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Report V

Skills for improved productivity, employment growth and development

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Introduction

The central aim of this report is to examine how, within a decent work perspective, countries can develop their skills base so as to increase both the quantity and the productivity of labour employed in the economy. Inadequate education and skills development keep economies trapped in a vicious circle of low education, low productivity and low income. The report therefore analyses how strategies to upgrade and enhance the relevance of skills training and to improve access to skills for more women and men can instead help countries move to a virtuous circle of higher productivity, employment and incomes growth, and development.

Skills development [1] is central to improving productivity. In turn, productivity is an important source of improved living standards and growth. Other critical factors include macroeconomic policies to maximize opportunities for pro-poor employment growth, an enabling environment for sustainable enterprise development, social dialogue and fundamental investments in basic education, health and physical infrastructure.

Effective skills development systems – which connect education to technical training, technical training to labour market entry and labour market entry to workplace and lifelong learning – can help countries sustain productivity growth and translate that growth into more and better jobs. This report examines the challenges faced by countries at different levels of development and their policy options. In so doing, it seeks lessons that are relevant for least developed, developing and more industrialized countries in linking skills development systems not only to the current needs of labour markets, but also to future needs as technologies, markets, the environment and development strategies change.

Background

At its 295th Session in March 2006, the Governing Body placed the topic of skills for improved productivity, employment growth and development on the agenda of the 97th Session (2008) of the International Labour Conference. In approaching this multifaceted subject, the present report seeks to apply the components of effective skills and employability policies articulated in the conclusions concerning human resources training and development agreed upon at the 88th Session of the Conference in 2000 (ILO, 2000a) and in the Human Resources Development Recommendation, 2004 (No. 195), adopted at the 92nd Session of the Conference in 2004. These tripartite discussions identified policies, programmes and institutions that can help to realize the potential of skills development to expand opportunities for decent work.

[1] In this report, "skills development" is understood in broad terms to mean, as spelt out in the conclusions concerning human resources training and development (ILO, 2000a, para. 5), basic education, initial training and lifelong learning.

The report also builds on the research findings of several ILO publications that analyse the linkages between skills, productivity and economic and employment growth. A series of *World Employment Reports*, beginning in 1999, have taken up the issue of skills development directly or as a component of broader employment policy issues. The *World Employment Report 2004–05: Employment, productivity and poverty reduction* concluded that, for the vast majority of the working poor, simply more work, unless it is more productive work, would not lead them out of poverty. It examined the conditions under which employment and productivity could grow in tandem and create a virtuous circle of decent and productive employment opportunities.

The knowledge accumulated in these discussions and publications, based on analysis by the Office and guidance from constituents, underpins the preparation of this report (see sidebar for a chronological summary). The present report, in turn, contributes to the knowledge base relating to the skills components of the Global Employment Agenda (GEA), which was adopted by the Governing Body in March 2003 and provides an analytical framework for promoting the employment components of the Decent Work Agenda. Productivity and employment issues feature prominently in Core Element 6 of the GEA on employability through improved knowledge and skills and Core Element 2 on promoting technological change for higher productivity and job creation and improved standards of living.

Sequence of recent tripartite discussions and research on skills development in relation to productivity and employment for decent work

1999	*World Employment Report 1998–99: Employability in the global economy: How training matters*
2000	ILC general discussion: *Human resources training and development: Vocational guidance and vocational training*
2001	*World Employment Report 2001*: *Life at work in the information economy*
2002	ILC general discussion on decent work and the informal economy
2003	Governing Body Committee on Employment and Social Policy (ESP), *Global Employment Agenda*
2004	Human Resources Development Recommendation, 2004 (No. 195)
2005	ILC general discussion: *Youth: Pathways to decent work*
2005	*World Employment Report 2004–2005: Employment, productivity and poverty reduction*
2006	Governing Body ESP Committee: *Implementing the Global Employment Agenda: Employment strategies in support of decent work: "Vision" document*
2006	Governing Body ESP Committee: *Employability by improving knowledge and skills*
2007	Governing Body ESP Committee: *Portability of skills*
2007	ILC general discussion on sustainable enterprises

The topic of this report is particularly relevant to the skills development needs identified in Decent Work Country Programmes (DWCPs). As the principal vehicle for promoting decent work at the country level, DWCPs comprise a set of agreed priorities for tripartite partnership with the Office. Many of the current DWCPs identify skills development, productivity and employment as national priorities for improving competitiveness, enhancing the employability of young women and men and increasing decent work opportunities for disadvantaged groups.

Objectives of the report

As the background paper for the general discussion on skills for improved productivity, employment growth and development at the 98th Session of the International Labour Conference, this report has the following objectives:

- Provide practical examples of the "virtuous circle", drawing lessons from national experience of investing in skills development, accelerating the growth of investment and productivity and translating those gains into higher income and sustainable job creation.
- Demonstrate how lifelong learning minimizes the displacement costs of technological change by preparing workers for alternative employment.
- Increase recognition of the importance of synchronizing national skills development policies with policies on technology, trade and the environment.
- Support national and international commitment to expanding the coverage of good quality basic education as a human right and an indispensable foundation for vocational training, lifelong learning and employability.
- Heighten awareness of the role of skills acquisition in promoting formalization in the informal economy.
- Emphasize the role of employers' and workers' organizations in advancing skills development in order to improve productivity and ensure the equitable distribution of the benefits of productivity growth.
- Apply the key instruments for skills development identified in the Human Resources Development Recommendation, 2004 (No. 195), to the goal of sustaining the growth of more productive employment.
- Facilitate tripartite discussion to provide guidance for ILO research, policy support, partnerships and technical cooperation in relation to skills for technological change, increased productivity and decent work.

Summary of the report

Education, training and lifelong learning foster a virtuous circle of higher productivity, more employment of better quality, income growth and development. ***Chapter 1*** introduces this catalytic role of skills development. It provides a succinct explanation of productivity, followed by an overview of the conceptual and empirical linkages between productivity and employment growth, and finally explains how a coherent skills development policy serves both short-term adjustment and long-term development goals.

Productivity growth reduces production costs and increases returns on investments, some of which provide greater income for business owners and investors, while some are turned into higher wages. The virtuous circle between productivity and employment is also fed through the investment side of the economy, when some productivity gains are reinvested by a firm in product and process innovations, improvements in plant and equipment and measures to expand into new markets, which in turn spur further output growth and productivity.

The productivity of *individuals* may be reflected in employment rates, wage rates, stability of employment, job satisfaction or employability across jobs or industries. The productivity of *enterprises*, in addition to output per worker, may be measured in terms

of market share and export performance. The benefits to societies from higher individual and enterprise productivity may be evident in increased competitiveness and employment or in a shift of employment from low to higher productivity sectors.

In the long term, productivity is the main determinant of income growth. A low-wage, low-skill, low-productivity development strategy is unsustainable in the long term and incompatible with poverty reduction. *Investment in education and skills helps to "pivot" an economy towards higher value added activities and dynamic growth sectors.*

Experience shows that all countries that have succeeded in linking skills with productivity have targeted their skills development policy towards three objectives:

(i) *Meeting skills demand in terms of relevance and quality:* so as to ensure the matching of skills supply and demand, skills policies need to develop skills that are relevant, promote lifelong learning and ensure the delivery of high levels of competences and a sufficient quantity of skilled workers. Furthermore, equality of opportunity in access to education and work is needed to meet the demand for training across all sectors of society.

(ii) *Mitigating adjustment costs:* the reorganization of work in line with new demands and technologies results in some skills becoming redundant. The ready availability and affordability of training in new skills and occupations help to insure against prolonged unemployment or underemployment and to maintain the employability of workers and the sustainability of enterprises.

(iii) *Sustaining a dynamic development process:* skills development policies need to build up capabilities and knowledge systems within the economy and society which induce and maintain a sustainable process of economic and social development. The first two objectives of improving skills matching and mitigating adjustment costs are based on a labour market perspective; they focus on skills development as a response to technological and economic changes and are essentially short- and medium-term objectives. In contrast, the developmental objective is focused on the strategic role of education and training policies in triggering and continuously fuelling technological change, domestic and foreign investment, diversification and competitiveness.

Chapter 1 also introduces three recurrent themes of the report. ***First, skills development must be an integral part of broader employment and development strategies*** *if it is to deliver on its substantial potential to contribute to overall productivity and employment growth.* The challenge for government policy is to develop and foster institutional arrangements through which ministries, employers, workers and training institutions can *respond effectively* to changing skill and training needs and play a *strategic and forward-looking* role in facilitating and sustaining technological, economic and social advancement. To meet this challenge, effective coordinating or mediating institutions are required at three levels:

- cooperation between the various providers of skills training, such as schools, training institutions and enterprises, to establish coherent and consistent learning paths;
- coordination between skills development institutions and enterprises to match skills supply and demand; and
- the coordination of skills development policies with industrial, investment, trade, technology and macroeconomic policies so that skills development policies are integrated effectively into the national development strategy and policy coherence

is achieved. Institutions need to encourage cooperation between different ministries, ensure the effective exchange of information and forecast skill needs.

Second, social dialogue and collective bargaining can create a broad commitment to education and training and a learning culture, strengthen support for the reform of training systems and provide channels for the ongoing communication of information between employers, workers and governments. In addition to promoting skills development, social dialogue and collective bargaining can also be instrumental in the equitable and efficient distribution of the benefits of improved productivity.

Third, gender equality is an underlying principle of decent work. Training policies and programmes that aim to improve productivity and employability therefore need to ensure equality of opportunity, be free from discrimination and take into account family and household obligations. In view of the essential nature of gender issues, examples of skills development policies and programmes which either target women or mainstream gender issues are highlighted throughout the report. A life-cycle approach has to be adopted to overcoming the challenges that confront women in gaining access to education and training and in utilizing this training to secure better employment. This includes: improving the access of girls to basic education; overcoming logistical, economic and cultural barriers to apprenticeships and to secondary and vocational training for young women – especially in non-traditional occupations; taking into account women's home and care responsibilities when scheduling workplace-based learning and entrepreneurship training; and meeting the training needs of women re-entering the labour market and of older women who have not had equal access to opportunities for lifelong learning .

Chapter 2 reviews the policy challenges and experience of groups of countries at different levels of development in connecting skills development to productivity and employment growth. Consideration of each group of countries begins with a succinct overview of the available data on productivity, employment and education as the nearest available measurement of skills levels.

A key policy challenge confronting the ***Organisation for Economic Co-operation and Development*** (***OECD) countries*** is to ensure the continuing relevance of skills acquired by both job entrants and mid-career workers. Success in this respect minimizes the risk of skills gaps, which can constrain enterprise growth and jeopardize the employability of workers. Structural transformations and heightened competition are making it increasingly difficult for workers with low skills to find productive employment. The policy responses to these challenges include improving access to and the relevance and quality of job-entry training, expanding lifelong learning opportunities and using active labour market policies to combat inequality and reintegrate older men and women into the labour market. The continuing adjustment of skills development programmes is an essential component of the restated OECD Jobs Strategy.

Most countries in ***Central and Eastern Europe (CEE)*** and the ***Commonwealth of Independent States (CIS)*** started the transformation process with a strong tradition of technical and vocational training. However, education and training participation rates have dropped, partly because much of the training offered by the vocational training system had become irrelevant in the transition from a command to a market economy. Efforts by these countries to reinvigorate skills development systems have included restructuring education and training systems to the demands of the new market economy, using labour market institutions to mitigate the negative effects of economic restructuring and targeting training and lifelong learning to raise the adaptability and mobility of the workforce.

One important characteristic of ***developing countries*** is the combination of high growth and productivity in some sectors and regions with low productivity and persistent poverty in the large informal economy. With a view to *addressing skills shortages* in high-growth sectors, it is necessary to improve coordination between prospective employers and education and training providers, increase the quantity of public training provision and encourage workplace learning. The *role of training in promoting formalization* in many countries involves focusing on: improving access to quality skills development outside high-growth urban areas; combining remedial education and employment services with technical training; implementing systems for the recognition of prior learning so as to open up jobs in the formal economy to those who have acquired skills informally; and targeting entrepreneurship training so that it encourages and enables the formalization of small enterprises.

The ***least developed countries***, mainly in sub-Saharan Africa, parts of Asia and small island countries, face a vicious circle of low education and skills, low productivity and poverty. Only one fifth of boys and girls of secondary school age in sub-Saharan Africa attend school. *The priority of improving the quality and availability of training* means that it is necessary to focus on reforming education and training systems so that they provide the skills and competencies that will be needed to boost the growth of decent work in the formal economy. Policy responses need to place emphasis on increasing the access of the poor to training, upgrading apprenticeship training and improving the relevance of training in public institutions by strengthening coordination and partnerships with the private sector and combining institution-based education and training with enterprise-based learning.

Chapter 3 identifies skills development as one of the critically important drivers of productivity growth and competitiveness at the enterprise level. Agreements between employers and workers are important means of promoting workplace learning and of ensuring that increased productivity benefits both employers and workers. Policies that encourage enterprises to increase on-the-job training and workers to participate in lifelong learning, with a view to improving performance and increasing the quantity and quality of employment, differ according to the various types of enterprise.

Inter-firm alliances of enterprises along ***global value chains*** related to multinational enterprises offer opportunities for economies of scale in skills development, for example by reducing the costs of training for individual enterprises through the sharing of certain costs between allied enterprises. Arrangements whereby a lead firm in a value chain sets the standards for skills development, develops the curriculum and training materials and, in some cases, provides the facilities and personnel to deliver the training, can provide a high quality of workplace training linked to the requirements of the production system. Experience also shows that training in the areas of compliance with labour standards and national labour law, conflict resolution and representation is important in value chains and corresponds well with worker training in technical fields.

Workforce skills are also a fundamental condition for the emergence of ***clusters*** – groups of enterprises that gain performance advantages through their proximity. Specialized competencies are developed both within and between firms, offering a competitive advantage for the firms within the cluster. A proactive role by governments in establishing linkages with multinational companies for the development of clusters and in supporting cooperation between firms in clusters can help to stimulate the adoption of technologies and skills upgrading programmes.

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

Smaller enterprises face particular challenges in gaining access to training services and developing the technical and managerial capabilities that they need for growth. The monitoring of skill shortages and entrepreneurial opportunities, the provision of sector- or cluster-specific training and the inclusion of entrepreneurial and trade union organizations on the management boards of training institutions can help to ensure that training is relevant and accessible to smaller enterprises.

Chapter 4 focuses on policy approaches that enable persons in rural communities, disadvantaged young people, persons with disabilities and migrant workers to realize their potential for productive work more fully and contribute more substantially to economic and social development. Within potentially marginalized groups, women are usually more vulnerable to social exclusion than their male counterparts.

The background report for the International Labour Conference (ILC) general discussion on the promotion of rural employment for poverty reduction (ILO, 2008a) identifies a set of factors required to raise agricultural and off-farm productivity, including effective means for persons in ***rural communities*** to learn about new technologies, production techniques, products and markets. Chapter 4 examines three methods that can be effective in improving access to high quality and relevant skills training in rural communities in order to improve agricultural productivity or to meet off-farm labour demand, namely: improving agricultural and rural extension services, combining technical and entrepreneurship training in community-based training and incorporating training on labour-based methods of investing in rural infrastructure.

In developing countries, the education and literacy rates are lowest for girls and women in rural areas. Broader availability of better quality education is needed to enable ***young people*** to acquire core skills and then be able to learn occupational and work skills. Chapter 4 reviews ways of improving training and employment services for disadvantaged young persons, especially those who have been removed from child labour, live in rural areas or whose families work in the informal economy, with a view to helping them enter the formal labour market and improving their long-term employability.

People with disabilities often end up in passive assistance programmes, receiving disability benefits or pensions in countries where such schemes exist, or relying on family support or charity in countries that do not have such schemes. Four out of five persons with disabilities worldwide live below the poverty line and it is a massive loss when they are unable to contribute to national development. The chapter identifies on-the-job training and targeted training in focused centres, provided that they are well designed and accompanied by appropriate employment services, as good practices that increase the ability of persons with disabilities to obtain productive mainstream employment.

Labour migration poses a variety of challenges and opens up opportunities for training and the deployment of skilled labour. These include compensating for skill shortages in destination countries, improving the recognition of skills across borders as a means of helping migrant workers to secure jobs for which they are qualified and responding to development challenges in countries of origin when skilled workers find employment elsewhere. The potential for labour migration to contribute to development objectives in both countries of origin and of destination can be realized more fully by

facilitating circular and return migration so that the skills acquired by migrant workers abroad benefit their countries of origin. In this respect, it is important to improve the ethical practices of employment services with a view to preventing the exploitation of migrant workers and to strengthen the ability of employment services to match competencies with local labour market needs. Bilateral and multilateral arrangements in the health care and education sectors are ways of avoiding the negative impact of migration on these critical services in developing countries.

Chapter 5 shifts attention to the future. Chapters 2 to 4 examine the kinds of challenges that are currently being faced by countries, enterprises and particular social groups to become more productive and increase employment. Chapter 5 presents a framework for linking skills development to future challenges by initiating and sustaining a dynamic development process and integrating skills development into broader national development strategies.

Successfully using skills policies to help trigger and maintain a dynamic process of employment growth has resulted in a virtuous circle of rising productivity and high growth rates, for example in the "East Asian Tigers" (Hong Kong (China), Republic of Korea, Singapore), the "Celtic Tiger" (Ireland) and Costa Rica. Their experience shows that a development strategy that combines technological upgrading with investment in higher value added non-traditional sectors (diversification) helps to ensure that productivity growth is accompanied by employment growth.

This strategy relies on widespread general education and occupational competences as the foundation of social capabilities to innovate, transfer and absorb new technologies, diversify the production structure into higher value added activities and attract more knowledge-intensive domestic and foreign investment. It also requires the collection, updating and dissemination of information on current and future skills requirements and the translation of this information into the timely supply of occupational and entrepreneurial skills and competences.

Coordinating skills development with the adoption of new technologies and diversification into new industrial sectors can be a challenge. Investment in human capital alone can increase the number of skilled workers, but not necessarily the number of jobs for them. On the other hand, increased technology transfer alone, without appropriately prepared workers and managers, is unlikely to sustain local job growth. Inter-ministerial coordination, social dialogue and feedback mechanisms between the suppliers of training, workers and the suppliers of employment are important means of maintaining effective coordination. The chapter reviews the complex and multilayer coordination mechanisms that exist in certain dynamic economies, such as Ireland.

National development frameworks provide an opportunity for countries to integrate skills development into broad national development policies, such as national development plans, strategies to reduce poverty and meet the Millennium Development Goals (MDGs), and DWCPs. These coherent national frameworks also provide an opportunity for labour ministries and workers' and employers' organizations to encourage line ministries (including ministries of agriculture, education, rural development, commerce and industry, and environment) to take into account the employment impact, job creation potential and skills development implications of their policies. Two critically important institutions for effective forward-looking skills development are s*ocial dialogue*, to coordinate the process of skills development with the national development strategy, and *skills forecasting and labour market information systems*, for the early identification of skills needs.

Whereas Chapter 5 examines the strategic role of skills development in achieving economic and social development goals that countries set for themselves, ***Chapter 6*** looks at how skills policies can also help to develop effective responses to externally induced changes in the economy. Three contemporary global drivers of change are taken as examples: *technology, trade and climate change*. Anticipating and managing the impact of global drivers of change draws on all three elements of skills development policy: taking advantage of emerging opportunities by matching the demand for and supply of new skills; facilitating adjustment and mitigating its costs for workers and enterprises adversely affected by global changes; and sustaining a dynamic development process.

Technology: while developed countries are pushing the technological frontier, developing countries are moving towards that frontier. Imitation allows for investment in non-traditional sectors and for the application of new technologies to a broader variety of economic activities. This means that skills and technology have to be enhanced simultaneously in order to ensure the sustainability of productivity growth and development. At the early stage of technological development, it is essential to achieve a minimum level of educational attainment in the population. Technological and industrial advancement requires the broad availability of high-quality secondary education and vocational training. Finally, the ability to innovate as well as to adopt more complex and sophisticated technologies requires technical and vocational education and training at the tertiary level, and particularly skills in research and development.

Trade: the World Commission on the Social Dimension of Globalization (2004, para. 275) pointed out that: "All countries which have benefited from globalization have invested significantly in their education and training systems". The recent *Aid for Trade (AfT) initiative* to improve trade preparedness needs to place more emphasis on supporting education and skills development. Social dialogue has been shown to be an effective instrument in reconciling differences on how to maximize the benefits and minimize the costs of increased participation in global markets. Social security systems and active labour market policies ease transitions to new employment, and lifelong learning can also be considered as a type of unemployment insurance.

Climate change: improved knowledge of the employment and skills impact of climate change is needed so that governments and the social partners can agree on joint responses at the national, sectoral and enterprise levels. Mitigation efforts (to reduce global warming) and adaptation (to adjust to the local impact of climatic changes) both create new employment opportunities. Realizing the potential for employment growth in these areas will require skills development. There will also be a growing need to help re-skill the workers who are adversely affected and to assist the most vulnerable workers in developing countries to respond more effectively to the local consequences of climate change.

The report concludes with a brief summary of its main policy orientations and a set of suggested points for discussion.

Abbreviations and acronyms

ACTRAV	ILO Bureau for Workers' Activities
ACT/EMP	ILO Bureau for Employers' Activities
ASEAN	Association of Southeast Asian Nations
BDS	business development services
CBT	community-based training
CEDEFOP	European Centre for the Development of Vocational Training
CEE	Central and Eastern Europe
Cinterfor	Inter-American Centre for Knowledge Development in Vocational Training, Montevideo, Uruguay
CIS	Commonwealth of Independent States
COOP	ILO Cooperative Branch
DWCP	Decent Work Country Programme
ECOWAS	Economic Community of West African States
ESP	Committee on Employment and Social Policy (ILO Governing Body)
FAO	Food and Agriculture Organization
FDI	foreign direct investment
HPW	high-performance workplace
IDB	Inter-American Development Bank
ICA	International Co-operative Alliance
ICT	information and communications technology
ILC	International Labour Conference
IMF	International Monetary Fund
IOE	International Organisation of Employers
IPEC	International Programme on the Elimination of Child Labour (ILO)
IT	information technology
ITUC	International Trade Union Confederation
IYB	Improve Your Business (ILO programme)
KAB	Know About Business (ILO programme)

KILM	key indicators of the labour market (ILO)
LDCs	least developed countries
LED	local economic development
LMI	labour market information
LMIS	labour market information systems
MDGs	Millennium Development Goals
MENA	Middle East and North Africa
MERCOSUR	Common Market of the Southern Cone
MNE	multinational enterprise
NQF	National Qualifications Framework
NTA	National Training Authority
OECD	Organisation for Economic Co-operation and Development
OSH	occupational safety and health
PES	public employment services
PPP	purchasing power parity
R&D	research and development
SBA	small business associations
EMP/SEED	Boosting Employment through Small Enterprise Development (ILO Programme)
EMP/SKILLS	Skills and Employability Department (ILO)
SYB	Start Your Business (ILO programme)
TREE	Training for Rural Economic Empowerment (ILO programme)
TVET	Technical and Vocational Education and Training
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNECE	United Nations Economic Commission for Europe
UNIDO	United Nations Industrial Development Organization
WAEMU	West African Economic and Monetary Union
WHO	World Health Organization
WISE	Work Improvements in Small Enterprises (ILO programme)

Chapter 1

Productivity, employment, skills and development: The strategic issues

1. The purpose of this first chapter is to establish the centrality of skills development to maintaining both productivity and employment growth – in developing as well as in developed economies. Skills development [1] is as important in combating poverty and exclusion as it is in maintaining competitiveness and employability. Education, training, and lifelong learning foster a virtuous circle of higher productivity, more employment of better quality, income growth, and development. Chapter 1 introduces this catalytic role of skills development, starting with a succinct explanation of productivity, followed by an overview of the conceptual and empirical linkages between productivity and employment growth, and finally an explanation of how a coherent skills development policy serves both short-term adjustment and long-term development goals.

1.1. Understanding productivity

2. "Productivity is a relationship between outputs and inputs. It rises when an increase in output occurs with a less than proportionate increase in inputs, or when the same output is produced with fewer inputs" (ILO, 2005a, p. 5). Productivity can also be considered in monetary terms. If the price received for an output rises with no increase in the cost of inputs, this is also seen as an increase in productivity (for example, due to an increase in the world price for agricultural or mining commodities).

3. Productivity can be measured either in terms of all factors of production combined (total factor productivity) or in terms of labour productivity, which is defined as output per unit of labour input, measured either in terms of the number of persons employed (as in this report) or in terms of the number of hours worked (ILO, 2005a). In order to examine productivity levels across countries in a meaningful way, the raw figures for gross domestic product (GDP) in US dollars per employed person are converted into comparable terms on the basis of purchasing power parity (PPP), which takes account of differences in the price of a standard set of goods and services in different countries. [2]

[1] In this report, "skills development" is understood in broad terms, as spelled out in the conclusions concerning human resources training and development (ILO, 2000a, para. 5): "It is the task of basic education to ensure to each individual the full development of the human personality and citizenship; and to lay the foundation for employability. Initial training develops further his or her employability by providing general core work skills, and the underpinning knowledge, and industry-based and professional competencies which are portable and facilitate the transition into the world of work. Lifelong learning ensures that the individual's skills and competencies are maintained and improved as work, technology and skill requirements change; ensures the personal and career development of workers; results in increases in aggregate productivity and income; and improves social equity."

[2] In *Key Indicators of the Labour Market (KILM)*, GDP per worker estimates are expressed in terms of 1990 US dollars, as the 1990 PPP made it possible to compare the largest set of countries (ILO, 2007a). Recent changes in calculations of PPPs of China and India, for example, may be taken into account in future computations.

4. Productivity improvements can also be understood at different levels. The productivity of *individuals* may be reflected in employment rates, wage rates, stability of employment, job satisfaction or employability across jobs or industries. Productivity of *enterprises*, in addition to output per worker, may be measured in terms of market share and export performance. The benefits to societies from higher individual and enterprise productivity may be evident in increased competitiveness and employment or in a shift of employment from low to higher productivity sectors.

5. An increase in productivity at any level can be attributed to various factors, for example, new capital equipment, organizational changes or new skills learned on or off the job. Productivity is affected by factors at the individual level, such as health, education, training, core skills and experience; by factors at the enterprise level, such as management, investment in plant and equipment and occupational safety and health; and by factors at the national level, such as supportive national macroeconomic and competition policies, economic growth strategies, policies to maintain a sustainable business environment and public investments in infrastructure and education.

> [A] thorough understanding of productivity would fill (and has filled) volumes as, rather unhelpfully, just about "everything" matters. Indeed, a truly thorough excavation of the topic would entail an unpacking of all the determinants of growth and development. For example, the prime source of productivity growth is technological change. Technological change, in turn, relies on innovation, which itself is influenced by an array of institutions, the ***quality of the supply of human capital***, competitive market dynamics, spending on research and development (R&D), and investment in general. These in turn depend upon the strength and stability of aggregate demand, and thus on the macroeconomic framework. Investment is a catalyst for innovation, but the reverse is also true: innovation spurs investment. …
>
> Changes in the organization of work and production have a profound influence on productivity … from … the birth of the factory system ... to contemporary discussions of the "knowledge economy" and "high performance work systems," both of which underscore the ***salience of human capital and its organization as a source of productivity growth and competitive advantage***. (ILO, 2005a, pp. 2–3; emphasis on skills-related factors added.)

6. It is important to recognize that skills development and other investments in human capital comprise only one set of factors necessary for productivity growth. Skills development alone cannot raise enterprise and national productivity. Other factors and policies are likewise insufficient if they are implemented in isolation of skills development. One of the messages of this report is that skills development must be an integral part of broader development strategies if it is to deliver on its substantial potential to contribute to overall productivity and employment growth.

7. Skills are critical in the structural adjustment of economies. As economies move from relative dependence on agricultural production to manufacturing and service industries, workers and enterprises must be able to learn new technical, entrepreneurial, and social skills. Inability to learn new skills because of inadequate basic education or lack of opportunity slows the transfer of all factors of production from lower to higher value added activities.

1.2. Productivity, employment and development

1.2.1. The virtuous circle

8. Productivity growth can raise incomes and reduce poverty in a virtuous circle. Productivity growth reduces production costs and increases returns on investments, some of which turn into income for business owners and investors and some of which are turned into higher wages. Prices may go down, consumption and employment grow and

people move out of poverty. The virtuous circle is also fed through the investment side of the economy when some productivity gains are reinvested by a firm into product and process innovations, plant and equipment improvements and measures to expand into new markets, which spurs further output growth and productivity.

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

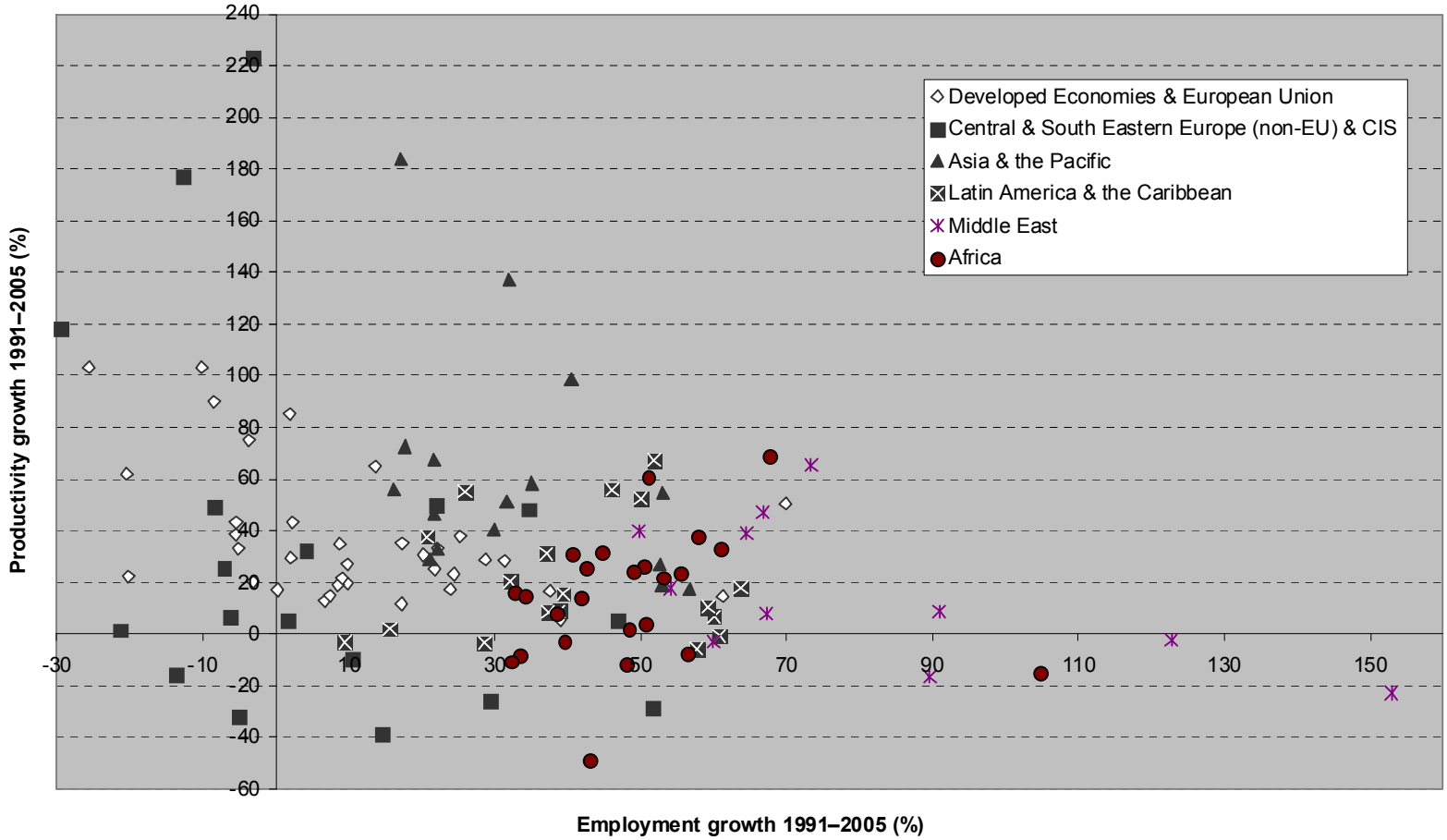
10. As consumption and production patterns change, work is reorganized to meet new demands and technologies. However this reorganization is not instantaneous and rarely smooth. Enterprises and workers are affected differently. Some find their skills in short supply while others may find their skills redundant. This dichotomy was brilliantly captured by Schumpeter, who described the process of innovation in market economies as "creative destruction" (Schumpeter, 1942). Well designed and coherent policies and institutions can, however, improve the capacities of individuals and enterprises to adapt, adding to the economic creative potential while reducing and sharing the costs of the "destruction" of redundant capacities. Some conditions offset the cost of this displacement effect. These include: overall economic growth; accessible labour market information about where employment is growing and where it is declining; the absence of discrimination against groups for whom job loss could turn into long-term hardship; and – most importantly for this report – workers' skills, the ready availability and affordability of training in new skills and occupations, and the base of core competencies that makes lifelong learning easier.

11. It is important that both enterprises and workers benefit from improved productivity. Improved productivity can enable enterprises to make new investments and fuel the innovations, diversifications and expansions into new markets that are needed for future growth. Improved productivity can result in higher earnings for workers, better working conditions, improved benefits and reduced working hours; these in turn can improve workers' job satisfaction and motivation.

12. At the enterprise or industry level, social dialogue and collective bargaining agreements enable all parties to share the benefits of productivity gains and to consider short-term and long-term choices (relating, for example, to profits, wages and new investments). At the economy-wide level, labour market policies can create a conducive environment for fair and effective sharing of the gains (covering such issues as wages policy and minimum wages, collective bargaining institutions to encourage social dialogue, and mechanisms for sharing labour market information).

13. ILO analysis of labour markets over the years shows that productivity and employment have tended to grow in unison, particularly in Europe and many parts of Asia. Figure 1.1 shows that the best performance between 1991 and 2005, in terms of both productivity and employment, was achieved by the high-growth economies of the Asian and Pacific Rim (for example, China, Republic of Korea and Singapore). Most industrialized countries in Europe and North America exhibit slower, although still positive, growth in both productivity and employment. These countries began the period in question with the highest productivity levels in the world, so the incremental change from that high starting point is smaller.

Figure 1.1. Productivity and employment growth, 1991–2005



Source: Based on *Key Indicators of the Labour Market*, fifth edition, 2007 (Geneva, ILO).

14. Many countries of Central and Eastern Europe have recently experienced increased productivity but without employment growth. This is explained by the transition from central planning to a market economy, the liberalization of domestic markets and the lowering of barriers to international trade and capital flows.

15. By contrast, countries which have achieved higher growth in employment than in productivity are typically found in Latin America, the Arab States and Africa. In these regions, with few exceptions, population growth led to employment growth, but largely in the informal economy and other low-productivity activities. The situation in some countries, including in the Arab States, is that growth has been concentrated in extractive industries with low employment potential.

1.2.2. Short-term trade-offs: Genuine and demanding public policy response

16. Labour productivity gains (higher output per worker) resulting from labour-saving technologies will lead to job creation only if the enterprise concerned can gain a bigger share of the market or if the economy can diversify into new products or markets. Competitive pressures drive investment, innovation, skills upgrading and other factors in the overall development process. However, even when higher productivity spurs economic growth and employment expands overall, labour-saving technological changes and the relative growth and decline of specific sectors result in job losses in some places and in some industries, for actual workers, enterprises and communities.

17. *Training* is a vital component of socially responsible preparation for and adjustment to the changes brought about by improved productivity at the individual, enterprise and community levels. *Lifelong learning* is a form of unemployment insurance: it reduces the risk of employment prospects being tied to technologies and products that become obsolete. Retraining and employment services for those who lose their jobs should be part of the social contract to share both the gains and the pains of change, enabling those in declining sectors to enter growing ones. Other essential components of a social response include income support, pensions and social security provisions related to employment, and labour market policies to promote access for enterprises to new investment funding, market information and other services. The importance of expanding social security provisions cannot be overstated. However, neither reskilling nor social security provisions will ultimately be effective in the absence of national strategies to expand the market, stimulate aggregate demand and boost job creation. The Decent Work Agenda – comprising representation and voice, social protection, employment promotion and protecting the rights of workers – is a fair as well as an efficient approach to adjusting to economic and technological change.

1.2.3. Using productivity and employment to boost development

18. Given that the problem in many developing countries is not the absence of work, but rather the prevalence of work that is insufficiently productive to yield a decent income, it is imperative that both employment and productivity growth be pursued in unison. In this regard, research has underscored the importance of market size, of an enabling environment to promote sustainable enterprise and investment, of pro-poor, employment-rich development policies, and of working towards two major objectives at the same time (ILO, 2002; ILO, 2005a; Ghose et al., 2008). These objectives are as follows:

- First, the rate of growth of wage employment in the ***formal economy*** must exceed that of the labour force in the economy as a whole, in order to ensure that labour moves from the informal economy into formal, more productive and decent employment. This requires dynamic high-growth sectors, "catching-up" through enterprise development and the development of the requisite technical and core skills needed to use new technologies and access new markets.
- Second, labour productivity in the ***informal economy*** must increase so that underemployment and poverty there are progressively reduced.

19. Skills development is central to both of these objectives. In order to achieve the first objective, the workforce must be "employable", that is, capable of learning new technologies and workplace practices, engaging in social dialogue and participating in opportunities for continued learning. Basic and vocational education prepare young people for the world of work and ongoing workplace learning. The policy environment, quality of local training service providers, and growth strategies of enterprises, must all coincide in favour of expanding on-the-job training. Employment services must share information about occupations and skills needed in the labour market and ease the school to work transition. Furthermore, having a more skilled workforce can stem the decline in the employment content of growth in the formal economy.

20. To achieve the second objective, access to training must extend deeper into the informal and rural economies, which is where most people living in poverty work, especially women (see box 1.1). This applies most of all to those who are self-employed or who work in micro- and small enterprises or in subsistence agriculture. Furthermore, the quality of the available training must be improved through the extension of the services provided by vocational training systems into under-served areas, improvements in informal apprenticeships, and measures to help small enterprises upgrade their technical and entrepreneurial skills.

Box 1.1
Gender and the informal economy

Across all countries, women are over-represented in jobs and tasks that require fewer and lower value skills, are lower paid and offer restricted career prospects. In most countries, women account for the majority of workers in the informal economy, which implies greater job insecurity, as well as lack of access to training, social protection and other resources, making them comparatively more vulnerable to poverty and marginalization. There is a significant overlap between being a woman, working in the informal economy and being poor.

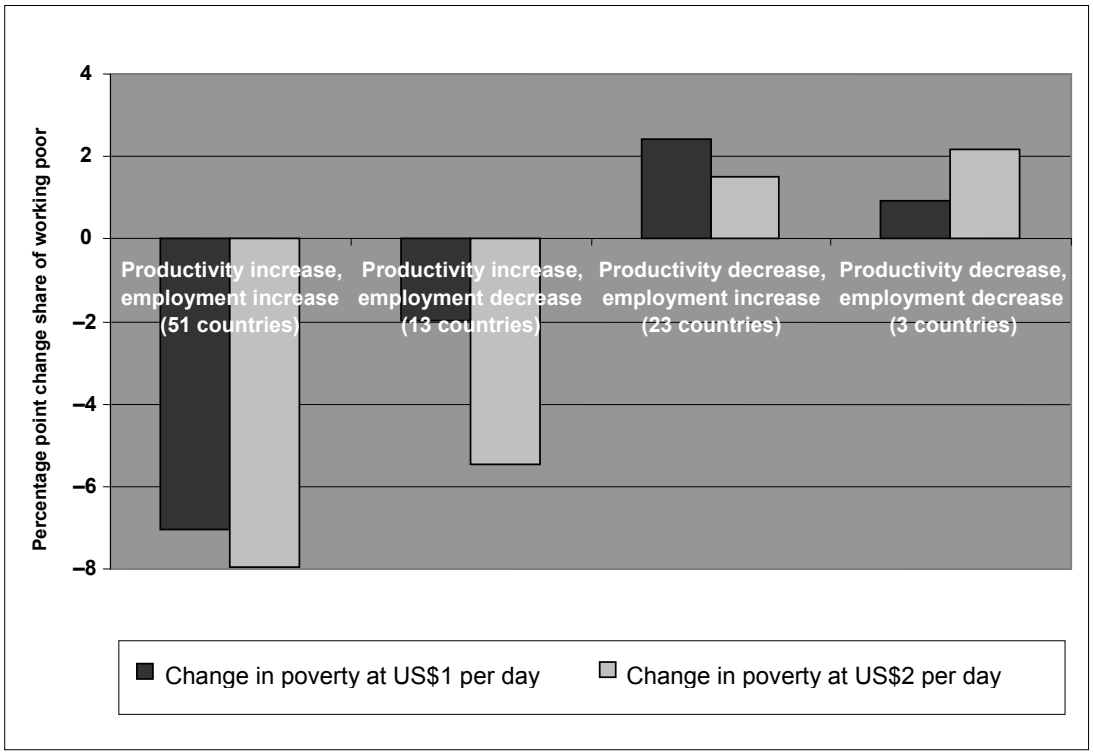
Source: Carr and Chen, 2004.

21. In the long term, meeting national and global commitments to improve basic education and increase literacy will open technical and vocational training opportunities to a broader section of the population. In the meantime, however, there is a need to develop innovative ways of upgrading skills and recognizing the latent skills of those already in the workforce, even if they have not had adequate basic education. Strategies to improve productivity in the informal economy must enable workers there to use new skills as leverage to help them move into decent formal work (see section 2.3 in Chapter 2). This strategy for skills development and the informal economy (or "informal sector", as it was called at that time) was articulated in the conclusions of the general discussion on training for employment in 2000:

> Training can be one of the instruments that, together with other measures, address the challenge of the informal sector [sic] … Informal sector work is unprotected work that is, for the most part, characterized by low earnings and low productivity. The role of training is not to prepare people for the informal sector and keep them in the informal sector; or to expand the informal sector; but rather it should go in conjunction with other instruments, such as fiscal policies, provision of credit, and extension of social protection and labour laws, to improve the performance of enterprises and the employability of workers in order to transform what are often marginal, survival activities into decent work fully integrated into mainstream economic life. Prior learning and skills gained in the sector should be validated, as they will help the said workers gain access to the formal labour market. The social partners should be fully involved in developing these programmes. (ILO, 2000a, para. 7.)

22. According to data for the period 1991 to 2005 (figure 1.2), the group of countries that increased both productivity and employment also experienced the greatest average reduction in poverty, whether defined at the extreme level of US$1 a day or the slightly less extreme figure of US$2 a day. [3] The average reduction in the proportion of workers living on less than US$2 a day in countries where both productivity and employment increased was 8 per cent over the 14-year period. Among the countries which experienced an increase in productivity but not in employment, the decline in the incidence of poverty was slightly lower, at just over 5.5 per cent. In stark contrast, poverty did not decline on average in countries which did not experience a rise in productivity, regardless of employment growth.

Figure 1.2. Average changes in poverty for countries grouped by relative performance in productivity and employment growth, 1991–2005



Source: *Key Indicators of the Labour Market*, fifth edition, 2007 (Geneva, ILO); Global Employment Trends Model, 2007; Working Poor Model, 2007. High-income OECD countries excluded.

[3] The *World Employment Report 2004–05* found that poverty reductions were greater in countries that had increased both agricultural productivity and employment (ILO, 2005a). For more recent analysis on agricultural employment, see *Promotion of rural employment for poverty reduction*, report for the general discussion, International Labour Conference (ILC), 2008 (ILO, 2008a).

23. Until recently, employment was not included in the set of targets by which progress towards meeting international goals to reduce poverty was measured. Decent work is now, however, more widely acknowledged to be the principal means by which people can escape poverty. *Full and productive employment and decent work for all* was therefore included in 2007 as a specific target under MDG 1 to eradicate extreme poverty and hunger. [4] This establishes a commitment to halving between 1990 and 2015 the proportion of the world's population living on less than US$1 a day.

24. Productivity growth, measured as the rate of growth of GDP per person employed, is one of the four agreed indicators countries are encouraged to use to measure their progress towards meeting this target. The other three indicators are: the ratio of employment to population; the share of "vulnerable employment" (defined as the proportion of own-account and contributing family workers in total employment); [5] and the proportion of the working poor (proportion of employed people living below US$1 a day, measured in PPP).

1.3. Skills policies for a virtuous circle: Linking productivity, employment and development

25. The process of skills development for productivity, employment growth and development is complex and is influenced by policies and institutions. The Human Resources Development Convention, 1975 (No. 142), and the Human Resources Development Recommendation, 2004 (No. 195), emphasize the roles of governments, employers and workers and the importance of social dialogue in designing and implementing training policies and programmes that are appropriate for country circumstances.

1.3.1. Objectives of skills development policy

26. Countries have very different initial economic and social conditions, and different levels of skills and competences. Effective development processes are forged from a social contract of shared objectives to propel the economy forward, expand decent work and raise living standards. The design, sequencing and focus of their policies need to respond to their different levels of development. However, experience shows that all countries that have succeeded in linking skills with productivity, employment growth and development, have targeted skills development policy towards three objectives, described in the following paragraphs.

27. ***Objective 1. Meet skills demand in terms of relevance and quality.*** Skills policies need to develop relevant skills, promote lifelong learning, deliver high levels of competences and a sufficient quantity of skilled workers to match skills supply with demand. Furthermore, equal opportunity in access to education and work is needed to meet the demands for training across all sectors of society. Policies designed to meet skills demand contribute to productivity, employability and decent work because:

- enterprises can use technologies efficiently and fully exploit productivity potentials;

[4] The new target, "Achieve full and productive employment and decent work for all, including women and young people," was proposed to the UN General Assembly by the Secretary-General at its 61st Session (2006). Under the MDG monitoring framework, the Inter-Agency and Expert Group on MDG Indicators, in which the ILO participated, selected the indicators for the target on decent work. See http://mdgs.un.org/unsd/mdg/Data.aspx.

[5] Own-account workers are self-employed workers who do not employ even one other person (ILO, 2007a).

- young people acquire employable skills which facilitates their transition from school to work and smooth integration into the labour market;
- workers build up and improve competences, and develop their career in a process of lifelong learning; and
- disadvantaged population groups have access to education, training and the labour market.

28. ***Objective 2. Mitigate adjustment costs.*** Training policies and programmes lessen the costs for workers and enterprises that are adversely affected by technological or market changes. Such externally induced changes can result in enterprises adjusting, downsizing or even closing down. Workers risk losing their jobs and their skills may become obsolete. Upgrading skills, retraining and reskilling of workers are essential elements of active labour market policies and facilitate reinsertion of workers into labour markets. Policies to retrain workers and entrepreneurs proactively and prepare them for change help to insure against job loss, reduce the risk of unemployment and re-establish workers' employability.

29. ***Objective 3. Sustain a dynamic development process.*** At the level of the economy and society, skills development policies need to build up capabilities and knowledge systems which induce and maintain a sustainable process of economic and social development. The first two objectives of skills matching and cost mitigation take a labour market perspective and focus on skills development as a response to technological and economic changes; they are essentially short- and medium-term objectives. By contrast, the developmental objective focuses on the strategic role of education and training policies in triggering and continuously fuelling technological change, domestic and foreign investment, diversification, and competitiveness.

30. Figure 1.3 presents an integrated framework for sustaining a dynamic skills development process, which is explained more fully in Chapter 5. It is based on building national ability to respond to external challenges, integrating skills development policies into national development strategies, and the development of the following three processes:

(1) *Upgrading technologies and diversifying economic activities* into non-traditional sectors. When technological upgrading is combined with investment in non-traditional sectors (diversification) *productivity growth comes together with employment growth in a context of accelerating technological change*. While technological change increases productivity in enterprises and value chains, diversification into non-traditional activities creates demand for labour and new employment opportunities.

(2) *Building up the competences of individuals and the capabilities of society.* Widespread general education and occupational competences are the foundation of social capabilities to innovate, transfer and absorb new technologies, foster creativity and innovations, diversify the production structure into higher value added activities, attract more knowledge-intensive domestic and foreign investment and take advantage of global opportunities.

(3) *Collecting, updating and disseminating information on current and future skills requirements and translating this information into the timely supply of occupational and entrepreneurial skills and competences.* Throughout this process of change, information needs to be obtained and passed on to decision-makers. Information to better match skills demand and supply improves the efficiency of labour markets. Accessible and reliable information on the skills that will be

needed and valued, and on the skills workers and young people are actually acquiring, reduces uncertainties, which in turn maintains incentives and motivation for investment in both new technologies and skills. Early identification of the skills that will be in demand in particular growth sectors is essential for informed policy decisions and investment choices by employers and workers. National development strategies and skills policies need to be informed by sex-disaggregated data in order to monitor and overcome gender bias in training and employment.

31. These three processes need to be developed simultaneously in order to establish a virtuous circle and a sustainable process of increasing productivity, employment growth and economic and social development. The experience of countries in aligning skills to both productivity and employment growth is examined in Chapter 5.

32. As depicted in the central square of figure 1.3, skills development policies are not pursued in isolation; along with technology, labour market, macroeconomic, trade and other policies, they are an integral part of national development strategies. These strategies reflect the aspirations of societies and, on the basis of labour standards and institutions, make up the countries' preparation for and response to global opportunities and challenges (indicated in the top box of the figure). External drivers of change, such as trade and investment, regional integration, technological advances and climate change, offer both opportunities for growth and challenges to existing economic activities. Workforce skills, entrepreneurship and innovation, and the ability to learn and adapt, are among the critical social capabilities that influence competitiveness, productivity growth and employment in the face of these challenges and opportunities. The three side bars in the figure represent the critical processes (listed above) of a skills development policy that can meet skills demands, mitigate adjustment costs and sustain dynamic development processes.

1.3.2. Information and coordination challenges: A role for government policies, institutions and social dialogue

33. Markets, if unsupported by government policies and institutions, are unable to translate skills development effectively into productivity, employment and development. This is due to problems affecting information, incentives and coordination. Countries have developed different institutional frameworks in the context of their own historical, political, economic and cultural development to overcome these problems. The challenge for government policy is to develop and foster institutional arrangements that establish and maintain the capacity of governments, employers, workers, schools, training institutions and universities to *respond effectively to* changing skill and training needs as well as playing a *strategic and forward-looking* role in facilitating and sustaining technological, economic and social advancement. The role of institutions in improving information, coordination and social dialogue is introduced here, and further analysis and examples are provided in Chapter 5.

Figure 1.3. Skills development strategy for productivity, employment and sustainable development

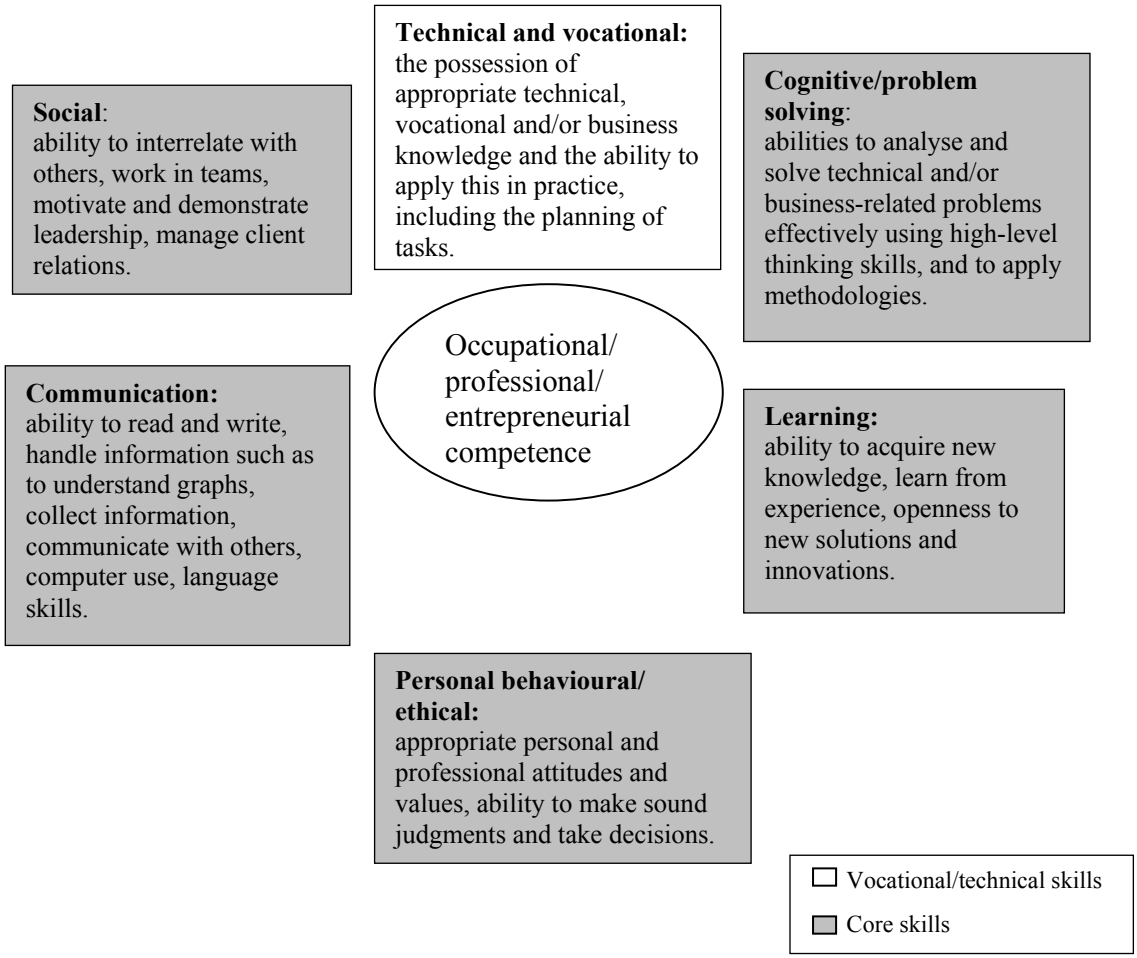
34. *Information and incentive problems* arise as a result of uncertainty regarding the skills required in enterprises and the future returns which can be expected from investment in training. In addition, enterprises recruiting workers cannot easily know the skills an individual worker has acquired or know for sure whether a newly trained worker will stay in the enterprise long enough to recover training costs. Such problems reduce incentives for employers and workers to invest in training. Interventions need to change the incentive structures to encourage an efficient level of investment in education and training and effective use of skills in enterprises. Institutions such as apprenticeships, high-performance workplaces (HPWs), accountable public training institutions and assessment and certification systems overcome uncertainties and incentive problems.

35. Coordination problems need to be addressed at three levels:

(i) *Cooperation between the various providers of skills training, such as schools, training institutions and enterprises*, is needed in order to establish coherent and consistent learning paths. Learning is a cumulative process and competences are created by acquiring a combination of different skills, for example, technical and core skills (see figure 1.4) and explicit and tacit knowledge (defined in box 1.2). This requires learning in different contexts, including classrooms, workplaces and networks, such as families, communities, clusters or value chains. Policies and

institutions need to coordinate these different learning activities for effective development of competences and lifelong learning.

Figure 1.4. Core skills and technical skills: Defining occupational and professional competences



Source: ILO, 2007i.

Box 1.2
Implicit (tacit) and explicit knowledge

Modern theories of knowledge and learning differentiate between two forms of knowledge with distinct properties. Knowledge about facts, events, principles and rules (knowing "something" or "declarative" knowledge) can be articulated and codified. These explicit forms of knowledge can easily be communicated between individual persons in a process of teaching and learning. In contrast, "procedural" knowledge (knowing "how to do something") refers to a person's capacity to apply rules and principles in a competent way while performing a task or job (for example, knowing in theory how to ride a bicycle does not mean the ability to ride one in practice). Procedural knowledge in combination with declarative knowledge determines a person's skills. Procedural knowledge is tacit in the sense that an individual cannot describe and articulate the "knowing how to do" or the procedure he or she follows. Tacit knowledge is implicit in skills and individuals apply it unconsciously, but it can be observed by others during the execution of the task. Implicit knowledge cannot be taught, but only acquired and "discovered" in a process of observation, practice and experience. This refers to the importance of socially provided learning at the workplace, in working side-by-side with a skilled person as well as in social networks such as families, enterprises or communities.

Source: ILO, 2007i.

(ii) *Coordination between skills development and enterprises is required to match skills supply and demand.* Labour market intermediaries identify skills needs and communicate this information to schools, training institutions and apprenticeship systems to create the required skills. Labour market information systems or labour market observatories, for example, identify skills needed in the economy. Public and private employment services communicate information to workers, support job placement, brokering and recruitment, and guide workers' training decisions and careers. Institutions that provide credible assessment and certification of workers' skills help enterprises more easily recognize workers' skills and match them with their demand.

(iii) *Coordination of skills development policies with industrial, investment, trade, technology and macroeconomic policies* is needed to effectively integrate skills development policies into the national development strategy and to achieve policy coherence. Building skills, competences and capabilities in society is a long-term process and cannot be leapfrogged. A forward-looking skills development strategy is therefore needed to ensure the timely supply of skills required in future labour markets. Institutions need to encourage cooperation between different ministries, ensure effective exchange of information and forecast skill needs.

36. ***Social dialogue and collective bargaining*** *at the enterprise, sector or national levels are highly effective institutions in creating incentives for investment in skills and knowledge*. They can help coordinate the skills development process and integrate skills development into the national development strategy. Building the capability in societies for learning and innovation – and for using skills and competencies – requires high levels of commitment, motivation and trust. Social dialogue and collective bargaining can build trust among institutions with common goals, create a broad commitment to education and training and a culture of learning, and build consensus in the design and implementation of skills development strategies. In particular, social dialogue can be a powerful means of reconciling diverging interests and in creating support for reforms of training systems. Furthermore, social dialogue supports policy coordination as it provides channels for ongoing communication of information among employers, workers and governments.

37. In addition to promoting skills development, social dialogue and collective bargaining also promote equitable and efficient distribution of the benefits of improved productivity. *Productivity gains need to be shared between enterprises, workers and society in a fair way in order to achieve and maintain a sustainable development dynamic.*

Chapter 2

Connecting skills development to productivity and employment growth in developing and developed countries

38. Countries at different levels of economic development face different challenges and constraints in trying to improve the quality and relevance of skills in order to improve productivity and increase employment. Data presented in Chapter 1 show the positive relationship between productivity, employment and poverty reduction. This chapter focuses on the skills dimension. Adding information about skills levels is constrained by lack of internationally comparable data. Therefore, education attainment and literacy rates are used as rough proxies for skills.

39. The sections of this chapter focus on policies to overcome constraints in using skills development to promote productivity and employment growth in unison – whether in terms of expanding access to basic, vocational or higher-level skills or in terms of utilizing these skills in ways that benefit both enterprises and workers. This chapter reviews experience in four groups of countries (following United Nations Development Programme (UNDP) classifications developed for the Human Development Index, as listed in the annex to this chapter), namely:

(1) high-income countries of the OECD;

(2) CEE/CIS countries;

(3) developing countries; and

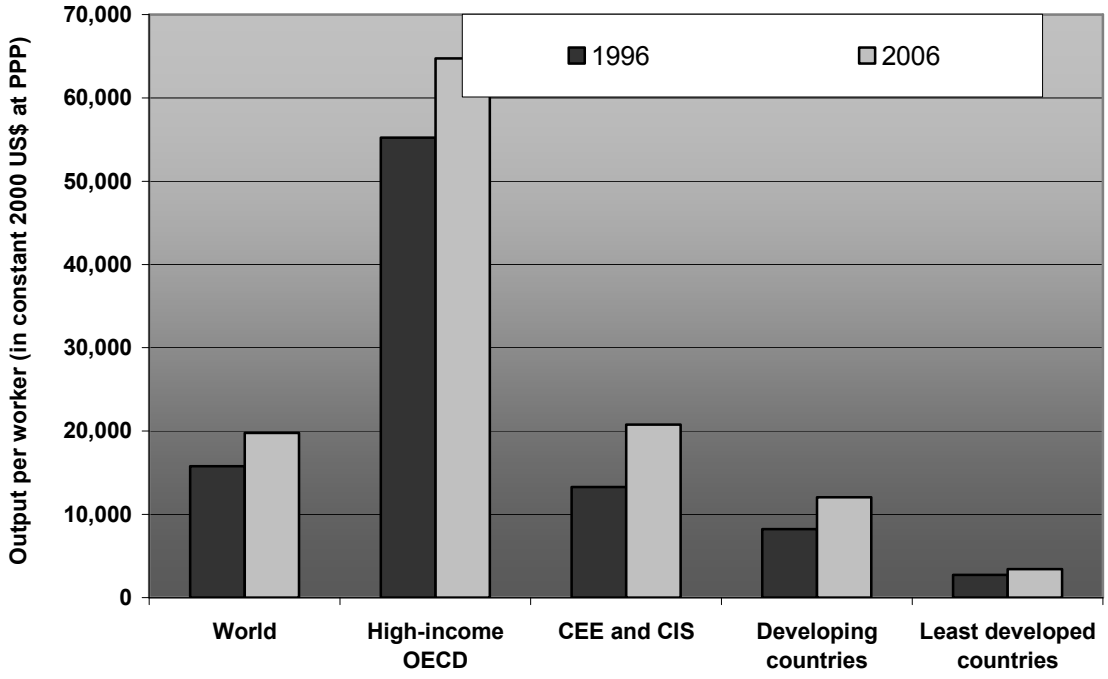
(4) least developed countries (LDCs).

40. The review for each country group starts with a succinct overview of available data on the relationships between productivity, employment and education as a proxy for skills (drawing mainly on latest available data compiled by the ILO and published in *Key Indicators of the Labour Market,* fifth edition, 2007 (ILO, 2007a), and *Global Employment Trends 2008* (ILO, 2008c)). This is followed by examination of selected policy issues that are of particular importance to countries in the group.

41. After contrasting data by country groups and regions, the chapter begins with the group for which data are most readily available (the OECD countries) in order to explore the empirical evidence of the relationships between skills, productivity and employment most easily. Reliable and comparable data are available for a smaller proportion of countries in the other groups. This affects the choice of data variables and restricts the level of confidence with which conclusions, or broad indications, can be drawn from the statistical evidence.

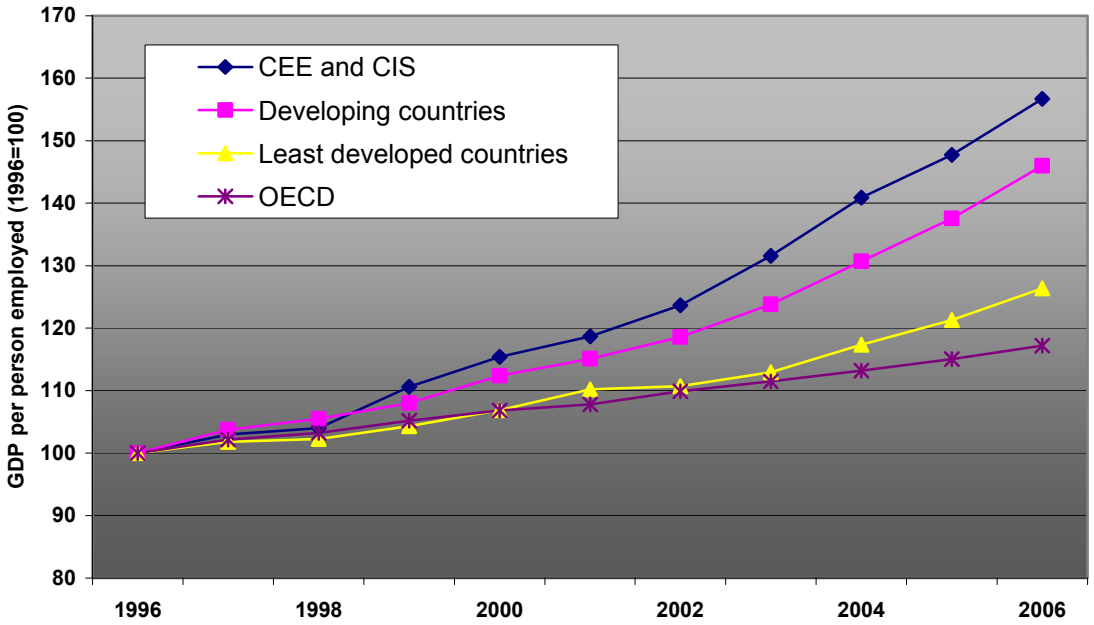
42. Figures 2.1 and 2.2 contrast productivity levels and growth trends by country groups. Measured in constant dollars and at purchasing power parity, figure 2.1 shows that in 2006 productivity in high-income OECD countries was four times higher than productivity in developing countries and nearly 18 times higher than in LDCs. In terms of trends, however, productivity grew fastest in the CEE/CIS country group and the group of developing countries.

Figure 2.1. Productivity levels by country groups, 1996 and 2006



Source: ILO, 2007a.

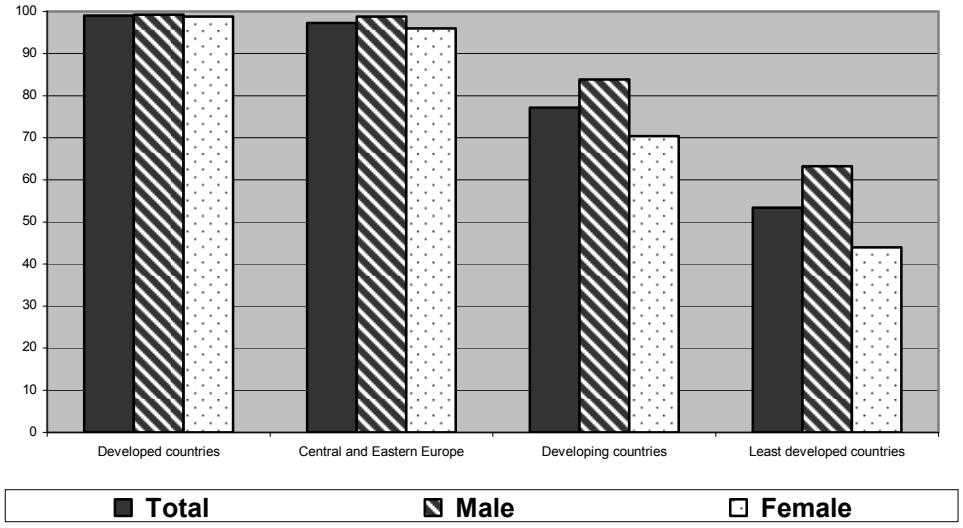
Figure 2.2. Productivity trends by country groups, 1996–2006



Source: ILO, 2007a.

43. The education indicator most widely available across countries is literacy, reported as the share of the population above the age of 15 years able to read and write. Figure 2.3 summarizes UNESCO data on average literacy rates by country group. Literacy is nearly universal in the OECD and CEE. In LDCs, however, only half of the population is literate, and literacy rates are even lower for women: nearly six out of ten women over the age of 15 years cannot read and write.

Figure 2.3. Average literacy rates of population over the age of 15, by country group



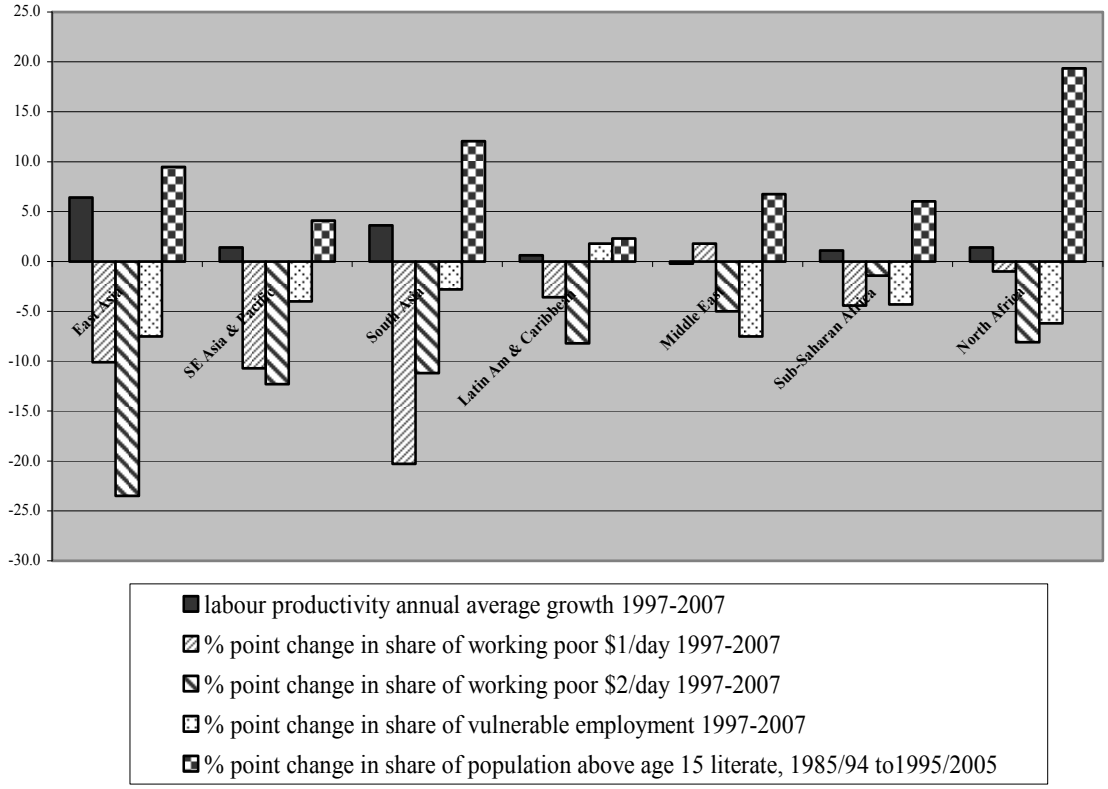
Source: UNESCO/UIS, http://www.uis.unesco.org (Jan. 2008).

44. Figure 2.4 looks at narrower regional groupings of developing and developing countries, summarizing trends in productivity, literacy, working poverty and vulnerable employment (the latter two being more qualitative indictors of employment) over the last ten years. Changes in the share of workers living in poverty and workers in vulnerable employment are presented side by side with productivity growth. [1] Relatively larger gains in productivity were associated with relatively larger reductions in poverty and vulnerable employment. The best performance in terms of reducing the share of workers living on US$2 per day (by 24 percentage points) and vulnerable employment (by 7 percentage points) was achieved in East Asia, which also had the highest productivity growth (almost 8 per cent average growth per annum). Large productivity gains were also associated with significant reductions in working poor and vulnerable employment in South Asia and South-East Asia. By contrast, productivity and poverty gains were relatively modest in Latin America and the Caribbean. Sub-Saharan Africa registered very small gains in productivity and only a 1.4 percentage point reduction in the share of workers living on less than US$2 per day.

45. Most regions registered greater success in expanding literacy than in raising productivity or reducing poverty. As a basis for future learning, this success bodes well for achieving fundamental economic and social objectives. It also raises expectations for higher learning and skills attainment, as well as for more productive and decent work. Expanding basic education without a corresponding increase in productive work did not result in substantial success in cutting working poverty across North Africa, the Middle East and sub-Saharan Africa.

[1] Vulnerable employment is an indicator of status in employment and comprises contributing family workers and own-account workers (those that are self-employed and do not employ even one other person). “By definition, contributing family workers and own-account workers are less likely to have formal work arrangements. If the proportion of vulnerable workers is sizeable, it may be an indication of a large subsistence agriculture sector, lack of growth in the formal economy or widespread poverty” (ILO, 2007a).

Figure 2.4. Productivity, literacy, working poor and vulnerable employment, by region; 1997–2007



Source: ILO, 2008c; literacy data from UNESCO, see figure 2.3 for web site. Region groups from the two data sets match closely but ILO includes Pacific Island countries with South-East Asia while UNESCO does not. Data on literacy is for latest year available, which varies by country and is therefore cited, by UNESCO, for a range of years.

2.1. High-income OECD countries [2]

2.1.1. Growth in productivity and employment

46. Economic growth in the industrialized countries has continued as scientific and technical knowledge has been used to raise the productivity of labour and of other production inputs. The systematic application of knowledge and science to producing goods and services has greatly increased the value of education and training for women and men. A comparative study of selected OECD countries (van Ark et al., 2007) documented the general downward trend in the share of low-skilled workers and the increase in the share of highly skilled workers in industry.

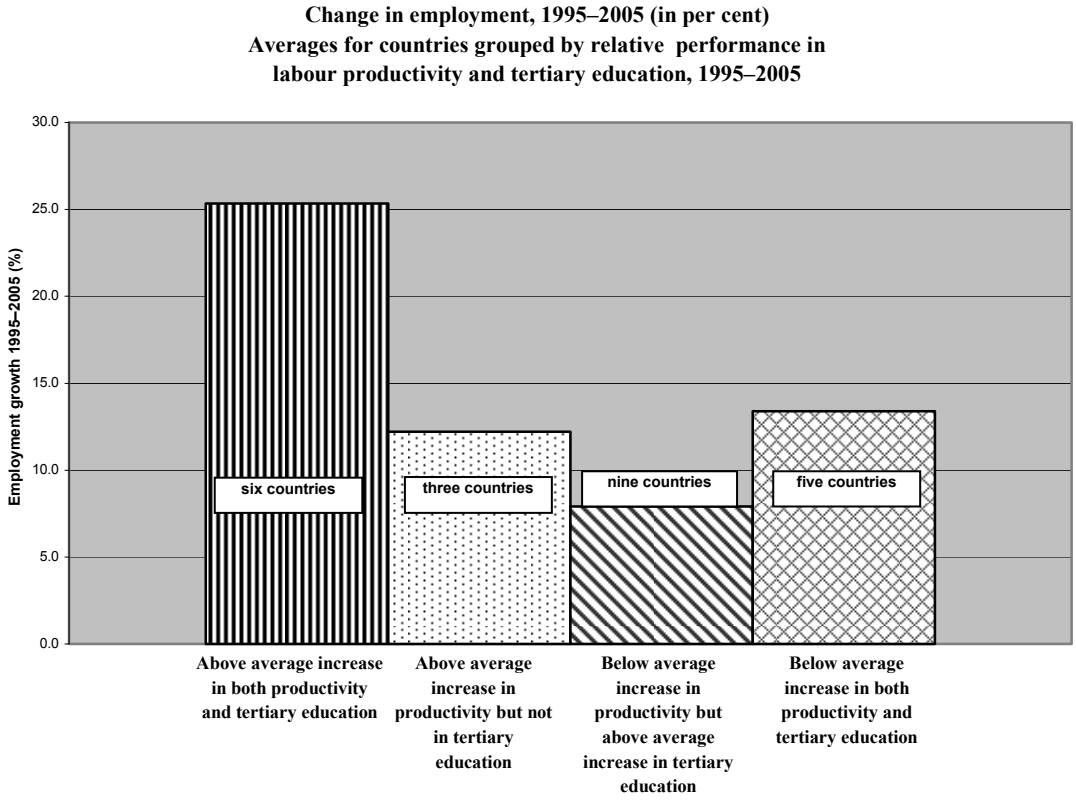
47. Taking a simple average across the group of 23 high-income OECD countries for which comparable trend data were available, growth in the share of the labour force with tertiary education was 6.2 per cent, productivity growth was 27.4 per cent and employment growth was 14.2 per cent over the 1995–2005 period. Productivity growth and rising education levels in the labour force have been associated with faster employment growth. As summarized in figure 2.5, the group of countries that achieved above-average growth in both productivity and education (measured as the change in the share of the labour force with tertiary education) showed a higher average growth in

[2] UNDP *Human Development Report* 2006 classification of 24 countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Republic of Korea, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.

employment than groups of countries with above-average performance in either productivity or education, but not both.

48. The first column in figure 2.5 shows that the six OECD countries with relatively high growth in productivity and tertiary education increased employment by 25.3 per cent on average. The average employment growth for countries with relatively high growth in productivity but not education (just three countries summarized in column two) was about half that rate (12.2 per cent), while countries with relatively high growth in education but not productivity experienced still lower employment growth (nine countries with average employment growth of about 7.9 per cent).

Figure 2.5. OECD high-income countries: Higher growth in productivity and tertiary education associated with higher employment growth



Source: ILO, 2007a; UNESCO/UIS 2007, see figure 2.3 for web site.

49. A recent OECD study (OECD, 2007a) found a negative statistical correlation between employment and productivity growth, measuring employment and productivity in terms of hours worked (rather than per worker, as in the ILO data) and over a longer 35-year period (1970 to 2005). One of the explanations suggested for this finding was that the measurement of labour productivity does not account for changes in the quality of labour. [3] Although the data presented in figure 2.5 are for a shorter period of time and so not directly comparable to this OECD analysis, adding even a rough indicator of change of labour quality (share of labour force with tertiary education) appears to show a

[3] For example, if employment grows faster for low-educated than high-educated workers, the average level of skills among the employed would decline. An overall increase in employment, then, would lead to a reduction in average measured labour productivity (OECD, 2007a, p. 60).

favourable relationship between productivity and employment. More importantly than the statistical correlation, the OECD analysis concluded that pro-employment policies tend to improve productivity. The revised OECD job strategy (see box 2.1) provides guidelines for improving both the quantity and the productivity of employment.

50. Measuring quality of employment in terms of vulnerable forms of employment rather than the educational level of workers also appears to show a positive relationship with productivity growth. As shown in figure 2.6, countries with higher productivity growth tended to have greater success in decreasing the share of vulnerable employment. As described above, vulnerable employment is the proportion of contributing family workers and own-account workers out of total employment and is a category of work that tends to be without employment contract or social protection. [4]

Figure 2.6. Change in productivity and vulnerable employment, 1995–2005

Source: ILO, 2007a.

51. Ensuring the continuing relevance of skills acquired by both job entrants and mid-career workers is a key policy challenge confronting industrialized countries. Success in this effort minimizes the risk of skills gaps that can constrain enterprise growth and jeopardize the employability of workers. Box 2.1 summarizes the policy guidelines on labour force skills and competencies of the "restated OECD Jobs Strategy" (OECD, 2006a). Recommendations on skills development – as one of the four pillars of the job strategy – address many questions concerning training relevance and accessibility.

52. Structural transformations and growing competition in more and more industries make it increasingly difficult for workers with low skills to find productive employment. Continuing adjustment of skills development programmes for new job entrants, skills upgrading programmes for those in the workforce, and retraining for the unemployed and those returning to work, are all essential. These challenges are examined below,

[4] Based on how countries categorize employment data collected at the national level, time trend data for vulnerable employment were not available for the larger set of OECD countries.

while questions of connecting skills development to longer-term technological change and sustained productivity and employment growth are taken up in Chapter 5.

Box 2.1
Restated OECD Jobs Strategy, 2007

The OECD Jobs Strategy to reduce joblessness and improve labour market performance was formulated in the mid-1990s. Based on an analysis of what was working and what not, the OECD "restated" the Jobs Strategy on the basis of four pillars:

A. Set appropriate macroeconomic policy

B. Remove impediments to labour market participation as well as job search

C. Tackle labour- and product-market obstacles to labour demand

D. Facilitate the development of labour force skills and competencies

To ensure that workers have the right skills, which can help create more and better paid jobs, pillar D comprises the following policy guidelines:

"D.1 Promote high-quality initial education and, in coordination with social partners where this is consistent with national practice, set conditions likely to improve labour force skills by:

- establishing a system of recognition of new competencies gained by adults through training and experience, including foreign credential recognition of new immigrants;
- ensuring that training is more demand driven and responds effectively to firms' changing skill requirements, and encouraging greater quality of training provision, including through performance monitoring of providers;
- supporting training programmes – e.g. training vouchers, training leave or schemes that help women alternate between work and training – which include co-financing from private agents and address training inequalities by providing effective learning opportunities for disadvantaged groups, notably low-educated;
- expanding the scope of apprenticeship contracts by easing age limits and allowing flexible compensation arrangements; and
- ensuring that some employment programmes are targeted to the specific needs of disadvantaged including through second-chance schools.

"D.2 In order to facilitate school to work transition, it is essential to:

- reduce early exits from education and ensure that young people acquire skills relevant to labour market requirements, including by broadening vocational programmes, strengthening links between general and vocational education and improving career guidance; and
- help combine education with work, notably through improved apprenticeship systems or more informal channels."

Source: OECD, 2006a.

2.1.2. Job-entry education and training: Improving access, relevance and quality

53. Despite progress made in recent years, failings of pre-employment and job-entry training to provide employable skills constrain employment and productivity growth. In the European Union (EU), 25.3 per cent of young people aged between 20 and 24 years had not completed upper secondary education in 2004 (Tessaring and Wannan, 2004). This effectively excludes them from higher-level vocational education and training programmes. With limited access to higher-level pre-employment training, many young people can, at best, participate only in shorter courses that give them access to low-quality and temporary jobs. Manifestations of poor relevance of pre-employment job-entry training include high unemployment and long job searches among graduates, and

lack of adequate employability or core work skills (ILO, 2004f and 2006b; OECD, 2007a).

54. Addressing the shortcomings in terms of the relevance and quality of pre-employment training demands a host of policies and measures. The measures reviewed below are among the instruments countries are using to improve access to, and raise the relevance and quality of, pre-employment training.

55. *Integrating core and technical skills training is becoming imperative in improving employability.* The higher probability of changing jobs and occupations over a lifelong career, or of working with new technologies, as well as the trend towards flatter management hierarchies within enterprises, have raised the demand for employability skills, for example, the ability to work in teams, take responsibility for quality control, and embrace opportunities for continual learning [5] (OECD, 2007a). In the United Kingdom, employers have identified certain core work skills, including communication, customer relations, teamworking and problem-solving skills, but also literacy, numeracy and general information and technology skills, as being deficient among many jobseekers, acting as a brake on recruitment and causing loss of potential productivity to enterprises (Confederation of British Industry, 2007).

56. *Quality assurance is likewise receiving increasing attention*. Many OECD countries are putting in place quality assurance systems to increase the transparency of the quality of education and training programmes offered by accredited public and private training providers. Such efforts aim to ensure that private and public investment in training has higher returns in terms of relevance of training and employability of trainees. Such quality assurance systems could include monitoring the content of training programmes against sector or national standards, as well as tracing, and publicizing the post-training employment experience of programme graduates.

57. *Certification of skills and recognition of skills acquired on the job* comprise another area that is being developed. Some countries are pursuing both accountability to standards and recognition of prior learning through national qualification frameworks. Box 2.2 illustrates the sophisticated and highly regulated quality assurance systems in Australia's technical and vocational education and training (TVET) and the social partners' involvement in the development of standards and skills assessment and certification. Apprenticeship systems in some European countries similarly involve employers and trade unions in defining occupational standards and curricula. Skills assessment schemes, increasingly based on occupational standards, help individuals to identify their skill deficiencies and provide a guide for the learner and training institution/provider (ILO, 2000a, para. 17).

58. *Occupational standards and competency-based training* are intended to improve the relevance of training and thus of the employability of trainees. Competency-based training shifts the emphasis from time spent in training courses to what trainees can actually do as a result of the training. Based on sound labour and work analysis involving the social partners, occupational standards provide the essential link between workplace requirements and education and training institutions and programmes. Standard setting has strengthened institution–industry collaboration and provided better guidance to students on the skills and knowledge they should be able to master and demonstrate.

[5] Employability "relates to portable competencies and qualifications that enhance an individual's capacity to make use of the education and training opportunities available in order to secure and retain decent work, to progress within the enterprise and between jobs, and to cope with changing technology and labour market conditions" (Recommendation No. 195, Paragraph 2(d)).

Box 2.2
Quality assurance system in TVET in Australia

In 2002 the Australian Quality Training Framework set nationally agreed standards for the TVET system. This quality system defines the registration and accreditation process for training providers and the specifications for the design of training programmes. TVET programmes can only be accredited and qualifications recognized throughout Australia if they are developed in compliance with the national guidelines. Training providers submit evidence of compliance with standards covering staff qualifications and experience, training facilities and client support services. Many of the learning and assessment programmes in Australia are based on nationally endorsed training packages linked to industry or enterprise-specific performance standards, called competencies which lead to nationally recognized qualifications. They have been developed and maintained in consultation with industry through industry skills councils. Training packages describe the skills and knowledge needed to perform effectively in the workplace.

Source: Gasskov, 2006.

59. *Public–private partnerships in training* involve public authorities, enterprises, trade unions and education and training institutions in addressing issues of quality and relevance of pre-employment training. Industry engagement is increasing in many areas: in national education and training policy development; identifying industry's skill gaps and projecting future demand (see box 2.3); advising education and training professionals on the content of occupational standards; advising on skills and competency assessment and certification provisions and methods; and, importantly, increasingly accepting students for longer periods of on-the-job training and directly providing workplace training facilities. The apprenticeship or dual training systems found in Austria, Denmark, Germany and Switzerland are classic examples of successful public–private partnerships in vocational education and training.

Box 2.3
Identifying skill gaps and improving training supply: United Kingdom sector skills councils (SSCs)

SSCs bring together employers, trade unions and professional bodies and governments to develop skills that UK businesses need. The Sector Skills Development Agency oversees the work of the councils and provides the link with government. Each SSC agrees with its partners on sector priorities and targets to address four key goals:

- Reducing skills gaps and shortages
- Improving productivity, business and public service performance
- Boosting skills in the sector and promoting equal opportunities
- Improving training supply, including apprenticeships and higher education, and national occupational standards.

In 2006 the regional skills assessment report written by Asset Skills, one of the SSCs, found that the property and housing sector was underperforming and had lower than average sector productivity owing to considerable skill gaps in the sector. On the basis of identified skills shortages, the council set up nine priorities for the sector including the following: customer service training for the whole sector; development of qualification framework that reflects the workplace; delivering functional information and communications technology (ICT) skills to the sector as a whole; delivering adult literacy and numeracy in the workplace; and delivering training for those most disadvantaged in the workplace.

Source: Asset Skills, 2006.

2.1.3. Expanding lifelong learning opportunities

60. Against a background of slow labour force growth and ageing populations in industrialized countries, the current workforce is the primary source for improving labour productivity in most of the high-income OECD countries. Technological and workplace change make skills obsolete rapidly. Some 30 per cent of the working age population in Europe is "low skilled" (CEDEFOP, 2007). In the United States, more than 40 per cent of the workforce, and more than 50 per cent of high school graduates as well as 16 per cent of college graduates, were found to suffer from basic skills deficiencies (The Conference Board, 1999).

61. While the needs for lifelong learning opportunities are substantial, access remains unequal among categories of enterprises and employees and also economic sectors. In France and Germany, employers spend on average more than 3 per cent of their payroll on training, while their counterparts in other countries spend far less. Technologically advanced sectors spend the most; small and medium-sized firms invest far less in training. In France, employees of large enterprises (500 or more employees) are twice as likely to participate in skills upgrading courses than are employees of firms with fewer than 20 employees (Gasskov, 2001). Men typically have better access to lifelong learning than women. Women may need encouragement and incentives to take advantage of training opportunities if they cannot see how they would benefit from training (for instance, if discrimination bars entry into higher-level work). And arrangements for where and when training takes place need to allow for responsibilities outside work.

62. *Links between lifelong learning and enterprise productivity* have been demonstrated by numerous studies. For example, several sector studies in the United States in the 1990s found that private sector training had a positive impact on workers' productivity and other outcome measures important to both workers and employers, such as wages, sales per worker, scrap rate and the adoption of new workplace practices (table 2.1).

Table 2.1. United States: Impact of private sector training

Study	Output measure	Impact
Lynch: non-college trainees	Wages	A year of formal on-the-job training raises wages as much as a year at college.
Holzer et al., 1993: Michigan manufacturing	Scrap rate	Repeat training and scrap rate is reduced by 7 per cent.
Krueger, 1993: Computers	Wages	Workers who use computers earn 10–15 per cent higher wages.
Black and Lynch, 1996: Non-manufacturing	Sales per worker	Computer training increases productivity by more than 20 per cent.
Black & Lynch, 1996: Manufacturing	Sales per worker	Providing a higher proportion of training off-the-job increases productivity.
Ichniowski, Shaw and Prennushi, 1994: Steel	Uptime	Where training is linked with progressive work practices, uptime is 7 per cent higher.

Source: Lynch, 1997.

63. More recently the European Centre for the Development of Vocational Training (CEDEFOP) summarized its review of research findings on the effects of training on firms' productivity, suggesting that an increase of 5 per cent of employee participation in training leads to a 4 per cent increase in productivity, and even a 1 per cent increase in

training days leads to a 3 per cent increase in productivity. Training provided through external courses had, on average, a much higher impact on productivity. The share of overall productivity growth attributable to training was approximately 16 per cent (CEDEFOP, 2007).

64. Incentives to invest in lifelong learning are a necessary part of a joint public and private commitment. Government policies and incentives schemes target enterprises, to encourage higher investment in lifelong learning for staff, and individuals, to encourage engagement in lifelong learning programmes. Measures and provisions targeted at enterprises include: deduction of training expenditures from corporate tax; compulsory tax exemption schemes that ensure a minimum level of expenditure on training (France); voluntary industry training levies to finance skills training and apprenticeships (Denmark, Belgium and the Netherlands); training clauses in collective agreements (such as in the Netherlands); independent skills assessment centres for employees; and paid education and training leave (in compliance with the ILO Paid Educational Leave Convention, 1974 (No. 140)). Incentives directed at individuals include: fellowships, vouchers, student loans and new financial mechanisms like "individual learning accounts". More research could further explore which of these approaches works better under which circumstances.

65. The European Commission's new common principles of flexicurity strongly emphasize the importance of lifelong learning (European Commission, 2007). The integrated strategy to enhance both flexibility and security in the labour market aims to ease transitions: from school to work, between jobs, between unemployment or inactivity and work, and from work to retirement. Lifelong learning is one of the four mutually supporting policy components:

- *flexible and reliable contractual arrangements* through labour laws, collective agreements and work organization;
- *comprehensive lifelong learning strategies* to ensure the continual adaptability and employability of workers, particularly the most vulnerable;
- *effective active labour market policies* that help people to cope with rapid change, reduce unemployment spells and ease transitions to new jobs; and
- *social security systems* that provide adequate income support, encourage employment and facilitate labour market mobility, including such provisions as unemployment benefits, pensions, health care and attention to balancing work and family responsibilities.

66. The common principles recognize lifelong learning as a crucial factor for both the competitiveness of enterprises and workers' employability: "High quality initial education, broad key competences and continuous investments in skills improve enterprises' opportunities to cope with economic change and workers' chances of staying employed or finding new employment" (European Commission, 2007, p. 6). The Commission statement acknowledges the importance of extending opportunities for lifelong learning beyond the highest skilled workers to low-skilled workers, the self-employed and older workers; of cost-sharing arrangements; and of involving government, social partners, enterprises and individual workers. While acknowledging that flexicurity approaches should be adapted to country circumstances, the principle of combining lifelong learning with contractual and social protection and active labour market policies is regarded as crucial.

2.1.4. Active labour market policies and combating inequality in the labour market

67. Inequalities in incomes, access to employment and skill endowment are growing simultaneously between groups of people in industrialized countries. For example, globally, women earn on average only two-thirds of men's pay. In the EU, women earn on average 16 per cent less than men (Beblo et al., 2003). Occupational segregation is the principal reason for pay gaps. [6]

68. Globalization, foreign competition and technological change give a premium to workers with marketable skills in the labour market, while squeezing out workers who have few or obsolete skills. Helping individuals out of unemployment, raising their chances of finding better, more decent jobs, and helping them to change careers, are an important policy challenge for governments.

69. *Active labour market policies and adjustment programmes* have many objectives, for example: meeting labour shortages; introducing people to work; promoting entrepreneurship; and overcoming social obstacles to employment, such as drug or alcohol addiction, illiteracy and poor numeracy, or employers' resistance to hiring disadvantaged or long-term unemployed people. Programmes combine career information and counselling, core work or life skills development activities, occupation-specific vocational training, work experience (paid or non-paid), subsidized on-the-job training and support services such as child care and transportation. Labour market adjustment programmes also address the demand side of the labour market, for example by providing subsidies to employers to hire workers or by running public job-creation programmes.

70. The summary results of over 90 evaluations of labour market adjustment programmes in mostly OECD countries are provided in table 2.2. Strategies that appeared to help women return to the labour market are specifically included in this overview. Programme results have been mixed. When these programmes are not supported by other policies and measures they tend to be ineffective. Success, measured for example by improved earnings and job take up and retention, is likely to increase when training programmes are: combined with work experience; targeted to meet the needs of specific groups and based on careful analysis of the demand for skills; combined with other measures, such as wage subsidies or tax incentives, that encourage employers to take up young, unemployed and marginalized workers; and negotiated and agreed upon by the parties concerned.

[6] In addition to occupational segregation, which is of great importance to skills development, other factors accounting for earning differentials include interrupted careers due to family responsibilities and differences in fringe benefits and bonuses offered to men and women managers (Beblo et al., 2003; Wirth, 2004).

Table 2.2. Evaluation results of active labour market training programmes

Programme	Source	Appear to help	Comments
Training for long-term unemployed (28 evaluations)	Dar and Tzannatos (1999)	Women and other disadvantaged groups	No more effective than job search assistance to increase re-employment probabilities and post-intervention earnings; two to four times more costly.
Formal classroom training	Meager and Evans (1998)	Women re-entrants. Does not appear to help prime-age men and older workers with low initial education	Important that courses have strong labour market relevance or signal "high" quality to employers. Should lead to a qualification that is recognized and valued by employers. Keep programmes relatively small in scale.
On-the-job training	Martin and Grubb (2001)	Women re-entrants; single mothers	Must directly meet labour market needs. Hence the need to establish strong links with local employers, but this increases the risk of displacement.
Retraining workers displaced in mass lay-offs (12 evaluations)	Dar and Tzannatos (1999)	Little positive impact: positive results mainly when economy is improving	No more effective than job search assistance and significantly more expensive. Rate of return usually negative.
Training for young people (19 evaluations)	Betcherman, Olivas and Dar (2004)	Positive impact in developing countries	Employment and earning prospects not improved. Negative real rate of return to these programmes when costs are taken into account. Additional evaluation shows positive employment impact in developing countries.
Training in vocational skills (36 evaluations)	Meager and Evans (1998)	Disadvantaged groups; especially prime-aged women	Results patchy, but positive effects on employment and earnings are as commonplace as no or negative effect. Higher positive impact when training involves placement with a private sector employer. Appears less effective than other active measures, especially direct job creation, where compared. Evidence of creaming, deadweight and substitution effects.

Source: Auer et al., 2005.

2.1.5. Training and reintegrating older workers into employment

71. Maintaining labour market participation of older workers is seen to help offset labour and skill shortages, improve productivity and alleviate the economic impact of ageing. Policies address the concerns of older workers about maintaining access to training in new technologies, discrimination in the labour market and having their experience and skills appreciated as assets for enterprise productivity (Stein and Rocco, 2001).

72. Policies on labour market participation and productivity of older workers in many countries are motivated by demographic trends within ageing economies. [7] For example, Japan's working age population is expected to shrink at an average annual rate of 0.8 per cent in the next 20 years and as a result strategies for raising productivity increasingly target older workers (see box 2.4). By 2030, in Europe, there will be 14 million more workers aged 55 to 64 years and 9 million fewer persons aged between 15 and 24 years. It is expected that there will be 2 million fewer learners in secondary and tertiary TVET. There is therefore an increasing need to enable older workers to acquire modern skills and remain highly productive (Bulgarelli, 2006).

Box 2.4
Ageing population and training and productivity policy in Japan

Despite the fact that Japan's capital–labour ratio is among the highest in the world, the ageing of the population, and anticipated population decrease projected over the next two decades, has resulted in a call for accelerating productivity growth. Japan's Third Science and Technology Plan aims to foster human resource development and a competitive research environment. The programme is expected to increase total public research and development (R&D) spending to 25 trillion yen over five years (1 per cent of gross domestic product (GDP) on an annual basis, well above the national average of 0.7 per cent during 2001–03.) The education and skills training programmes are shaped by the key focus areas proposed by the Plan, including life sciences, information technology, environment and nanotechnology and materials. Support for researchers targets the young, female and older workers. The share of women researchers is to increase from 11 to 25 per cent.

73. Policies to maintain the employability of older workers address such issues as "trainability" and the economic payoffs of training. Although employers rate older workers highly in terms of their dependability, loyalty and commitment, their abilities to learn new skills and master new concepts, ideas and approaches are sometimes questioned. In the United States, for example, some research has shown that older employees receive less training in or outside enterprises than younger workers (Imel, 1991). Employers might invest less in training older workers because they question whether such training will "pay off" in terms of the length of time these trained workers will remain employed. However, both research and practice show that older workers respond to training as efficiently as do younger workers. If extra training may be required, employers may see these costs offset by turnover among older workers compared to younger ones.

74. *The gender dimension* of the labour force participation of older workers has been an important feature in policies targeting the training and productivity of this age group. Older men have been over-represented in declining industries and under-represented in growth areas, and have therefore been affected by the reduced demand for low-skilled

[7] Labour market and social protection implications of demographic change will be the subject of a general discussion at the 98th Session (2009) of the International Labour Conference.

workers. During recessions and as part of policies to boost employment of younger workers, active labour market policies have often included early retirement schemes.

75. Another gender-related issue to take into account is that mid-career and older women returning to work (after raising a family) have specific skill and retraining requirements. If these needs are not met, women re-entering the labour market may experience downward occupational mobility. This underutilization of female workers' skills has implications for economic productivity.

76. The OECD and the European Commission have both recommended integrated comprehensive policy approaches to address the range of issues surrounding older workers (learning and productivity, social security costs, discrimination in the labour market). In Austria, the so-called "Employment Pact" for older workers was launched as a tripartite initiative in the mid-1990s [8] to increase the supply of older workers and stimulate demand for them by lowering the cost of employing them. It includes the following measures:

- encouraging later retirement and flexible retirement (for example, gradual reduction of working time while contributing to pension benefits);
- legislation to counter age discrimination (already in force for several decades in the United States);
- guidance and training programmes targeting older workers, accompanied by advice and guidance for employers;
- employment placement services and support for other labour market intermediation; and
- coordinated and comprehensive packages of age-friendly employment measures and policies developed and implemented jointly by government, employers, trade unions and civil society.

2.2. Countries of Central and Eastern Europe (CEE) and the Commonwealth of Independent States (CIS) [9]

2.2.1. Higher productivity but stagnant employment growth

77. When market-oriented economic policies were introduced in the early 1990s, all CEE and CIS countries had comparatively low productivity levels. Labour hoarding and the absence of market incentives for the production of goods and services were major contributing factors (van Ark, 1999). High employment levels prevailed and wages were low. As reforms were introduced, however, employment levels fell, drastically in CEE countries and less so in CIS countries. High unemployment and low wages have

[8] In the face of declining labour force participation and rising unemployment of persons over the age of 50, the Austrian Government and representatives of employers and employees (within the national context of the country's national Action Plan for Employment) put in place a set of policies aiming, on the one hand, to provide incentives for employers to retain and train workers over the age of 50 and, on the other, to ease these workers' return to employment if they become unemployed (European Foundation for the Improvement of Living and Working Conditions, 1999).

[9] Central and Eastern Europe (CEE): Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia, The former Yugoslav Republic of Macedonia and Ukraine. The Commonwealth of Independent States (CIS): Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan (Associate Member) and Uzbekistan.

triggered migration outflows from Central Europe to Western Europe and from the Central Asian Republics to the Russian Federation.

78. Recently, some CEE countries have embarked on a path of positive economic, productivity and employment growth; in other countries, this has not happened yet. By contrast, many of the Central Asian Republics face difficulties in resuming economic productivity and employment growth, as GDP per capita still remains below 1990 levels. The limited available data, especially from the CIS countries, show that the painful adjustment period has not ended in most of the countries in this group.

- Across the CEE countries, employment growth continues to lag behind GDP growth, and in some countries employment levels have fallen, particularly in post-conflict economies. Across the countries that have joined the EU, annual GDP growth rates are typically three to four times higher than employment growth rates (Cazes and Nesporova, 2006).
- Measured from 1995 to 2005, productivity rose dramatically in many CEE countries. Growth rates ranged from about 40 per cent in Bulgaria, Czech Republic, and Slovenia, to just over 100 per cent in Estonia and Latvia (ILO, 2007a).
- However, on average these countries had large shares of workers in vulnerable employment (12.7 per cent on average across the CEE countries). Despite the large productivity gains, this share fell by less than one and a half percentage points on average across these countries during that same ten-year period (ILO, 2007a).
- In the CIS countries, vulnerable employment was even higher (19.7 per cent of employment in 2005) (ILO, 2007a).
- Fully one fifth of the workers in Central and South-Eastern Europe and the CIS countries lived on US$2 per day (ILO, 2008c).

79. Most countries started the transformation process with universal primary education and literacy rates and a strong tradition of secondary education, including technical and vocational training. Data for 2005 show that on average 85 per cent of the labour force had secondary or higher education (ILO, 2007a). The ability to attract new investment has also hinged on the availability of skilled workers. Many car manufacturers, for example, were drawn to the Czech Republic and Hungary, as these countries offered a skilled workforce, competitive wage rates and proximity to European markets. However, education and training participation rates have dropped, partly as a result of economic hardships and partly because much of what was offered had become irrelevant in the transition from a command to a market economy. The ageing workforce will present a major economic, labour and policy challenge for many years to come, with important implications for education, training and migration policies.

2.2.2. Investing in relevant education and training programmes

80. The pursuit of market-oriented economic and social policies and the collapse of training in state-owned enterprises have drastically reduced the supply of training, and what is on offer is not always relevant to new labour force needs in emerging industries and services. A major policy challenge for CEE/CIS countries is to restructure education and training systems and to invest in education and training that is relevant to the new market economy.

81. In most CEE/CIS countries, public education and training budgets declined markedly in the 1990s. Participation in school education went down as fees were introduced and parents withdrew children from school, which threatened future skills

development in the region. Vocational education and training output plummeted. In Kazakhstan, 42 per cent of the population aged between 14 and 18 years was enrolled in vocational training and technical education programmes in 1989; by 2000, the share had dropped to just 24 per cent (UNICEF, 2004). Poor pay for teachers and deteriorating training infrastructure exacerbated the problems.

82. *Investing in new skills that are in demand in the new economy is the new focus.* Many CEE countries are upgrading secondary and vocational curriculum materials and investing in new areas of skills, for example in banking, finance, computer software, administration and secretarial work. Training in core work skills is also being integrated in curricula to enhance individuals' employability. Many CEE/CIS countries are endeavouring to improve programme quality by setting competency standards to guide the development of new curricula and, ultimately, strengthen qualifications systems, including skills recognition. Systems for skills assessment, accreditation and recognition are expected to improve individuals' employability and labour market efficiency.

83. *Investing in managerial and entrepreneurial training* is also a high priority. Job and wealth creation depend on an enterprise culture based on risk-taking and entrepreneurship. The medium-sized enterprise sector has grown in the CEE/CIS countries but is still relatively small. In 2003, enterprises employing more than 250 employees accounted for 51.2 per cent of total employment in the Russian Federation, compared to 34.2 per cent in the European Union (RSMERC, 2004).

84. For both small and larger enterprises, business, managerial and entrepreneurial training has become an important tool for boosting innovation, productivity and growth. Demand for accountants and managers and for courses in organizational behaviour, labour relations, human resources management, marketing and related subjects has mushroomed, while demand for engineering and science professionals has dwindled generally throughout the region. In the Russian Federation, business training programmes tripled their output in a decade to 140,000 graduates in 2000 (Mechitov and Moshkovich, 2004). Governmental and non-governmental programmes increasingly support small business development, investing in local incubators that provide business support services and entrepreneurial skills training. Many secondary school programmes also inculcate business skills and culture in young people, a learning component that was missing in the past (a specific example is given in box 2.5).

Box 2.5
Know About Business (KAB) programme in Central Asia

In 2002, the ILO and vocational training institutions in some Central Asian countries started the KAB programme to promote positive attitudes among young people towards enterprise and self-employment. The KAB programme gives vocational education students knowledge and practical skills to start, operate and work productively in a small enterprise, and accustoms them to an environment where full-time wage jobs are scarce. The curriculum has been adopted as the official business education curriculum for secondary and vocational training schools. An assessment carried out in Kyrgyzstan in 2007 showed that 44 national vocational training institutions (42 per cent of all institutions in the country) had introduced the programme, with more than 4,000 students participating. An additional 15,000 individuals are expected to participate in the training by 2009.

Source: ILO, 2007d.

2.2.3. The role of labour market institutions in mitigating the negative effects of economic restructuring

85. National public employment services (PESs) were established in the early 1990s to address the needs of the burgeoning population of unemployed and dislocated workers in most of the CEE/CIS countries. They primarily administered unemployment benefits, but have also begun to implement active labour market policy measures to combat unemployment and help individuals to find jobs (Cazes and Nesporova 2006). [10] They canvassed businesses for vacancies, which they matched with jobseekers' skills profiles, and provided career guidance, training and retraining to the unemployed in preparation for new occupations, including self-employment.

86. PESs address important equity concerns, taking into account the fact that many jobless people lack resources and can only afford training and retraining with PES assistance. These services help the most disadvantaged in society access employment, for example by supporting job placements for persons with disabilities (ILO, 2004b). They also help young people to find a first job, particularly those who lack alternative means to do so. They have proven vital in helping young people to gain access to labour market information and career advice and in identifying suitable job vacancies (Cazes and Nesporova, 2006). [11]

87. *Strengthening social dialogue on education and training* plays an important role in making training programmes more relevant. [12] A recent ILO survey of national social dialogue on employment policies (Rychly and Vylitova, 2005), found that workers' and employers' organizations are becoming more active in the field of training policy. In Poland, for example, they are instrumental in designing training curricula. In Estonia, they are members of the Foundation for Vocational Education and Training Reform. In the Czech Republic, they are represented on the Council for Human Resources Development. In most CEE/CIS countries, the social partners are increasingly active in administering PESs.

88. The social partners, and employers' organizations in particular, can be instrumental in improving the quality and efficiency of education and training systems. They can identify the skills needs of enterprises and translate these into training policies and programmes. Employers' organizations can raise their members' awareness of the need for more and better workplace training. Evidence concerning current levels of training taking place in enterprises is scant. A survey conducted by the Georgian Employers' Association revealed that 43 per cent of its members did not invest in improving employee skills, although 85 per cent recognized that such investment could raise productivity and competitiveness significantly. In Azerbaijan, only about half the enterprises surveyed had plans to provide training to their employees (ILO, 2006h).

[10] Across 11 CEE countries, total expenditure in 2002–03 on labour market policies as a percentage of GDP ranged from 0.28 per cent in Lithuania to 1.25 per cent in Poland, with the share devoted to active labour market policies being 16 per cent in Lithuania and 11 per cent in Poland.

[11] In Romania in 2004, for example, the youth unemployment rate was 21.4 per cent, compared to a rate of 7.1 per cent for adults. In Poland, the figures were 39.5 per cent and 18.8 per cent.

[12] "Members should … define, with the involvement of the social partners, a national strategy for education and training, as well as establish a guiding framework for training policies at national, regional, local, and sectoral and enterprise levels" (Recommendation No. 195, Paragraph 5(a)).

2.2.4. Education, training and lifelong learning to raise workforce productivity, adaptability and mobility

89. The European Union's Lisbon Strategy is the major policy instrument of CEE countries for enhancing productivity, innovation and competitiveness. It advocates more R&D and investment in human capital, education and skills to boost productivity, innovation and competitiveness. Increased investment resources would raise the demand for skilled workers and contribute to overall job creation.

90. The Lisbon Strategy has education and training policy implications for the European Union's CEE member countries, and also for aspiring members in the region, which need highly skilled and adaptable workers who are able to create and use new technologies effectively. In boosting innovation and competitiveness, policies and programmes relating to lifelong learning will gain importance. With the accession of a number of CEE States to the EU, the Lisbon Strategy is the main policy instrument for enhancing productivity and competitiveness, and all new EU Members have national action plans in place for its implementation. These countries are also directed by the EU Guidelines for Growth and Jobs that call for improved access to vocational, secondary and higher education, as well as efficient lifelong learning strategies. [13]

91. *Improving workers' labour force participation, adaptability and mobility* is particularly relevant in the countries of Eastern Europe, including Ukraine and the Russian Federation, because of their rapidly ageing labour force. Paying attention to older women will be exceptionally important because of their longer life expectancies. [14] In the near future, there will be fewer workers than today in these countries to operate factories, offices and workplaces. A reduction in the number of workers may induce productivity-enhancing investments. The demographic trend is also likely to motivate policies to increase labour force participation, encourage workers' adaptability and enable older workers to remain in or re-enter the workforce. Introducing polices to manage the flow of skilled workers in and out of CEE/CIS countries is of growing importance as a policy instrument to manage the supply and demand of workers at various skill levels – a theme addressed in Chapter 4.

92. Many countries in the region have large migrant worker populations. The Russian Federation (14 million migrants), Ukraine (7 million) and Kazakhstan are large net receivers of migrant workers. In the Russian Federation, many of them come from the Caucasus and Central Asia, and send remittances to their home countries. Meanwhile Central European workers, particularly construction workers, migrate in large numbers to Western Europe, causing skill shortages at home. At present, some 15,000 highly educated specialists leave Ukraine each year. Bulgaria is estimated to have lost 50,000 scientists and skilled workers since the early 1990s (Mansoor and Quillin, 2007). Many countries fear that the "brain drain" may damage their future ability to innovate and compete internationally. Furthermore, the poor labour market situation in many countries (in particular Belarus, Republic of Moldova and Ukraine) is resulting in increasing vulnerability of young women in the region to exploitation with the rise in human trafficking.

[13] http://ec.europa.eu/growthandjobs/index_en.htm

[14] Women's life expectancy is longer in all regions. In the Eastern European and CIS countries, the gap in life expectancy between women and men has increased since transition for a variety of reasons. In the Russian Federation, for example, women live 13.3 years longer than men on average (UNECE, 2003).

2.3. Developing countries in Asia and the Pacific, Latin America, the Arab States and Africa

93. This group comprises a diverse group of over 80 countries (see the annex to this chapter). Most countries in Latin America and the Caribbean, as well as many countries in Asia, including China and India, and among the Arab States, belong to this group. Some two dozen countries in Africa are covered in this group, while most are classified as LDCs. [15]

94. An important characteristic of countries in this group is the combination of high growth and productivity in some sectors and regions and low productivity and persistent poverty in other economic sectors or regions. As indicated in Chapter 1, responses are needed to address the resulting twin challenges for skills development, which are: (1) meeting the demand for higher skills in the growing higher-technology, often export-oriented sectors, thus removing one potential constraint on future growth; and (2) using skills development to improve productivity and support formalization of economic activities in the still largely impoverished informal economy.

2.3.1. Patterns in productivity, education and employment

95. Employment and productivity trends vary substantially among countries in this group:

- Most countries in *Asia* have improved their competitiveness in the global economy, driven by low production costs, abundant pools of skilled and semi-skilled labour and rapid growth in labour productivity. Overall in Asia, productivity increased by 40 per cent from 1995 to 2005 (ILO, 2006c). Poverty has retreated, although as many as 1 billion workers (60 per cent of all workers) live on less than US$2 per day (ILO, 2007p). The ILO's 14th Asian Regional Meeting called for measures to promote productivity growth, and to enhance enterprise and national competitiveness and faster growth in the number of decent jobs available for workers (ILO, 2006c).
- In *Latin America and the Caribbean* productivity has risen only slightly: 0.6 per cent on average per year from 1997 to 2007. Unemployment in 2007 was 8.5 per cent, slightly less than the 8.9 per cent rate five years earlier. In 2007, 8.0 per cent of the labour force lived on less than US$1 per day. One quarter of all workers in the region lived on less than US$2 per day (ILO, 2008c). One substantial challenge for most countries in Latin America is to create decent job opportunities for the working poor while also reducing unemployment.
- In the Middle East, productivity has remained at about the same level over the past ten years, actually decreasing by 0.2 per cent on average per year between 1997 and 2007. Employment levels have likewise stagnated, with unemployment rates remaining high. One fifth of workers live on less than US$2 per day (Fahim, 2008; ILO, 2008c). In North Africa, productivity growth was higher – 1.4 per cent annual

[15] The UNDP lists 137 developing countries or areas, of which 50 are designated least developed countries. The classification is made according to three criteria: low income (three-year average estimate of gross national income per capita under US$750), weakness in composite Human Assets Index (based on indicators of nutrition, health, education and adult literacy) and economic vulnerability (based on indicators of instability of agricultural production, instability of exports, proportion of non-traditional activities in manufacturing and services, handicap of economic smallness and population displaced by natural disasters) (UN Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing Countries, www.un.org/special-rep/ohrlls/ldc; 29 Jan. 2008).

average growth (1997–2007) but two-fifths of workers live on US$2 per day (ILO, 2008c).

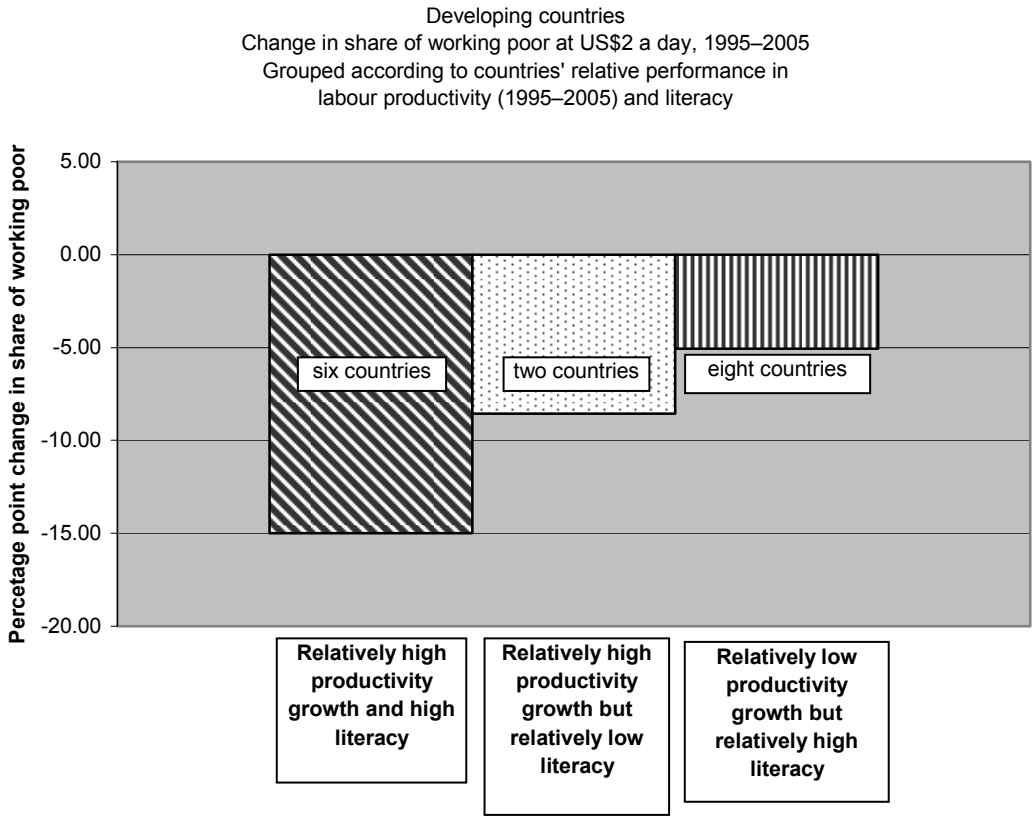
96. Reviewing the relationships between trends in education, productivity and employment for even a handful of countries in this group is difficult owing to the lack of up to date comparable data. The best available proxy for skills is literacy, expressed as the proportion of the population over the age of 15 that can read and write. Owing to greater data availability, the measurement used to capture trends in quality employment relates to the working poor, that is the percentage point change in the number of workers living on US$2 per day. Productivity remains the same: output per worker in constant dollars. Trends are calculated as simple averages for 1995–2005 for productivity and working poor, but literacy is for the latest year available. [16]

97. Relationships between these three variables are summarized in figure 2.7. While conclusions must be guarded because of the small sample size for which data are available (relative to the large number of countries in this group), the picture that emerges is that those countries with the best performance in improving labour productivity and higher literacy rates registered the best average performance, as a group, in reducing the share of working poor.

98. Across the six countries which had relatively better performance in increasing labour productivity and had relatively higher literacy rates, the average reduction in the share of working poor was 15 percentage points, compared to the 5 percentage point reduction achieved by countries which had high literacy but relatively low improvements in productivity. The two countries with relatively strong productivity growth but high rates of illiteracy (Pakistan and India) reduced the share of working poor by 4 and 13 percentage points respectively.

[16] Trend data for literacy is not available for comparable periods, necessitating the use of a static measurement.

Figure 2.7. Developing countries: Productivity, literacy and working poor



Source: ILO, 2007a; UNESCO/UIS, 2007.

2.3.2. Addressing skills shortages in high-growth countries and sectors

99. Skills shortages curtail the expansion of higher-productivity sectors and the expansion of local production into higher value added activities.

- Among *Asia's* high-growth countries, rapid development has accelerated the demand for higher-skilled workers, professional staff in the medical and legal fields and business managers. For several years, media reports and surveys of multinational enterprises (MNEs) have decried shortages of skilled labour in China and India. [17] Recent government initiatives in China aim to improve the general skill level of the labour force and ensure that shortfalls in skill quality will not become an obstacle to expanding employment and economic growth (China, Institute for Labour Studies, 2007).
- In *Latin America* there is a general concern that while coverage of education and training has increased, the quality of that education has not adequately equipped young people for the labour market. This has led to calls to increase the vocational content of secondary education.

[17] A recent Economist Intelligence Unit Corporate Network Survey among 600 chief executives of multinational companies with businesses across Asia found that a shortage of staff was their biggest concern in China and South-East Asia. It was the fourth biggest concern in India (after problems with infrastructure, bureaucracy and rising wages for skilled workers) (*The Economist*, 2007).

- In the *Arab States*, employers often identify a lack of skills as a barrier to expanding business and employment. [18] Education systems in these countries tend to prepare students for public sector jobs, which used to be the primary employer for labour market entrants, and have not developed sufficient linkages to the private sector (Assad and Roudi-Fahimi, 2007).

100. There is no single model of an effective national response to the challenge of upgrading skills development and bridging skills gaps. But across the range of responses, *improving coordination* and *expanding the availability of training* are two critical factors.

101. *Improving coordination between prospective employers and education and training providers* is an effective and feasible way to reduce the mismatch between education and training outcomes and employment opportunities. Employer involvement at the local or industry level is most important in three ways:

- First, employers' involvement in the management of training institutions helps to keep institutions abreast of changing technologies, the kind of technical and ICT equipment used at the workplace, and which industries, occupations and skills are declining or rising in demand. The development of competency-based standards in close cooperation with industry can help training become more relevant so that the skills acquired improve trainees' employability.
- Second, employers can provide experiential learning by accepting interns or apprentices – sometimes with agreements of later employment – that enhance the systematic and classroom-based knowledge learning through practical application.
- Third, feedback mechanisms through which employers and the trainees they hire can systematically inform training providers of whether the quality of training matches on-job expectations. Sometimes this is organized directly within the labour market area of training institutions, and in other places it is coordinated through local employment offices of the national employment service.

102. A community- and industry-driven training system is thus essential to redressing both sides of the skills mismatch coin: *relevance* and *quality* of training. This is one of the key objectives of ongoing vocational training reform policies in Egypt, for example (see box 2.6). Strengthening ties between tertiary education and the private sector is also growing in many developing countries in order to provide the professional and management skills needed by a growing private sector.

[18] For example, in a World Bank Institute survey, 27 per cent of firms interviewed in a sample of Arab States said that education and skills of the workforce were a major constraint (Tan, 2006).

Box 2.6
Egypt: Demand for reforming the training system

Various studies have noted that the Egyptian vocational and education training system does not provide skills that are in demand by employers and young people for the following reasons:

- inadequate involvement of employers in the management of training centres;
- weak links to employers to facilitate post-training employment;
- poorly trained and paid teachers;
- out of date equipment;
- concentration of training for women in traditional occupations;
- low quality of training, with inadequate attention to theory as well as practice and therefore, perhaps, not surprisingly;
- low esteem of vocational training among students and parents.

Efforts to address weaknesses and fragmentation include: coordinating training policy under the Supreme Council for Human Resources Development; improving training quality through investments in curricula, improved teachers' salaries, and offering combined general (coursework) and practical (internship) training; and providing retraining to adult workers under the Social Fund for Development.

Source: Fahim, 2008; Amer, 2005; de Gobbi and Nesporova, 2005; Van Eekelen et al., 2001.

103. *Increased training provision* must accompany this enhanced flow of information about what kind and levels of training are needed – otherwise training institutions will not be able to respond and adjust their training. Public financing systems increasingly link funding to employment outcomes, whether for centralized public training institutions or, increasingly, for individual training institutions. Strong ties to prospective employers are crucial to meeting these expectations of accountability. [19]

104. Methods of financing skills development increasingly emphasize demand-responsiveness and accountability for performance. They include: (1) payroll levies on employers; (2) fees paid by enterprises or trainees; (3) self-funding by training institutions through production and sale of goods and services; (4) community support; and (5) expansion of training provision by non-governmental organizations in the informal economy and by private sector providers in the formal economy (Johanson and Adams, 2004, p. 9). The effectiveness of such approaches depends on many factors, including programmes to develop markets for training by demonstrating the benefit of training to employers and workers, improving the efficiency of tax administration and labour or employment service administrations, and providing public information on the performance of individual institutions in order to inform consumer choice and improve accountability.

105. Encouraging *workplace learning* is one form of increasing private sector investment in skills development – targeting adult workers already in the workforce. As technologies or products change, employers become keenly aware of what skills are needed by their workers. There should be no mismatch between training provided at the workplace and the specific types and levels of skills actually needed. The catch is that workers must have the ability to learn – basic skills, aptitude for learning, communication skills – based on their pre-employment education and training. The second challenge is maintaining a policy environment that encourages, or provides

[19] See Galhardi, 2002 and 2004 for compilation of survey data on investment in training for selected countries in the Americas region and elsewhere.

incentives for employers and workers to extend workplace training. This topic is itself the subject of Chapter 3 of this report.

106. One of the causes of skills gaps is the fact that more often than not training of girls and young women is limited to traditional occupational areas rather than being geared to new demands in the labour market. *Overcoming barriers that deter women from training* – at and outside the workplace – serves the twin objectives of reducing inequality and meeting labour market needs. Unequal division of labour within the family is a major barrier to increasing women's participation in education and training. Targeting women requires an effort to schedule training in accordance with their requirements as regards when and how to learn. This commitment must start at the secondary and vocational training levels (see section 4.2 in Chapter 4) and continue at the workplace (lessons learned in overcoming barriers to women's training in entrepreneurship are summarized in Chapter 3). Special effort is needed to reduce occupational segregation [20] in training and subsequently in employment, so that women are prepared to meet the skills needs in emerging industries and occupations. As in the case of Botswana (box 2.7), efforts to improve training begin with a commitment to overcome gender bias.

Box 2.7
Gender mainstreaming of national vocational training in Botswana

The Botswana Training Authority, in collaboration with the Women's Affairs Department within the Ministry for Labour and Home Affairs, drafted a "National policy for mainstreaming gender into vocational training and work-based learning" (2000) with the following objectives:

- Increase access of women into vocational education and training and reduce their attrition once they begin the training.
- Eradicate gender blindness and increase gender awareness in vocational training institutions by integrating inclusive language into curricula, improving attitudes of trainees, instructors and administrators towards gender disparity, equality and equity in vocational training and promoting gender training to overcome gender stereotyping and prejudice.
- Articulate what constitutes sexual harassment, raise awareness of it and create strict reporting and response mechanisms.
- Develop and implement a system of regular data collection and reporting of information by gender in all vocational training institutions about the status and training needs of men and women with a view to reducing occupational segregation.

Source: Botswana Training Authority, 2006.

107. Examples from India, Brazil and Jamaica (boxes 2.8–2.10) illustrate policy initiatives to address challenges on coordination, expansion and inclusion. The following section examines ways to enable persons already working in the informal economy to acquire the skills needed for higher productivity formal economy jobs.

[20] Occupational segregation refers to the concentration of women or men in certain trades, fields of work or industries. For example, a survey on the participation of women in vocational and technical training in Latin America found that the ten specific sectors with the greatest number of female students reported 77 per cent female enrolment (Silveira and Matosas, 2001).

Box 2.8
Addressing the demand–supply gap of skills development in India

India's economy is highly dichotomous and shows signs of becoming more so. Productivity has grown rapidly in the modern sector, led by services, transport, communications and manufacturing, and the share of employment has been decreasing in agriculture and growing in the service sector. However, employment growth is insufficient to absorb the estimated 12.8 million labour market entrants each year, or to create more productive jobs for the vast majority of workers who make a living in the informal economy. There is concern that even vocational training graduates are not highly employable owing to the mismatch between what they have been taught and what employers need – in both technical and core skills (FICCI, 2007; TeamLease, 2007).

Expansion, quality and inclusion comprise the goals of the Planning Commission's strategy to address the skills gap, make education and training relevant to labour market needs and improve the access of poor and vulnerable people to skills development opportunities (Planning Commission, Report of the Working Group on Skills Development and Training).

Expansion: India's Five-Year Plan (2007–12) foresees a tenfold expansion of education and training infrastructure, from some 5,000 to about 50,000 industrial training institutes (ITIs) and industrial training centres under the Ministry of Labour and Employment, to provide training in relevant skills for industry and service sectors and also in skills for agricultural and rural employment. "The challenge … is to increase the skilled workforce from 5 per cent at present to about 50 per cent. To make our working people employable, we must create adequate infrastructure for skill training and certification and for imparting training. Industrial Training Institutes must keep pace with the technological demands of modern industry and the expanding universe of technical knowledge" (Prime Minister Manmohan Singh at the Indian Labour Conference, April 2007, New Delhi).

Quality: Upgrading of training facilities, tools, faculty and curricula are all targeted. With World Bank assistance, some 500 ITIs are to become "Centres of Excellence" that will be closely linked to industry. Industry Management Committees are to be given enhanced financial and programme development autonomy to manage individual ITIs. State governments will, however, retain ITI ownership and continue to regulate admissions and fees.

Inclusion: Over 90 per cent of Indian workers earn a living in the informal economy. Few of them have the necessary skills to help improve their productivity and income-earning capacity. The Skills Development Initiative aims to provide 1 million workers with employable skills over the next five years and 1 million workers each year after that. The Initiative's public–private partnership combines provision of short-term training courses with certification. The programmes target poor and less-educated individuals who cannot afford mainstream long-term training programmes owing to high entry qualifications and costs. In partnership with the ILO, the Ministry of Labour and Employment is implementing a pilot programme focusing on four clusters: brassware (Moradabad, Uttar Pradesh), glassware (Firozabad, Uttar Pradesh), textiles (Tiruppur, Tamil Nadu) and domestic workers (Delhi). While the programme aims to contribute to improving productivity and competitiveness of enterprises and employability of workers in the clusters, it also pilot tests implementation frameworks and methodologies for skills provision and certification in the informal economy.

Source: Ratnam and Chaturvedi, 2008.

Box 2.9
Training for new industries in Brazil

In Brazil, the challenges of new technologies and the aim to extend industrial development to new geographical areas were the reasons behind the initiative of the National Confederation of Industry to start a new education and training programme. Building on the PLANFOR worker qualification programme (1995–2002), Brazil's Education for New Industry programme plans to expand the outreach and functions of SESI (social service for workers and their families) and SENAI (the national industrial training service) to cover basic and continuous education and vocational training. The training supports the strategic plan for industrial development. It is designed to meet employers' requirements for greatly improved basic work skills so that workers can read instructions, interpret graphs and exchange knowledge. Its objectives are ambitious: the 40 per cent of industrial workers who are currently either illiterate or have completed fewer than eight years of education are expected to complete basic education; nearly 700,000 workers are expected to complete intermediate-level education and improve their basic and vocational skills. The programme will also provide initial, further, lifelong and specialized industrial training, and middle-level technical education linked with formal education. Graduates of the programme, 40 per cent of them technicians, are expected to fill the 1 million new industrial jobs that are envisaged in the new industries. The programme focuses mainly on industrial workers and their families/communities.

Source: Gallart, 2008.

Box 2.10
Skills development and productivity and the National Training Agency of Jamaica (HEART Trust/NTA)

One of the goals of the National Development Plan 2030 is to reduce the "productivity gap". Jamaica's growth in labour productivity was the lowest in the region, at 0.4 per cent per annum over the past decade and a half. The low level of adoption of new technologies, slow skills upgrading, low economic relevance of education, concentration of activity in tourism and mining with little diversification and the growth of the informal economy, are all factors in the low productivity growth. The National Development Plan responds by creating incentives for enterprise development and performance, a national qualification framework being adopted by all education and training providers, and by increasing cooperative training programmes with private sector enterprises.

The Jamaica Productivity Centre, a tripartite organization funded by the Ministry of Labour and Social Security and comprising representatives from the Jamaica Employers' Federation and the Jamaica Confederation of Trade Unions, helps firms to diagnose productivity and competitiveness gaps and design solutions while also influencing secondary and tertiary curricula to provide competence-building training and educational programmes. The Centre works with the enterprise based training section of HEART trust/NTA to develop a productivity measurement methodology for monitoring the impact of training on enterprise productivity.

Source: McArdle, 2007.

2.3.3. Promoting formalization: The role of training

> Members should identify human resources development, education, training and lifelong learning policies which … address the challenge of transforming activities in the informal economy into decent work fully integrated into mainstream economic life; policies and programmes should be developed with the aim of creating decent jobs and opportunities for education and training, as well as validating prior learning and skills gained to assist workers and employers to move into the formal economy (Human Resources Development Recommendation, 2004 (No. 195), Paragraph 3(d)).

108. The conclusions of the general discussion on skills at the International Labour Conference in 2000 (as quoted in Chapter 1), the conclusions of the general discussion on the informal economy in 2002, and the subsequent Human Resources Development Recommendation, 2004 (No. 195), address the connections between more and better training and formalizing work and enterprises. Formalization brings better working conditions and rights at the workplace for workers and fairer competition among employers. For society, formalization expands the tax base and makes laws and labour regulations easier to enforce.

109. As noted in the conclusions of these tripartite ILO discussions, skills development is not a panacea – it is not the only necessary condition for formalization – but it is one essential contributing factor. Among other factors, the importance of policies to expand employment growth in the formal economy must be highlighted. Improving skills matching and efforts to promote formalization through better skills development assumes an expanding formal economy with jobs to fill. The pace of job creation must accelerate to absorb the un- and underemployed, including providing better employment opportunities for those in the informal economy. In the absence of such job creation, the informal economy will continue to absorb larger portions of the labour force who cannot find decent work despite having higher qualifications.

110. In many developing countries a large formal economy coexists with a large unorganized informal economy. It is especially in this group of countries that there is an important opportunity to use training as a bridge from livelihoods in the informal economy to more productive and decent work in the formal economy.

111. Many countries pursue explicit broad policies and programmes that include skills development to help move workers and enterprises into the formal economy and so create durable, productive and decent employment. [21] These efforts are discussed under three broad policy headings: extending access to training outside the high-growth formal economy; recognition of prior learning; and including formalization in entrepreneurship training.

112. *Improving access to quality skills development outside high-growth urban areas* is the first requirement. In many developing countries people's access to relevant education and training programmes that could enhance their productivity at work often remains inadequate. Training opportunities may simply be lacking; illiteracy may bar young people and adults from vocational training; education and training services may be too expensive or have a poor record of enabling trainees to move into better jobs; and training may not fit the needs of certain population groups, such as women or migrant workers.

113. Education enrolment and attendance figures have improved in most developing countries. However, the quality of education and its relevance to employability and careers in the formal economy are becoming the paramount policy issue. In Latin America, there are calls to increase the job or skills-related components included in secondary education programmes, especially in marginal rural and urban areas, in order to enable students to obtain a grounding in technical and job-related skills that will give them a better chance of entering the job market (Pieck, 2007, p. 13). Efforts to redress deficiencies in formal education and improve articulation between basic and general

[21] For a review, see reports and articles collected for the ILO Interregional Symposium on the Informal Economy: Enabling Transition to Formalization, held on 27–29 November 2007, Geneva, to share experience on formalization of the informal economy.

education, on the one hand, and work-related training, on the other, reveal some good practices that might be adapted more generally. These are:

- *Link local and national training institutions.* In Honduras, Education for Work Centres (*Centros de Educación para el Trabajo – CENETs*) provide education and training primarily for poor women in rural and urban communities with low levels of education. They build on local needs assessments and community participation, but are also linked to the national vocational training institution INFOP. The training combines core skills, such as training in literacy and gender issues, technical and vocational training (in agriculture, agro-industry, trade and services) and entrepreneurship training. A recent impact assessment found that employment in the communities rose by 136 per cent following training, increased investment and introduction of new technologies (Rosal, 2007; Ooijens et al., 2000).
- *Combine remedial education and employment services with technical training.* The Training for Work Programme *(Programa de Capacitación Laboral – CAPLAB)* in Peru (1997–2006) integrated poor underemployed and unemployed young people and women into the labour market by matching vocational training to the experience and motivation of trainees, targeting demand in the labour market, primarily of local small enterprises, and including on-the-job experience. The programme is based in formal training institutions and emphasizes training of trainers in new technologies and training methods, and in ways of combining technical training with remedial education where necessary and linking training to decentralized employment services. Originally donor funded, the programme was incorporated in the General Law on Education in 2003 (CAPLAB, 2007).
- *Take women's training needs into account.* Programmes that target women, or men and women, need to take into account the particular circumstances that influence women's abilities to take advantage of training opportunities, such as family responsibilities and workload, the seasonal character of work or ability to travel to training centres. Some of the ways in which public policy can meet these criteria for targeting women workers stem from experimentation in the private and non-government sectors, where women have taken the initiative to organize training in ways that are accessible and meaningful to them. For example, teleworking in the small office/home office (SOHO) industry appears to be growing in some Asian countries. It is a new type of working space, which appears to be particularly relevant in helping women improve their access to the technical and core skills development, networking and employment benefits traditionally associated with formal economy work. [22]
- *Target young adults who have missed out on good secondary education.* So-called "second chance programmes" target adults who, for whatever reason, did not receive an adequate education at a younger age. Such programmes generally offer flexible timing, short duration courses and social services, where needed, to facilitate entry into the formal labour market. For example, the *Chilecalifica* programme launched in 2002 by the Chilean Ministries of Education, Economics, and Labour aims to improve the level of schooling, the quality of technical training, national certification of skills and competencies and labour market information. Between 2002 and 2004, some 74,000 people were certified through the programme; for those who completed the course, income levels increased by

[22] For example, see information about "eHomemakers" in Malaysia that provides professional training on business development, financial planning, shariah law and networking to women working from home in ICT and other office support work (available at http://www.ehomemakers.net).

9.7 per cent on average and their employment rate increased by 5.7 per cent (Gallart, 2008).

- *Enable rural migrant workers to secure formal urban employment.* This likewise may require targeted interventions or support. In China, for example, assisting workers to migrate from low-productivity informal rural work to formal work in urban areas is one of the strategies for overcoming skills shortages and for reducing rural poverty (box 2.11). In a separate approach, distance learning programmes, for example education in English, computer programming, economics and management, are being extended to rural informal economy workers in the more poorly served areas (Wu, 2007).

Box 2.11
Training rural workers for formal urban jobs: The Dew Drop Programme in China

In 2004, the Chinese Government launched the Dew Drop Programme, a combined anti-poverty and skills training programme that encourages people from poor rural areas to migrate to urban areas where skill shortages are acute. The stated goal, according to the State Council Leading Group of Poverty Alleviation and Development, is to provide free vocational training for 5 million young farmers and 200,000 older persons from poor rural areas and help them to find jobs in cities during the 11th Five Year Plan (2006–2010). Comprising skills training, modest subsidies and relocation assistance to urban areas facing specific skills shortages, the Dew Drop Programme is part of a larger ambitious government poverty reduction campaign. Government reports suggest that in 2006 the project budget included US$95 million for training, approximately 1.65 million farmers, an increase of 29 per cent from 2005. Nearly 1.3 million of those trained went on to find work in urban areas, furthering the programme's objective to reduce both urban labour shortages and rural poverty. Recent legislation, in particular the Employment Protection Law, is intended to integrate the national labour market, including providing vocational training for both laid-off urban workers and rural migrant workers. Other efforts target improving working conditions so that jobs in labour-intensive, export-oriented industries are more attractive to migrant workers. In Guangdon Province, only 4.8 million out of 7.3 million vacancies were reported filled in 2007.

Source: State Council Leading Group Office of Poverty Alleviation and Development, China, http://en.cpad.gov.cn.

114. In all these examples, the advantage of anchoring the outreach in national vocational training institutions lies in the fact that their experience, human resources, infrastructure and tripartite governance help to align training supply and demand. The challenge for the training institutions is to adapt training to the needs of people with low levels of education and scant employment experience. The goal is to equip them with the skills and competencies needed in the smaller enterprises likely to hire them, while instilling skills and the ability to learn that will, in turn, help these enterprises to adopt newer technologies and become competitive in the formal economy.

115. Schemes for the *recognition of prior learning (RPL)* aim to open formal economy jobs to those who have not had the advantage of formal vocational training. Prior learning embraces all skills, no matter where or how they were acquired: at the workplace, in the community, at home, through informal apprenticeships or "learning by doing" in the formal or informal economy. Recognition means certification of skills on the basis of standard qualification criteria. Certification is intended to help employers more easily recognize the skills and competencies of job applicants and thus make it easier for workers to compete for jobs in the formal economy.

116. RPL has been particularly prominent in skills development in South Africa. The country shares the characteristic of many developing countries in that the industrial and technology-based economy thrives alongside a very large informal economy. A formal RPL system was instigated by the Government to redress the legacy of apartheid by recognizing the skills and learning of those who had been denied access to formal education, training and employment (box 2.12). System reforms elsewhere that emphasize a qualification-based approach and recognition of acquired vocational skills are also expected to improve employment opportunities for those in the informal economy.

Box 2.12
Recognition of prior learning (RPL) in South Africa

The South African Qualifications Authority (SAQA) has developed common procedures and guidelines for the implementation of RPL within the National Qualifications Framework. The comprehensive guidelines encompass assessment, feedback and quality management systems and procedures. Industry "Sector Education and Training Authorities" (SETAs) develop industry-specific plans (for example in the tourism, hospitality and sport, health and welfare, construction, insurance, and engineering sectors) to advise on RPL procedures, set skills verifications procedures (including, when necessary, through observation rather than examination) and organize provision of upgrading training. Some of these industries particularly target workers in the informal economy. For example, RPL is directed towards the construction trades with a large number of workers in informal work without certification to enable them to access jobs that require qualifications. The system is expected to continue promoting lifelong learning as well as job entry into the formal economy.

Source: Blom, 2006; SAQA, 2004; Dyson and Keating, 2005.

117. National qualifications frameworks (NQFs) comprise a comprehensive approach for testing and certifying competencies and for appraising the effectiveness of different training providers. Implementation of NQFs is proving to require large commitments – to develop and, even more, to maintain them (such as keeping assessments abreast of technologies). Some cautionary notes are emerging from researchers. "One of the newest innovations, national qualifications frameworks, … is proving difficult to implement for countries that have limited capacity. More limited competency-based systems appear effective and more feasible" (Johanson and Adams, 2004, p. 5). [23]

118. *Small enterprise development (SED)* efforts can directly support formalization as part of strategies to promote productivity and decent work. For example, surveys of large and small enterprises in Ghana, Kenya and Zimbabwe found a positive impact of all SED support mechanisms on productivity, including workplace or outside training, internal R&D, hiring expatriates, access to foreign buyers and suppliers and technology transfer by means of technical assistance or licensing. Of these measures, employee training had the greatest impact on productivity. The effects were relatively larger in small enterprises where skill levels were lower (Biggs et al., 1996).

119. The experience in Ghana (described in box 2.13) and the following examples highlight the importance of giving more attention to training, for both managers and workers, in addition to other measures that promote formalization, such as access to credit and product markets and improving the environment for sustainable enterprise.

[23] For information about the challenges of implementing and maintaining such approaches, see the following ILO working papers: Tuck, 2007; Young, 2005; and Dyson and Keating, 2005.

- In Kenya, the *Programme on product improvement and inter-firm linkages between micro and formal enterprises* developed by the Federation of Kenya Employers helps informal operators to enter into subcontracting arrangements with large enterprises, including applying the ILO's Start and Improve Your Business programme and other tools in the CD package *Employers' organizations and enterprise development in the informal economy: Moving from informality to formality* (ILO, 2006m).
- In Peru, the Department of Micro and Small Enterprises of the Ministry of Labour and Employment Promotion supports PRODAME *(Programa de Autoempleo y Microempresa)* in providing free guidance and counselling services to individuals who wish to create or formalize a small enterprise, and PROMPYME *(Centro de Promoción de la Pequeña y Micro Empresa)* in helping small enterprises to raise their productivity and competitiveness by accessing new markets, including public procurement, a market available only to formal registered enterprises (ILO, 2005j).
- In South Africa, the National Productivity Institute provides education and training to small-business owners to help them improve their productivity by becoming formal businesses, in particular in learning to follow regulations on production processes, minimum wages, insurance, labour regulations, etc. (National Productivity Institute, 2003, cited in ILO, 2005a, p. 109).

Box 2.13
A decentralized pro-poor strategy to upgrade the informal economy in Ghana

In Ghana, the policy to promote pro-poor growth focuses on upgrading the informal economy by expanding opportunities for decent work. The work pilot tested in two districts through partnership between the Ministry for Manpower, Youth and Employment, the Trade Union Congress of Ghana, the Ghana Employers' Association and the ILO under the Ghana Decent Work Pilot Programme established local institutions for social dialogue, bringing together local government, elected assembly officials and representatives of small enterprise associations. Statutory subcommittees of the District Assemblies for Productive and Gainful Employment draw up and implement local economic development plans that are helping hundreds of small local enterprises to upgrade their business and expand into the formal economy. The partnership between the private and the public sector removes constraints on growth through investments in infrastructure, training and other factors. The small business associations encourage members to join the national health insurance scheme and pension fund. The subcommittees have initiated "decent work savings and credit unions" that bolster economic stability as well as mobilizing capital for investment. Voice, organization and local social dialogue have led to improvements in governance and conflict resolution and generated local tax revenue, providing additional fiscal resources for investments in infrastructure and training that further encourage growth and improved working conditions. The training manual for small business associations in Ghana was developed jointly by the Informal Sector Desk of the Trade Union Congress of Ghana, the training unit of the Ghana Employers' Association and two national providers of business services to small and medium enterprises.

Source: www.ilo.org/led, van Empel, 2007.

2.4. Least developed countries

2.4.1. Low productivity and education and persistent working poverty

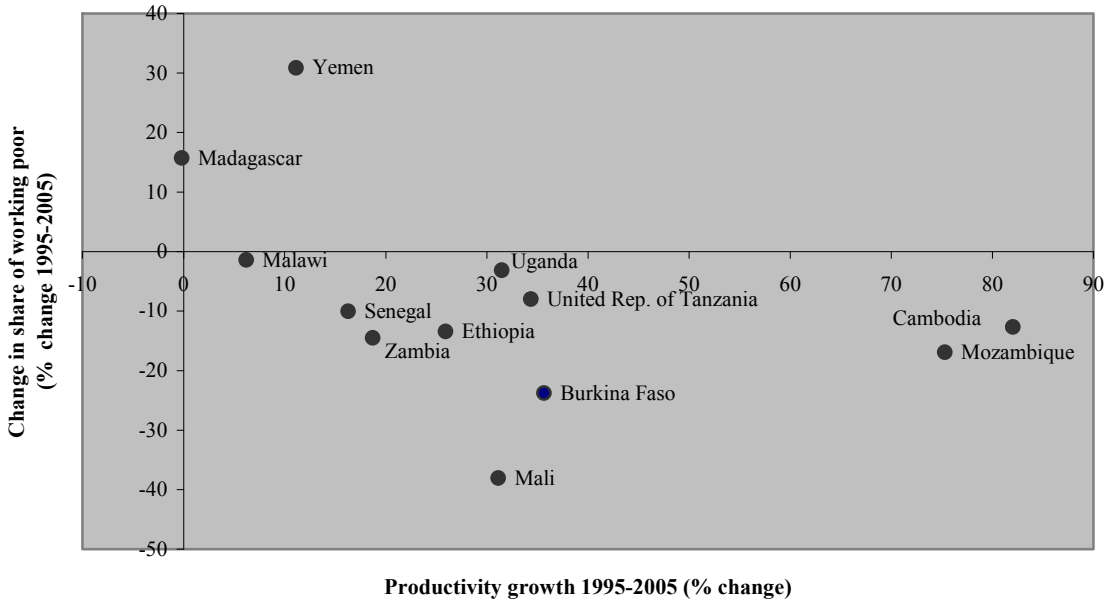
120. The *LDCs* comprise some 50 countries in the world (as listed in the annex to this chapter; for distinctions between "developing" and "least developed", see footnote 15). Two-thirds are in sub-Saharan Africa and many others are in Asia. There are also many least developed small island countries. Recent developments in these countries underline the fact that low skills, low productivity and working poverty reinforce one another in a vicious circle.

121. A distinctive characteristic of the poorest countries is a generally low level of education. As discussed in Chapter 4, only one fifth of boys and girls of secondary-school age in sub-Saharan Africa actually attend school (UNICEF, 2007). This is exactly half the average attendance rate worldwide.

122. Data availability is particularly poor for examining the relationships between productivity, skills and employment. Comparable data to measure changes over the last decade in all three of these categories is available for only a dozen countries. Across this small sample, poverty remains high, with 48 per cent of workers on average living on less than US$1 per day. The literacy rate on average across these dozen countries is 52 per cent of the population over the age of 15. Given that statistics are generally available for better-off countries, there is reason to assume that the actual situation across the entire set of LDCs is more sobering still.

123. The good news is that average growth in productivity was high among the countries in this sample – 31 per cent from 1995 to 2005 – and productivity growth appears to be correlated with a decreasing share of working poor (figure 2.8). However, with such a narrow education base, only a small proportion of the potential workforce is able to take advantage of any opportunities for higher productive work in newer technologies or service sectors. Poorly educated and without marketable skills, most of the labour force cannot find decent and productive jobs in the formal economy. In sub-Saharan Africa 75 per cent of workers earn a living in the informal economy. Income earned from informal economic activity is too low to lift more than a minority of them out of poverty.

Figure 2.8. Least developed countries: Changes in productivity and numbers of working poor (at US$1 per day), selected countries



Source: ILO, 2007a; ILO, 2007o.

2.4.2. Policy priorities: Improving training quality and availability

124. *Education and training systems* in LDCs have many weaknesses and are not yet, in general, assets in terms of achieving development goals. Educational output is often distorted, favouring academic non-technical qualifications, while vocational, technical and employability skills training that could open up labour market opportunities is in short supply. Many young people tend to consider vocational and technical training to be a second-class choice for a career.

125. LDCs need to confront the following twin challenges in broadening coverage and improving the quality of skills training so as to improve productivity and promote income growth:

- first, to raise the productivity of women and men in the informal economy, where most young people, women and entrepreneurs work today; and
- second, to reform education and training systems so that they provide the skills and competencies that will be needed to boost the growth of decent work in the formal economy.

126. A recent study by the African Union identified specific areas of skills development that were considered crucial for economic and social development in Africa. In two priority areas, agriculture and rural development, and indigenous and cottage industries, the emphasis is on upgrading traditional and informal skill acquisition systems (African Union, 2007). The ILO's 11th African Regional Meeting (Addis Ababa, April 2007) concluded that African member States should enact strategies that include "… (re)training opportunities for the working poor, especially young people and women, with the aim of ensuring that half of Africa's workforce has obtained new or improved skills by 2015" (ILO, 2007c).

127. Many governments have recently designed policies that emphasize training for workers in the informal economy. Policies in Senegal give priority to vocational training for small producers and the self-employed. In Benin, government technical schools now provide skills training to informal sector master craftspersons and apprentices. Zambia's training policies are largely focused on raising skills for the informal economy. Some initiatives endeavour to improve the links between formal training institutions and informal sector workers and entrepreneurs.

128. Many financial and non-financial barriers have to be overcome in order to increase the access of the poor to training. These barriers include opportunity costs of training time in terms of livelihood, high entry requirements or high fees for training courses and social factors that often put pressure on women to enter training that only gives them access to low-productivity jobs. Women face obstacles in upgrading their work or receiving training because of the unpaid work they are expected to do within the household. Unpaid household work may help other household members to participate in training and higher level paid employment, but leaves women with less time to expand their business and improve their productivity. Box 2.14 summarizes some general lessons learned from numerous small-scale projects and larger programmes that have successfully overcome these barriers.

Box 2.14
Improving the access of the poor to training: Lessons learned

Reduce financial entry barriers: governments should fund specific poverty targeted interventions for the poor to facilitate access to mainstream (formal) skills training.

Lower the non-financial access barriers to formal courses, and/or provide additional assistance to the poor to overcome them, for example by addressing their lack of formal educational background, before they undertake skills training.

Develop skills development strategies for disadvantaged groups: rural groups, specific categories of women, young women and men, those working in the informal economy, and men and women with disabilities.

Develop special facilities that respond to difficult personal circumstances (in terms, for example, timing, location or training methodology).

Avoid training the poor (and especially poor women) in traditional trade areas so that they are not marginalized further; train them instead for businesses using new technologies (such as mobile phone repair) and train women in traditionally male occupations. Long and sustained efforts of advocacy and awareness raising at the community and institutional level are often required to help build public support for new economic roles of women.

Support financially informal apprenticeship training (elaborated below).

Source: Palmer, 2007.

129. *Illiteracy* puts formal training out of reach for many people in the informal economy, including for apprentices and master craftspersons. The success of combining literacy training with livelihood training has been demonstrated by many programmes, such as the Society for the Development of Textile Fibres in Senegal, the Tangail Infrastructure Development Project in Bangladesh and the Somaliland Education Initiative for Girls and Young Men (Oxenham, 2002).

130. In the United Republic of Tanzania, the Vocational Education and Training Authority has designed and tested an integrated training programme comprising literacy, technical and managerial training, as literacy is an important precondition for effective skills training. Trainees are linked with credit and business development providers. An

evaluation found that the quality of the products and services produced by the trainees improved and sales and profits increased (Johanson and Adams, 2004).

131. *Informal apprenticeships* can improve training and productivity outcomes. Informal apprenticeships are a major supplier of skills and training for work in the informal economy. However, the quality of training is often low as the theoretical foundations of a trade are lacking and technology is rudimentary. In many LDCs, numerous initiatives endeavour to upgrade apprenticeship training in view of its potential to raise productivity and employability. Some efforts have been piecemeal but others have taken a comprehensive approach (Nübler, 2008a).

132. In Benin, the Artisans' Support Office *(Bureau d'appui aux artisans)* seeks to complete the training of apprentices by working with various trade associations. The Bureau links master craftspersons and apprentices who are trade association members to reputable public or private sector training providers for complementary training. It finances the programmes and acts as a technical adviser. The trade associations implement and supervise the training, develop new training modules, participate in trainee selection, negotiate instructors' fees, monitor apprentices' attendance, co-organize tests at the end of the training and participate in programme evaluation. The concept of complementary apprentice training was new to the master craftspersons, and advocacy and information efforts were needed to secure their participation. Other success factors include investing in upgraded equipment and teacher training (Johanson and Adams, 2004).

133. Making informal apprenticeships more effective requires an integrated strategy, comprising the following elements:

- *Improving the image of apprenticeship training* by means of general awareness-raising campaigns about its role and opportunities, including in primary and secondary schools.
- *Conducting market surveys* to determine trades and skills that have market potential and the complementary support needed.
- *Assisting the poor in financing apprenticeship* when households cannot afford apprenticeship fees and costs of tools and equipment.
- *Improving quality and relevance of skills training*, e.g. by complementing training on the job with theoretical training or by providing master craftspersons in informal apprenticeships with technical, entrepreneurial and pedagogical skills.
- *Combining skills training with development of literacy and numeracy* for apprentices without sufficient basic education.
- *Upgrading the skills of master craftspersons*, as improving their skills will translate into better or more relevant skills for their apprentices.
- *Developing national schemes for the recognition of skills* through the assessment and certification of skills, whether or not they were acquired in the informal or formal apprenticeship system.
- *Providing post-training support* for graduates through job-matching employment services or access to microfinance and other support for self-employment.
- *Encouraging young women to enter apprenticeships.* If apprenticeships are to provide equitable and high-quality training for young men and women, efforts are needed to improve understanding of occupational segregation and find ways in

which apprenticeships can help to overcome barriers to young women entering non-traditional fields of work. [24]

134. Formal public training systems in LDCs face problems of relevance, quality and equity.

- Formal TVET systems fail to deliver skills for existing jobs.
- The quality of training has deteriorated as budget cuts have curtailed investments in facilities, equipment and staff salaries.
- Equity in access to education and training is a critical problem in LDCs. Women and girls are under-represented in vocational education and training, in some countries making up only a small fraction of enrolments and often ending up in occupational streams traditionally reserved for women, like hairdressing and secretarial work.

135. *New policies and delivery systems* have been introduced by many LDCs to address these problems, many of which centre on coordination and partnerships with the private sector. For example, Malawi, United Republic of Tanzania and Zambia have established national consultative or coordinating bodies (national training authorities) that advocate partnership as a means of improving efficiency in the use of public money by making vocational education and training more responsive to the job market. Structuring the relationship between the training system, employers and trade unions is a major feature of national training authorities (Johanson and Adams, 2004).

136. *Delivery of education and training* has been another area of innovation, generally focused on introducing dual training programmes (combining institution-based education and training with enterprise-based instruction), competency-based training, expanded training services and distance teaching. Putting competency-based training into operation is a complex process, involving the development of job analysis-based standards, preparation of new modular course materials and design of new assessment methods and performance tests. It puts pressure on instructors and institution managers to deliver these skills and raises expectation of employers' involvement.

137. In recent years, there has been much policy and programme development activity to encourage enterprises to expand *workplace learning,* while improving the quality of training. In a number of French-speaking African countries (for example, Benin, Burkina Faso, Chad, Côte d'Ivoire, Guinea, Mali, Niger, Senegal and Togo) training funds have been established. The funds are primarily fed by money collected in enterprises (a certain percentage of their payroll). The funds finance employee training within or outside the enterprise and constitute the embryo of these countries' emerging systems of lifelong learning. Box 2.15 illustrates the rationale and operations of Senegal's *Fonds de développement de l'enseignement technique et de la formation professionnelle* (FONDEF).

[24] See ILO, 2005e.

Box 2.15
Senegal: *Fonds de développement de l'enseignement technique et de la formation professionnelle* (FONDEF)

FONDEF is an autonomous organization that finances the bulk of continuous training and lifelong learning in enterprises. FONDEF receives money from the State and from enterprise contributions (based on a payroll levy). Its aim is to sharpen enterprise staff skills and create a real market for continuous training. Enterprises pay 25 per cent of the training costs. FONDEF finances training in all types of economic activity, supports training plans of public and private sector enterprises and training programmes agreed upon by sector and branch organizations and groups of enterprises. FONDEF's contributions can amount to a maximum of 75 per cent of total training costs. Once a selection committee (consisting of representatives of FONDEF's administration and the social partners) has approved a training plan, the training is contracted to one or more private or public training providers (at present 130) accredited by FONDEF. In almost three years (2004–06) FONDEF financed training in 106 enterprises for nearly 7,000 staff. Small and medium-sized enterprises accounted for 52 per cent of the requests for financing training, while 31 per cent of such requests came from large enterprises. The banking and financial sector and industry (textiles, food) were among the major beneficiaries. There were few beneficiaries among very small enterprises.

Source: World Bank, 2007a.

138. Training by itself does not create jobs, nor does it necessarily raise productivity in the informal economy. These objectives can best be achieved in an economic and labour market environment that supports the development and use of skills and the formalization of informal activities. For example, the participants of the 11th African Regional Meeting agreed that strategies to escape the informal economy trap should integrate, among other things, "policies for the increased registration of informal businesses, skills development, improved and safer working conditions, the extension of social protection coverage and the encouragement of freely chosen associations of informal economy workers and employers" (ILO, 2007c, p. 9).

Annex

Country groups

High-income OECD countries
Australia
Austria
Belgium
Canada
Denmark
Finland
France
Germany
Greece
Iceland
Ireland
Italy
Japan
Korea, Rep. of
Luxembourg
Netherlands
New Zealand
Norway
Portugal
Spain
Sweden
Switzerland
United Kingdom
United States
(24 countries or areas)

Central and Eastern Europe and the Commonwealth of Independent States (CIS)
Albania
Armenia
Azerbaijan
Belarus
Bosnia and Herzegovina
Bulgaria
Croatia
Czech Republic
Estonia
Georgia
Hungary
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
The Former Yugoslav Rep. of Macedonia
Moldova, Rep. of
Montenegro
Poland
Romania
Russian Federation
Serbia
Slovakia
Slovenia
Tajikistan
Turkmenistan
Ukraine
Uzbekistan
(28 countries or areas)

Developing countries
Algeria
Antigua and Barbuda
Argentina
Bahamas
Bahrain
Barbados
Belize
Bolivia
Botswana
Brazil
Brunei Darussalam
Cameroon
Chile
China
Colombia
Congo
Costa Rica
Côte d'Ivoire
Cuba
Cyprus
Dominica
Dominican Republic
Ecuador
Egypt
El Salvador
Fiji
Gabon
Ghana
Grenada
Guatemala
Guyana
Honduras
Hong Kong (China)
India
Indonesia
Iran, Islamic Rep. of
Iraq
Jamaica
Jordan
Kenya
Korea, Dem. Rep of
Kuwait
Lebanon
Libyan Arab Jamahiriya
Malaysia
Marshall Islands
Mauritius
Mexico
Micronesia, Fed. Sts.
Mongolia
Morocco
Namibia
Nauru
Nicaragua
Nigeria
Oman
Pakistan
Palau
Panama
Papua New Guinea
Paraguay
Peru
Philippines
Qatar
Saint Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines
Saudi Arabia
Seychelles
Singapore
South Africa
Sri Lanka
Suriname
Swaziland
Syrian Arab Republic
Thailand
Tonga
Trinidad and Tobago
Tunisia
Turkey
United Arab Emirates
Uruguay
Venezuela, Bolivarian Rep. of
Viet Nam
West Bank and Gaza Strip
Zimbabwe
(89 countries and areas)

Least developed countries
Afghanistan
Angola
Bangladesh
Benin
Bhutan
Burkina Faso
Burundi
Cambodia
Cape Verde
Central African Republic
Chad
Comoros
Congo, Dem. Rep. of the
Djibouti
Equatorial Guinea
Eritrea
Ethiopia
Gambia
Guinea
Guinea-Bissau
Haiti
Kiribati
Lao PDR
Lesotho
Liberia
Madagascar
Malawi
Maldives
Mali
Mauritania
Mozambique
Myanmar
Nepal
Niger
Rwanda
Samoa (Western)
Sao Tomé and Principe
Senegal
Sierra Leone
Solomon Islands
Somalia
Sudan
Tanzania, United Republic of
Timor-Leste
Togo
Tuvalu
Uganda
Vanuatu
Yemen
Zambia
(50 countries and areas)

Source: UNDP, 2006.

Chapter 3

Skills and productivity in the workplace and along value chains

> Members should … promote the expansion of workplace learning and training through: (i) the utilization of high-performance work practices that improve skills; (ii) the organization of on- and off-the-job training with public and private training providers … and (iii) the use of new forms of learning together with appropriate social policies and measures to facilitate participation in training (Human Resources Development Recommendation, 2004 (No. 195), Paragraph 9(f)).
>
> Members should … recognize that the realization of lifelong learning should be based on the explicit commitment: by governments by investing and creating the conditions to enhance education and training at all levels; by enterprises in training their employees; and by individuals in developing their competencies and careers (Recommendation No. 195, Paragraph 4(b)).
>
> Sustainable enterprises should innovate, adopt appropriate environmentally friendly technologies, develop skills and human resources, and enhance productivity to remain competitive in national and international markets. They should also apply workplace practices based on full respect for fundamental principles and rights at work and international labour standards, and foster good labour–management relations as important means of raising productivity and creating decent work (Conclusions concerning the promotion of sustainable enterprises, International Labour Conference, 96th Session, Geneva, 2007, para. 13).

139. This chapter starts by identifying skills development as one, but just one, of the principal drivers of productivity growth and competitiveness at the enterprise level. The empirical evidence shows that effective means to promote workplace learning are different for different kinds of enterprises. Therefore, the chapter reviews the empirical evidence and draws lessons on fostering skills development in three business contexts. First, *inter-firm alliances* within local clusters or along global value chains related to multinational enterprises offer opportunities for economies of scale in skills development. Second, firms following a so-called *high-performance workplace strategy* place particular emphasis on skills development as part of participatory approaches to enterprise management and growth. Third, *smaller enterprises* need to overcome particular challenges to access training services and develop the technical and managerial capabilities they need for growth. The end of the chapter turns to the important role of governments and social partners in promoting skills investment and innovation.

3.1. The sustainable enterprise: Competitiveness, productivity and skills development

140. As concluded at the 96th Session of the International Labour Conference, "Sustainable enterprises are a principal source of growth, wealth creation, employment and decent work. The promotion of sustainable enterprises is, therefore, a major tool for achieving decent work, sustainable development and innovation that improves standards of living and social conditions over time" (ILO, 2007e, para. 3).

141. The Conference concluded that enterprises need to be viable in order to be sustainable. Viable enterprises are competitive enterprises. If an enterprise is not able to maintain its competitiveness then its long-term viability is doubtful as is the quantity and quality of jobs it provides. Conversely, workplaces that provide decent work build the human and social capital essential for sustained productivity improvement. Thus, a two-way relationship between competitiveness and decent work exists.

142. The OECD defines competitiveness as "the ability of companies, industries, regions or supranational regions to generate … relatively high factor income and factor employment levels on a sustainable basis", while remaining exposed to international competition. [1] One academic overview (Cantwell, 2005) defines competitiveness as "the possession of the capabilities needed for sustained economic growth" and stresses that this is in a competitive context where others may have equivalent, but usually slightly different, sets of capabilities. The standard of living of a country will rise when it achieves sustained productivity growth. Similarly, at the enterprise level, such growth makes it possible to finance a firm's expansion plans, while at the same time offering the possibility of sustaining real wage increases.

143. There is much debate, however, about the determinants of competitiveness, with the World Economic Forum (2007) recognizing 12 pillars: (1) institutions, (2) infrastructure, (3) macroeconomic stability, (4) health and primary education, (5) higher education and training, (6) goods market efficiency, (7) labour market efficiency, (8) financial market sophistication, (9) technological readiness, (10) market size, (11) business sophistication and (12) innovation. It is important to note that although these factors individually cannot ensure competitiveness, together they contribute to the development of more competitive economies.

144. *Enterprises become sustainable by being competitive themselves and functioning in a conducive enabling environment*. The conclusions of the discussion on the promotion of sustainable enterprises (ILO, 2007e) provide detailed guidance on the essential conditions for an enabling environment, which are summarized in box 3.1.

[1] The concept of competitiveness is defined in the Eurostat Concepts and Definitions Database at http://forum.europa.eu.int/irc/dsis/coded/info/data/coded/en/gl007950.htm.

Box 3.1
Conditions for a conducive environment for sustainable enterprises

- Peace and political stability
- Good governance
- Social dialogue
- Respect for universal human rights
- Entrepreneurial culture
- Sound and stable macroeconomic policy
- Trade and sustainable economic integration
- Enabling legal and regulatory environment that benefits both women and men equally
- Rule of law and secure property rights
- Fair competition
- Access to financial services
- Physical infrastructure
- ICT
- Education, training and lifelong learning
- Social justice and social inclusion
- Adequate social protection
- Responsible stewardship of the environment

Source: ILO, 2007f.

3.1.1. Drivers of productivity growth and the changing context of the enterprise

145. To understand the importance of training for enterprises and the need to engage in it, the sources of productivity change must be reviewed and the rapidly changing context, both inside and outside the enterprise, must be noted. The changing context has a profound impact on the strategies that are available to enterprises and on their training needs.

146. Over recent decades, there has been a radical and transformational *change in technologies* with the introduction of ICT. New computer and communications systems constitute a general purpose technology, similar in importance to the application of steam and electricity in earlier technological revolutions (Gospel and Fiedler, 2007). Overall, this technology has operated to increase productivity in many sectors of most economies. In terms of skills and human resource development, ICT has had divergent effects. On the one hand, it has required higher levels of skills and provided the means for more decentralized and less routine production and service systems. On the other hand, it has facilitated the spread of mass production work to developing countries.

147. The importance of ICT, however, should not mask the emergence of other new technologies, such as biotechnology and nanotechnology, that are beginning to affect certain sectors. Nor should it mask the importance of many smaller technological and organizational changes that are also taking place, such as incremental changes in the construction industry, with the introduction of new materials, equipment and tools.

148. Productivity and competitiveness are in part technology driven (also referred to as technology push), but are also market driven (also referred to as market pull) (Rosenberg, 1975). In terms of product markets, the story over the last several decades has been one of an increasing opening up of markets and extension of their geographical boundaries, often referred to as globalization. This is itself in part technologically driven (e.g. by ICT, improved communications, cheaper transportation systems) and in part policy driven (e.g. national governments reducing trade and investment barriers).

149. Another aspect of market and technological change is a *shortening of product and service life cycles*. A product that would have lasted for a decade may now only be fashionable and acceptable for a few years. This generates a demand for new knowledge and innovation and for skills and ways of working that can keep up with change.

150. The *globalization of financial markets* is also increasingly affecting the context within which firms operate and is shaping their strategies. This refers to increasing international money flows, the interdependence of financial markets, the growth of international markets in mergers and acquisitions, the spread of notions of shareholder value and the activities of private equity and hedge fund investors. These can put pressures on firms to increase productivity, innovation and profitability. However, they can also lead firms to think more short term and to close down or sell off parts of their operation, with serious negative economic and social consequences (Gospel and Pendleton, 2005).

151. The introduction of *new workplace practices*, such as just-in-time inventories, worker teams, total quality management and benchmarking, is also changing the way in which enterprises manage their workplace, and may require the development of particular new skills.

152. Finally, changes in *business structure* are also important. Many firms are reconfiguring their boundaries. Hence, there is some move towards more decentralized forms of organization and more delayering internally within enterprises. Similarly, there are changes in the boundaries of firms, with an increase in outsourcing and offshoring. Value chain management and cluster organization have recently developed as major components of business strategies and organizational structures.

3.1.2. Productivity benefits of enterprise level training

153. The productivity improvement impacts of technological and other business advances cannot be fully realized without a workforce capable of exploiting their potentialities and making new arrangements work. A skilled workforce is a major contributing factor to the enhancement of productivity capacity. Kochan (2006) cites a substantial body of research which shows that companies that invest in their workforces to build knowledge-based organizations can achieve a return on their investment through higher productivity and profitability.

154. While evidence of this has been widely reported in industrialized countries, there is also similar empirical evidence from several developing countries. Tan and Batra (1995) and Batra (2001) analyse six developing countries [2] and report that firms training their employees experience substantial productivity gains compared to firms that do not engage in workplace training.

155. Maintaining a high level of competitiveness depends in part on the ability of firms and their workers to change and innovate. A review of the literature on innovation, productivity and employment concluded that "the evidence on the overall employment impact of innovation at the level of firms tends to be positive; firms that innovate in products, but also in processes, grow faster and are more likely to expand their employment than non-innovative ones, regardless of industry, size or other characteristics" (Pianta, 2004). A well-trained and skilled workforce strengthens the capacity for both individual creativity and group innovation (Amabile, 1996). Successful

[2] The country analysis covers Colombia, Guatemala, Indonesia, Malaysia, Mexico and Nicaragua.

innovation also requires a high level of skilled labour working alongside research and learning at all levels.

156. However, innovation is not just a technological phenomenon that finds expression in new products and production processes. Rather, innovation is a social process that depends upon people, their knowledge, their qualifications and skills, as well as their motivation and job satisfaction. For example, a study in the Netherlands covering 9,000 enterprises concluded that only 25 per cent of the influence on innovation success in that country originated from technological innovation, while 75 per cent rested on social innovation, such as management knowledge and the way this knowledge is acquired and integrated into the functioning of the enterprise (Volberda and van der Bosch, 2004).

157. *Sharing the benefits of improved enterprise productivity* is likewise a social process. Freedom of association and the effective recognition of the right to collective bargaining ensure that workers and employers and their organizations can negotiate all kinds of employment relations issues. Combined with freedom of association, collective bargaining ensures that workers have a voice and can negotiate for equitable outcomes.

158. Collective bargaining is a key instrument for securing rights and representation at work, promoting employment, improving working conditions and extending social protection. Collective bargaining has been found to contribute to higher productivity (Freeman and Medoff, 1984; Mishel and Voos, 1992), less inequality in wages, lower and less persistent unemployment and fewer and shorter strikes than the levels seen in countries where collective bargaining is less established (Aidt and Tzannatos, 2002), although the effects vary according to national, sectoral and firm-level contexts (Hirsch, 2003). In several systems, collective bargaining has proved to be a key instrument for introducing innovations in work organization with a view to obtaining high-quality organization and performance.

159. The existence of strong communication channels fostered by collective bargaining can promote workplace stability, thereby reducing turnover. Lower turnover often results in lower training costs, and the retention of more seasoned workers can translate into higher productivity and quality of products and services. Collective bargaining can also motivate workers to engage in training and promote an environment of trust between management and workers, with both parties more likely to expect gains from investments in skills (Nübler 2008b). The benefits of collective bargaining include helping to bring order to "wealth distribution and reduction in economic and social inequalities; its role in combating poverty; both macro and microeconomic benefits … ; its ability to provide a basis for a fair globalization" (statement by the Worker Vice-Chairperson, Governing Body Committee on Employment and Social Policy, ILO 2007j, para. 99).

160. The basic choice confronting several systems is between low wages or higher quality, productivity and skills. Collective bargaining can support the virtuous circle: jointly determined skills development can support innovation and productivity gains, and translate them, in part, into higher pay and employment. Information sharing and dialogue concerning skills development, innovation and productivity improvements can be positive forward-looking issues for joint consultation that support sustainable enterprise (box 3.2). Where collective bargaining does not exist, consultation through teams and quality circles can allow information to be shared on issues concerning training and productivity. Collective bargaining agreements increasingly focus on training issues, including establishing sabbatical and training leave or savings accounts for training and education (ILO, 2007m).

Box 3.2
Collective bargaining, productivity and competitiveness

Collective bargaining provides enterprises with a mechanism to encourage participation in the workplace. The literature on the value of participation has examined benefits related to the ability to secure trust and commitment in employment relations and thus improve productivity and efficiency. Indeed, there is now a growing body of evidence showing that workplace participation through collective bargaining can enhance firm performance and that firms with higher degrees of worker participation outperform other firms (see, for example, Fashoyin et al., 2006; Hayter, 2002; Ozaki, 1999). Collective bargaining has also been shown to enhance training intensity and human capital accumulation in companies, thereby increasing productivity. In this respect, in OECD countries there is increasing social dialogue and collective bargaining on continuous training. In countries with training levies and/or funds, these have usually been given a framework through bipartite or tripartite agreements at sectoral and/or national levels. In this way, collective bargaining can contribute to investment in training, even in countries where trade union density and/or collective bargaining coverage are not high. In addition, greater employee participation in the workplace reduces monitoring costs, with benefits in terms of efficiency. How and to what extent competitiveness is dealt with through collective bargaining varies considerably from one country to another. However, collective bargaining is, of course, only one means of enhancing productivity and competitiveness and is typically underpinned by "basic conditions" such as level of infrastructure, health and education, and complemented by government regulations and other factors.

Source: ILO, 2007f, p. 57.

161. Partnerships on training between workers' and employers' organizations are common and illustrate the important benefits that can be derived from constructive dialogue and cooperation (see box 3.3 for just one example). Unions have also long played a vital role in the administration of craft apprenticeship programmes, another important form of workplace learning. For example, the International Union of Painters and Allied Trades in the United States operates over 59 job corps programmes in 32 states providing on-the-job training, social skills development and general education to the young.

Box 3.3
Culinary Union Training Center, United States

The Culinary Union Training Center (CUTC) is a single union multi-employer labour–management partnership that covers nearly 50,000 unionized workers in Las Vegas, the fastest growing service and tourism centre in the United States. Recognizing the rapid expansion of the industry, rising consumer expectations for quality and an increasing demand for trained workers, the Las Vegas Culinary Workers Local 226 of the Hotel Employees and Restaurant Employees (HERE) negotiated the creation of a jointly trusted training fund and centre in its 1989 contract. The partnership's own facility, the CUTC, provides pre-employment training for hourly workers entering the hotel industry as well as upgrade training for current union members. The CUTC is the main route by which employers find "work ready" employees. It also is the vehicle through which entry level workers and immigrants begin to acquire skills needed to move up in the fast-paced hospitality industries and acquire a practical appreciation of union-provided benefits, including training. The Center is recognized for accepting every person referred to it, regardless of learning or social disabilities. Two-thirds of Center graduates obtain jobs with HERE-represented employers and their turnover rate is half that of other new hires. CUTC plays a critical role in the ability of HERE and its signatory hotels to grow in stride with the breakneck expansion of the Las Vegas hospitality industry.

Source: http://workingforamerica.org/.

162. There is a strong correlation between *labour productivity and wages,* but changes in wages may not always be commensurate with changes in labour productivity. Wages are determined by a variety of factors, including national laws and regulations (e.g. minimum wages), recognized machinery for wage determination, collective agreements between employers and workers, or some combination of these factors. Higher wages can be achieved through the increased demand for labour, either by increased product demand or labour productivity, or by restrictions on the supply of labour. Increasingly, employers are concerned with addressing productivity gains from the perspective of efficiency as well as equity and to utilize collective bargaining processes to effect workplace changes to promote competitiveness. "Hence the view of employers that [collective bargaining] should address not only how the gains of improved performance should be shared, but also how to increase the productivity 'cake' …, this is the only way in which regular pay increases can be absorbed without eroding profitability and jeopardizing competitiveness" (de Silva, 1996, p. 8).

163. At the enterprise level, higher skills, better managed human resources and higher productivity and innovation raise revenues and profits. On the basis of this, firms can pay higher returns to capital, provide lower priced and better quality goods and services to customers, and still offer good wages and decent work that are sustainable. The balance among these uses for the increased earnings stemming from improved productivity and competitiveness can be maintained through the institution of collective bargaining.

164. However, as the ILO Director-General Juan Somavia put it in his statement to the International Monetary Fund (IMF) in October 2007, "… in many countries real labour income growth for most workers has lagged behind productivity leading to an erosion of the share of labour in the economy despite a sharp rise in the earnings of the very highest paid. This troubling trend was highlighted in the last two *World Economic Outlooks* of the IMF. Globalization, with all its benefits, has been accompanied by growing inequality in the majority of countries, making it even more difficult to cut into poverty and exacerbating tensions resulting from inadequate opportunities for decent work". [3]

3.1.3. Workplace safety and health also improves productivity

165. The ILO has estimated that, globally, about 2.2 million people die every year from occupational accidents and diseases, while some 270 million suffer serious non-fatal injuries and another 160 million fall ill, for shorter or longer periods, from work-related causes (ILO, 2005b). This entails an enormous toll of suffering for workers and their families. Furthermore, the ILO has estimated that the total cost of such accidents and ill health amounts to approximately 4 per cent of the world's GDP – a colossal figure that is over 20 times greater than official development assistance (ILO, 2006e).

166. *Apart from the paramount priority of meeting the rights of workers in terms of occupational safety and health (OSH), training for improved OSH is an important form of workplace learning that has demonstrated strong social and productivity benefits for enterprises.* The right to information and training is a core principle in the Occupational Safety and Health Convention, 1981 (No. 155).

167. To demonstrate the productivity benefits of OSH at the enterprise level, the United Kingdom's Health and Safety Executive (the national tripartite OSH institution) has prepared case studies showing how over 20 major enterprises have benefited from

[3] See http://www.ilo.org/public/english/bureau/dgo/speeches/index.htm for the full statement, made to the IMF on 20–21 Oct. 2007 in Washington, DC.

improvements to their management of health and safety, ensuring that workers were fully involved and consulted at all stages of the process. The overall results of the case studies are summarized in box 3.4.

Box 3.4
The business of health and safety: Summary of benefits of OSH programmes in United Kingdom enterprises

By taking positive steps to prevent accidents and ill health, several business benefits were gained over periods of one or more years, including:

- Absenteeism rates were very greatly reduced.
- Productivity was clearly improved.
- Very significant sums of money were saved through better plant maintenance.
- Compensation claims and insurance costs were considerably reduced.
- Client and supplier relationships were improved and company image and reputation were enhanced.
- Employees' morale, motivation and concentration at work increased.
- Employee retention was improved.

Source: Health and Safety Commission, United Kingdom, 2004.

168. The ILO supports the implementation by its tripartite constituents of a number of programmes that build on the link between training for improved OSH and productivity. For example, the Work Improvements in Small Enterprises (WISE) training programme (box 3.5) and the ProMes programme in Latin America (box 3.6) have successfully encouraged enterprises to implement management tools for applying decent work practices in the workplace that improve health and safety and productivity simultaneously.

Box 3.5
Thailand: Better work methods improve safety, health and productivity jointly

Medium-sized metal-processing enterprises in Thailand have improved safety, health and productivity by applying simple low-cost solutions. The National Institute for the Improvement of Working Conditions and Environment has been providing assistance to these enterprises through the introduction of the ILO's WISE programme.

Through the programmes, workers and managers jointly discuss their workplace problems and identify and implement practical improvement measures. The Institute has evaluated the impact of the programme and found that "enterprises participating in the project were able to improve their working conditions and the work environment, and especially were able to reduce the number of occupational accidents".

Source: *Asian-Pacific Newsletter on Occupational Health and Safety*, Vol. 12, # 3, Nov. 2005, available at: http://www.ttl.fi/Internet/English/Information/Electronic+journals/Asian-Pacific+Newsletter/.

Box 3.6
Productivity Measurement and Enhancement System (ProMes)

The Productivity Measurement and Enhancement System (ProMes) (known as SIMAPRO in Spanish) is an enterprise-based participative measurement and feedback system, introduced in several Latin American countries with the support of the ILO. Its central tenet is to connect organizational objectives to learning, through communication and knowledge sharing, social dialogue and the commitment of workers and management to continuous improvement.

For example, in 1995 a sugar mill firm in Mexico started a ProMes pilot experience on changing work culture for improved labour productivity and working conditions in a department with 35 persons. Four years later, it was fully implemented in all departments, delivering an average of 19 feedback and training sessions per year per group, developing and applying more than 100 improvement proposals from workers per year. One of the key results was the reduction of health injuries resulting in savings of US$60,000 in insurance costs, resources that were re-allocated to provide incentives for workers to develop further accident prevention measures. Since that time, an additional 15 enterprises in the sugar industry employing 8,000 workers have adopted ProMes. The programme has been extended to the sugar industry in Cuba and to other sectors, such as textiles in the Dominican Republic and fruit export in Chile. ProMes is a *holistic* system, proposing improvements not only for productive processes, but also for safety and health management at work. The indicators in question are regulated under a single standard, and that is efficiency. The system is *flexible* – adaptable to any organization. It is *permanent,* because involvement and continuous improvement never end, but at the same time is organized in cycles in such a way that innovations can be introduced where and when they are necessary. It is *inclusive* because all personnel take part in it, from shop floor workers up to the general manager. It is based on the idea that details are an essential part of a productivity improvement system, and each person in the organization could make improvements in work.

Source: ProMes was developed by Professor R. Pritchard and was adapted and supplemented with other learning components (self-learning guides on productivity and working conditions improvement) by practitioners of the model in the Latin American region. See also *La Guia SIMAPRO,* ILO/Cinterfor, 2007.

3.2. Enterprise value chains and clusters: Improving productivity and employment outcomes through skills development

169. New forms of productive organization based on inter-firm alliances have significant implications for skills development and workplace learning. [4] They represent innovative attempts to combine technology, skills and knowledge to develop higher value added products (Lazonick, 1990; Dyer and Singh, 1998; Kale et al., 2000).

170. The need for firms to access new technology and acquire the specialized skills needed to operate that technology drives many arrangements. New technology is important for product and process innovation, both of which improve value added. New

[4] Inter-firm arrangements are defined broadly here as joint business activities between two or more firms. These arrangements may be formally structured through contracts and agreements or they may be more informally organized through the joint work of employees from different firms. These arrangements may exist between competing and non-competing firms and they may cover a single activity (e.g. product development) or several business activities (e.g. product development, production and marketing). Inter-firm arrangements thus exist where two or more firms jointly undertake business activities and individual firms may have a variety of such arrangements with other firms for different business activities.

technology may be incorporated into new products or it may be used to add new features to existing products.

171. The new models of productive organization based on specialization in value adding processes within firms and greater interdependencies between firms take several forms. They may take the form of synchronized production systems within *integrated value chains.* Here there is usually a lead firm that sets the pace for other firms and that drives the integration of all the producers into a coherent production system. Alternatively, they may take the form of *local or regional clusters of firms* [5] that regularly work together or that join together for temporary projects. These firms may share complementary sets of competencies in the cluster or they may share specialized local resources such as universities and research institutes or specialized labour markets. In whatever form they arise, the new models of productive organization have some significant implications for the ways in which workplace skill development occurs.

3.2.1. Workplace training and skills development in value chains

172. Participation in and the growth of value chains require new skills and knowledge. New skills are needed to manage production, innovation and improvement across the network of supplier firms, including skills to participate in virtual and inter-organizational teams across networks of supplier enterprises. One study reported that "Logistics personnel in integrated value chain enterprises need enhanced skills to manage customer service and communications with trading partners, use information technologies, work in cross-function teams and plan logistics. These new skills are a blend of behavioural and communicative skills and specific technical skills and knowledge" (Murphy and Poist, 1998, pp. 284–301). ILO work with constituents shows that training and support is needed in the areas of compliance with labour standards and national labour law, conflict resolution and representation and that training in these core competencies corresponds well with worker training in technical areas (box 3.7).

Box 3.7
Cambodian garment manufacturers in the global value chain

Improving labour standards in global value chains is an important part of any pro-poor development strategy. Ensuring that workers' rights and entitlements are protected helps distribute the benefits of trade. The *Better Factories Cambodia* programme supports apparel factories in complying with national labour laws and international labour standards ratified by Cambodia and in upgrading management and core work skills. This helps factories compete in global markets where many buyers demand compliance with labour standards from their suppliers. Improved labour standards also help enterprises to be more competitive through higher productivity and quality. These benefits help build the business case and supplier support for improved labour standards.

Garment workers are predominantly young uneducated women. A World Bank survey found that good working conditions in Cambodian factories were a major factor in buyers sourcing from that country. Many predicted that the end of the quota system in 2005 would result in a dramatic reduction in employment in Cambodia. On the contrary, data compiled in 2006 show that:

[5] The definition of an industry cluster is "geographical concentrations of industries that gain performance advantages through co-location" (Doeringer and Terkla, 1995, p. 25). Michael Porter popularized the concept of industry clusters in his book, *The competitive advantage of nations* (1990).

- Employment levels in the garment sector have increased by 28 per cent.
- Both volume and value of imports to the United States have increased in seasonally adjusted terms.
- Buyers strongly engaged with *Better Factories Cambodia* increased their purchase volumes at twice the industry average in 2005.

Better Factories Cambodia has achieved this by implementing a three-pronged strategy. Firstly, it monitors and reports on working conditions in Cambodian garment factories according to national law and core international labour standards. Secondly, it helps factories to improve working conditions and productivity through workplace cooperation on remediation and training. Thirdly, it facilitates dialogue between the social partners and international buyers to ensure a rigorous, transparent and continuous cycle of improvement and to establish cross-border cooperation.

The ILO, with other international partners, is responding to the enormous interest in the possibilities of applying the tools and lessons learnt from this project implemented with employers, trade unions and the Government to other countries.

Source: ILO, 2005c.

173. Within some value chains, the lead firm may act more as a coordinator or integrator of collaborative product development than as a product developer. New sets of skills are required, from technical (hard) skills to people management (soft) skills. The greater interdependency among supplier firms is based on human capital development and so creates a need for new skills by themselves. Skills in relationship management, inter-organizational teamwork and joint problem solving may all be required. Business management skills are vitally important for bringing together the skills of workers to achieve enterprise efficiency.

174. An ILO Symposium on Labour and Social Aspects of Global Production Systems (October 2007) [6] acknowledged that under some conditions organizing work in such value chains is "a door through which developing countries can access modern technologies, acquire new technical and organizational skills and obtain higher productivity leading to better incomes".

175. The development of new knowledge and skill along supply chains can occur in a number of ways:

- *Skill development through lead firm arrangements*. In some cases the pace and extent of skill development in firms down the supply chain is set by the lead firm in the chain. The lead firm establishes policies and procedures for suppliers to follow and directly engages suppliers in their implementation through the exchange of personnel between firms and through the development of network activities. Supplier clubs and associations may be created and a key focus of these organizations is the implementation of production practices, work practices and management systems that are established by the lead firm (Lincoln et al., 1998).

  Not only are the requirements for skill development often driven by the needs of the lead firm, but these firms are often large firms with the resources to supply training internally. Small and medium-sized firms down the supply chain often lack these resources and so the lead firm becomes central to skill development in the whole supply chain. The lead firm sets the standards for skill development, develops the curriculum and training materials, and in some cases provides the facilities and personnel to actually deliver the training. Such arrangements have the potential to provide a higher quality of workplace training as knowledge acquisition and skill development are more closely linked to the requirements of

[6] For more information, see www.ilo.org/public/english/dialogue/actemp/.

the production system. Box 3.8 provides an illustration of such "collaborative education".

Box 3.8
John Deere: Collaborative education and training for suppliers

John Deere, an agricultural and construction equipment manufacturer, provides collaborative education and training for its suppliers. Its global learning and development unit is responsible for supplier education. The education programme ranges across many areas such as quality control, management systems, cost analysis and technical skills. In running this programme, John Deere also partners with public sector institutions such as technical colleges to develop and deliver programmes. This cost-effective approach to upgrading supplier skills results in stronger and more profitable suppliers.

Source: Stegnar et al., 2002.

Lead firms are also often involved in monitoring or auditing the conditions of employment within their value chains. Recent studies of Mexican factories show that skills are transferable through the "social capital" that is built between the buyer and supplier as a result of repeat visits. This has led to improvements in work organization, productivity and ultimately also in working conditions (Locke et al., 2006).

- *Skill development through network agents.* In some cases lead firms in a supply chain take a direct role in supplier development, while in other cases they delegate this role to third-party network agents. Consultants, advisers, industry associations and providers of new technology may all be used to help synchronize production activities and provide the human capital development needed to do this. Joint training may be organized by the network agents or similar training may be supplied to firms in the network by these agents. Here the level of integration achieved may not be comparable to that in lead firm arrangements, but the need for skill development and training still exists and is met through common supply to firms in the network. New skills and knowledge are developed through the use of common agents, rather than through the close integration of firms. Some companies use this type of development to align goals and business objectives amongst member firms of a supply chain (Maylett and Vitasek, 2007).
- *Learning by doing.* Development of knowledge and skills by supplier firms occurs where buyer firms set clear performance requirements but leave the supplier firms to find their own ways of responding to those requirements. Here training and skill development takes on more the form of stand-alone firm development, except that the performance outcomes of the firm are not decided by the firm itself. The use of supplier rating schemes and supplier audits by buyer firms may force suppliers to review and upgrade their production practices, work practices, management systems, technology and their investments in human capital, but this upgrading is decided internally by the supplier firm with no direct assistance or intervention from the buyer firm (Beaumont et al., 1996).

3.2.2. Workplace skills development in clusters

176. The growth of local and regional production clusters is another growing form of inter-firm arrangement that has implications for enterprise-level training. The interdependencies between firms in clusters and regions are based less on the kind of synchronized integration of production that is seen in value chains and more on the need for firms with specialized sets of competencies to work together. Workforce skills are a fundamental condition for the emergence of clusters. Knowledge sharing and problem solving, in particular, are aided by the development of close working relationships in the cluster. Specialized competencies are developed both within firms and between firms, and it is the specialized competence of the cluster as a whole that defines the ability of firms within the cluster to compete (Wilk and Fensterseifer, 2003).

177. As was the case with firms linked through integrated value chains, innovations and improvements in products and business processes are driven by the acquisition of new knowledge, and clusters provide new possibilities for knowledge search, knowledge acquisition and knowledge use.

178. Within clusters, firms may undertake joint action to share experiences and learn from each other or they may develop business relationships specifically to leverage new knowledge (Keeble et al., 1999). Firms may also undertake joint action in specific business activities where the specialized knowledge of one firm in the cluster is essential for success (Belussi, 1996; Crouch et al., 2001). A producer firm, for example, may undertake joint marketing and distribution with another firm because it lacks specialized knowledge of niche markets or of global distribution, sales and service.

179. Clusters and regions also provide access to specialized business services, enabling firms within the cluster or region to focus upon investments in specific core competencies. This access to "local competition goods" is essential for firms to be able to access global markets (Blair and Gereffi, 2001). Specialized local resources can play an important role in the development of clusters and regions. Not only do institutions such as universities, technical institutes and research laboratories provide access to advanced technical knowledge, they also act as incubators for new firms seeking to develop new products based upon that knowledge. Institutions such as universities may also act as a source of highly skilled employees in new and emerging technologies and this skill may not be generally available from the labour market (Hendry et al., 1999). For example, in Brazil a garment cluster has been the target of sector-focused technical and entrepreneurial skills enhancement efforts (see box 3.9).

Box 3.9
Clothing cluster upgrading in Brazil

The clothing cluster in the state of Pernambuco, north-east Brazil, employs 80,000 people. Most establishments are small, informal businesses that produce low-quality products and pollute the local water supply. Many of these businesses are managed by "housewives" and set up in their homes. The active efforts of a local cluster association, SINDIVEST *(Sindicato das Indústrias do Vestuário, Tecelagem e Fiação de MS)*, in partnership with organizations in Germany, have helped to reduce environmental problems, initiate policy change, formalize the sector and raise quality. Few seamstresses had any formal training, resulting in low-quality work and little innovation in design. SINDIVEST, with its partners, organized study visits to training colleges in Germany, short missions to Brazil for textiles engineering staff of a German college to train trainers for courses offered by the *Serviço Nacional de Aprendizagem Industrial* (SENAI) and the University of Recife, training courses for textiles engineering and other issues, visits to international trade fairs to learn about quality, and three new training schools for technicians set up by SENAI. By 2002, about 1,000 workers had been trained in a variety of areas, including garment production, general management, human resources, logistics, fashion and design. Many courses are now offered, from one-day seminars to more in-depth programmes lasting 18 months. A fashion committee has been established in Pernambuco to provide leadership on design issues and efforts are being made to develop a local brand.

Source: Wahl and Meier, 2005.

180. Specialized service centres providing particular business services may also be important local resources. New business incubators, groupings of specialized consulting firms, technology and business parks, and industry centres may all supply specialized business services to new and growing firms (Leiponen, 2005). [7]

181. A study of five clusters in India, Brazil and several African countries (Sakamoto and Marchese, 2005) suggested that workforce skills are a necessary precondition for the emergence of clusters. Furthermore, the examples showed that the skills base was usually present within a locality long before the cluster effectively blossomed. The study highlighted the role of the State in skills upgrading for cluster development in providing basic skills and demand-driven vocational training, in addition to creating an enabling business environment to attract and retain firms. Governments' proactive role in establishing linkages with multinational companies for cluster development and in supporting cooperation among firms within the cluster was also found to be important, particularly in stimulating the adoption of technologies and programmes to upgrade skills within the clusters.

3.3. Training in high-performance workplaces

182. The factors contributing to high-performance workplaces (HPWs), and in particular the role of training, have attracted considerable attention in recent years. [8] This attention is primarily driven by a recognition that creating an enabling policy and regulatory environment is essential, but not sufficient to ensure high productivity and competitiveness. *Organizational issues at the workplace are also critical*.

[7] Since 2003, the ILO has been collaborating with the United Nations Industrial Development Organization (UNIDO) in running a cluster development course at the International Training Centre of the ILO that has targeted change agents in local institutions and taught them ways to improve value addition and competitiveness.

[8] There is no single agreed-upon definition or consensus on these work methods (Gephardt and Van Buren, 1996), although common themes have been identified that focus on enhancing the skill base of employees and employee involvement (Wright and Snell, 1998).

183. The term "high-performance workplace" is both a descriptor of the desired outcomes of innovative work organization and shorthand for a set of human resource practices, summarized below under three headings: how work is organized, how employees share the benefits of improved productivity and how they participate in decisions on how to improve productivity. The HPW concept is about managing in a way that enables and encourages people to maximize their potential – in their own interests and in the interests of business performance (Ashton and Sung, 2002).

184. HPW practices are recognized as being good for employers, as they contribute to achieving good, successful businesses with high turnover and solid profit margins. They can also benefit employees, thanks to a high degree of investment in skills development and training, combined with open communication channels between managers and workers, flexible working policies and the involvement of employees. Furthermore, there is expectation that a HPW culture can contribute to economic success in increasingly competitive global markets.

185. Training is an essential prerequisite for, and one of the integral parts of HPWs. As shown throughout this chapter, human resources affect productivity and competitiveness and are a key part of innovation. Most of the studies suggest a positive effect of training on productivity, wage levels and wage growth, as basic human capital models would predict. There is less evidence of the effect of training on worker well-being but, in so far as this can be captured by job security and higher wages, it would seem that there are real benefits for workers. [9] One recent meta-analysis of HPW identified training and skills as among the most important aspects of such systems (Combs et al., 2006).

186. *Work organization* refers to the division of labour, within the firm and between firms, and how work is organized in terms of product and service delivery. In HPWs, workers exercise relatively broader discretionary decision-making responsibilities, rather than suspending their individual judgement while implementing managerial or operational commands. Typically management rotates workers across a broad range of tasks rather than narrowly constraining the range of tasks done by individual workers. Operators have more responsibility for quality assurance from their workstation rather than passing on that responsibility to others. These workplace features – worker discretion, responsibility for quality control and cross-functional flexibility – each have implications for the breadth of technical training and development of core work skills required to implement an HPW strategy (Hunter and Hitt, 2001; Doeringer et al., 2002).

187. *Gain sharing.* If skills training and work organization are two essential elements of HPWs, then this raises two important corollary questions. First, how are workers, once trained to higher levels and deployed in more elaborate work systems, to be rewarded? Are there gender differences in work-related rewards? In other words, is there a tendency for women workers to be treated differently from men in terms of gain sharing? Second, if performance and productivity are higher, how are the gains from this to be shared with workers? Gain sharing is an essential part of HPWs. "Workers need to be able to participate in the success of enterprises and to gain a fair share in the benefits of economic activities and increased productivity. This helps to contribute to a more equitable distribution of income and wealth. Important vehicles for achieving this are through collective bargaining and social dialogue" (ILO, 2007e, para. 13(4)).

[9] Research findings on the impact of HPW can be found in Brown, 1990; Barrett and O'Connell, 2001; Lynch and Black, 1998; Hill, 1995; Greenberg et al., 2003; Krueger and Rouse, 1998; and Osterman, 1995.

188. *Employee participation and social dialogue.* This relates both to direct forms of participation via employee participation arrangements of various kinds and indirect or representative forms of voice in decision-making within enterprises and the workplace by means of joint consultation via works councils and collective bargaining via trade unions. One European study found that new pay systems have proven more viable when they have been introduced with high employee involvement, with workers' organizations participating in their administration and with extensive training (Dell'Aringa et al., 2003).

189. The elements of the HPW – training and skills, work organization, gain sharing and worker participation and dialogue – are complementary. They need to be applied in combination or "bundled" in order to produce significant productivity and other beneficial outcomes (Doeringer et al., 2002). Box 3.10 provides an illustration of an ILO programme that takes a bundled approach to promoting decent and productive workplace practices.

Box 3.10
Factory Improvement Programme

The ILO's Factory Improvement Programme, operating in Viet Nam, Sri Lanka and India, assists participating enterprises in implementing productive workplace practices based on good labour–management relations and respect for workers' rights as effective means of increasing the enterprises' capacity and competitiveness. The programme is based around the delivery of seven programme modules: workplace cooperation; quality; productivity; cleaner production and continuous improvement; human resource management; health and safety; and workplace relations.

An independent evaluation in 12 enterprises in Viet Nam reported that:

- Each factory had established factory improvement teams. These generally comprised an equal mix of managers and workers and all were still in operation some 14 months after the programme had ended.
- There had been a reduction in end-line production defects of 67 per cent on average. In some workshops, reductions of over 90 per cent had been achieved.
- Awareness had been raised across all levels of the factories of quality and productivity issues (as demonstrated by the widespread continuing use of tools and techniques introduced under the programme).
- Reports had been provided by the factories themselves, indicating productivity improvements.
- Alterations had been made to working areas to ensure efficiency gains in production, enhanced worker safety and an improved working environment overall.
- There was heightened awareness of occupational health and safety issues in the participating factories and subsequent action had been taken to reduce hazards, such as the provision of safety equipment, the establishment of accident response procedures and the reconfiguration of work areas.

Source: ILO, 2006f.

3.4. Improving skills and productivity in small enterprises

190. The objectives of improved productivity, employment growth and development in small enterprises require special attention. Such enterprises constitute the majority of enterprises in both developed and developing countries [10] and they present special development challenges as far as improving skills, productivity and competitiveness is concerned. The main issues include:

- *Productivity, incomes and working conditions tend to deteriorate as the size of the enterprise decreases* (Vandenberg, 2004). Training and skills development are important factors in improving the conditions of employment for the vast majority of workers. Furthermore, for enterprises in the informal economy, training and increased productivity are important strategies for making the transition to the formal economy.
- *Small enterprises have specific skill development needs.* Small enterprise owners often need training in a number of entrepreneurial skills. They also need workers who are multiskilled. For example, a small retailer serving a local market cannot afford a marketing specialist but may need workers trained in many aspects of work, such as answering the telephone, keeping records, replacing sold stock and displaying products, with particular knowledge of the shop's products. Small enterprise owners and managers therefore need skills that can be of immediate use and are relevant to their particular scale of operations.
- *Small enterprises face many constraints in training entrepreneurs and workers.* They are disadvantaged in the labour market in recruiting skilled workers, thus increasing the need for in-house training. However, smaller enterprises are much less likely than larger enterprises to engage in formal training (Ashton et al., 2008; Spilsbury, 2003; World Bank, 1997*)*. Smaller enterprises often cannot meet the costs of training, particularly if workers who are trained move quickly to other employers; they lose time and may face disruption in enterprise operations if entrepreneurs and workers attend training courses. Courses that they may need might not exist; those that are available on relevant topics may be poorly adapted to their particular needs. In a survey of ten clusters in northern India carried out in 2000–01, workers in small enterprises indicated that their lack of knowledge about training opportunities, rather than the cost of training, had prevented them from upgrading their skills (Joshi, 2005).
- *Women-headed small enterprises face different constraints to those owned and managed by men.* Generally speaking, women-headed enterprises tend to start smaller, face discrimination in finance and product markets, and grow more slowly. Under-capitalized business prevents expansion and threatens business viability. The absence of collateral to secure credit is a common problem (Murray and Boros, 2002). Women tend to be more averse to risk, use family members rather than hired labour and base their business in the home in an effort to balance business with household and caring duties. The gender-based

[10] Data on 20 OECD countries, for example, shows that the share of enterprises employing fewer than ten persons ranges from 57 per cent for the United States up to 95 per cent for Turkey. For 19 of the 20 countries, over 90 per cent of enterprises employ less than 50 (OECD, 2002). In developing countries the proportion of micro- and small enterprises is even higher, with large numbers being in the unregulated informal sector. In Colombia in 2005 micro-, small and medium-sized enterprises together accounted for 99.9 per cent of all enterprises (Pineda, 2007).

differences between men and women in small enterprises must be acknowledged so that skills providers can take these differences into consideration in terms of entrepreneurship training. [11]

- *Small enterprises and their workers tend to be under-represented in employers' and workers' organizations, particularly in developing countries.* This means that their views and needs are not always adequately reflected in skills development tripartite advocacy and advisory mechanisms (for example, in tripartite productivity councils, national skills development and accreditation authorities, etc.).

3.4.1. How training and skills development is provided in small enterprises

191. Although less engaged in formal training, small enterprises do take steps to develop workforce skills. Much of their effort goes unnoticed because it takes place informally, at the workplace (see box 3.11 for examples of informal training).

Box 3.11
Examples of informal training and learning in small enterprises

- Working alongside a skilled worker, observing his or her work and gradually taking over the job; the skilled worker provides advice and guidance.
- Working through learning packages and experimenting through trial and error until the new skills are mastered.
- A skilled worker instructs and passes on, or cascades, the skills to colleagues. For example, this method can be used when new equipment is introduced and the equipment installer trains one employee, who then trains her or his colleagues. This can be an important way of achieving improvements in product quality.
- Rotating workers between jobs to ensure that they are multiskilled and can step in and take over a colleague's job if she or he is absent.
- Designating one employee, e.g. an informal mentor, to whom others can go for advice.
- Using informal seminars where skilled workers, suppliers or outside specialists provide advice, information or instruction to groups of employees in the workplace.

Source: Ashton et al., 2008.

192. There are widespread inadequacies in the provision of formal training to small enterprises. Attempts to make training provision more accessible to smaller enterprises include decentralizing training – moving it closer to enterprises, offering courses outside working hours – while also taking into account household responsibilities, and encouraging cost sharing. Efforts to ensure that the training is relevant to the needs of workers and employers in the small enterprise sector include surveying skill shortages and entrepreneurial opportunities, providing sector or cluster-specific training and including entrepreneurial and trade union organizations on the management boards of training institutions.

193. Informal enterprise-level training can be cost effective, as it ensures that workers learn exactly what is relevant to their particular work and it can provide workers excluded from formal training opportunities with a chance to acquire new skills. They

[11] Many guides have been developed by the ILO and others on how to conduct feasibility studies for women's entrepreneurship and to develop strategies to match the skills supply with market demand. See, for example, Finnegan and Haspels, "GET ahead for women in enterprise training package and resource kit" (Bauer et al., 2006) or "A guide for training women economic groups" (ILO, 2003a).

may also gain an insight into broader business functions and acquire entrepreneurial skills and knowledge useful for establishing their own enterprises. However, such skills acquisition depends on the (possibly weak) knowledge and practices of the existing workforce and their ability to transmit what they know effectively.

3.4.2. Other crucial factors affecting productivity in small enterprises

194. As highlighted throughout this chapter, training alone is insufficient to ensure productivity gains. In order to have an impact on the productivity of small enterprises, skills development initiatives invariably need to be integrated with other crucial measures that influence productivity and competitiveness. These include, for example:

- *The provision of an enabling business policy, regulatory and social environment.* As indicated in the conclusions concerning the promotion of sustainable enterprises (ILO, 2007e, para. 10), "[a]n environment conducive to the creation and growth or transformation of enterprises on a sustainable basis combines the legitimate quest for profit – one of the key drivers of economic growth – with the need for development that respects human dignity, environmental sustainability and decent work". The conclusions also stressed the need to place particular emphasis on supporting the transition of informal economy operators to the formal economy and ensuring that laws and regulations cover all enterprises and workers.
- *Access to financial services.* Small enterprises have particular difficulty gaining access to finance from formal institutions because of banks' avoidance of risk, high transaction costs, complicated procedures and a lack of suitable collateral. These general constraints on raising investment and operating capital restrict investment in training and other investments that could improve productivity or lead to the uptake of new technologies or advances into new markets. These general constraints can be particularly severe for women entrepreneurs. Small enterprises are more attractive to lenders if the owners or managers undergo training in various basic entrepreneurial skills. Peru's *Financiera Solución,* a large financial institution, offered management training to small enterprise clients to reward their loyalty and also to strengthen their management capabilities and therefore loan repayment rates. In three years, more than 1,800 of the institution's entrepreneur-clients received Improve Your Business training, thereby strengthening the viability and competitiveness of their enterprises (Sievers and Vandenberg, 2004).
- *Access to business development services (BDS)*. International experience has validated policies to favour the development of markets in which small enterprises can access training and related services. Locally available and affordable BDS can help small enterprises train their workers, improve entrepreneurship and business management skills, and raise productivity. Quality testing and accreditation services that allow enterprises to demonstrate that their products or manufacturing processes meet certain standards, for example in terms of durability, hygiene or adherence to core labour standards, can help them gain access to formal markets. The general principle is that services available to small enterprises are more relevant over longer periods of time and are more cost effective if the enterprises themselves pay for, or share the payment of, the service (Committee of Donor Agencies for Small Enterprise Development, 2000).

Public policies to encourage the market development of business services targeting smaller enterprises need to assess and respond to the constraints women face in starting and growing their businesses and in taking advantage of training and other services. Lessons from ILO programmes to support women's entrepreneurship, particularly in East Africa and South-East Asia, support a coherent approach that includes the following elements:

- developing a local knowledge base on women entrepreneurs;
- supporting voice and representation in local organizations and associations;
- helping business service providers at the community level develop support services that target women entrepreneurs;
- developing local and external partnerships to boost marketing and representation;
- providing women with disabilities with the space and opportunities to organize, thus enabling them to become successful entrepreneurs (ILO, 2006g).

- *Provision of social protection.* Social protection schemes (providing insurance to employers and workers alike against illness and unemployment and to entrepreneurs against flood or fire) are important enabling factors for business and work. Where such schemes do not yet exist, or are not accessible to smaller enterprises, practical strategies for workplace improvement suitable for small enterprises can be implemented based on participatory training methods. These schemes target improved occupational safety and health as well as enhanced productivity. [12]

- *Employers' and workers' organizations have important roles to play in promoting upgrading amongst small enterprises.* In developing countries, in particular, the small enterprise sector is inadequately represented, implying the need for determined efforts to extend representation to this sector and to build the capacity of existing and new representative organizations to help them carry out their work. Employers' and workers' organizations can engage, on behalf of their members, in promoting an appropriate legal and regulatory environment and sound macro and fiscal economic policies that do not discriminate against small enterprises. They can advocate adherence to core labour standards, the rule of law and respect for property rights. They can promote productivity-raising measures – including expanding availability of training and learning services – that target the small enterprise sector. Box 3.12 outlines examples of ILO support to constituents to increase representation and productivity in small enterprises.

[12] For examples and impact assessment of such schemes supported by the ILO, see ILO: *Labour and social trends in ASEAN 2007: Integration, challenges and opportunities*, ILO, 2007g; and T. Kawakami, S. Arphorn and Y. Ujita: *Work improvement for safe home; Action manual for improving safety, health and working conditions of home workers*, ILO, 2006.

Box 3.12
Organizing employers and workers in small enterprises

The ILO's programme on boosting employment through small enterprise development (SEED) helps entrepreneurs and their workers to increase their representation in employers' associations and trade unions, and assists them in building their own democratic and representative organizations. It helps them become recognized interlocutors with government authorities at various levels so as to increase their access to economic opportunities and to negotiate fair returns for their labour.

- An employers' toolkit was designed with the International Organisation of Employers (IOE) for use by managers and staff of employers' organizations (and other business associations) wishing to augment representation in their respective countries. The toolkit was part of a broader effort to strengthen the capacities and expand the activities of employers' organizations around the world, but notably in developing and transition countries. The toolkit contains guides, manuals and other aids that can help organizations analyse the policy environment for small enterprises, plan a recruitment strategy or offer training that improves productivity through better employee relations. Half of the tools are training materials that an employers' organization may consider offering to improve the performance of its smaller members.
- Research on the representational gap of workers in small enterprises has been undertaken by SEED and the ILO Bureau for Workers' Activities (ACTRAV) as part of the follow-up to the debate in the Committee on Employment and Social Policy of the Governing Body in November 2006 on business environment, labour law and micro- and small enterprises. The overall aim of the research is to document associative strategies of workers' organizations that have successfully reached out to small enterprises (formal and informal), their strengths and weaknesses, and how and under what legal and institutional framework, representational functions are more effectively performed. Fifteen country case studies and a synthesis report are being prepared for publication in 2008.
- The SYNDICOOP programme was launched in 2002 following discussions among representatives of the International Confederation of Free Trade Unions (ICFTU) and the International Co-operative Alliance (ICA), facilitated by ACTRAV and the ILO's Cooperative Branch (COOP). This programme supported organizing unprotected workers in the informal economy through cooperative–trade union collaboration in Rwanda, the United Republic of Tanzania and Uganda. Its overall objective was to reduce poverty among unprotected informal economy workers by improving their working and living conditions, and enhancing employment and incomes. Trade unions and cooperatives collaborated in joint working committees to organize informal workers. A handbook was developed jointly by the ILO, the ICFTU and the ICA explaining the SYNDICOOP approach to organizing workers in the informal economy and to working together in giving a voice to workers in the informal economy. Efforts are being made to expand the SYNDICOOP approach worldwide into a global programme between the ICFTU, the ICA and the ILO.

Source: ILO, 2006l; ILO, 2008d.

3.5. How governments and the social partners can support enterprise-level training and skills development

195. Governments have a crucial role to play in ensuring that the basic conditions for sustainable enterprise development are in place (see box 3.1 above), which includes policies and programmes that affect an enterprise's decision to train its workforce.

196. One of the key factors influencing an enterprise's decision to train is *the basic education level of its workforce*. This raises a major public policy issue. If workers enter the labour force with poor education, they will be less likely to get the training needed to increase their wages and could get caught in the vicious cycle of the "low-skill, bad job" trap (Snower, 1996). Thus governments have the important responsibility of ensuring that high-quality systems of education, training and a lifelong learning culture are in place. Furthermore, they play a role in targeting skills training for disadvantaged and unskilled workers – a subject further developed in Chapter 4 of this report.

197. Governments can also *provide financial incentives* to advance private sector and individual investment in training. The most common include levy grant schemes (compulsory or voluntary taxes on payroll or outcome); levy rebate schemes, in which employers are partially reimbursed for approved training; levy exemption schemes, where employers are exempt from levy payments if they spend a percentage (upper bounded) of their payroll; tax incentives for approved training; and also training credits, training awards and individual training accounts. The success of such schemes largely depends on transparent management (often tripartite), the availability of qualified training providers and effective monitoring and quality assurance mechanisms.

198. *Promoting the application of principles underpinning international labour standards and international management standards* is also an important means of encouraging enterprises to train. The reference to the Human Resources Development Recommendation, 2004 (No. 195), at the beginning of this chapter articulated the different, but shared responsibilities for training between government, employers and workers. The ILO Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy (MNE Declaration) (ILO, 2006d) and the Guidelines for multinational enterprises of the OECD provide guidance on training local workforces and other matters in respect of good corporate behaviour and citizenship (acquiring new knowledge from MNEs through foreign direct investment (FDI) is explored in Chapter 5 below).

199. National and local governments can also provide *leadership in bringing together the various local resources* such as universities, technical institutes, business development and financial service providers and organizations of workers and employers to provide the specialized business services and training that may be beyond the means of local enterprises, and to assist new and growing firms in clusters and value chains (box 3.13).

Box 3.13
Workforce innovation in regional economic development

The US Department of Labor (DOL) Employment and Training Administration (ETA) has undertaken an initiative called Workforce Innovation in Regional Economic Development (WIRED) to integrate economic and workforce development activities, demonstrating that talent development can drive economic transformation in regional economies across the United States.

The WIRED initiative applies the following six-step conceptual framework to the activities taking place in each of the regions where investments have been made:

(1) Define the regional economy by identifying the surrounding communities that share common characteristics, looking beyond traditional political boundaries.

(2) Create a leadership group that represents the major assets of a region and provides a forum for regional economic decision-making.

(3) Conduct a regional assessment to fully map the area's assets and identify the strengths, weaknesses, opportunities and risks based on those assets.

(4) Develop an economic vision based on those strengths and assets and gain support for that vision from the broad-based regional partnership.

(5) Build a strategy and corresponding implementation plan that identifies specific goals and tasks and provides a blueprint for how to achieve the region's economic vision.

(6) Identify resources – both to support the region's plan and invest in the region's economy – from a wide range of sources including foundations, angel and venture capital networks, and federal, state and local governments.

The initiative supports innovative approaches to education, economic development and workforce development that go beyond traditional strategies, preparing workers to compete and succeed both within the United States and around the world. It is expected that WIRED will demonstrate how talent development can drive economic transformation and enable regions to compete in the global economy.

Source: http://www.doleta.gov/wired/files/WIRED_Fact_Sheet.pdf.

200. Employers, workers and their organizations also have a vital role to play in promoting enterprise-level training, including:

- *Advocacy:* The social partners can document and disseminate examples of good practice and advocate the design of appropriate policies to encourage enterprise-level training for improved productivity and competitiveness.
- *Representation:* The social partners can reach out to workers and owners of enterprises, and in particular those of small enterprises and the informal economy, to increase the representation of their membership to ensure deeper and broader benefits of association, representation and leadership.
- *Services:* The social partners provide a variety of important services to their members that could potentially impact on the decision to provide enterprise-level training, including knowledge management, training, awareness raising, advice and guidance on how to access public and private services, links to research and consultancy resources and advice on innovative practices at the workplace (box 3.14).

Box 3.14
Improving workplace learning in Mauritius

In 2005 the ILO, jointly with the Mauritian Employers' Federation (MEF), initiated a programme to enhance workplace learning practices. The two main objectives of the programme were to: (i) strengthen the capacity of the MEF and its members to plan, design and implement innovative workplace learning programmes; and (ii) facilitate social dialogue on workplace learning between the Government and the social partners with a view to assisting in the effective implementation of the national skills strategy. As a first step, a survey of enterprises was conducted to benchmark the state of workplace learning in Mauritian enterprises. In recent years enterprises had faced an increasingly competitive environment – particularly in textiles, a mainstay of the Mauritian export market – and the Government had identified the most effective way of enhancing competitiveness as developing higher value added forms of production with specific focus on key sectors, including ICT, financial services and tourism. Almost two-thirds of enterprises surveyed viewed improved workplace learning as key to complying with new market demands and to adding value to their products and services, and almost three-quarters responded that they had witnessed significant changes in recent years in their skills requirements. A tripartite national workshop (2007) solicited the views of the social partners on ways to improve workplace learning, emphasizing the importance of information exchange in establishing learning networks that might promote best practice and improve overall competitiveness.

Source: ILO, 2006i.

201. Finally, in view of the important and complementary roles of governments and workers' and employers' organizations in the development and implementation of policies to promote sustainable enterprises, as noted in the general discussion on the promotion of sustainable enterprises (ILO, 2007e), tripartite productivity organizations, institutions and programmes at the national, local and industry sector levels are increasingly prevalent (box 3.15).

Box 3.15
New Zealand national workplace productivity programme

The Government of New Zealand follows a tripartite approach to increasing workplace productivity through partnership between the Government, the employers and the unions. It has identified seven key drivers of workplace productivity in the country, namely: building better leadership and management; investing in skills and knowledge; using technology and encouraging innovation to get ahead; organizing work; creating a productive workplace culture; networking and collaborating; and measuring what matters.

The programme reaches a large number of workplaces and provides practical support for employers and workers to raise performance in the workplace, the value of the work done and the rewards for both employers and workers.

The Government and the social partners are working with the ILO to document the approach and resources so that they can be adapted and replicated in neighbouring Pacific island countries.

Source: New Zealand Department of Labour, 2004.

Chapter 4

Target groups

> Members should … promote access to education, training and lifelong learning for people with nationally identified special needs, such as youth, low-skilled people, people with disabilities, migrants, older workers, indigenous people, ethnic minority groups and the socially excluded; and for workers in small and medium-sized enterprises, in the informal economy, in the rural sector and in self-employment (Human Resources Development Recommendation, 2004 (No. 195), Paragraph 5(h)).

202. This chapter examines ways to overcome barriers that keep some parts of society from participating in the benefits of economic growth. Their lack of access to education and training or the low quality or relevance of the training that is available traps them in the vicious circle of low skills and low productivity employment. While it is not possible to cover all groups in need of specific policy attention, this chapter focuses on enabling persons in rural communities, disadvantaged young people, persons with disabilities and migrant workers to more fully realize their potential for productive work and for contributing more substantially to economic and social development.

203. Gender often compounds and further exacerbates existing patterns of disadvantage or discrimination. Within potentially marginalized groups women are usually more vulnerable to social exclusion, as compared to their male counterparts. Despite significant progress achieved in many areas, gender stereotypes still significantly shape women's and men's opportunities, especially among groups facing other substantial disadvantages. Under various circumstances, efforts to mainstream gender in policies and programmes or efforts to implement women-targeted policies and programmes may be effective. Examples of both approaches are highlighted throughout the sections of this chapter.

4.1. Rural communities

204. The *World Development Report 2008* estimates that three out of every four poor persons in the world live in rural areas (World Bank, 2007). Some 2.1 billion people in rural areas live on less than US$2 per day. Most depend on agriculture for their livelihoods, but it is agriculture of such low productivity that their work does not lead them out of poverty. The *World Employment Report 2004–05* (ILO, 2005a) showed that poverty was reduced most in countries which increased both labour productivity in agriculture and overall employment.

205. In the poorest regions of the world, the majority of employed women work in agriculture: 60 per cent of employed women in South Asia, compared to 43 per cent of men; 68 per cent of employed women in sub-Saharan Africa, compared to 62 per cent of men (ILO, 2007o). High concentrations of women in low-productivity work results in high proportions of women living in poverty.

206. The complex relationships between growth, productivity and employment in agriculture, and between agriculture and other sectors, are explored in the report for the general discussion on the promotion of rural employment for poverty reduction (ILO, 2008a). That report identifies a set of factors required to raise agricultural and off-farm productivity, and thereby to increase incomes in rural areas. These requirements, which are similar to the set of interrelated factors for productivity in general identified in Chapter 1 of the present report, relate to infrastructure (especially roads, irrigation systems, flood control and storage facilities), clarity with regard to land and water rights (without which smallholders have little incentive or available collateral to invest in increasing the productivity of their land), good governance (especially tax regimes and efficient public services), institutions to provide timely information on prices and markets, access to microfinance and effective means of learning about new technologies, production techniques, products and markets.

207. It is this last factor of productivity that is the focus of this section: how to improve access to quality and relevant skills training throughout rural areas in order to raise productivity and incomes. Two main points are covered: (1) rural areas' needs for better quality learning and training linked to opportunities for better livelihoods and employment; and (2) options to make training more widely available so that people in rural areas are better able to take advantage of these opportunities.

4.1.1. Linking skills to rural productivity and employment growth

208. *It is impossible to overstate the importance of extending basic education to boys and girls so that they are able later to learn the skills necessary for working productively in agriculture or to prepare themselves for alternative employment opportunities.* [1] A parallel imperative is to provide literacy and numeracy training along with skills training for young people and adults, especially women, who did not have the opportunity to learn at a younger age.

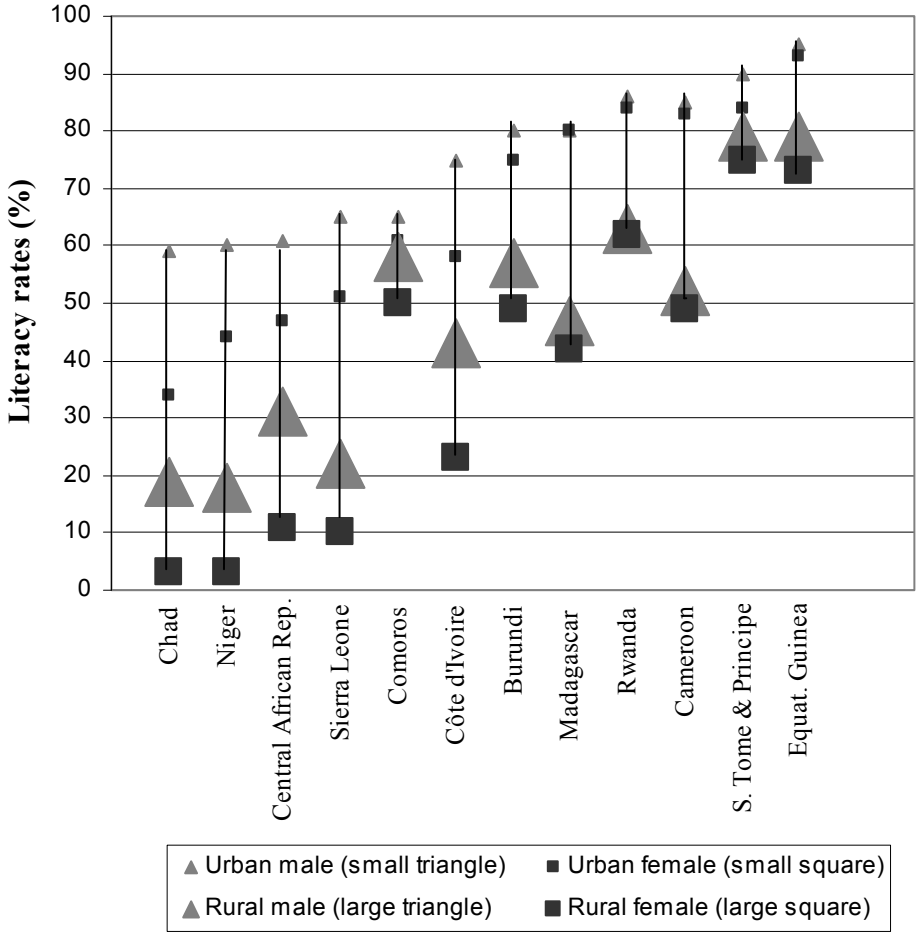
209. Lack of basic education also impacts on wider social objectives for stable and democratic societies, gender equality and overall poverty reduction. As reported in Chapter 2 of this report, UNESCO estimates the average literacy rate across least developed countries at about 50 per cent, and even lower for women (43 per cent). Hidden within these national averages is the huge divergence in literacy rates between urban and rural areas. According to UNESCO country studies, in the most extreme cases there is a 50 to 60 percentage point difference in literacy rates between urban men and rural women (figure 4.1).

210. The sobering statistics on literacy motivate countries and UN agencies to join together in the Education for All campaign, spearheaded by UNESCO, to enable countries to meet MDG 2: universal primary education by 2015. The 2006 MDGs report explained urban/rural disparities as being due to high rates of poverty in rural areas that "limit educational opportunities because of demands for children's labour, low levels of parental education and lack of access to good quality schooling" (United Nations, 2006c,

[1] See, for example, the impact of schooling on choice of non-farm jobs and income levels, household investments in schooling and the effect on those children's later access to non-farm jobs or urban employment in the Philippines and Thailand (Otsuka and Yamano, 2006); the impact on rural wages and non-farm employment from increased government spending on rural education in India (Shenggen et al., 1999); and the strong relationship between the acquisition of literacy and numeracy and productivity gains in agriculture (Godfrey, 2003, pp. 44–45).

p. 7). Progress in extending primary education raises demand for better access to quality secondary education and vocational training, as well as for higher level education. [2]

Figure 4.1. Urban/rural disparities in literacy: Selected countries



Source: UNESCO, 2004.

211. Beyond basic education and core skills, the question is "skills for what?" *Vocational training should equip young people and older adults with the skills they need to improve agricultural productivity or to meet off-farm labour demand.* Training provision should be coordinated with the priorities set for rural development, which affect the opportunities available to young people and adults. For example, skills development could be linked to policies aiming to diversify agricultural production or markets, expand services or manufacturing in rural areas, promote private sector development and entrepreneurship or improve small-scale agricultural productivity.

212. Although rural households may derive a large share of their livelihoods from agriculture, their income-generating activities, and opportunities, are quite diverse. Non-farm rural activities are an important source of rural income and an important means of managing the seasonal fluctuations which prevail within the agricultural sector. In Latin America, for example, a recent study found that off-farm work was relatively more important for women, accounting for 65 to 93 per cent of rural women's employment in

[2] For further details, see http://www.unesco.org/education/index.shtml.

nine out of 11 countries studied, while agriculture remained the major source of employment for men (Atchoarena and Gasperini, 2003). Technical training needs to be linked to opportunities and needs in both agriculture and non-agriculture, for both women and men.

213. *Increasing the productivity and sustainability of small-scale agricultural producers* can increase both incomes and employment. Improved production practices and new technologies, alternative crops that increase yields, labour-intensive speciality crops and other non-traditional activities can have positive income and employment effects for small landholdings. Substituting low-value with high-value products (whether for local or international markets) can generate on-farm employment and raise incomes (box 4.1). [3]

Box 4.1
Supporting agricultural productivity and employment through alternative products

In Liberia, research undertaken jointly by the Government, the ILO and the Food and Agriculture Organization (FAO) identified the technology and technical skills needed to revive production and jobs in agriculture, particularly in rubber plantations, crop production, horticulture and livestock. The objective was to identify crops and livestock which enhance employment opportunities for young people and give them an alternative to migrating to the informal urban economy. This objective is part of a broad strategy for realizing the potential of a restored agriculture sector to contribute to national employment objectives. Findings show that rice production and cultivation of seedlings for tree crops and vegetable production could generate a larger number of jobs per acre at higher probable incomes than traditional crops. The research highlighted the need for investments in many areas to facilitate a transition to alternative crops, including training in these products and production, processing and marketing, as well as investments in physical infrastructure.

Source: ILO, FAO and Liberia Ministry of Agriculture, 2007.

214. Innovations that increase the productivity of land or labour in agriculture require flexibility and adaptability on the part of rural economies, and thus alter training needs. Changes in trade regimes, competition or consumer preferences, as well as shifts in the surplus or scarcity of labour due to economic growth elsewhere in the economy, affect what products are produced where, and thus affect what skills are valued. The emerging threat to rural livelihoods from environmental degradation and climate changes creates a need for new technologies, alternative crops or growing processes – all of which, in turn, create new demands for skills development (box 4.2).

[3] For a discussion of food security issues as part of sustainable agricultural development, see Henry, 2008.

Box 4.2
Biofuels in Mozambique: A promise and a challenge

In mid-2007, Brazil and Mozambique signed a bilateral agreement to join forces in the production of biofuels. The initiative aims at tapping Mozambique's considerable potential for the production of biomass. Biofuels production is seen as a means of generating income and employment for the Mozambican population, and also of improving energy security and countering global climate change. The framework to help the country create internal and export markets for biofuels includes training of Mozambican engineers and technicians.

The goal is to replicate Brazil's sustainable biofuel production model in the African country. Biofuel production targets unutilized or underutilized land, often in areas having a high incidence of rural poverty. On the basis of Brazil's experience, the industry can generate jobs for low-income rural households. Ensuring the quality of these jobs, however, will require targeted skills development and other forms of support to rural communities. Raising the standards of new jobs will depend on improving industry efficiency and the productivity of rural workers, as well as broadening the skill base to respond to demand for accelerated rural activities.

Source: Biopact web site (http://www.biopact.com); Von Braun and Pachauri, 2006.

4.1.2. Delivering skills development in rural areas

215. Countries are employing a variety of means to extend relevant training services in rural areas. Expanding the outreach of national training institutions and upgrading apprenticeships were two methods of skills delivery that were examined in Chapter 2. The remainder of this section considers three additional channels of increasing skills provision in rural areas: extension services, community-based training and embedding skills development in rural infrastructure investments. Each of these approaches places great importance on decentralizing resources and responsibility and on improving inter-ministerial coordination, in particular among rural development, agriculture, education, public works and labour ministries.

216. *Agricultural and rural extension services* supply information, knowledge and training in how to use that knowledge, to farmers and rural businesses. Innovation in delivering agricultural extension services has led to an expanded choice of providers, refinement in appraising those who should be targeted and for what, and combinations of formal and non-formal approaches. [4] Interventions to improve agricultural productivity focus on the adoption of new technologies and accessing new markets: [5]

- Technology options, particularly linked to timely information (market).
- Value adding techniques in processing, packaging and marketing of agricultural products.
- Improved production practices using upgraded inputs and techniques.
- Introduction of new speciality products – non-food staples.
- Environmentally sustainable practices.

217. National and international approaches to rural extension services have changed considerably over the past two decades. Until the early 1990s, publicly financed extension networks were typically maintained to provide training and site visits to small farmers and farmers' groups, through rural-based government extension agents. The

[4] For additional information and examples, see Johanson and Adams, 2004.

[5] For an expanded discussion, see Rivera, 2001.

approach was top-down with little farmer involvement in deciding content and delivery, and also considered costly in relation to the quality and quantity of services provided. By the mid-1990s, international donors and many national governments were paring down their support for publicly financed rural extension, and instead promoting provision through private providers or public–private partnerships. There was a keen interest in finding better means of extending know-how to improve agricultural productivity. Since then, demand-driven partnership approaches have been tested with mixed results (box 4.3). While there is clear evidence of viable alternative services, problems largely persist in serving the rural poor, whose more marginal landholdings, subsistence crops and remote locations often prevent inclusion in more business-oriented approaches (Avila and Gasperini, 2005; World Bank, 2007).

Box 4.3
Measuring the cost and performance of paid agricultural extension services

Paid extension services, as opposed to free public services, differ considerably and each case needs to respond to local conditions. In general they are designed to meet the capacity of farmers to co-finance the costs of the service. Arrangements for paid extension can include direct contracts between governments or municipalities and private providers to provide extension for a limited period, adjustable payment based on farmer incomes or share of a crop's profits, tradable extension vouchers that are awarded to low-income producers by government, as well as various services negotiated through agricultural associations on behalf of members.

A study of paid agricultural extension services in Nicaragua has analysed the performance of extension services contracted directly between extensionists and their clients, with producers paying small fees directly to the technician for agreed services. Findings indicated that even poor farmers were willing to pay if the service was seen to increase their productivity.

In Ghana, recent agricultural growth has not been accompanied by comparable improvements in agricultural productivity. Improving technical skills was seen as a means to improving productivity and this has stimulated the development of decentralized private sector advisory services systems. These services combine technology development with communication and information services and links to markets. The initiative is spurring interest in opening up contracting to more institutions in order to further diversify delivery mechanisms.

Feedback from similar cases elsewhere, however, has highlighted risks related to private or fee-based public extension. First, without specific efforts, women and small-scale and marginal farmers are likely to be missed by such programmes. Monitoring of quality of service and accountability for cost-effectiveness is also called for, as is formal registration of providers. An environment creating and maintaining healthy competition between providers is needed. Finally, public and private extension must work in partnership, without one constraining the other.

Source: Alex and Rivera, 2004.

218. Extension systems have also become more participatory, in part prompted by initiatives based on cost recovery and contracting out of delivery, where funding is linked to the demand for services. A simplified typology of approaches being used is provided in table 4.1, although in reality many approaches coexist and complement each other.

Table 4.1. Agricultural extension reform strategies

		Funding	
		Public	**Private**
Market reforms			
Delivery	Public	Revision of public sector extension via downsizing and some cost recovery (Canada, Israel, United States)	Cost recovery (fee-based) systems (OECD countries; previously in Mexico)
	Private	Pluralism, partnerships, power-sharing (Chile, Estonia, Hungary, Bolivarian Republic of Venezuela, Republic of Korea)	Full privatization and commercialization (Netherlands, New Zealand, England and Wales)
Non-market reforms			
Political Fiscal Administrative issues		Decentralization to lower tiers of government (Colombia, Indonesia, Mexico, Philippines, Uganda and others)	Transfer (delegation) of responsibility to other entities (Bolivia, to farmer organizations; Ecuador, mixed with farmer-led NGO programmes; Peru, extension devolved to NGOs)

Source: Rivera, 2001, p. 24.

219. Two forms of private sector provision of extension services merit specific mention. First, *producer associations* focus on enhancing the performance of local producer organizations, including improving their ability to provide services to upgrade farmers' technical capacities and broaden know-how in business and financial management, marketing and advocacy. [6] This is proving a cost-effective channel for reaching rural entrepreneurs. The number of producer organizations found in remote rural communities has expanded considerably and in many countries they are already a major source of access to rural skills training.

220. Second, *industry-sourced technical training* helps channel knowledge and information within the input (seeds, fertilizer, related financial services) and output distribution systems (harvest and post-harvest handling, marketing, etc.) through public–private partnerships and company-provided extension services. Although these practices have been commonplace for larger agribusiness operations, it is only recently that smallholders, primarily through their producer associations or grouped as suppliers to main buyers, have become beneficiaries of product- and market-specific technical support. Farmers' and rural community organizations, supported by public agencies, are needed, however, to make sure that individual farmers and rural businesses have full information about the products or technologies being delivered through industry-provided training and are able to make well-informed choices.

221. As pointed out in Chapter 2, for those products and agro-based industries that are highly dependent on international markets, relationships within *value chains* can help meet specific skill challenges for adopting new technologies or productivity-enhancing workplace practices. Competitiveness in agriculture-based products in developing

[6] Cooperatives are an important form of "member-owned" producer associations. Their role in information-sharing, skills development, market access and other important contributions to agricultural productivity are examined in the report, *Promotion of rural employment for poverty reduction* (ILO, 2008a, Ch. 4).

countries is changing from the traditional base of primary resources, commodities and low-cost, low-skilled labour to manufactured products, speciality agricultural products and services. While a few countries are making the transition well, the majority are not participating in the process and their skills base is increasingly inadequate to do so. For international markets, agricultural exports need to be low-cost, high-quality and at high volumes, with flexible delivery, including rapid turnaround. Public extension services and support services within value chains are important means of improving international competitiveness and thereby boosting employment growth in both rural and urban areas.

222. *Community-based training (CBT)* has high potential for delivering skills training in remote areas not integrated into global value chains and lacking formal educational institutions. Proximity to urban markets can be a key factor of rural productivity, both in providing opportunities for non-farm employment and for affecting agriculture directly through easier knowledge transfer and improved access to consumers and suppliers. More remote rural areas are characterized by localized and thin labour markets offering a restricted choice of jobs, narrow training opportunities, limited and costly transport and communications, low investment and low pay.

223. CBT can be an effective means to improve the productivity and employability of the rural poor, especially women, disenfranchised youth, persons with disabilities and communities rebuilding after natural disasters or civil strife. But CBT works only if skills development is linked to broader local economic development efforts, particularly for infrastructure designed to integrate remote areas. The starting point is to identify potential economic opportunities and existing learning and training assets (institutions, apprenticeships, informal learning). The second step is to then identify the skills required (as well as other input or infrastructure needs) to enable communities to realize the potential of these opportunities for local employment and earnings. On the basis of understanding demand for skills and gaps in the local supply of training, then it is possible to design and deliver (or improve existing) relevant community-based training. The final, but crucial step is to provide post-training services, such as entrepreneurship support, help in obtaining wage employment and access to credit and markets (box 4.4).

Box 4.4
Training for Rural Economic Empowerment (TREE)

The ILO's TREE programme is a community-based training package to promote income generation and employment creation. Implemented with local and national partners in Pakistan (North Western Frontier Province) and the Philippines (Autonomous Region in Muslim Mindanao – ARMM), TREE targeted society's most marginalized groups – the rural poor, particularly rural women, disenfranchised male youth and persons with disabilities who had lost their livelihoods in regional conflict. These groups lacked opportunities for training and skills development which could help them access jobs. The TREE programme identified local economic opportunities, designed and delivered community-based skills training and provided follow-up services after training. The programme was adapted to the socio-cultural characteristics and local conditions in each country.

The independent project evaluation of the pilot TREE programme (December 2007) documented considerable success in training both men and women. In the Philippines, for example, tracer studies showed that 94 per cent of those interviewed attributed their present economic activities to the training they had received under the programme. In Pakistan, literacy programmes were included in the programme, greatly improving participants' ability to benefit from vocational training. Some 56 per cent of the programme participants in skills development or literacy were women.

Additional lessons are being learned from adapting the TREE approach to ongoing technical cooperation work in Sri Lanka, Madagascar, Niger, Burkina Faso and Nepal.

224. Combining technical and entrepreneurship training is particularly important in rural areas. The scarcity of formal employment in far-flung areas means that for many people the best prospect of turning technical training into livelihood is through self-employment. Technical and entrepreneurship training can be combined through integrated local economic development programmes (as well as by incorporating business knowledge and skills in formal secondary and tertiary education). [7]

225. CBT is a public investment – whether financed through national budgets or with donor assistance. It is a tool for targeting deprived areas, for extending the benefits of national economic growth to disadvantaged regions, for reaching the poorest of the poor. But this approach can be an investment, not a charity, under several conditions: (1) if it helps integrate local producers into larger markets beyond their geographical areas; (2) if the skills training is of sufficient quality that products and services produced are competitive in local and national markets; and (3) if demonstration projects are undertaken in partnership with national agencies responsible for local or decentralized development which can track results and draw lessons for adapting successful practices to other communities.

226. *Labour-based methods to improve rural infrastructure* invest in both skills and physical assets to boost rural productivity and create jobs. Roads, flood control, irrigation and other infrastructure are critical for stabilizing production, increasing yields per acre and improving transport to markets for agricultural products. But an even higher boost to agricultural productivity is attained when these investments are made with appropriate labour-based methods. As explained in the report on rural employment (ILO, 2008a, Ch. 4), the income earned locally is higher proportionally than when more equipment-based methods are used, and this has a larger multiplier effect in the locality.

227. Labour-based methods can provide productive employment opportunities. They may employ persons at a higher level of productivity than their alternative employment opportunities in situations of high underemployment or unemployment (ILO, 2005a, Ch. 4). However, for persons in rural communities to be able to fill this new source of labour demand, some training is usually needed. A premium on training will result in construction trades, building and maintenance, small contractor bidding for public contracts and community-based planning to enable local communities to work with national agencies in setting priorities for infrastructure investments.

228. *In summary*, boosting skills development in rural areas will not in itself create jobs. Demand for skills is driven by sustainable enterprise growth and investment, which in turn can be stimulated by policy incentives that target and support rural employment. Pathways out of rural poverty and towards more dynamic growth are founded on skills development to improve the competitiveness of rural activities, technical and business skills to raise agricultural productivity, and basic skills development. This requires upgrading the quality of skills provision as well as extending its availability to underserved rural areas. Productivity gains in the agricultural sector will not be sufficient to reduce poverty, however. Support to individuals in identifying and moving to new non-traditional, primarily non-farm areas of work is also needed. Governments and social partners have a clear role in strengthening rural institutions and decentralizing planning and delivery of skills development services, and linking this to improved local governance, coordination and integration of services targeting rural people.

[7] This is the purpose of the ILO's Know About Business (KAB) programme for secondary, tertiary or technical and vocational education and training (TVET) institutions.

4.2. Disadvantaged youth

229. The ILO estimates that 85 million young people (between the ages of 15 and 24) are unemployed, 300 million are working but remain poor (living on less than US$2 a day) and 20 million have withdrawn from the labour market (ILO, 2006b, p. 5). Many of these young people cannot access the education and training that could enhance their productivity and chances of finding decent work. Particularly vulnerable are illiterate young people, school dropouts, (former) child labourers, youth in rural areas or in the informal economy and young women.

230. The conclusions on promoting pathways to decent work for youth (ILO, 2005d) observe that failure to find a job may be due to lack of relevant skills and training opportunities, low demand for young people's skills obtained through training or changing labour market demand. The result may be long periods of job search, higher unemployment and sustained periods of lower-skilled and precarious work. The conclusions call for targeted interventions to overcome disadvantages and to promote social inclusion and greater equity.

231. For young people, as for all workers, sustained economic growth supported by sound economic policy is fundamental to creating opportunities for good jobs. Evaluations show that in the absence of job and labour market opportunities many programmes that have trained unemployed young people have not succeeded in raising their employment rates and incomes (Bennell, 1999). These are sobering findings when considering the prospects for assisting disadvantaged youth in developing countries in gaining access to decent productive work.

232. This section focuses on how to increase access to training for disadvantaged youth and how to ensure that this training leads to more productive employment. It concludes by drawing attention to the roles of institutions and actors in implementing these solutions. This section builds on the broader review of the application of policies and programmes to promote youth employment discussed by the Governing Body Committee on Employment and Social Policy in November 2006 (ILO, 2006k). [8]

4.2.1. Overcoming education and skill disadvantages

233. *Low educational attainment deprives young people of learning core skills and being able to participate in job training.* Individuals are considered most employable, able to find and retain jobs and adaptable to workplace changes when they have broad-based education and training, basic and portable high-level skills, including teamwork, problem solving, ICT, communication and language skills (ILO, 2000a, para. 9). As depicted in figure 1.4 in Chapter 1 of this report, "core work skills" would also include literacy and numeracy, ability to learn and social and interpersonal skills. Core skills should be every individual's intellectual foundation when leaving school (ILO, 2007i).

234. However, 96 million young women and 57 million young men are illiterate, most of them in developing countries. School attendance rates are lowest in sub-Saharan Africa: as low as 59 per cent for girls in primary school and only 22 per cent in secondary school (table 4.2). Less than 20 per cent of boys and girls in the region complete secondary school, meaning that most are at a severe disadvantage upon entering the labour market. These figures suggest that a significant proportion of young people in the world lack basic core and employability skills. Exclusion from education

[8] Along with skills development and employability, this review highlighted the importance of economic policies to expand employment, enterprise development, labour market policies and institutions, and governance and social dialogue as the critical policy instruments for youth employment (GB.297/ESP/4).

and training is at the root of child labour, low-paid and poor quality jobs and the vicious circle of poverty and social exclusion (ILO, 2005e).

Table 4.2. Average school attendance rates, by sex (per cent)

	Primary school		Secondary school	
	Boys	Girls	Boys	Girls
World	78	75	46	43
Sub-Saharan Africa	63	59	21	22

Source: UNICEF, 2007.

235. Opportunities and risks faced at one stage in the life of individuals frequently influence their transition to the next. Hence, the areas of vulnerability that affect children and youth must be addressed early in life. Many actors have a role to play in this process: national and local authorities, the social partners, members of civil society and young people themselves. A major challenge is to devise education and training policies and measures that break the vicious circle of inadequate basic education and low productivity, and support the transition of disadvantaged young people into decent work.

236. *The links between child labour and youth employment problems are extensive and education and training can do much to alleviate both at the same time.* Child labourers cannot participate in education and skills programmes that could help them access good jobs as young adults. For poor families, the value of educating and training their children and earning future income from their work is often less attractive than the immediate income from putting them to work (Freedman, 2008). The policy challenge is to provide incentives to children and their families that encourage refraining from, or withdrawing from, child labour; and to educate and train them so that they can access decent work. [9]

237. Are children, once removed from hazardous working conditions, being properly equipped to access good jobs at an appropriate age? In 2003, the ILO's International Programme on the Elimination of Child Labour (IPEC) reviewed non-formal education and skills training which it supported in nine countries. [10] The review found that in some instances the vocational training provided was not necessarily relevant to labour market needs. The report went on to suggest more systematic use of labour market surveys and pre-training counselling or career guidance to help determine what vocational skills should be taught (ILO, 2006o).

238. The ILO report recommended outreach skills training – in informal settings, usually at simple venues – to ensure that training is accessible and relevant. Training there would encourage youth to put their new skills to use and earn incomes in their local communities and so avoid training-induced migration to urban areas. For example, IPEC

[9] Some successful approaches to reducing child labour that integrate education and alternative family earnings include the *Programa de Erradicação do Trabalho Infantil* (Programme for the Eradication of Child Labour) in Brazil, which extends the time children stay in school, thus limiting the time available for work (Tabatabai, 2006); helping parents of child domestic labourers in Kenya create income-generating activities as a substitute for children's income and improving their access to education (ILO, 2004d, p. 25); and improving education for children in hazardous agricultural work in East Africa combined with skills and grants to help families undertake alternative activities (ILO, 2006n, p. 5). Combining quality education with school feeding programmes and providing cash incentives can also discourage child labour. Conditional cash transfer (CCT) programmes ensure regular payments to poor households on condition that they meet certain obligations, such as sending their children to school and vaccinating them. Although reduction of child labour is seldom an objective, CCTs have been effective in reducing it (Tabatabai, 2006, p. vii).

[10] Bangladesh, Cambodia, Colombia, India, Kenya, Peru, Philippines, Senegal and Turkey.

supports apprenticeship training programmes with local businesses and craftspersons that assist rural youth in learning new skills instead of having to travel to urban areas for training (ILO, 2006o).

239. *The key points on training in rural areas* in section 4.1 apply in particular to young persons in rural communities: the importance of selecting trades and occupations where skills development will be relevant; of providing trainees with labour market information, job search assistance and other employment services; and of integrating entrepreneurial training and technical training in preparing youth for self-employment. There are many examples of initiatives that combine these elements.

- Bangladesh offers young people in rural areas various forms of training for self-employment. Around 555,000 young people received training between October 2001 and March 2004 in some 300 training centres run by the Department of Youth, of whom approximately 341,680 entered self-employment (ILO, 2005e, p. 57). [11]
- In India, the Training of Rural Youth for Self-Employment (TRYSEM) programme trains rural poor aged 18–35 in technical and entrepreneurial skills for wage- or self-employment. So far, some 54 per cent of trainees have been women and 28 per cent have been illiterate. High unemployment (50 per cent) among those young people who had undergone training raised demand for better labour market information and job search assistance. For example, the Baatchit project, targeting rural youth aged 15–24, fits together vocational training, entrepreneurial skills and career guidance, including building awareness about available career options, job vacancies and recruitment processes. However, many trainees' lack of education reduced the effectiveness of training (Brewer, 2004), underscoring the need to make vocational training complementary to basic education and core employability skills training.
- In Nigeria, the National Open Apprenticeship Scheme (NOAS) educates and trains unemployed young people in over 100 occupations. An offshoot of the NOAS is the School-on-Wheels programme, which provides mobile vocational training to school leavers and other unskilled persons in rural areas. After the three-month training, graduates are absorbed into the NOAS. Over 21,000 young people have benefited from the programme so far (Brewer, 2004, pp. 43 and 116).

240. *Out-of-school youth primarily find livelihoods in the informal economy.* In its *World Employment Report 1998–99* devoted to training, the ILO pointed out that a major shortcoming of earlier training strategies in developing countries was an exclusive concentration on the needs of the formal economy, in spite of the fact that it accounted for a much smaller proportion of total and new employment than the informal economy.

241. As pointed out in section 2.4, traditional apprenticeships are the largest source of skills for the informal economy. The informal apprenticeship system can be an effective means of skill development in the informal economy as this is where most entrepreneurs in the micro-enterprise sub-sector acquired their skills. However, apprenticeship training tends to be limited to the practical skills of a trade, generally transferred through the observation and replication of tasks carried out by an experienced worker. To be more effective in increasing employability, some combination of hands-on experience and systematic knowledge is required. For example, the apprenticeship programme in Nigeria mentioned above offers theory classes on Saturdays as a complement to the

[11] The centres offered training in poultry rearing, beef fattening, livestock rearing, food processing, kitchen gardening, handicrafts and leather work.

practical training received. Good practice is to link apprenticeship training with formal schooling so young people have an incentive to remain in school and acquire the core skills needed for work and for making their way through life. Finally, a system for certifying the skills mastered by the apprentice – recognized by employers in other localities and in the formal economy – can help young people make the transition to work in the formal economy. National efforts to upgrade the quality of apprenticeship training, such as by several countries in West Africa, incorporate these elements of core skills, employment services and recognition.

242. Specific "second chance" interventions are needed for school dropouts who may have left school before acquiring basic literacy and numeracy skills and who have drifted into low-paid, unskilled work in the informal economy. This need is growing across countries regardless of development levels. For young people and others facing long-term unemployment, "second chance" programmes offer an alternative to labour market exclusion and long-term joblessness. A review of "second chance" programmes pointed out that they must do more than provide technical competencies; they must also compensate for inadequate education and provide the competencies needed for both work and life (World Bank, 2006). Experience in Spain has also highlighted how important it is that employers accept placements of youth and organize working time around coursework, tutoring and other support (box 4.5).

Box 4.5
"Second chance" programme in Spanish cities

The European Association of Cities for Second Chance Schools reports on the experience in four Spanish cities: Bilbao, Cadiz, Gijón and Barcelona. In Bilbao, the programme is divided into phases with a decreasing share of coursework and an increasing proportion of workshops, tutoring and in-company work over a two-year period. The programme benefits from the strong local involvement of the Confederation of Basque Enterprises. In Cadiz, the programme is supported and promoted by Cadiz University in close collaboration with the City Council. The Association credits the role of employers in raising the success level of the "Second chance" programmes – in accepting students and trainees and their flexible working time in order to accommodate more technical training and individualized support services to help young people make the transition into the labour force.

Source: European Association of Cities for Second Chance Schools, 2007.

243. *Overcoming exclusion from education and training opportunities is the first priority in improving young women's employability.* Many youth education and training programmes, including traditional apprenticeships, are biased against girls and women. Others, by not directly addressing constraints on girls going to school and young women participating in vocational training, fail to meet objectives of equitable access for women and men.

244. At the level of basic education, effective programmes to keep girls in school require a comprehensive approach. Increasing the proportion of girls' school attendance and moving toward better male/female equity in schooling often requires special measures to induce parents to enrol their daughters and keep them in school (Biasiato, 2007; Atchoarena and Gasperini, 2003). Practical changes have proved to make a big difference, such as separate latrines for girls and adjusting school times to accommodate household or marketing responsibilities. More fundamental measures include increasing the number of female teachers (as role models and as a source of encouragement for young girls and reassurance for parents), removing gender stereotypes from teaching materials and training teachers to avoid early occupational segregation (such as

favouring boys over girls in mathematics lessons). Furthermore, in some places measures to overcome cultural resistance to girls' education may require incentive schemes, such as stipends to families who enrol daughters in school. This kind of comprehensive approach has proven effective, as seen in the example from Bangladesh profiled in box 4.6.

Box 4.6
Bangladesh: Assisting girls and young women with access to secondary education and skills training

The Female Secondary School Assistance Programme, financed by the International Development Association (IDA), supported government efforts to improve girls' access to secondary education (grades 6–10) in rural areas. They and their families were given cash stipends to cover tuition and personal costs. This incentive was combined with efforts to increase the proportion of female teachers, to invest in the provision of water and sanitation facilities, and to improve community involvement in the incorporation of occupational skills into the training.

By 2005, girls accounted for 56 per cent of secondary enrolments in areas covered by the programme, compared to 33 per cent in 1991. Their attendance rates increased to 91 per cent, surpassing the boys' attendance rate (86 per cent). Overall, access to secondary education increased substantially for girls in Bangladesh, jumping from 1.1 million in 1991 to 3.9 million in 2005. An increasing number of the girls enrolled come from disadvantaged or remote areas.

Source: IDA, 2007.

245. Overcoming occupational segregation in employment starts with removing gender stereotyping from education and training. In the Latin American Pro-Joven programmes, measures to open non-traditional occupations and careers to women include widening the types of internships offered to both sexes, improving counselling and career guidance services, and raising teachers' and trainers' awareness of the importance of discarding gender-based expectations in relation to students and their selection of courses of study – in particular welcoming young men into training in occupations traditionally dominated by women and vice versa (Aedo and Nuñez, 2003).

246. Widespread discrimination on account of ethnicity or caste adds to girls' difficulties in accessing education and young women's barriers to employment on account of gender bias. In Guatemala, only 26 per cent of indigenous non-Spanish-speaking girls complete primary school, compared to 62 per cent of Spanish-speaking girls; in the Slovak Republic, only 9 per cent of Roma girls attend secondary school compared with 54 per cent of Slovak girls (Lewis and Lockheed, 2007). In Viet Nam, 19 per cent of ethnic minority girls had not attended school compared to 2 per cent of Viet girls (Morris, 2006). Specific policies, and their local enforcement, combined with awareness-raising campaigns, are required to improve equity in access to education and hence to training and employment for minority groups, and in particular for girls and young women in these groups.

247. Programmes and policies that target disadvantaged youth are most effective if they tackle the specific causes of the disadvantage: remote location, informal economy, lack of basic education, discrimination, etc. Active labour market policies and macroeconomic policies aiming at full employment are also needed. Across different projects targeting different groups of young people, however, common good practices can be discerned. Brewer (2004), in an exhaustive review of training projects' impact on young women and men, summarized the key features of effective training practices for disadvantaged youth: data collection and mapping of marginalized populations; needs-based assessments; training components; social support and labour market services

(including vocational guidance and counselling); [12] financial support; physical infrastructure; and coordination, cooperation and commitment (page 34).

4.2.2. Institutional keys to success: Inter-ministry collaboration and social dialogue

248. An ILO Tripartite Meeting on Youth Employment (ILO, 2004b) called for closer coordination between government institutions and agencies, both at national and local levels. As a minimum, coordination is called for between ministries of education and ministries of labour and, where they exist, ministries of youth. At the international level, the Youth Employment Network (YEN) – a collaboration between the UN, the World Bank and the ILO – has encouraged countries to draw up national action plans entailing comprehensive efforts extending across ministries, social partners and civil society and has sought international financial and technical support for their implementation. [13]

249. One example of inter-ministerial and local/national collaboration is the Young People's Self-Support and Challenge Plan in Japan. It engages four Ministries: Education, Culture, Sports, Science and Technology; Health, Labour and Welfare; Economy, Trade and Industry; and Economic and Fiscal Policy, ensuring that a holistic approach is pursued in promoting youth employment (ILO, 2005e, p. 51). Canada's Youth Employment Strategy involves 13 government departments and agencies working in partnership with employers' and workers' organizations.

250. Agency coordination at national and local levels and a high degree of decentralization are equally important. This was illustrated by Chile Joven, a programme widely cited in surveys of youth training and employment programmes. Beginning in the 1990s (and completed in 2000), the programme targeted unemployed, underemployed or in other ways vulnerable young people. It was highly decentralized: some 1,000 recognized private and public training providers participated in competitive bidding for programme contracts. It provided 400 hours of formal training, combined with two–three months' work experience in enterprises. It also trained young people for self-employment. Altogether some 190,000 young people aged 16–24 participated in the programme opening up new labour market opportunities for many participants. On the basis of the success in Chile, the programme was replicated in Argentina, Colombia, Peru and Uruguay. [14]

251. The conclusions of the ILO Subregional Tripartite Meeting of Experts on Decent Employment for Young People (ILO, 2007n, para. 5(a)) summarized the importance of inter-ministerial collaboration and partnerships with trade unions and employers' organizations:

> [Education and training policies] could be made more responsive to labour market requirements by engaging employers' and workers' organizations that are the main actors in the labour market. Vocational education and training should include work experience and be based on broad occupationally related and employability skills … Workplace learning fosters productivity, innovation, competitiveness and improves occupational health and safety ... Policy coherence and more effective coordination across systems and institutions, including between

[12] For a review of good practices in career guidance, see Hansen, 2006. On the basis of this research, career guidance materials have been developed in ILO projects in Ethiopia, Indonesia and the Philippines.

[13] The YEN was established in 2001. The priorities of national action plans are the "four Es": employability, equal opportunities for young men and young women, entrepreneurship and employment creation.

[14] For information on Chile Joven and similar programmes in Latin America, see Bennell, 1999, p. 37; Brewer, 2004, pp. 29 and 86–88; Godfrey, 2003, p. 40; ILO, 1999, p. 181; ILO, 2000c, pp. 28–30; ILO, 2004b, p. 34; and O'Higgins, 2001, p. 139.

ministries of education and of labour, should be sought at all levels of education, training and lifelong learning.

252. *To conclude*, effective youth employability strategies combine activities on several fronts: skills development, work experience and provision of labour market services. They engage a range of relevant government departments, work together with employers and workers' organizations and other organizations, and include marginalized youth. Such comprehensive approaches to skills development and the creation of decent work for young people must be supported by a healthy macroeconomic climate that stimulates investment, economic growth and increased employment opportunities. There is no short cut to enhancing skills development opportunities for disadvantaged youth. However, the lessons of experience and the conclusions of tripartite discussions on skills development as a component of youth employment (ILO, 2005d; ILO, 2004e) provide a blueprint for collective action.

4.3. Persons with disabilities

253. The importance of skills training for persons with disabilities has long been recognized by the ILO, with an emphasis on promoting access to general skills development services along with and under the same conditions as non-disabled people wherever possible (Recommendation No. 99, 1955; Convention No. 159 and Recommendation No. 168, 1983). This theme of inclusion is further enhanced in later ILO instruments and in the UN Convention on the Rights of Persons with Disabilities, 2006.

254. This section of the report focuses on approaches, programmes and policies that bring persons with disabilities into the mainstream of economic and productive life by improving their access to decent quality learning, training and employment services. Much of the available information on policies is from OECD countries, while many of the lessons from programmes and projects are gleaned from experience in developing countries.

4.3.1. Skill needs to improve employability and productivity

255. Disabled persons, in particular women, are generally very disadvantaged in the labour market. They tend to be more inactive, to be over-represented among the unemployed and to have much lower earnings than non-disabled people. Their experience of early adult life is often beset by frustration, disappointment and reduced confidence in the strengths they bring to the labour market because career aspirations have simply not translated into employment (Burchardt, 2005).

256. In connection with their marginalized position in the labour force, people with disabilities often end up in passive assistance programmes, receiving disability benefits or pensions, in countries where such schemes exist or relying on family support or charity in countries which do not have such schemes. They are more likely to be poor: 82 per cent of disabled people worldwide live below the poverty line (Hope, 2003); 20 per cent of all people living on less than a dollar a day worldwide are disabled (Elwan, 1999). Like other poor people, persons with disabilities have very limited access to education and training that could help improve their potential productivity, employment and income-earning prospects.

257. Women and girls with disabilities face double discrimination in education, training and employment that cuts across cultures and development levels. Whereas significant progress has been achieved globally with regard to literacy rates and education levels in

general, very little of such progress has involved girls and women with disabilities. There is still a common attitude that a disabled woman has little hope of becoming a wife or mother, or of getting a decent job, whereas it is more widely accepted that a man, despite his disability, is capable of earning an income and providing for a family. This differential attitude has a great impact on women's access to education and appropriate training (Biasiato, 2007).

258. Global gross domestic product (GDP) lost annually owing to disability (comprising social benefits paid to, and loss of productive potential of, people with disabilities) is massive (Metts, 2000). In the United Kingdom (UK), it is estimated that the economy would receive a return of £13 billion if the employment rate for people with disabilities was comparable to the national average, and that by 2020 the UK economy would grow by £35 billion if the skills of people with disabilities were developed to world-leading levels (Evans, 2007).

259. The ageing of the workforce in many developed countries also means that an increasing proportion of the workforce will have age-related disabilities and the effective recruitment and retention of disabled people will therefore increasingly affect national productivity. This is particularly the case in economies experiencing skills and labour shortages. "Low employment rates of disabled people are ... increasingly becoming an issue for reasons of macro-economic efficiency, which is concerned with making progress in using grossly under-utilised human resources" (OECD, 2003).

260. Evidence of the skills deficit among persons with disabilities is accumulating, as many countries are "activating" disabled people by, for example, introducing "welfare to work" initiatives (OECD, 2003). Even when quota systems are in place to increase formal sector job opportunities for disabled people, skill deficits remain a barrier. In Thailand, for example, between 1996 and 1998 over 9,000 designated disabled job vacancies per year could not be filled by the public employment service because qualified disabled applicants could not be found (ILO, 2003d). In Germany, the quota level has recently been reduced from 6 to 5 per cent because there were insufficient numbers of qualified persons with disabilities to fill the available jobs.

261. Disabled people in open mainstream employment often reach high productivity levels, supporting the "business case" for employing them (Zadek and Scott-Parker, 2001). A survey among Australian employers found that employees with disabilities were rated lower than average employees on some productivity factors (speed and accuracy), and better on others (attendance and sick leave) and employee maintenance factors (recruitment, safety, insurance costs) (Graffam et al., 2002). In the United States, employers that accommodate workers with disabilities improve productivity owing to longer retention of trained disabled workers and savings in workers' compensation and other insurance costs (Job Accommodation Network, 2007).

4.3.2. Skills training options for persons with disabilities

262. People with disabilities access training in a variety of ways – through mainstream or special training institutions, on-the-job training, informal apprenticeships or active labour market policies. These training options differ in terms of costs and likelihood of moving trainees into productive mainstream employment, their long-range goal.

263. *Mainstreaming policies* for skills training in many countries now aim to enable disabled persons to participate in general-population vocational training institutions and programmes. Vocational education and training centres may provide a range of assistance services, as well as technical aids and adaptations to meet disability-related support requirements. However, a number of significant barriers have been identified:

for example, disabled students often have limited access to mainstream courses as they often cannot pay tuition fees or do not meet entry requirements, training centres may be inaccessible and inadequate preparations may have been made to accommodate trainees with disabilities. The results of mainstreaming initiatives point to other challenges as well, as illustrated in the case of Australia (box 4.7).

Box 4.7
Australia: Labour market outcomes of vocational education and training for people with disabilities

The Bridging Pathways national action plan 2000–05 was introduced with the aim of creating a vocational education and training system that would lead to international best practice in achieving equitable outcomes for people with disabilities. Specifically, the plan of action aims to increase access for persons with disabilities to vocational education and training; to improve their successful participation and achievement in all fields of study and levels; and to achieve outcomes in employment and lifelong learning that also increase their contribution to the economic and social life of the community. Following recognition that people with a disability in vocational education and training continue to experience lower levels of employment before and after training, compared to the general result, a revised Bridging Pathways Blueprint was introduced in 2004. This Blueprint points to progress achieved but says "despite pockets of achievement, we are still struggling to see substantial employment outcomes".

Source: Australian National Training Authority, 2004, p. 19.

264. *Training in special centres* predominated in early vocational rehabilitation approaches. They emphasized separate dedicated training facilities for people with disabilities. These institutions – including sheltered workshops using a production-based approach to training – continue to operate in both developed and developing countries.

265. An oft-stated objective of sheltered workshops is to increase the "work capacity" of people with disabilities so they may secure employment elsewhere once they are fully trained and rehabilitated. However, in general, sheltered employment has had very little effect on the productivity of people with disabilities and their integration into the community (Murphy and Rogan, 1995). In many countries this has led to setting targets for transitioning from sheltered workplace-based training to mainstream employment and to considerable change in the operation of dedicated training centres, including improving the labour market relevance of courses offered and linking courses to national certification frameworks (box 4.8).

Box 4.8
Trinidad and Tobago

The National Centre for Persons with Disabilities in Trinidad offers two-year skills training programmes in a range of courses certified by the National Examination Council of the Ministry of Education. In addition to technical skills, the programmes include remedial numeracy, reading and writing skills, computer literacy and independent living skills, to equip individuals with disabilities with the work-related and social skills necessary for success in the open labour market. Trainees initially undergo a programme of vocational assessment and may also attend the Work Adjustment Training Programme, which focuses on improving individuals' work-related behaviour and developing core skills for employability. After successful completion of the programmes, graduates are channelled into advanced training or apprenticeship programmes, with support and guidance as required, before moving on to jobs at companies in the locality. Ongoing counselling and guidance is provided to graduates as they move from being apprentices to becoming full-time or part-time employees. Over 55 per cent of graduates find jobs in open employment and some enter self-employment.

Source: Trinidad National Centre for Persons with Disabilities, 2006.

266. *Enterprise-based training of people with disabilities* is encouraged by government subsidies and workplace modifications, increasingly deployed to encourage people with disabilities to engage in open "supported" employment. Such employment also provides individual coaching and training support to people with disabilities in mainstream jobs. This type of training has been found to outperform other rehabilitation programmes (Frölich et al., 2004; PricewaterhouseCoopers, 2006). It is also cost-effective: at the average cost of employing one disabled person in a sheltered job for one year, Remploy (a UK-based provider of services to people with disabilities) can successfully help four people find jobs with mainstream employers (Remploy, 2007). As it gradually closes its sheltered workshops, Remploy foresees a quadrupling of the number of people they can place in high-quality open employment each year.

267. Skills training partnerships in which employers collaborate with local training or employment service agencies have proven to be highly successful in equipping people with disabilities with marketable skills. Training may involve several levels ranging from basic employability skills to more advanced employer needs. In Canada, for example, both the Bank of Montreal and the Royal Bank have repeatedly used the approach to hire entry-level bank tellers and customer service representatives. Costs are typically covered by the Government through community service agencies, and training may be provided by the agencies in collaboration with a regional training institution. In the Republic of Korea, several employers collaborate with the Korea Employment Promotion Agency for the Disabled (KEPAD) in placing and training workers with disabilities, with KEPAD undertaking the recruitment and pre-employment training of the disabled workers and advising on workplace adjustment, and the companies undertaking on-the-job training (ILO, 2007h). Employers have cited many benefits to the approach: savings in recruitment time; financial savings through reduced training costs; lower employee attrition rates and associated recruitment and retraining costs; the creation of a more representative and diverse workforce as often required by legislation; and a better understanding of the diverse needs of customers – including those with disabilities.

268. ICT training for subsequent employment of disabled people in ICT-related jobs and sectors has enormous potential both in developed and developing countries. For example, in the Republic of Korea, following preparatory training arranged by KEPAD, CJ Telenix provides training for people with disabilities to work as call-centre operators from their own homes. While the cost of establishing these home-based workstations is high, the expense is more than recouped in terms of increased productivity and customer satisfaction (ILO, 2007h).

269. *Training people with disabilities who work in the informal economy* is a double challenge. Firstly, those who work in the informal economy, including many disabled people, are often uneducated and have received little or no training. Secondly, the work is almost inherently characterized as low in both productivity and earnings. A variety of training models have been used to develop skills to upgrade work in the informal economy (see example from Cambodia below). Formal training programmes have generally had little impact. Nevertheless, there are individual success stories that illustrate, in general terms, the productivity benefits of skills development for disabled people who work in the informal economy.

Box 4.9
Cambodia

Under the auspices of the Alleviating Poverty through Peer Training (APPT) project in Cambodia, people with disabilities (having either reduced mobility or a visual disability) wishing to start their own informal sector enterprise were given in-house training in already established businesses. A total of 511 people with disabilities (including 290 women) were trained and 423 (including 248 women) started a business. Another 74 participants improved their existing businesses. Using a simple learning-by-doing approach, the APPT addressed the particular skills development needs of disabled people in rural localities in a developing country. The project replicated the skills and practices of successful businesses. Careful planning ensured that markets were not flooded by too many new businesses offering similar products or services. The APPT strategy has now been adopted by NGOs, so that its continuity is assured for the immediate future at least. Throughout the project implementation, government officials seconded to the project were provided with an opportunity to gain awareness of training and employment challenges confronting persons with disabilities and experience in using the APPT approach to overcome them.

Source: ILO, 2008b.

270. People with disabilities also acquire employable skills through *active labour market policies*. So far, this has especially been the case in OECD countries. In Canada, for example, the various Labour Market Agreements for Persons with Disabilities are designed to help people with disabilities overcome barriers and become active in the labour force (box 4.10). Agreements between the federal Government and individual provinces/territories support a broad range of programmes and services, including job coaching and mentoring; pre-employment training and skills upgrading; post-secondary education; assistive aids and devices; and a variety of workplace supports that help people with disabilities to develop marketable skills and find employment.

Box 4.10
Work Foundations, Alberta, Canada

In Alberta Province, Canada, the Work Foundations programme, available to all Albertans including those with disabilities, provides basic skills training to enable participants to pursue further job-related training and/or find employment. The Training for Work programme assists low-income Albertans to gain occupational skills and some basic academic and/or employability skills needed to obtain employment and become self-sufficient. Of the 1,300 Albertans with disabilities who participated in the programme in 2005–06, 70 per cent completed their training and of these 51 per cent were employed or self-employed within three months. The Alberta Provincial Board for Persons with Developmental Disabilities provides funding for a range of initiatives including "employment preparation supports" that are designed to assist individuals with skills development for employment and exploring the world of work, and "employment placement supports" that help individuals maintain employment and/or self-employment.

Source: Provincial Government of Alberta, 2006.

271. Inappropriate disability legislation may nevertheless reduce the uptake of people with disabilities in employment and thereby constrain them with regard to being productive members of the labour force. For example, Viet Nam still places mandatory restrictions on the number of hours per day (seven) that a person with a disability can work, a policy that reduces employers' incentive to hire them as it implies that all disabled people have lower work capacity and productivity. In the United States and Australia, the employment rates of disabled persons fell following the introduction of the Americans with Disabilities Act and the Australian Disability Discrimination Act (Stapleton and Burkhauser, 2003; Australian Public Service Commission, 2006). The

protections afforded in these laws may have dissuaded employers from recruiting disabled workers. However, the employment effect of anti-discrimination legislation in the United States may become more positive in the future as young people with disabilities face less discrimination in completing formal education and training (Imparato, 2002).

272. *To summarize*, enhancing the skills of disabled people can improve their ability to either secure formal economy jobs, where they exist, or to increase their income-generating capacity in the informal economy, where formal jobs are scarce. On-the-job training has been found to be more effective than institution-based training, although special centres that have introduced relevant training, delivered effectively with accredited certification and follow-up support services, have had considerable success in placing graduates. While a policy of mainstreaming training has been adopted recently in many countries, there is to date no compelling evidence with regard to its effectiveness. The primary aim of training is to lead to higher-productivity employment and higher income in good-quality formal jobs. Targeted training – if well designed and accompanied by appropriate employment services – can greatly increase the ability of persons with disabilities to obtain such mainstream employment. As with the other target groups covered in this chapter, persons with disabilities are a diverse group with different support requirements. Some can benefit from inclusive training once reasonable accommodation is made. Others need greater support and sometimes targeted or separate training.

4.4. Migrant workers

> International cooperation and technical cooperation in human resources development, education, training and lifelong learning should develop mechanisms that mitigate the adverse impact on developing countries of the loss of skilled people through migration, including strategies to strengthen the human resources development systems in the countries of origin (Human Resources Development Recommendation, 2004 (No. 195), Paragraph 21(a)).

273. Labour migration poses a variety of challenges and opportunities for training and deploying skilled labour. This section takes up three interlinked issues. First, for countries of destination, migration policy is examined as one approach to fill skill shortages. Second, for skilled workers themselves, ways of improving recognition of skills across borders are discussed as a means to help migrant workers secure jobs for which they are qualified. Third, for countries of origin, development challenges are examined when migration results in skills gaps as skilled workers – particularly in the health-care and education sectors – seek better employment opportunities elsewhere.

274. The scale of migration of skilled workers in some regions and in some occupations raises concerns about the impact on development and on the return on investments in skills development made in developing countries. Recent analysis of migration flows from developing to developed countries estimated that some 8 per cent of the adult population with tertiary education in developing countries had migrated to OECD countries (Ghose et al., 2008). [15] For some countries, the proportion is much higher: above 70 per cent for some countries in the Caribbean region (Guyana, Haiti, Jamaica and Trinidad and Tobago) and between 40 and 50 per cent for some countries in Africa (for example, Gambia, Ghana, Kenya, Mozambique and Sierra Leone) (Dumont and Lemaître, 2005).

[15] Ghose et al. (2008) analyse data on immigrants and expatriates from the OECD database (http://www.oecd.org) and from Barro and Lee (2000). Developing countries in the summary statistics quoted include least developed countries.

275. The potential harm of this brain drain is of most concern in the health-care and education sectors. Nearly one third of practising physicians in the United Kingdom and New Zealand are foreign born: one third to one half of physicians graduating from South African medical schools emigrate to developed countries (Clark et al., 2006). Some 150,000 nurses from the Philippines work abroad, through programmes actively supporting their overseas employment. In turn, data from the end of the 1990s showed that 80 per cent of doctors in rural areas of South Africa were from other countries, including many from other African countries (Bach, 2003).

276. International migration patterns in health-care occupations broadly reflect the trends for high-skilled workers in general (Dumont, 2007, citing OECD data). Pienkos (2006, p. 38), in describing the brain drain in the Caribbean region, referred to the risks of these patterns for employment and development as manifestations of a vicious circle: "The source country … cannot easily develop if it loses skilled personnel, and it won't be able to retain skilled personnel unless it develops. Loss in the stock of human capital lowers the very productivity and economic growth essential to higher incomes and more attractive employment opportunities at home."

277. The broader implications and policy responses to the development impact of labour migration, and in particular of women migrant workers (box 4.11), have been examined by a number of UN and other organizations. [16] Guidance on dealing with the intertwined issues of skills development, productivity, overseas employment, gender (box 4.11) and development is provided in the outcomes of recent tripartite discussions, in particular the *ILO Multilateral Framework on Labour Migration* (ILO, 2005f), adopted by a Tripartite Meeting of Experts (31 October–2 November 2005), following the general discussion on migrant workers at the International Labour Conference in 2004.

Box 4.11
Gender issues in migration

The UN General Assembly's Summary of the High-level Dialogue on International Migration and Development (October 2006) noted that about half of all international migrants were female and that women, like men, migrated in order to improve their livelihood. "However, migration also entailed risks that were often more serious for women than for men, especially when women were relegated to undesirable low-paying jobs. It was important, therefore, to adopt policies that addressed the particular circumstances and experiences of female migrants and reduced their vulnerability to exploitation and abuse." (UN, 2006b, p. 4).

Recent research on gender in skilled migration concludes that women are under-represented among the highly skilled. This gender gap is strongly correlated with the gender gap in educational attainment in countries of origin (Docquier et al., 2007).

In general, migrant workers are more likely than residents of host countries to get jobs for which they are over-qualified. This trend is particularly striking for female migrant workers (OECD, 2007b).

4.4.1. Filling skills gaps in countries of destination

278. A skill shortage emerges when the demand for workers for a particular occupation is greater than the supply of workers who are qualified, available and willing to work under prevailing market conditions. Chapter 2 identified skill shortages in some OECD countries due to ageing populations and in some countries of Central and Eastern Europe (CEE) and the Commonwealth of Independent States (CIS) due to restructuring. One

[16] See especially UN, 2005; UN, 2006a; Global Forum on Migration and Development, 2007; and UN, 2006b.

response is to invest in capital, technology and work organization so as increase the productivity of each worker (i.e. higher productivity of each worker reducing the need for more workers with those skills). Another strategy is to hire workers from other countries with the requisite skills and willingness to work at prevalent wages. In some circumstances, this is seen as a faster way to fill emerging vacancies than to train workers in the national labour market.

279. International labour migration is a part of global structural adjustment and should take place in conditions of choice. Some countries offer opportunities in higher-wage, higher-skill or otherwise preferred occupations for persons from other countries who find these jobs preferable to the opportunities they face in their home labour markets. This becomes a stark and painful choice where local job creation is woefully inadequate. Migration is also the result of differential growth rates across economies. As some economies achieve faster growth, workers in slower-growth economies, where demand for their work is slack, find work, or more highly paid work, in other countries. Many countries find themselves in the position of both sending and receiving migrant workers – filling lower-skill occupations with workers from other countries while their own skilled workers seek more readily available job opportunities elsewhere. As noted, this characterizes some CEE and CIS economies and also some developing countries, such as Thailand.

280. For destination countries, meeting labour shortages by opening their labour markets to foreign workers may benefit employers searching for workers in the short term. International migration is selective towards more highly skilled workers. The proportion of migrant workers in OECD countries with tertiary education increased from 30 per cent in 1990 to 35 per cent a decade later (Docquier and Marfouk, 2005).

281. However, this short-term solution in favour of readily available labour from other countries could have long-term consequences as destination countries run the risk of decreasing investment in training to meet demand for higher-skilled workers. Coordination between migration policy and skills development policy may be the preferred approach to balance short-term and long-term needs (see box 4.12 for an example from Ireland).

Box 4.12
Migration and skills development policy in Ireland

A 2005 government study *(Skills needs of the Irish economy: The role of migration)* concluded that while skills development of the resident population remained the primary source of skills and thus the priority for government policy, immigration was important in meeting needs for highly skilled workers. Analysis of the 2006 census showed that employment in the manufacturing, construction and food and drink sectors accounted for the highest shares of migrant labour from the ten European Union (EU) countries concerned and showed that, in the high-growth economy, there had been no displacement of Irish workers as a result of immigration. In January 2007, Ireland introduced a dual migration scheme, with a “green card” system to allow permanent migration of highly skilled workers and a temporary work permit system to address short-term labour shortages in identified sectors.

Source: Shanahan and Hand, 2008.

4.4.2. Skills recognition: Enabling work commensurate with skill levels

> International and technical cooperation in human resources development, education, training and lifelong learning should … promote recognition and portability of skills, competencies and qualifications nationally and internationally (Human Resources Development Recommendation, 2004 (No. 195), Paragraph 21(f)).

282. As stipulated in Recommendation No. 195, migrants should have equal access to education, training and lifelong learning. The Migrant Workers (Supplementary Provisions) Convention, 1975 (No. 143), also calls for equality of both treatment (Article 8) and opportunity, which includes training and retraining in countries of destination. This is an issue of paramount importance for migrant workers with both high and low levels of skills.

283. Recognition of workers' skills by potential employers is important for migrant workers so that they can obtain productive employment commensurate with their qualifications and experience. "Immigrants are more likely than the native-born to hold jobs for which they are over-qualified" (OECD, 2007b, p. 25). Given the lack of information on education and training systems in countries of origin available to employers in countries of destination, it may not be surprising that between 25 and 50 per cent of skilled migrant workers are inactive or unemployed or hold jobs that require lower levels of skills than their previous occupation. Being able to recognize skills is important to employers in order to be able to determine whether migrant workers have the ability to meet their needs.

284. As discussed in the paper on portability of skills presented to the Governing Body Committee on Employment and Social Policy (ILO, 2007i), cross-border skills recognition is not easy because destination and origin countries' systems of occupational classification and qualifications can be very different, and employers in one country lack information about the credibility or reputation of diploma- or certificate-granting institutions in other countries.

285. There are a variety of skills recognition models in use to overcome these difficulties. The report on portability of skills distinguished three main approaches: unilateral arrangements used by a single country to recognize skills of incoming workers, mutual recognition agreements between two or more countries and regional integration frameworks within networks of sending and receiving countries.

286. The most recently agreed regional arrangement, the European Qualifications Framework for lifelong learning adopted by the European Parliament in October 2007, extends the approach of mutual recognition (box 4.13). This approach increases transparency and comparability of qualifications, regardless of where or how skills are attained, and is specifically designed to build a coherent system in encouraging both lifelong learning (through easier recognition of workers' advancement along skill levels) and mobility (by improved recognition of workers' qualifications across countries).

Box 4.13
European Qualifications Framework (EQF)

The EQF is a "translation grid" between Member States' qualification systems to help employers and workers better understand EU citizens' qualifications. Intended to support mobility and lifelong learning, the EQF establishes equivalences between qualifications and certificates obtained in different countries. It is a reference tool for both employers and workers when comparing the qualification levels of different countries and various education and training systems.

The EQF includes eight broad categories of skills – "reference levels" – ranging from basic to the most advanced qualifications. Each category includes descriptions of what workers should know and be able to do, regardless of where their diplomas, qualifications or certificates were obtained. In part, this responds to the particular circumstance of opening labour markets at the Europe-wide level, where individual institutions' reputations for quality of training are not known throughout the wider EU. In part, it also caters for the growing number of training service providers, as the private sector increasingly responds to new demands for training. This approach is also intended to better match education and training provisions and employers' needs in the labour market and to validate non-formal and informal learning, including on-the-job learning. The EQF combines recognition of prior and ongoing learning in one system, for both national and migrant workers, and covers the entire span of qualifications, ranging from those normally acquired during compulsory schooling to those gained at tertiary academic institutions and professional and vocational training establishments.

Source: http://ec.europa.eu/education/policies/educ/eqf/index_en.html.

287. The Caribbean Community (CARICOM) follows a different approach, focusing on improving conformity and convergence among formal training institutions. In 2003 the Caribbean Association of Training Agencies was created to establish and govern a regional training and certification system, harmonize national TVET systems, develop regional standards and establish a regional system for assessment and certification of skills (box 4.14). This approach is intended to improve the transparency of the regional labour market. It enhances the employability of workers by harmonizing their qualifications and opening employment opportunities in the whole region. Enterprises benefit as they expand their recruitment base for skilled labour.

288. Other regions are also initiating efforts to improve recognition of skills: ASEAN is developing a mutual recognition system as a necessary step in its movement towards a common labour market; MERCOSUR is adopting mutual recognition of skills arrangements between selected professional bodies (so far in agriculture, engineering, agronomy and geology); and several regional groups in Africa are interested in developing schemes for mutual recognition of national qualifications to facilitate the migration of workers within regional economic communities, particularly ECOWAS and WAEMU. [17]

[17] ASEAN: Association of Southeast Asian Nations; MERCOSUR: Common Market of the Southern Cone; ECOWAS: Economic Community of West African States; WAEMU: West African Economic and Monetary Union.

Box 4.14
Skills recognition in the Caribbean

The Caribbean Single Market and Economy aims to offset labour market shortages and curb migration to countries outside the Caribbean by enabling free movement of labour, and to complement agreements on the free movement of goods, services and capital. The CARICOM Free Movement of Persons Act (2006) provides for the free movement of certain categories of skilled labour (as certified through recognized skills certificates) and progressively for the free movement of all persons by 2009. Over 100 occupational standards have been adopted by CARICOM as a basis for a regional qualifications framework. In contrast to the EQF (box 4.13), training centres and schools in each of the countries issue the same qualifications. Regional accreditation bodies are planned for assessing qualifications for equivalency, as an enabling factor to free movement within the region, beginning with the now concluded Agreement on Accreditation for Education in Medical and other Health Professions.

Source: McArdle, 2007.

4.4.3. Migration policies and development in countries of origin

289. The *Multilateral Framework on Labour Migration* (ILO, 2005f) aims to improve management of migration, encompassing protection of workers and promoting development linkages. As a framework of non-binding guidelines and principles, it seeks to help constituents make good choices in their migration policies based on the recognition of fundamental human rights. Chapter IX of the Framework focuses on the prospects for labour migration to serve development goals, specifying among other measures how skills and employability policies can help maximize the potential for good development outcomes from migration and reduce the risks of perpetuating a vicious circle between losing skilled workers to better jobs abroad and persistent low levels of productive employment at home.

290. *Circular migration* refers to migrant workers returning to their country of origin temporarily, between periods of working abroad, while *return migration* is taken to mean a permanent return to the country of origin. In both cases, as noted in the conclusions on a fair deal for migrant workers in a global economy (ILO, 2004c), "… returning migrant workers bring back skills, capital, experience and knowledge, these benefits from labour migration can be enhanced by appropriate and equitable conditions to support the return of migrants" (paragraph 9). Specific suggestions raised in various international forums include encouraging circular forms of migration in order to better link temporary labour mobility to the skills and development needs of the source country, as well as to the skills requirements of the destination country. On this point, the Global Forum on Migration and Development (2007, p. 7) concluded that "by agreement, destination countries could make their entry and work permit policies more flexible in return for commitments by origin countries to strengthen the incentives for migrants and their skills to return home, either temporarily or permanently".

291. *Skills recognition schemes* are also helpful in aiding countries of origin to benefit from the development potential of returnees. Systems that recognize the new skills, or skill levels acquired during work abroad would help returnees attain commensurate work at home.

292. *Remittances* account for a substantial share of foreign exchange in some developing countries. They are private transfers – savings that migrant workers send to their families which can have a material impact on standards of living as they are spent on improving housing, educating children and meeting health-care needs. There is a general consensus that remittances could have a deeper impact on development if

recipient communities also had the technical and entrepreneurial skills, and an enabling business environment, to encourage investment of remittances in small businesses and livelihood creation. Researchers have suggested that the greater share of remittances is from workers with low skill levels. While this may seem paradoxical, it is families' needs at home rather than migrant workers' earning levels abroad that most influence remittances (Lucas, 2005; Katseli et al., 2006).

293. *Ethical employment services* that assist workers in securing overseas employment are in the front line of countries' efforts to prevent exploitation of migrant workers. They are increasingly important also in providing cross-country job-matching services. In this role they need credible information on skills and qualifications. In some cases they are also providers of training. They may organize and assess technical training to fill specific needs of employers in the destination countries or they may provide training in employability skills, including language, culture, work practices and rights and responsibilities at work. Their growing role has led to increased efforts to help them follow good practices in their recruitment and job-matching work to help mitigate the potential for labour migration to undermine development (box 4.15).

Box 4.15
Private employment agencies and labour migration

Private employment agencies (PREAs) play an important role in the functioning of labour markets. One of the fastest growing types of PREA is the overseas placement agency, which helps employers to recruit workers abroad and assists workers in migrating for employment.

ILO Convention No. 181 and Recommendation No. 188 on PREAs were adopted in 1997 to recognize the growing role of PREAs and also to recognize the need to protect the interests of workers assisted by these agencies. The Convention establishes parameters for the services to be provided by these agencies.

In 2007 the ILO published the *Guide to private employment agencies: Regulation, monitoring and enforcement* as a joint effort between the Skills and Employability Department and the Special Action Programme to Combat Forced Labour (part of the Fundamental Principles and Rights at Work programme). It can assist national legislators in drafting legal frameworks in line with Convention No. 181 and includes many examples of existing national legislation from both developed and developing countries. Also included are descriptions of how legislation and regulations can be implemented by governments to help prevent the exploitation of migrant workers.

294. *Sector or occupation policies* aim to prevent movements of highly skilled migrant workers and those with advanced education from diminishing health care and education service capacity because of these service sectors' vital importance to social and economic development. Under the auspices of its Sectoral Activities Programme, the ILO launched an action programme on migration of health-care workers in 2006, in close partnership with other UN agencies (box 4.16).

Box 4.16
ILO Action Programme on "The International Migration of Health Service Workers: The Supply Side"

This action programme was launched in 2006 with the aim of developing and disseminating strategies and good practices for the management of health services migration from the supplying countries' perspective. The action programme responded to concern over the growing trend to meet health workforce shortages in developed countries by hiring nurses and other health-care workers from developing countries. The programme, in close collaboration with the World Health Organization (WHO) and the International Organization for Migration (IOM), assists participating pilot countries in addressing the implications of migration for health services and for the migrant workers, increasingly women, and their families. Currently, the pilot countries include Costa Rica, Kenya, Romania, Senegal and Trinidad and Tobago.

Through the programme, the ILO is active in the Global Health Workforce Alliance partnership (GHWA, launched in May 2006 and hosted by the WHO) and, along with the ILO's International Migration Programme, in the Health Worker Migration Policy Initiative (launched in May 2007 under the GHWA) to find practical solutions to the problem of the increasing migration of health workers from developing to developed countries.

Source: http://www.ilo.org/public/english/dialogue/sector/sectors/health.htm.

295. The roundtable on "Human capital development and labour mobility: Maximizing opportunities and minimizing risks" at the Global Forum on Migration and Development (Brussels, July 2007) found that the movement of skilled and trained professionals can put countries of origin at risk and that this is most likely in vulnerable sectors such as health and education (ILO, 2004c). But it also cited OECD and WHO research which concluded that migration was not the principal cause of weak health-care systems in developing countries and that a variety of policies were needed (OECD, 2007b). It recommended establishing "a matrix of good practices for countries of origin and destination and for joint actions between them that can help retain, train and recover skilled health personnel for development" (p. 7). Similarly, a UN General Assembly discussion on migration (UN, 2006b) recommended consideration of measures to retain highly skilled workers by, among other things, ensuring equitable pay and decent working conditions, and the promotion of the return, even on a temporary basis, of skilled workers to their countries of origin. Some countries reported having adopted, or were considering the adoption of, codes of conduct "barring the active recruitment of health workers from developing countries affected by labour shortages in the health and education sectors" (p. 4). Other suggestions were for cooperative arrangements to train skilled workers in developing countries or for compensatory schemes.

296. Good practice principles (table 4.3) and promising initiatives have been identified by the ILO's International Migration Programme (Wickramasekara, 2003; 2007; Lowell and Findlay, 2002; ILO, 2005f, Annex II):

- bilateral agreements, such as the South Africa–United Kingdom Memorandum of Understanding on Reciprocal Educational Exchange of Healthcare Personnel (2003) which, inter alia, promotes the recognition of qualifications of South African health-care professionals, encourages short-term working arrangements in the United Kingdom and provides for return to South Africa with new skills and experience;
- medical tourism, to increase opportunities for trained health-care professionals to work at home by capitalizing on lower-cost but high-quality health care relative to services in some developed and developing countries; marketing health services to foreigners is an initiative finding much success in Thailand and the Philippines;

- codes of practice instigated by destination countries to control recruitment from countries vulnerable to skill exodus by managing migration with the origin countries. The policy, under the UK Department of Health, is aligned with the UK Department for International Development (DFID), creating policies that can serve both domestic health-care delivery needs and international development objectives.

Table 4.3. Good practices in promoting "brain gain"

Countries of origin	Countries of destination
❑ Initiatives to remain and return	❑ Flexible, transparent immigration policies
❑ Promote linkages with nationals abroad (including short-term secondments or sabbatical visits)	❑ Adopt circulation-friendly visa regimes and encourage circular, temporary and exchange movements
❑ Promote short-term movements	❑ Direct technical assistance to human resources in health and education
❑ Improve institutional and physical infrastructure	❑ Recognition of overseas qualifications and experience
❑ Incentives for remittances by emigrants	❑ Ensure portability of acquired social security rights
❑ Bilateral agreements with destination countries	❑ Codes of conduct on ethical recruitment and accountability mechanisms for recruitment agencies and employers
❑ Long-run retention is linked to economic growth and diversification	❑ Inclusion of migrant workers in learning opportunities
❑ Adequate allocation of public resources to health services	
❑ Effective recognition systems for skills acquired through working abroad	

Source: Wickramasekara, 2007.

297. *In summary*, research, policy experience, governments, workers and employers highlight the challenge of achieving "win-win" outcomes from international labour migration – for individual workers, employers and national economic and social development. The principles of fair treatment and protection for migrant workers have been articulated through tripartite discussions and agreements. The potential for labour migration to contribute to productivity growth and development objectives in countries of origin and countries of destination is high. But the risks of adverse results are also high in some countries. There is still much to learn about the effectiveness of national and international efforts to put the agreed principles into action and to monitor the results of adapting good practices to different national and industry circumstances.

Chapter 5

Skills policies as drivers of development

> Members should identify human resources development … policies which … facilitate lifelong learning and employability as part of a range of policy measures designed to create decent jobs, as well as to achieve sustainable economic and social development (Recommendation No. 195, Paragraph 3(a)).

298. Education and skills policies not only help countries respond to technological and economic changes, but are themselves drivers of change. A better trained workforce makes it easier for enterprises to adopt new technologies and for countries to attract FDI and diversify their production structures. This chapter focuses on the third objective of effective skills development policies, namely to initiate and sustain a dynamic development process (as introduced in Chapter 1). First, it reviews the components that are necessary for a forward-looking skills development policy and, second, it shows how skills development can be closely linked and coordinated with economic and social policies in order to increase both productivity and employment growth.

299. The chapter draws on the experience of countries that have been successful in using skills policies to help trigger and maintain a dynamic process of employment growth. These countries include Japan, the "East Asian Tigers" (Hong Kong (China), Republic of Korea, Singapore), the "Celtic Tiger" (Ireland), Costa Rica and Viet Nam, with the latter being an example of a country that is at the beginning of the process of catching up. [1] Development in these countries has been characterized by rapid technological catching up and sophistication, the diversification of production into non-traditional activities and a shift from low to high technology activities. FDI has been attracted in higher value added sectors and exports expanded in technology intensive manufacturing and services. This process has resulted in economic and social development and a virtuous circle of rising productivity and high growth rates.

5.1. Capabilities, technology and information: A dynamic process

300. The dynamism of the development process can be explained by three main factors:

(1) a national commitment to *technological catching up* and the *diversification* of production and the export structure into higher value added sectors;

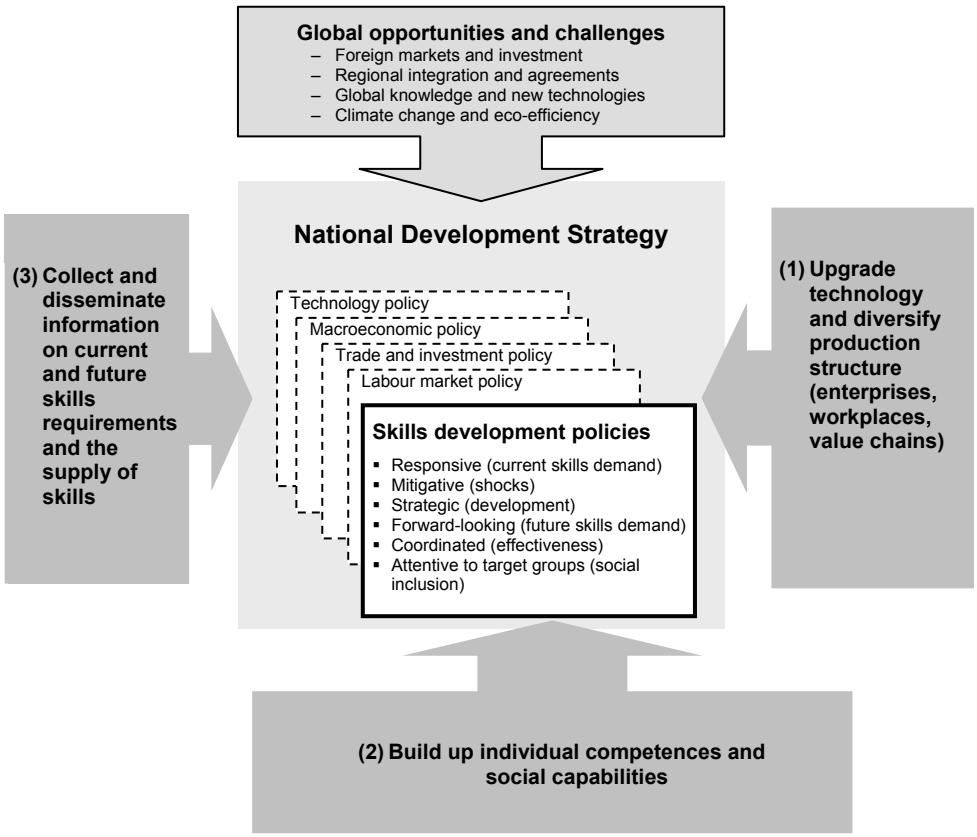
[1] Since 1985, Viet Nam has experienced high growth rates in GDP and in manufacturing exports, has attracted significant FDI, shifted the export structure from mainly primary products to manufactured products with increasing levels of value added manufactured products, and seen an increase in wages and the demand for skills (Henaff, 2008). However, although the country has been able to diversify into low-technology manufacturing, it has not yet moved into higher technology sectors to a significant extent.

(2) the building of *social capabilities* and a learning trajectory in alignment with the catching up process, taking into account efficiency and equity aspects (as defined further in box 5.1); and

(3) *the collection, updating and dissemination* of information on current and future skills requirements and the translation of this information into the timely supply of occupational and entrepreneurial skills and competences.

301. A virtuous circle within economies is created by simultaneously building up *distinct, yet complementary bodies of knowledge* in relation to these three factors, as indicated in figure 5.1. This involves three policy orientations: (1) developing scientific, technological and commercial knowledge as a basis for catching up and diversification; (2) expanding the tacit (or implicit) knowledge underpinning the occupational and entrepreneurial competences of individuals, and building the capability of societies to mobilize, communicate and accumulate such tacit knowledge; and (3) sustaining institutions that collect and disseminate the data and information needed to make effective policy choices so as to meet current and future skills requirements.

Figure 5.1. Skills development strategy for a dynamic process of sustainable development



5.1.1. Upgrading technology and diversifying production structure

302. *Technological development* is the major driver of long-term productivity improvements. Developing countries can benefit from the advanced technologies available in industrialized countries and catch up with technological leaders through the transfer of technologies and their diffusion within the economy. Openness and new information and communication technologies improve the access of enterprises and economies to a wider technological and scientific knowledge base (see, for example,

Grossman and Helpman, 1991). Knowledge may be incorporated in imported goods and services. It may spill over from FDI or be transferred through licensing agreements with foreign firms. It may also result from local efforts and incremental changes. More recently, the Internet has offered access to substantial knowledge, data and information.

303. *The diversification of a country's production structure* is an another important element of a dynamic development process. Empirical evidence shows that the development of poor countries is closely linked with an increase in the variety and diversity of their economic activities (Imbs and Wacziarg, 2003; Klinger and Lederman, 2004). As poor countries develop, their economies expand into non-traditional activities, with enterprises exploring and introducing products and processes that are well-established in world markets. [2] This highlights the dynamic aspect of comparative advantages as "the trick seems to be to acquire mastery over a broader range of activities, instead of concentrating on what one does best" (Rodrik, 2004, p. 7).

304. Diversification is the result of entrepreneurial activities to "discover" the cost structure of an economy or, in other words, to identify new activities (new to the country, but already well established on world markets) that can be undertaken at a sufficiently low cost to be profitable. Entrepreneurs must experiment with new product lines, tinkering with technologies from established producers abroad and adapting them to local conditions. Hausmann and Rodrik (2003) call this a process of "self discovery". These search and discovery activities have great social value, as other companies learn and imitate, thereby raising the technological level of the sector and increasing diversification. The garments industry in Bangladesh, cut flowers in Colombia, information technology (IT) in India and salmon in Chile are well-documented examples of such development (Rodrik, 2004).

305. Hence, catching up involves both the deepening of technological capabilities at the enterprise level – starting with easier activities and functions and moving into more complex ones – and the widening of those capabilities through their development and application in an increasing variety of economic sectors.

306. *A development strategy which combines catching up in technological development with investment in non-traditional sectors* helps to ensure that productivity growth is accompanied by employment growth in a context of accelerating technological change. New technologies increase productivity, while diversification into non-traditional activities creates demand for labour and results in employment growth. The East Asian Tigers [3] and, more recently, Ireland and Costa Rica, have focused on technological development and diversification as a strategic objective in their development strategies.

307. *Recent analysis suggests that government policies play an important role* in industrial and technological development. This role, however, is different from the old approach of "picking the winner or loser" and is discussed in section 5.2. There is growing consensus in development literature and among international organizations that development-oriented governments play an important role in promoting and facilitating technological development, boosting entrepreneurial search and discovery and catalysing private investment and innovation (Lall, 2000; Hausmann and Rodrik, 2003; Rodrik, 2004; De Ferranti et al., 2003; UNIDO, 2005, p. 12; WTO, 2006, p. 68; UNCTAD, 2007, p. 8).

[2] Imbs and Wacziarg (2003) also provide evidence that, beyond a certain level of income, the development process is characterized by increasing specialization.

[3] Powell, analysing the case of Singapore, concludes that: "Put simply, the priority for economic development determines the process of skills formation" (2007, p. 12).

5.1.2. Building individual competences and social capabilities

308. Countries start with very different initial conditions and levels of skills and competences. Learning and building capabilities is a cumulative and long-term process which cannot "leapfrog" stages. This process is characterized by "path dependency", which means that it builds on the existing knowledge base and grows incrementally. The gap between the existing level of competence and the task to be mastered needs to be small enough so that learning the next step is feasible.

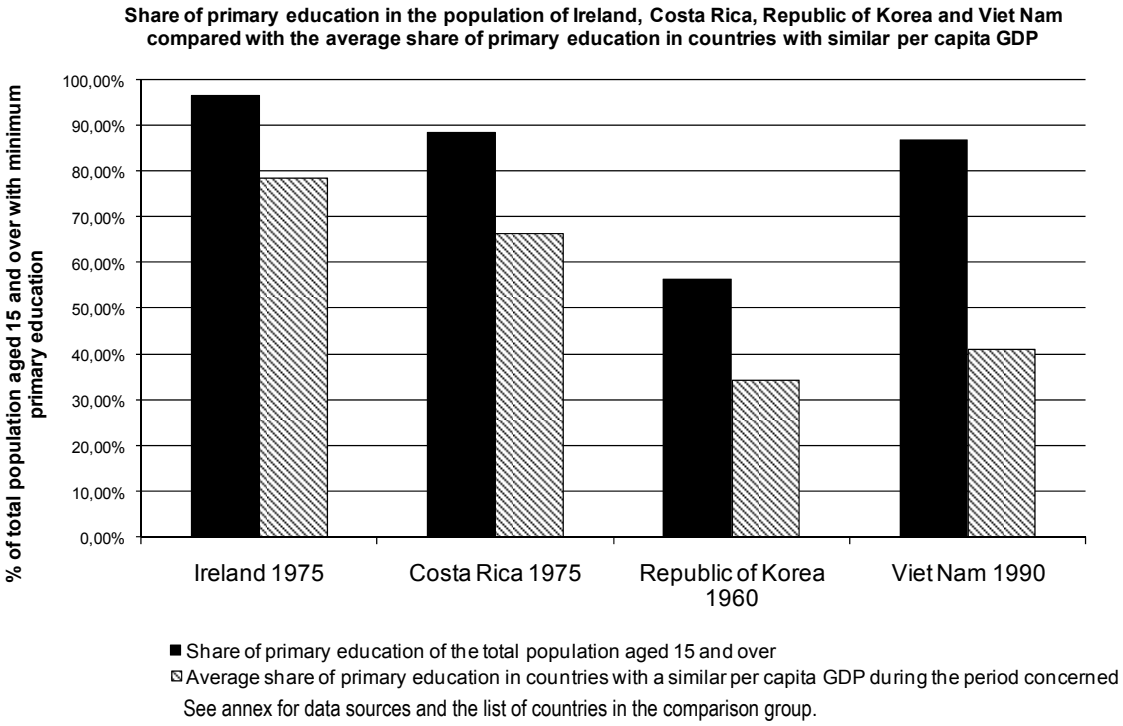
309. Governments, enterprises and workers all play important roles in building competences. Governments invest in education and training and provide incentives to encourage investment by employers and workers in training and on-the-job learning. Enterprises invest in the training of their managers and workers and introduce continuous improvements in work organization. Individuals take advantage of education and training opportunities to acquire new skills and knowledge.

310. *Basic general education and core competences* are the foundation of social capabilities and of a national knowledge system. The capabilities of individuals to read, write and communicate, understand basic mathematics and adopt a favourable attitude towards work and change are prerequisites if enterprises and the economy are to upgrade technology and diversify (ILO, 1999). Because core competences are relevant across occupations and professions, as well as across low- and high-level jobs, they enhance the employability of workers. Moreover, competence in mathematics and science becomes increasingly important as society moves towards the knowledge economy. Better educated workers are at an advantage in implementing technology.

311. The crucial importance of establishing a basic level of competences in society as a precondition for creating a dynamic development process is demonstrated by the history of Costa Rica, Ireland, the Republic of Korea and Viet Nam. Each of these countries had achieved high levels of basic education and an adult literacy rate of over 70 per cent when their per capita income was still at a relatively low level. When the four countries began to industrialize and to catch up, the share of their population with at least primary education was significantly above the average for countries with a similar GDP per capita at the time (see figure 5.2). [4] Educational "catching up" therefore preceded the technological catching up process in these countries. This shows the commitment of governments and the private sector to invest a substantial portion of their scarce resources in basic education and to promote institutional development in the education and training system. And the commitment to education has remained evident in their comparably higher levels of literacy as they have moved along the development process.

[4] Some countries in the control groups also had similar high shares of basic education, but were not successful in generating a dynamic development process. This emphasizes the general point that, while a broad educational base may be necessary, it is not sufficient to trigger a virtuous circle.

Figure 5.2. Educational attainment of "catching up" countries



312. To take advantage of domestic and global opportunities for sustainable development, it is necessary to build the capability of enterprises and countries to transfer technologies in a competent manner, diversify into competitive economic sectors, enter international markets and gain market shares, as well as to achieve eco-efficiency and protect the natural environment. Managerial and entrepreneurial skills, in addition to the mastery of technical and vocational skills, are critical to entering and maintaining the development process.

313. This body of skills, competences and knowledge can only be developed in a complex and gradual learning process because much of the underlying knowledge is tacit (see box 5.1). Unlike scientific and technological knowledge, tacit knowledge at the individual level can only be created through experimentation, research and learning by doing in particular circumstances. This highlights the importance of "learning to learn", problem solving and management skills (Enos et al., 2003).

Box 5.1
The meaning of social capability

The capabilities and competences of individuals are determined by both explicit and tacit knowledge elements. Individuals need to know the technological and commercial principles, regulations and other rules that they follow (this is explicit and codifiable knowledge referred to as declarative knowledge) and they need to be able to apply them competently (this is tacit or procedural knowledge). Tacit knowledge cannot easily be codified and can therefore only be communicated and transferred between individuals through a process of demonstration, observation, imitation and practice.

Tacit knowledge becomes collective knowledge when it is shared between the members of a community and embedded in institutions such as networks, teams, clusters or "communities of practice". It is expressed through routines, rules, shared norms, conventions, regulations, laws and standards. Building social capabilities therefore involves an extensive process of practice and learning by doing; communication to others within social networks (families, communities, enterprises); and embedding the knowledge in institutions (by creating or adapting rules, standards, regulations, conventions). Technological capability is acquired by identifying technological knowledge (codified or embedded in machines), learning the rules of technology transfer (codifiable) and learning how to apply the rules, that is, how to adopt new technologies, adapt them to local conditions and exploit international knowledge spillovers (tacit) (Lall, 2000). In the same way, trade-related, industrial and environmental capabilities are acquired by engaging in the activity, learning the rules of the game (codified) and learning how to apply them effectively (tacit).

Source: Polanyi, 1967; Cohen and Levinthal, 1990; Lall, 2000; Nelson and Winter, 1982; North, 1990.

314. Tacit knowledge cannot easily be codified, but the accumulated experience of the past and commonly shared understanding are embedded in institutions such a rules, norms, traditions, conventions and regulations (Nelson and Winter, 1982). Furthermore, institutions are required to transform an individual's tacit knowledge into socially provided knowledge. Networks, industrial clusters and communities of practices mobilize and communicate tacit knowledge at the levels of the enterprise, sector and economy. Hence, interpersonal, communication and teamworking skills are of central importance since they *lubricate* interfaces between people within and between organizations and assist in the generation and diffusion of knowledge.

315. Skills, knowledge and capabilities therefore have two major functions:

- First, as human capital, they influence productivity and comparative advantages. Formal education and training increase human capital and labour productivity. Learning by doing in enterprises creates economies of scale as per unit production costs fall with increasing productivity.
- Second – and this is highly relevant for the virtuous circle – individual competences and social capabilities function as a catalyst or driver of development by increasing the speed with which new technologies are adopted and productivity growth achieved (Mayer, 2001, p. 34) and therefore the speed of the exploration and discovery of new markets and products. [5] This is demonstrated by empirical studies showing that countries which import capital embodying new technologies are more likely to improve productivity. Research further shows that countries with

[5] McCartney points out that successful policy cannot simply be judged in terms of its static effects and the degree to which markets are liberalized: "Once we consider economies as dynamic rather than static entities and evaluate policy in terms of achieving dynamic not static efficiency, what we conceive of as good policy becomes far more nuanced" (2004, p. 6). This suggests that there may be trade offs between static and dynamic efficiency in the short or medium term.

a broader and stronger skill base stand to benefit the most because their resulting productivity growth will be even higher (Coe and Helpman, 1995; Mayer, 2001).

5.1.3. Collecting and disseminating information on skills requirements and supply

316. Rapid and fundamental changes in the economy, including the emergence of new technologies, result in continuous changes in labour markets and in the demand for more, new and different skills. However, the development of skills requires a substantial amount of time and investment. Information is therefore needed for markets to function and for governments to coordinate policies effectively. The early identification of skills requirements is critical as it helps to reduce uncertainty and increase incentives to invest in training. It avoids skills shortages and development and growth bottlenecks by helping to reduce skills mismatches. And it helps to prepare workers for changes in the demand for skills and to maintain employability and employment.

317. Labour market information systems (LMIS) are intended to provide up to date information on current and future skills requirements, skills shortages and training needs (see section 5.2.2 below). Labour market analysis helps governments, workers and employers, TVET system managers and other actors to develop a common understanding of changes over time in the demand for skills, make informed choices in relation to training, and design and formulate effective skills development policies (Hilbert and Schömann, 2004). The challenge is to develop institutions which effectively identify future skills requirements, translate skills requirements into the supply of new skills and coordinate and synchronize skills development policies with trade, investment and technology policies (Powell, 2007).

318. In order to coordinate the flow of information so that it reaches both women and men, it is necessary to take into account the gender dimension in the communication of information. Labour market and training information is frequently unavailable to women because it is conveyed through channels to which they do not have equal access, such as associations and placement services geared to male users, informal networks, radio programmes broadcast at times when women are not available to listen, etc.

5.1.4. The experience of “catching up” countries: The integration of skills development policy into the national development strategy

319. Skills and competence development has been a strategic element in the national development plans of Costa Rica, Ireland, the Republic of Korea and Singapore. Even though these countries differed substantially in their initial conditions, which meant that the sequencing and focus of their policies were somewhat different, they each adopted very similar strategies in at least four areas: the proactive role of government; outward-oriented learning; the sectoral approach to building capabilities; and a forward-looking skills development approach.

320. *The proactive role of governments:* the Governments of Costa Rica, Ireland, the Republic of Korea and Singapore have taken an active role in promoting exports, investment, technology transfer, technological change and human resource development. They have effectively used these policies to build up competences and capabilities at the enterprise, industry and national levels. These countries have formulated national development strategies as a framework for policy coordination and coherence.

321. *Outward-oriented learning strategy:* learning from foreign sources has been of great importance in all "catching up" countries. Costa Rica and Ireland have chosen an FDI intensive strategy by attracting high-tech MNEs, particularly in the electronics and IT sectors, combined with efforts to create linkages between foreign and domestic firms and to promote training by MNEs (following an earlier stage, in the case of Costa Rica, of attracting investment in agriculture and textiles). A well-educated labour force has supported both the process of attracting high-tech FDI and the learning process. Viet Nam is currently embarking on an FDI-intensive learning strategy. The Republic of Korea originally opted for a more autonomous learning strategy, with the focus on learning by doing in national enterprises. Technological capabilities were built up by importing capital goods and learning through reverse engineering, importing disembodied scientific and technological knowledge, such as open-source publications, and hiring foreign consultants and trainers. With the increasing complexity of technology, however, the country also relied on FDI to improve its technological knowledge base. Enterprises and the country as a whole built up the capability to diversify and to trade by increasing investment in non-traditional sectors and engaging in international trade.

322. *The sectoral approach to building capabilities:* a sectoral approach to industrialization was adopted by Costa Rica, Ireland, the Republic of Korea and Singapore, albeit at different stages of their development process. Costa Rica in the 1980s and Ireland in the 1990s began to identify sectors where local initial conditions offered the potential for high growth. At an early stage of their development, the Republic of Korea and Singapore defined strategic sectors with a high learning potential to move up the learning and value added chain. Sectoral strategies provided the basis for their skills development strategies. For example, Hong Kong (China), Ireland and Singapore established sectoral bodies to monitor developments in specific sectors, including the influence of globalization, new technologies and new management practices. They assessed how these changes affected demand for skills and then communicated this information to the skills development system.

323. *A forward-looking skills development approach:* education and training policies in successful late starters anticipated future skills requirements in order to ensure the timely supply of the skills necessary to achieve the nation's development goals. The challenge is to develop the ability of countries to build up a trajectory of learning and innovation and to develop a proactive strategy that integrates science, technology and learning into industrial, trade and investment policies with a view to achieving economic and social development.

324. In the Republic of Korea, the Government designed a sequential expansion of formal education and vocational training based on industrial development plans. In order to bridge the time lag between investment in skills and the accumulation of the skills stock, the Government based human resource development policies on the forecasting of skill demands. Furthermore, at each stage of development, government policies channelled young people into particular training programmes. In the past, the transition to higher value added industries was accomplished without major skills shortages, but more recently a skills mismatch can be observed (Cheon, 2008). Ireland has a history of skills forecasting since the 1960s. The objective is to provide early information to workers, enterprises and training institutions on future skills requirements. As described below in the case study of Ireland, a sophisticated institutional framework has been developed to collect and interpret data on the future demand for skills and the supply of skills, and to transform this information rapidly into skills development (Shanahan and Hand, 2008).

5.2. Coordinating skills development policies with economic policies

325. Skills development policies and strategies need to be coordinated with and closely linked to industrial, trade, technology, macroeconomic and environmental policies to create a sustainable and dynamic development process (as shown in the central panel of figure 5.1). The management of this process is a complex matter and there is increasingly widespread recognition that market forces and private entrepreneurship, as well as governments and institutions, have an important role to play in this respect (Rodrik 2004, p. 2). In particular, social dialogue represents an effective institution for managing the coordination process.

326. *Problems relating to information, incentives and coordination, and the resulting market failures, call for government interventions.* Enterprises need to invest in the discovery of profitable activities and the search for the best technologies to produce a particular product within the local economy. The first firms that innovate may not earn the full return on their investment in terms of learning and discovery because, as the value of their discovery becomes evident, other firms will imitate them, although at a lower cost as they benefit by learning from the experience of the first innovators. Government policies and institutions need to provide incentives to entrepreneurs to invest in discovery, for example by protecting the returns of the firm for a limited period of time, so as to trigger a socially efficient level of investment in the search process and to promote the development of non-traditional activities (Hausmann and Rodrik, 2003).

327. Information problems also arise because employers recruiting skilled workers need to be able to judge accurately the nature and level of the workers' skills. Institutions can reduce this risk by helping to identify and assess skills in a credible manner and communicating the information efficiently to employers and the labour market.

328. *Coordinating the adoption of new technologies and diversification into new industrial sectors with skills development can be a challenge.* Investment in human capital alone would lead to diminishing returns on skill accumulation (more skilled workers, but not necessarily jobs for them). On the other hand, increased technology transfer alone, without appropriately prepared workers and managers, is unlikely to be enduring. It may even have negative development consequences by exacerbating income inequality if only the advantaged sectors of society can obtain the relevant training (Mayer, 2001). The challenges of coordination can be addressed through policies and institutions that: (1) align incentives for workers, enterprises and the public sector to invest in complementary forms of knowledge and skills; and (2) promote cooperation between the various skills providers with a view to establishing coherent and consistent learning paths.

329. *Moreover, in view of the risk of "government failure"*, Lall (2000) and Rodrik (2004) suggest that governments need to design institutional arrangements and monitor outcomes carefully. Government policies and coordination efforts may be subject to failure due to lack of information, technical skills or good governance. Furthermore, government interventions are prone to political capture or corruption, or to the temptation to "pick winners" rather than to facilitate a market-based process.

330. Policies and interventions therefore need to focus, not on investment outcomes – which are inherently unknowable beforehand – but on getting the policy process right. "We need to worry about how we design a setting in which private and public actors come together to solve problems in the productive sphere, each side learning about the opportunities and constraints faced by the other ..." (Rodrik, 2004, p. 3). The risks of

corruption, opportunistic behaviour and favour seeking need to be minimized throughout the process.

331. *The institutional framework plays a key role in meeting the challenges of information and coordination* for the effective management of development dynamics and the integration of a forward-looking skills development process. Well-designed institutional settings facilitate collaboration between the public and private sectors, elicit information about objectives, trends and bottlenecks, and distribute responsibilities for solutions. They encourage and enable enterprises, education and training institutes and R&D institutes to invest in knowledge, technology and the discovery of products and processes that are well established in world markets and can be produced at home (Lall, 2000; Rodrik, 2004). Finally, institutions facilitate cooperative behaviour and help to reconcile the diverging interests of individuals and organizations, thereby supporting reform processes in the economy and in the education and training system.

332. *National development frameworks* may provide an opportunity for countries to integrate skills development into broad national development processes. Skills development plays an important role in national development strategies, five- or ten-year national development plans, national employment policies, Poverty Reduction Strategies (PRSs) and Decent Work Country Programmes (DWCPs). These are the principal vehicles for articulating and implementing national development goals in general and tripartite commitments to reduce decent work deficits in particular. PRS and DWCP processes to devise these strategies are intended to give stakeholders a voice in prioritizing needs and aligning national budgets and development assistance with these strategies. [6]

333. The current prevalence of these processes, aided in no small part by the importance placed on them by the United Nations system, the World Bank and bilateral donors, provides an opportunity for the integration of skills development into broader policy goals, such as promoting private sector development, boosting the growth of key economic sectors and extending the benefits of economic growth to disadvantaged regions and groups within countries (as suggested in Chapter 4).

334. These national processes also provide an institutional framework for the coordination of policies across government agencies. This is potentially a substantial advantage for skills policy, where responsibilities in such areas as education, vocational training, labour market information, employment services, career guidance, unemployment benefits and retraining services are divided between many ministries, departments and agencies at the national level and their provincial or regional counterparts.

335. *Social dialogue*, to coordinate the process of skills development with the national development strategy, and skills forecasting and labour market information systems, for the early identification of skills needs, are therefore two critically important institutions for effective forward-looking skills development.

5.2.1. The role of social dialogue

336. Social dialogue is an institution that is of great importance in coordinating the process of "catching up". Building the social capacity for learning, innovation and productivity requires more than a change in mindset and a relationship of trust between individuals: it requires institutionally embedded relations of trust between agencies,

[6] For a review of ILO work to enable workers' and employers' organizations to participate in PRS processes at the national level, see ILO, 2007l.

departments and other organizations involved in the TVET system, science and the production system (Brown, 1999).

337. Cooperation through social dialogue builds institutional relations in training and therefore creates trust on the basis of continuous working relations, thereby helping to ensure that incentives are well targeted. Institutions generate behavioural rules which provide the basis for regularity and predictability in the behaviour of the social partners, governments, agencies and other organizations involved. Through repetitive cooperative behaviour, institutions and organizations develop a reputation over time for behaving as expected (Dasgupta, 2000). And this is a process that can discipline excesses, avoid the abuse of incentives and facilitate the adoption of appropriate corrective measures.

338. *Social dialogue also plays a key role in processes to reform the TVET system* and in shaping national skills development strategies (Ishikawa, 2003). Reform processes become successful through dialogue as all actors are "aligned" and become committed to working towards the achievement of a shared common goal. It is *through process* that the traditional roles and functions of public education and skills providers, as well as labour market institutions, are changed and new functions emerge that are aligned to achieving the success of the strategy (Bird, 2006). South Africa provides an interesting example of a country in which social dialogue has resulted in the successful development of the National Skills Development Strategy. The involvement of the social partners in the process of designing and implementing the National Skills Development Strategy is considered to be a major factor of success (box 5.2).

Box 5.2
Social dialogue in national skills development in South Africa

The National Skills Development Strategy was drawn up between August 2003 and February 2005 through a process of extensive cooperation between the Government and employers' and workers' organizations. The process involved consultation, evaluation, research and the exchange of information and amendments. The Government played the central role as the convenor of the social dialogue process and as the final arbiter of the national skills strategy, which was part of a national reform process of the training system. The Deputy President's Office coordinated the reform process and ensured the input of the social partners. The close political relationship between the ruling party in government and the dominant trade union federation resulted in close collaboration, which provided a broad basis for collaboration in the implementation of the national skills strategy.

Social dialogue took place at the national level and was managed through a statutory body, the National Skills Authority, on which the Government, employers' organizations, trade unions, providers of education and training and the community (targeting special interests) were represented. This contributed to the successful coordination of actions. As a result of this process, the strategy was universally supported when launched in February 2005 at the national, sectoral and provincial levels and amongst the labour, business and community constituencies.

Source: Bird, 2006.

339. Social dialogue echoes the needs and aspirations of its constituents. Its relevance grows as it enables more voices to be heard. There is therefore a pressing need to increase the participation of women, minorities, older and younger workers in social dialogue structures and mechanisms. The low number of women in leadership positions

in representative bodies has been identified as hindering the improvement of gender equality in national skills development strategies. [7]

5.2.2. Early identification of skills needs: Methodologies, approaches and systems

340. The early identification of skills needs is an important element of forward-looking skills development strategies as it serves to link future labour market needs with skills development systems. This helps to reduce uncertainty over future skills demand, thereby increasing incentives for workers and employers to invest in training. It helps to prepare workers for the changing demand for skills and to maintain employability and employment. At the level of the national economy, it reduces skills mismatches and avoids skills shortages and bottlenecks to development and growth. Countries have developed a wide variety of approaches and methods for identifying skills needs and disseminating and using the respective information.

341. *Quantitative forecasting approaches* use economic statistics models to analyse macroeconomic data from national accounts and data from labour force surveys with a view to forecasting long-term trends in labour markets at the national or regional level. These top-down approaches project national growth, productivity, labour supply, labour market participation, working time and other macroeconomic variables. For each sector, changes are forecast in the demand for occupations and the level of employment in each occupation. The implications are then analysed in terms of changes in education, training and qualifications.

342. The early forecasting models developed during the 1960s and 1970s adopted the "manpower requirement approach" developed by the OECD. Their sole purpose was to inform planning policies of ministries of education, manpower planning and human resources development. Many developed and developing countries in all regions used these approaches until the 1980s. However, the manpower planning approach proved to be inflexible, rigid and too limited in informing the labour market and the skills development system in an increasingly dynamic world. It also suffered from many methodological shortcomings (Neugart and Schömann, 2002).

343. As a consequence, new forecasting models evolved which focus on the medium to long term (three to ten years), use much more sophisticated projection methods, provide information to a wider group of potential users and integrate dynamic trends. Although these advanced models continue to face methodological problems and other limitations, a number of developed and middle-income countries use this method to provide regular forecasts of labour market trends (box 5.3) (Neugart and Schömann, 2002).

[7] Consult http://www.ilo.org/public/english/dialogue/themes for more information on gender and social dialogue (January 2008).

Box 5.3
Skills forecasting in the Netherlands

A highly sophisticated forecasting approach is used in the Netherlands. Since 1989, the Research Centre for Education and the Labour Market (ROA) at Maastricht University has issued forecasts every two years, and so far eight waves of forecasts have been generated. The model forecasts the growth rates in demand for each occupation by analysing trends in occupational shifts. It does not forecast employment levels for a given type of education, but consistently integrates supply and demand interactions and dynamic effects, such as labour market adjustment and technological changes, into skill profiles in specific occupations. The information is disseminated to labour markets to improve the educational and occupational choices of individuals, as well as to inform and support educational, economic and labour market policy formulation.

Source: Cörvers and Hensen, 2007; Cörvers and de Grip, 2002.

344. *Furthermore, many countries have developed qualitative approaches* to identifying skills requirements in the short and medium term. In contrast with quantitative forecasting models based on macroeconomic data, these approaches collect and analyse data and information from such sources as enterprise surveys, media vacancy announcements and expert stakeholder panels. Germany relies heavily on qualitative approaches and has developed an integrative approach in which the social partners are major actors (box 5.4).

Box 5.4
Early identification and distribution of skills in Germany: The FreQueNz network

In 1999, the federal Government and the social partners in the Alliance for Jobs, Training and Competitiveness adopted a resolution calling for the improvement of the early identification of new skills and qualification needs. The system identifies qualification needs at the federal, sectoral, regional and local levels and combines various methods and approaches. It gives preference to shorter-term qualitative knowledge of specific developments and changes in requirements on the labour market. It brings together various organizations, institutions and networks: the social partners (DGB – the German Confederation of Trade Unions and KWB – the German Employers' Organization for Vocational Training), the Federal Institute for Vocational Training (BIBB), educational institutions, vocational education and training actors and research institutions in the FreQueNz network. Knowledge of changing skills needs is disseminated widely to political actors, the social partners, the labour administration, research institutions, educational and training organizations and other associations. Information on skills requirements is translated into specific qualification requirements and the definition of new qualifications by the BIBB.

345. *In many European countries, quantitative and qualitative analyses are now combined to improve the coordination of skills development* with labour market, structural and development policies (Strietska-Ilina, 2007). LMIS in many European and "catching up" countries coordinate the collection, processing, storage, retrieval and dissemination of labour market information (Mangozho, 2003). Labour market information (LMI) analysis units, sometimes also called labour market observatories, aim to provide up to date information on the trends and dynamics of sectoral and occupational skills requirements, new occupations and the skills that will emerge as a result of technological and economic change. The user groups for this information include policy-makers in ministries of planning, education, economic development and

labour, employers' and workers' organizations, enterprises, training institutions, public employment services and individual students, workers and jobseekers.

346. *Successful "catching up" countries, and particularly Hong Kong (China), Ireland, the Republic of Korea and Singapore, adopt a sectoral approach to identifying skills and training needs for development* (Shanahan and Hand, 2008; Cheon, 2008; Powell, 2007). Strategic sectors for development are adopted through tripartite processes. Government policies and institutional arrangements link industrial and investment policies with skills development by undertaking specific analyses of sectoral occupational and skills needs. Labour market analysis, establishment surveys, qualitative feedback from stakeholders and specific studies of cross-sectoral issues are among the approaches used in this process. Sectoral bodies: (1) monitor developments in their sector, including the influence of globalization, changing technology and new management practices; (2) analyse how these changes affect the demand for skills; and (3) assess the degree to which each of the sectors has the appropriate skills to support economic changes. The relevant ministries translate information on future skills requirements into education and training supply, for example by expanding the number of training centres and institutions, providing grants for training in the required skill areas or removing incentives for training in low priority areas or fields in which labour demand is shrinking.

347. *Developing countries often experience difficulties in organizing and maintaining LMIS for several reasons.* First, the practice of using LMI to guide demand-based skills development systems is not well understood in many transition and developing countries. Second, many countries experience great difficulty in producing the basic labour market statistics that underpin labour market information, such as household and labour force surveys. Third, there is insufficient cooperation between institutions to ensure that LMI products are credible and relevant. Lack of cooperation also results in poor distribution of the information that is developed (Sparreboom, 2001).

348. South Africa's National Skills Development Strategy (introduced in box 5.2 above) includes the establishment of a skills development information unit. This unit relies on various approaches to identify skills needs, including basic labour market analysis, stakeholder panels at the national and sectoral levels and more advanced econometric analysis of future skills needs. The unit is located in the Department of Labour, which also manages the new Skills Development Strategy, so that the production of relevant labour market information can be closely aligned to the needs of policy-makers and stakeholders (Sparreboom, 2004).

349. Experience has shown that good LMIS can be developed and strengthened in developing and industrialized countries by:

- tailoring LMI to the needs of the various users;
- diversifying sources of LMI and using a variety of public and private sector institutions;
- combining quantitative and qualitative LMI;
- finding multiple uses for information and nurturing intelligent users of LMI;
- promoting continuous improvements in data gathering;
- assessing the usefulness of LMI; and
- developing political and institutional support.

5.2.3. A case study: Coordinating skills development for sustainable dynamic growth in Ireland

350. Ireland has experienced extraordinary growth in productivity, employment, wages and national income since the mid-1990s. During the 1980s, it adopted a development vision and common understanding which recognized that, through high levels of education and training, the country could produce skills that would drive productivity, innovation and entrepreneurship, create competitive advantages and boost employment. The Irish National Development Plan and the ten-year social partnership agreement *Towards 2016* provide the framework for national policy-making (Shanahan and Hand, 2008). Ireland's skills, industrial, labour market and research policies are highly interconnected through a network of interlinked organizations and an *institutional framework* that enables effective policy coordination between the various policy areas. The social partners are important informants, consultants and sustainers of the process.

351. *Education and training policies are coordinated at the ministerial level* by the Department of Education and Science (DES) which, for example, coordinates the planning and development of general and vocational education institutes through the Vocational Education Committees and the Higher Education Authority. The Department of Enterprise, Trade and Employment (DETE) is responsible for enterprise training and labour force development and, through its tripartite national Training and Employment Authority (FAS), coordinates the Irish apprenticeship scheme and continuous vocational training for the labour force, including training programmes for the unemployed.

352. *The future demand for and supply of skills are coordinated through forward-looking skills development policies* based on a skills forecasting and labour market information system. In 1997, the Expert Group on Future Skills Needs (EGFSN) was set up by the Government to monitor all sectors of the Irish economy and to identify current or future skills shortages. The Board of the Expert Group comprises representatives of government departments, the social partners, science and research and education and training authorities. This network provides effective channels for the collection of information and advice from all stakeholders in the economy and for the dissemination of the information produced by the skills identification system to the respective policy fields, including R&D, industry, labour market and skills development.

353. The Expert Group, together with the National Training and Employment Authority (FAS), which is responsible for the provision of training and employment services, "translates" the information produced by the skills identification system into skills development. The Expert Group advises the ministries responsible for education and enterprise development, trade and employment (the DETE and the DES respectively), thereby contributing to policy coherence in the skills development system. The National Development Plan Gender Equality Unit also contributes to this institutional strength, contributing information on gender equality in training, occupational segregation, men and women in training, apprenticeships and company-sponsored training, and offering suggestions for the improvement of accessibility and the reduction of segregation in training and employment. [8]

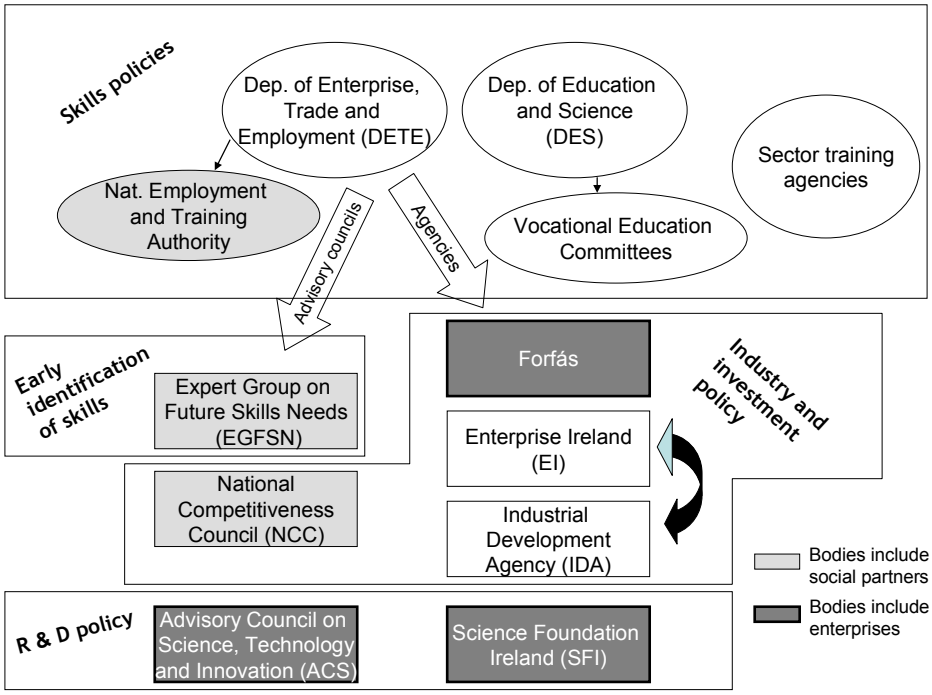
354. *The institutional strength in the country aids coordination in many other ways* (as summarized in figure 5.3). Institutions that promote national enterprises (Enterprise Ireland) and attract FDI (IDA Ireland) cooperate through the National Policy and Advisory Board for Enterprise, Trade, Science, Technology and Innovation (Forfás) with a view to fostering skills and technology spillovers from foreign to domestic enterprises.

[8] The fact sheet is available at http://www.ndpgenderequality.ie (January 2008).

The National Competitiveness Council (NCC), composed of representatives from many agencies, the social partners and outside experts, identifies industries with a high growth potential (such as biotechnology and ICT) and analyses the technologies and skills needed to support their growth. The Advisory Council for Science, Technology and Innovation (ASC) advises on the Government's science and technology strategy and research agenda, which the Science Foundation Ireland (SFI) implements. Forfás has the role of encouraging coordination between scientific research, enterprise development and inward investment, and of linking all this information to the skills development system (Shanahan and Hand, 2008).

355. In conclusion, *forward-looking and coordinated policies have been at the heart of Ireland's success*. The country is currently aiming to attract investment in knowledge-intensive industries and to develop the bio-pharmaceuticals and international financial services sectors. Policies and institutions build expertise and clusters, develop R&D capacity and provide highly educated personnel and support for advanced technologies. Institutions which identify skills requirements early, communicate the information to training authorities and promote training within enterprises contribute to creating a dynamic sectoral development process. Social dialogue, particularly at the national level, plays a central role in the skills development process and in coordination.

Figure 5.3. Policy coordination in Ireland



356. To summarize, skills development can be a powerful catalyst for change. To realize this potential, skills development policies need to be integral components of broad national development strategies so as to prepare the workforce and enterprises for new opportunities and adopt a proactive approach to dealing with change. Analysis of countries with some considerable success in launching and sustaining dynamic growth processes shows that effective skills development policies: build capacities to adapt new technologies and diversify economic activities; sustain a learning trajectory that is aligned with growth opportunities and priorities; and develop institutions that collect and share information, thereby helping to anticipate trends and match the demand for and the

supply of skills. Coordination between agencies, stakeholders, training institutions, employers and workers necessitates a degree of institutional sophistication, which in turn requires effective social dialogue.

Annex

Comparing education data of "catching up" countries with a comparison group of countries [9]

	GDP p.c. PPP 2000 constant US$ [1]		Primary education (%) [2]		Average years of schooling	
Ireland 1975	**9 840**		**96.50**		**7.09**	
Comparison group (unweighted average)	11 010		78.62		4.85	
Argentina		*11 132*		*93.40*		*6.30*
Greece		*12 432*		*84.80*		*5.91*
Portugal		*8 997*		*64.10*		*2.77*
South Africa		*9 625*		*61.40*		*4.55*
Spain		*12 861*		*89.40*		*4.74*
Costa Rica 1975	**5 681**		**88.30**		**5.14**	
Comparison group (unweighted average)	5 718		66.33		3.79	
Algeria		*4 834*		*33.50*		*2.01*
Brazil		*5 560*		*73.10*		*2.99*
Mexico		*6 474*		*72.00*		*3.93*
Nicaragua		*5 973*		*54.50*		*2.99*
Peru		*5 298*		*73.00*		*4.61*
Uruguay		*6 171*		*91.90*		*6.20*
Republic of Korea 1960 [3]	**1 226**		**56.20**		**4.25**	
Comparison group (unweighted average)	1 268		34.24		1.81	
Dominican Republic		*1 302*		*64.70*		*2.70*
Honduras		*1 398*		*43.10*		*1.87*
Haiti		*1 055*		*9.80*		*0.78*
Thailand		*1 078*		*63.10*		*4.30*
Sri Lanka		*1 378*		*72.90*		*3.94*
Ghana		*1 300*		*20.50*		*0.97*
Liberia		*1 230*		*10.60*		*0.67*
Mozambique		*1 327*		*14.50*		*0.48*
Tunisia		*1 343*		*9.00*		*0.61*
Viet Nam 1990	**1 153**		**86.80**		**3.84**	
Comparison group (unweighted average)	1 204		41.00		2.41	
Congo		*1 292*		*60.40*		*5.13*
Central African Republic		*1 267*		*37.10*		*2.35*
Kenya		*1 124*		*65.10*		*3.65*
Guinea-Bissau		*1 002*		*22.80*		*0.65*
Nepal		*1 036*		*24.50*		*1.55*
Rwanda		*1 036*		*43.60*		*2.10*
Sudan		*1 674*		*34.10*		*1.64*

[1] Source: World Bank, World Development Indicators (apart from the Republic of Korea).

[2] Primary education and average years of schooling from: Barro, R.J. and Lee, J.-W. (2000). International Data on Educational Attainment: Updates and Implications. CID Working Paper No. 42. Data tables: http://www.cid.harvard.edu/ciddata/barrolee/appendix_data_tables.xls, 24 Nov. 2007.

[3] Republic of Korea data: http://www.ckan.net/package/read/econ-gdp-historical, 24 Nov. 2007.

[9] Countries in bold are the so-called "catching up" countries. Countries in the comparison groups (in italics) were selected for their similar levels of GDP per capita. The year was chosen based on the period when the catching up country concerned started to industrialize, apply new technologies, diversify economic activities and grow. The table shows the difference between the respective countries and comparison groups in terms of primary education and average years of schooling.

Chapter 6

Skills policies responding to global drivers of change: Technology, trade and climate change

> Employability is an "individual's capacity to … secure and retain decent work, to progress within the enterprise and between jobs, and to cope with changing technology and labour market conditions" (Recommendation No. 195, Paragraph 2(d)).

357. Viewed from a global perspective, change in workplaces and labour markets is being driven by powerful and interconnected forces: rapid technological advances (particularly ICTs) and their global diffusion, increased trade and FDI, intensified competition in international markets and, more recently, climate change and the urgent need to improve the management of energy and waste. Together they have the potential to trigger major transformations in economic systems in all regions of the world (ILO, 2006a; ILO, 2007k).

358. Chapter 5 examined the strategic role of skills development in achieving national economic and social objectives, essentially in terms of technological change, diversification and development. The present chapter looks at how skills policies can also help to develop effective responses to externally induced changes in the economy. Three contemporary global drivers of change are taken as examples: *technology, trade and climate change*. The twin goals are to be able to take advantage of emerging opportunities for increased productivity, employment and development, while at the same time mitigating the cost for workers and enterprises that are adversely affected by global changes. The chapter therefore refers to all three objectives of skills development policy, as described in Chapter 1: matching the demand for and supply of new skills; facilitating adjustment and mitigating its costs; and sustaining a dynamic development process.

6.1. Building social capabilities to promote technological catching up

359. In view of the major role of technological skills and competences in influencing innovation and diversification, it is important for technological change and skills development to go hand in hand. The GEA points out that a strong skills base promotes productivity and employment by enabling enterprises to move with greater ease up the value chain.

360. While developed countries are pushing the technological frontier, developing countries are moving towards that frontier (UNCTAD, 2007, p. 6). *Imitation allows for investment in non-traditional sectors and for the application of new technologies to a broader variety of economic activities.* The movement to a more sophisticated and

diversified production structure will result in the growth in the long term of productivity, competitiveness in international markets and income.

361. *The current phase of technological change is characterized by strong complementarities between technology and skills.* This means that skills and technology must be enhanced simultaneously in order to ensure the sustainability of productivity growth and development. Technological change is also characterized by a skills bias due to several factors:

- skilled workers are more adept at learning and implementing new technologies; even the simple adoption of existing technologies requires a minimum level of general education and training of the workforce (World Bank, 2003);
- the availability of skilled workers creates incentives for firms to develop skill-intensive technologies (Acemoglu and Pischke, 2001); and
- substantial engineering, scientific and managerial skills are needed at higher technological levels (Beaudry and Patrick, 2005).

362. The level of skills and competences attained in a population, the quality of education and training and the skills structure are important determinants of a society's capability to master technologies (Zachmann, 2008). While all developing countries are improving their skills base, the process of building social capabilities is highly uneven between countries and regions. This section draws links between the education and training levels and systems in the various countries and regions and the level and type of technologies that they attract and adopt.

6.1.1. A solid base of general and core skills

363. *At the early stage of technological development, it is essential to achieve a minimum level of educational attainment in the population.* A good educational foundation, in combination with relatively low wages, has helped some developing countries to attract investment in labour-intensive low-skill industries, such as garments and footwear.

364. However, in most of the countries of sub-Saharan Africa, manufacturing tends to consist of the low-level processing of natural resources and the manufacture of simple consumer goods for domestic markets (UNCTAD, 2003). Moreover, in many of these countries a large share of employment is in petty trade. The level of basic formal education is very low and the average adult literacy rate (age 15 and above) is only 61 per cent (UNESCO, 2007). In the informal economy in many African countries, as noted in Chapter 2, the most common means of delivering skills, namely through informal apprenticeship, does not enable young people to learn updated technologies. A number of countries currently have policies to upgrade the informal apprenticeship system, including improvements in the learning of both technical skills and theoretical knowledge (examples include Benin, Ghana, Mali, Senegal and Togo).

365. *Core skills, such as client service, social, interpersonal and language skills*, are important in attracting and adopting new ICTs. Activities in the fields of business services and data processing, such as call centres and back office services, combine the use of high-level communications technology and semi-skilled workers. The technological content of the work is relatively low, but workers require language skills, as well as social and communication skills. The eastern Caribbean countries have seized the opportunity of the new service markets to step onto the first rung of the knowledge economy, with low-cost semi-skilled labour being engaged in exporting data-processing services. The combination of excellent telecommunications technology and relatively

low wage semi-skilled IT workers has attracted many companies from the United States to the island countries (UNDP, 2005, p. 61).

366. A broad foundation of basic skills therefore helps countries to attract low-technology manufacturing, and also ensures the "trainability" of the workforce. The combination of widespread basic skills and the core skills that facilitate lifelong learning serve as a catalyst in moving to higher value added activities.

6.1.2. Scope, structure and quality of secondary education

367. The scope and quality of secondary education and training plays an important role in building social capabilities for technological and industrial advancement. Costa Rica, Ireland and the Republic of Korea invested substantially in secondary education with a view to promoting industrialization. When Ireland entered the European Economic Community in 1973, it received substantial subsidies from the European Social Fund, which it invested largely in educational reform to provide mass education at the secondary level. Costa Rica consistently invested in education and skills development and has been able to provide free, compulsory and universal education up to the ninth grade since 1948, with funds saved from abolishing the military (Monge Naranjo, 2008). This later helped to attract high-technology manufacturing, for example in electronics and software (Te Velde, 2005; Shanahan and Hand, 2008).

368. Many Asian countries expanded their secondary education between 1960 and 2000, during which period they moved from low to higher levels of technology and diversification. In contrast, many Latin American countries focused on expanding tertiary education, which has resulted in a high average number of years of schooling, but has not created a structure and distribution of education that has strengthened the broad social capabilities required for technological catching up. For example, average educational attainment is at the same level in both Malaysia and Panama, at 7.9 years of schooling, but in Malaysia 43 per cent of the population over the age of 15 has some secondary schooling, compared to 29 per cent in Panama. Garrett (2004, p. 13) concludes that the relatively low performance in secondary education has prevented many Latin American countries from gaining access to and adopting sophisticated technology.

369. Competences in mathematics and science have also been identified as an important element in moving into the knowledge economy. Broadening the base of scientific literacy appears to have a greater economic impact than building smaller cohorts of very highly trained scientists working in R&D (World Bank, 2003).

6.1.3. Technical, vocational and R&D skills

370. Technical and vocational education and training at the secondary and tertiary levels are highly relevant for the adoption of more complex and sophisticated technologies. The shift from low to medium and higher technologies requires substantial investment in vocational and technical skills, as well as in technical subjects in tertiary education. In the Republic of Korea and Singapore, secondary level vocational education and training played a crucial role in shifting the economy from labour-intensive low-level technology to more advanced technology during the early phase of industrialization (see box 6.1).

Box 6.1
Vocational education and training in the Republic of Korea and Singapore

In the Republic of Korea, vocational education and training played a crucial role in shifting the economy from low and semi-skilled labour-intensive manufacturing industries to more advanced technologies, heavy manufacturing and chemical industries. Following a vast economic development plan in the 1960s, the Government expanded basic education to the middle school level, anchored vocational training at the secondary level through vocational high schools and established two-year junior colleges to expand technical education at the tertiary level. In addition, it anticipated emerging skills shortages and started up a public non-formal training system under the Ministry of Labour to increase the supply of skilled craftspersons and operatives. The massive promotion of heavy and chemical industries in the 1970s was accompanied by a further expansion of formal and non-formal vocational education and by an emphasis on science and engineering in junior colleges. In addition, a Special Law for Vocational Training, enacted in 1974, required companies with over 500 employees to train 15 per cent of their workforce.

In Singapore, vocational education and training was equally important during the industrialization phase. Singapore's efforts to move to higher value added sectors in the mid-1970s included adding a vocational stream to secondary education, establishing joint bilateral technical institutes with France, Germany and Japan and creating a Skills Development Fund, which was initially used to finance the improvement of workers' skills and the ability of employers to provide training. Through its Vocational and Industrial Training Board (VITB), founded in 1970, Singapore also established a series of programmes to upgrade the skills of those who were already in the workforce. The overarching goal was to support the enhancement and diversification of the industrial base of the economy and to make sure that the move towards higher value added forms of production was not held back by inadequacies in the education and training of the workforce.

Source: Osman-Gani, 2004; Powell, 2007; Cheon, 2008.

371. The successful expansion of Costa Rica, India, Ireland and Israel in the global software and IT industry can largely be explained by the availability of a large supply of relevant IT skills and competences, and particularly the abundant supply of engineering and technology graduates (Arora and Gambardella, 2004). As a result, these countries were prepared and could take advantage when global opportunities emerged. Costa Rica and Ireland were able to target MNEs through their investment promotion agencies and to train workers rapidly in the ICT skills required to attract FDI. Furthermore, particularly in Ireland and Israel, the inflow of skilled migrants (including returning migrants) added to the supply of relevant IT skills.

372. Today, China, India and the Republic of Korea are the three leading countries in terms of total technical enrolment at the tertiary level. Indeed, already in 1995 they accounted for 44 per cent of the developing world's technical enrolments (UNCTAD, 2003). The Republic of Korea has the world's highest proportion of the population enrolled in engineering and other technical subjects. This strong skills base at a high technical level has been developed to prepare the move into the knowledge economy.

373. R&D skills take on greater importance as countries adopt and absorb ever more complex technologies. The knowledge-intensive sectors are the most dynamic in terms of their "learning potential". As technologies become more complex, the significance of R&D increases to monitor, absorb and adapt technologies, lower transfer costs and obtain technologies that are not easily available under licence. The Republic of Korea and Singapore had already invested heavily in the development of R&D capacity to prepare for the knowledge economy, while Ireland has recently started to focus on R&D

with a view to moving into higher value added sectors. China's R&D as a percentage of GDP grew from around 0.7 per cent in 1997 to 1.1 per cent in 2002 (UNIDO, 2005, p. 63). This reflects the strategy in China of diversifying manufacturing into medium-level technologies and, at the same time, catching up with cutting-edge technologies in some sectors and shifting into the knowledge economy.

374. Within countries, technological change may affect men and women differently. Occupational segmentation along gender lines may perpetuate a digital or technological gap. Skill polarization between an elite group of technologically skilled specialist workers and the larger mass of technically semi-skilled, flexible or casual workers receiving low-level training may prevent women from preparing for employment in new industries or occupations. Technological change often makes lower-skilled labour redundant. If women are concentrated in lower-skilled jobs, then they are relatively more vulnerable than men to both the qualitative and the quantitative impact of technological change (Biasiato, 2007). On the other hand, gender roles may not be fully segregated in certain areas of new technology. Women who begin working in these areas are at something of an advantage, as they do not have to overcome the perception that they are intruding on what has been accepted as "men's work".

6.2. Maximizing the benefits and minimizing the costs of trade and investment

375. The interlinkages between trade, foreign investment, employment and development have recently been the subject of increased attention by the ILO and other international organizations. For example, in 2006 the ILO undertook a joint study with the World Trade Organization on trade and employment (ILO/WTO, 2007). The World Commission on the Social Dimension of Globalization (2004, para. 275) pointed out that "All countries which have benefited from globalization have invested significantly in their education and training systems."

6.2.1. Skills and technology for competitiveness

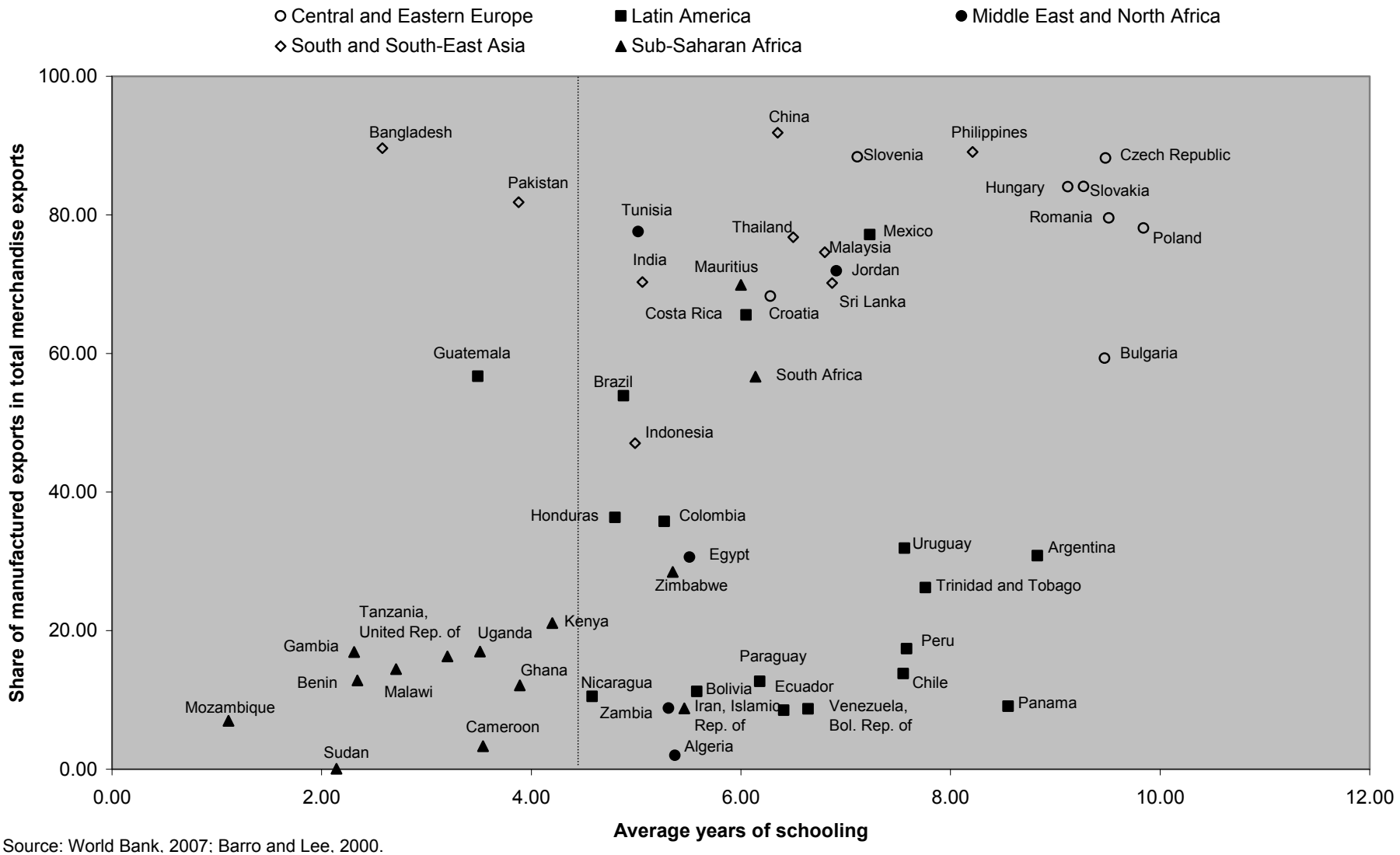
376. The benefits deriving from trade are not simply a residual effect of openness to trade. Many countries face important supply-side constraints and therefore seek to develop social capabilities so that they can benefit from trade and take advantage of global opportunities to induce and sustain a dynamic development process. Countries can develop new comparative advantages through this dynamic process. They can strengthen their productive capacities, their capacity to respond to the opening up of trade and their capacity to deal with change. With strong social capabilities, economies can take advantage of emerging opportunities in international markets and are therefore able to benefit from trade. Social capabilities, technological development and diversification into non-traditional economic activities help prepare economies to take advantage of the opportunities and potential available through trade.

377. Figure 6.1 groups countries according to their performance in education and the export of manufactured goods. In Africa, labour costs per hour are the lowest in the world, but so are average educational levels: most African countries have not participated in the global growth of manufactured exports and the diversification of production locations. These countries are grouped in the lower left-hand area of the figure.

378. The figure shows that there is a particularly strong correlation between manufactured exports and education levels (measured in the average years of schooling of persons over the age of 15) in Asia and in CEE countries. This suggests that, as these countries invest in education and training, they are developing skills that are needed to diversify export structures and increase their competitiveness on international markets.

379. However, in Latin American countries the share of manufactured exports is usually low, independent of the average level of schooling achieved. This lack of correlation suggests that education and skills development in most Latin American countries does not adequately create the social capabilities required for export diversification and international competitiveness.

Figure 6.1. Education and manufactured exports



Source: World Bank, 2007; Barro and Lee, 2000.

6.2.2. Enhancing the capability to adjust

380. The measures adopted in various related areas are taking on growing importance in developing the skills and capacity that are required to take advantage of trade-related opportunities and to adjust to the resulting changes. Three such areas are: external assistance, social protection and social dialogue.

381. *(i) External assistance:* there is evidence that access to global markets does not in itself spur investment in new supply capacity in the less developed countries (Stiglitz and Charlton, 2006). Many countries lack the resources to invest in developing the human capital, knowledge, information, institutions and infrastructure that are necessary to remove internal barriers to trade. The recent *Aid for Trade (AfT) initiative* is designed to provide more aid to less developed countries to enhance their trade capabilities and improve *trade preparedness* (OECD/WTO, 2006 and 2007).

382. In July 2006, the WTO Task Force defined the scope of Aid for Trade, which encompasses:

- *trade policy and regulations*, including the training of trade officials, institutional and technical support to facilitate the implementation of trade agreements and to adapt to and comply with rules and standards;
- *trade development*, including investment promotion, information services and training to build institutional and enterprise capabilities, establish business support services and promote public–private networking, e-commerce and market analysis;
- *building productive capacity*, focusing on private sector and SME development: training programmes in this context are usually directed at trade support institutions or enterprises;
- *trade-related infrastructure;* and
- *trade-related adjustment*.

383. At the conceptual level, Aid for Trade has so far placed emphasis on physical infrastructure and the removal of supply side constraints, with relatively little importance being given to developing the social capabilities required to benefit from trade. It would therefore be helpful if additional emphasis were given to the coordination of education and skills development policies, on the one hand, with technology and innovation policies, on the other. In particular, the role of building and upgrading technological capability and its impact *on export competitiveness and poverty reduction needs to be taken into account.* [1]

384. *(ii) Social protection:* trade policies cause shifts in the occupational composition of employment. While sectors producing for export will grow, with a rise in the related employment opportunities, other sectors that lose their competitiveness as a result of the rise in imports are likely to decline. *Trade-related adjustment and inclusive social protection systems can ease the transition between jobs and mitigate the social cost of job losses.* External assistance to provide help in designing policies and developing institutions that can reconcile the workers' need for security with the requirement of employers for flexibility is another possible area of emphasis for the Aid for Trade agenda.

[1] The *Least Developed Countries Report 2007* (UNCTAD, 2007, p. 181) concludes that "The importance of physical infrastructure is clearly recognized, but the development of technological capabilities is largely overlooked. This is a serious omission which must be rectified."

385. A recent study by the OECD (2005) argues that workers who are displaced due to the opening of trade are more adversely affected than workers who lose their jobs as a result of technological or structural changes or macroeconomic slow-down. They tend to experience longer spells of unemployment and larger wage losses when they return to employment. Workers in declining sectors tend to be older, less well-educated and to have substantial occupation- and industry-specific skills. If they do not find re-employment in the same industry, which is often unlikely, their technical and vocational skills, as well as tacit industry-specific capabilities, lose value on the labour market.

386. However, targeting social security and training measures at trade-related job losses is difficult, even in developed countries, as shown by the Trade Adjustment Assistance Programme in the United States and similar measures in other developed countries. And this is even truer in developing countries. General and permanent social security systems, combined with active labour market policies, can have a better impact than temporary or narrowly targeted mechanisms (Kletzer and Rosen, 2005). Moreover, lifelong learning is a type of unemployment insurance in that it eases the transition to new employment, occupations or industries in the event of job loss.

387. *(iii) Social dialogue:* trade liberalization brings structural changes and intensified competition in domestic and international markets. *Social dialogue has been shown to be an effective instrument in reconciling differences on how to maximize the benefits and minimize the costs of increased participation in global markets.* Workers seek a source of security and advancement through training. The aim of enterprises in this respect is to enhance flexibility and responsiveness to increasingly competitive and dynamic (international) markets. Governments seek to enhance international competitiveness, technological development, regional development, equity and social integration (Schömann et al, 2006). These different agendas place enormous pressure on training systems during the process of change, reforms and adjustment (Heyes, 2007; Nübler, 2008b).

388. For example, in Germany, the interest of companies in modernization in response to global changes and that of workers in training for employment protection need to be reconciled. Company agreements have been negotiated between employers and works councils for the introduction of teamwork as a new form of work organization and the systematic preparation of the workforce through training. This has resulted in increased productivity at the enterprise level. Workers have negotiated an entitlement to continuous training to ensure their employability in the company and in external labour markets (Nübler, 2008b). Similarly, in Austria social dialogue has helped to manage the process of structural adjustment in the iron industry by creating a foundation that provides joint solutions for retraining and social protection. The interests of enterprises and the economy have been served by maintaining and developing local human resources to accommodate newly emerging sectors and adjust to new technologies. Other examples also demonstrate the effectiveness of social dialogue over extended periods of change in technologies and markets (box 6.2 on Singapore) and at the international, as well as the national or sector levels (box 6.3 on the retail industry).

Box 6.2
Employability and labour market adjustment in Singapore

In Singapore, the Workforce Development Agency (WDA) is the central body for the coordination of all human capital issues. It enhances the employability of workers through multiskilling and retraining. In the long term, the goal is to assist workers to stay employed by maintaining up to date skills and to cooperate with employers with a view to strengthening human resource practices in a system that promotes lifelong learning. Training programmes targeting both young and older workers cater for the needs of the working population through the Adult Cooperative Training Scheme (ACTS) and the Training Initiative for Mature Employees (TIME). The Modular Skills Training Initiative (MOST) provides reskilling and skills upgrading courses through a part-time programme offered during the day, in the evening and at weekends.

The WDA also provides opportunities for the certification of vocational and technical skills acquired by workers outside the formal school system. This contributes to the recognition and portability of their skills and their employability. The Reskilling for New Economy Workforce (ReNEW) programme offers a fast-track programme for the certification of skills through intensive courses. Private institutions, such as the Singapore Institute of Management (SIM), the Singapore Training and Development Association (STADA) and the Singapore Human Resource Institute (SHRI) also provide degree courses to update workers' skills.

Trade unions contribute to the education and training of their members through the Skills Redevelopment Programme (SRP), originally established in the manufacturing sector and later extended to support worker (re)training in the service sector. The National Trades Union Congress also launched an Education and Training Fund (N-ETF) to support some 40 IT and office skills courses. Enterprises contribute to workforce development through a skills development levy of 1 per cent of gross wages and can reclaim most training costs from the Skills Development Fund (SDF).

Source: Leggett, 2007; Osman-Gani, 2004; Wong, 2001.

Box 6.3
Matching retail workers' skills to new technological requirements

The strongest and most competitive firms in the retail industry have adopted new technologies early. Radio-frequency identification (RFID) technology promises to revolutionize supply chain and retail store operations. RFID's non-line-of-sight and unique serialization properties vastly enhance control of these operations. An ILO tripartite meeting in 2006 (Tripartite Meeting on Social and Labour Implications of the Increased Use of Advanced Retail Technologies, Geneva, 18–20 September 2006) concluded that these technologies increase productivity, improve the quality of consumer service, make commerce more competitive and offer good job opportunities to workers with various levels of education, training and qualifications.

However, by facilitating widespread automation of low-skilled functions, RFID technologies are expected to displace a substantial proportion of the sector's current workforce. Many of these workers may find it difficult to move on and adapt to new functions without upgrading their skills. The ILO will convene a global forum (November 2008) to examine how social dialogue should accompany technological change, including by understanding job impact, minimizing job loss and maximizing prospects for skills and training to aid employability and improve business productivity and competitiveness.

Source: http://www.ilo.org/public/english/dialogue/sector/techmeet/tmart06.

6.2.3. The role of multinational enterprises in skills development and technology transfer

389. MNEs are often at the leading edge in the use of new technology. Moreover, they are frequently more capital and skill intensive than local firms and they require workers with technical knowledge, such as engineers (Lall, 2000). Many developing countries attract FDI and MNEs with the intention of linking their national knowledge system to the global knowledge system, developing tacit skills and creating technology spillovers. However, such learning is not automatic and many less and least developed countries have experienced only modest knowledge spillovers from MNEs (UNCTAD, 2007). The debate remains open on this point and further empirical research is needed to understand how MNEs can best contribute to building up social capabilities. The Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy (ILO, 2006d, p. 4) offers guidance to MNEs, governments and employers' and workers' organizations in this area (see box 6.4).

Box 6.4
Guidance in the area of training laid down in the ILO's Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy

"Governments, in cooperation with all the parties concerned, should develop national policies for vocational training and guidance … This is the framework within which multinational enterprises should pursue their training policies."

"… multinational enterprises should ensure that relevant training is provided for all levels of their employees … as appropriate, to meet the needs of the enterprise as well as the development policies of the country. … This responsibility should be carried out, where appropriate, in cooperation with the authorities of the country, employers' and workers' organizations and the competent local, national or international institutions."

"Multinational enterprises operating in developing countries should participate, along with national enterprises, in programmes, … encouraged by host governments and supported by employers' and workers' organizations … [which] should have the aim of encouraging skill formation and development as well as providing vocational guidance, and should be jointly administered by the parties which support them. Wherever practicable, multinational enterprises should make the services of skilled resource personnel available to help in training programmes organized by governments ..."

"Multinational enterprises, with the cooperation of governments … should afford opportunities within the enterprise as a whole to broaden the experience of local management in suitable fields such as industrial relations."

390. Empirical analysis suggests that strategies to incorporate FDI policies into export-led growth and development strategies have been more successful than import substitution approaches, in part because of the stronger incentives for MNEs to transfer skills and up to date technology to the host country. To be able to compete in international markets, export-oriented firms have an incentive to use the latest technologies, quality control procedures and management techniques (Moran and Wallenberg, 2007). MNEs are also motivated to invest in training for their local professional and managerial staff. This generates horizontal transfers of skills and technology between the MNE and its affiliates. When domestic producers form part of global networks and value chains, MNEs need to keep the local sourcing and supplier networks at the competitive frontier (as discussed in Chapter 3). They therefore have an incentive to provide on- and off-the-job vocational training for suppliers, subcontractors and customers, and to invest in tertiary education through close collaboration with universities and R&D centres, and the establishment of their own training centres.

391. Government policies and institutions play an important role in fostering skills and knowledge spillovers from MNEs to the local economy by attracting higher value added FDI and technology and skills-intensive MNEs, and by enabling the domestic economy to learn from MNEs. Joint ventures and networks of enterprises in local clusters or along global value chains can help to establish cooperation between MNEs and the domestic economy, and accordingly facilitate the flow of knowledge and skills. Firms can organize training and technological spillovers effectively through such learning and innovation networks (Zachmann, 2008).

392. Evidence from some large economies, in particular China, India and the Republic of Korea, suggests that joint ventures between domestic and international firms, within a coherent export-oriented development strategy targeting technological catching up, have benefited industry-wide learning. These countries first attracted MNEs in selected sectors largely by offering access to domestic markets. They favoured joint ventures to promote learning and technology transfer. As a consequence, they were able to develop significant technological and investment capabilities and diversify their production and export structure. The automobile industry in all three countries provides an interesting example of the creation of inter-firm and industry-wide learning in networks covering international car companies, local assembly firms and local suppliers (box 6.5).

Box 6.5
Learning networks in the Chinese and Indian automobile industries

China and India export a wide range of highly sophisticated products that is beyond what might be expected on the basis of their per capita income levels. Their export profiles are skewed towards high-productivity goods. Learning networks have played a critical role in developing this investment and productive capacity.

India liberalized the automobile industry in the 1990s. National car assembling companies, such as Maruti Udyog Ltd. (MUL), a joint venture between the Indian Government and the Suzuki Motor Corporation (Japan), and the private company Tata Engineering and Locomotive Company Ltd. (TELCO), a leading domestic car assembly firm, faced the need to meet two sets of standards:

- international quality standards set by global automobile manufacturers entering the Indian market; and
- high local content standards set by national regulations.

The Indian automobile industry tends to rely on numerous small supplier companies and it was therefore a challenge to meet international quality standards. In response, the assembly companies (TELCO and MUL) developed close linkages with their suppliers. Through these linkages, they upgraded the skills base of their suppliers, transforming the supply chain into a learning chain based on a collaborative and reciprocal relationship between assemblers and suppliers. The network has created an industry-wide learning process and the development of technological, networking and production capabilities at the industry level.

In China, since the mid-1990s, foreign investors have played a key role in building social capabilities: "... if China has welcomed foreign companies, it has always done so with the objective of fostering domestic capabilities" (Rodrik, 2006, pp. 7, 18). Foreign investors are required to enter joint ventures with domestic firms in order to ensure technology transfer. The strong domestic producer base has contributed to the creation of domestic supply chains. The automobile parts industry has been promoted through local content requirements, which has forced the companies to cooperate closely with local suppliers to ensure high quality. Substantial knowledge and skills have been transferred from foreign to domestic enterprises and domestic first-tier suppliers have now achieved levels close to international best practice.

Source: Okada, 2004; Rao, 2004; Rodrik, 2006, pp. 7, 18.

393. In Africa, foreign investment is largely targeted at natural resources, which generates limited spillover effects. For example, investments in mining are not strongly embedded in domestic economies as they have few forward and backward linkages in host economies. UNCTAD concludes that national policies have not yet found levers to enhance the impact of higher FDI inflows on building domestic technological capabilities or the development of domestic enterprises (UNCTAD, 2007, pp. 41–42).

6.3. Climate change

394. *One of the major drivers of change, along with technology and trade, is climate change.* Sustainable development and the integration of environmental protection into economic and social development objectives has long been an important issue on the national and international policy agenda. Environmental sustainability is an integral part of the ILO's objective of sustainable enterprise.

395. Within the sustainable development agenda, climate change is now an urgent concern. The level and structure of employment and skill needs in many places worldwide will be affected both by the direct impact of global warming (particularly in agriculture, fishing, tourism and mining) and by the policies adopted at the community, national and international levels to address climate change and its effects (World Resources Institute et al., 2005).

396. Knowledge and awareness of the employment and skills implications of climate change and the related policies are still scarce (Kuhndt and Machiba, 2008). This explains in part why "decisions on climate policies are rarely assessed from the standpoint of employment" (ETUC, 2007, p. 182). The ILO Director-General, in his Report to the ILC in 2007 (ILO, 2007k), highlighted the need to undertake research to identify the scale and nature of the employment transformation that will accompany the shift to more sustainable patterns of production and consumption.

397. Lessons from previous experiences of transition suggest that the transition process needs to be managed in a proactive manner and that steps have to be taken to facilitate the adjustment of labour markets so as to maximize opportunities for new jobs and address potential job losses. Skills development will play a prominent role in this process (ILO, 2007k).

398. Skills development is relevant to both mitigation and adaptation policies:

- *adaptation policies* aim to reduce the negative impact of global warming;
- *mitigation policies* seek to reduce global warming itself by cutting greenhouse gas emissions and developing a low-carbon economy.

6.3.1. Skills that enhance the capacity of the most vulnerable to adapt

399. Measures to improve the capacity to adapt to the impact of climate change need to be targeted at the most vulnerable social groups and geographical regions. Poor people in developing countries, who are often engaged in agriculture in tropical, semi-arid or arid regions, and people in low-lying areas, tend to be the most severely affected, as their economic activity and location are most climate sensitive (Abramovitz et al., 2002).

400. A fundamental need is for developing countries to be able to monitor climate trends and their impact on local productive activities. For example, the Commission on Agricultural Meteorology of the World Meteorological Organization is helping to strengthen the occupational profile and skills of agricultural meteorology in developing

countries by providing training and advisory services to the agricultural community. These skills are in high demand where changing weather conditions are giving rise to the need for adjustment measures in relation to crops, livestock and forests (Walker, 2005).

401. In agricultural communities, it is therefore necessary to improve knowledge of new technologies, crop selection and diversification, together with the skills to apply this knowledge (Stern, 2007; IPCC, 2007a). *The diversification of crop varieties* has been introduced in many countries in Africa and in Brazil to broaden farmers' choices (IPCC, 2007b). Communicating this knowledge through rural communities and enabling farmers to use it to manage their future was discussed in Chapter 4. In agriculture and other negatively affected sectors, governments, the social partners and the TVET system need to develop, devise and implement proactive measures so that workers, enterprises and communities are able to adapt to these far-reaching environmental changes and to the public policies and international agreements formulated to protect the environment. The regional and community response to restrictions on fishing in an area that is dependent on the industry offers an example of the type of institutions that are needed to build the capacity for adaptation (box 6.6).

Box 6.6
Responding to environmental change:
Diversification in Spanish fishing communities

According to the European Union, Spain has the 11 regions that are most dependent on the fisheries sector in the entire Community. The potential loss or downsizing of fishing (due to diminishing stocks and environmental protection policies) is driving urgent development and job-creation measures. Diversification includes aquaculture and new non-maritime activities. The target groups are middle-aged and older men who learned their trade through on-the-job experience and who have limited broader education or training, and women seeking to supplement family earnings. The response strategy draws on the commitment of all the stakeholders and institutional assets of the region, for example:

The General Union of Workers, in its response, identified promising employment alternatives to fisheries, depending on the geographical conditions and on the training and preferences of the workers affected, and included retraining among the investments required to develop these alternatives.

Universities and training centres contribute their capacities in the form of technological consultancy, management, awareness raising and specialized training to improve the adaptability of workers.

GUIMATUR is a Galician association composed exclusively of women shellfish gatherers, net makers and repairers, which was created in 2004 as a result of training courses subsidized from European funds. The association disseminates the traditional artisanal maritime culture of southern Galicia, through tourist routes and activities, enabling women to supplement their income during closed seasons or seasonal stoppages. The approach is appreciated for the income generated, as well as for the manner in which it values and protects the cultural heritage of the Galician maritime town involved (Cambados).

The consolidation and implementation of the ideas conceived by fishery workers themselves requires access to technical and financial support from outside the affected communities. The different forums, networks and spaces for the exchange of opinions play a fundamental role in publicizing initiatives and sharing learning about the experiments that are being carried out in other regions or countries, and in learning from the problems and strengths of other initiatives.

Source: www.guimatur.org/main.aspx.

6.3.2. Mitigation: Skills and capabilities for "green" jobs

402. A broad range of new and different skills at the vocational, technical and managerial levels are needed to reduce greenhouse gas emissions and facilitate the transition to low-carbon economies. Renewable energy and energy-efficient technologies, as well as policies and institutions advocating a shift from carbon-intensive to low-carbon activities are increasing the demand for new and different skills for "green jobs", while the skills used in so-called "brown" jobs will be in decline (Jochem and Madlener, 2003).

403. Various studies, mainly in industrialized countries, have estimated the potential net employment effect of mitigation policies. [2] However, as in the case of technology and trade, which are discussed above, if the potential is to be realized, economies require new, diversified and greater skills (ILO, 2007k). These include high-level skills for research and development in new technologies, technical skills related to the installation, operation and maintenance of energy-efficient buildings, and the many core skills required to support the implementation of reforms and changes.

404. Many countries are developing training policies and programmes to meet the "green" skills profile of new or upgraded occupations. In the United States, the Green Jobs Act of 2007 authorizes up to US$120 million a year in funding for the training of workers for jobs in the clean energy sector to design, manufacture, install, operate and maintain a host of innovative renewable energy and energy-efficient technologies. [3] There is also increasing demand for new occupational skills from artisans, architects and construction engineers as a consequence of green or energy-efficient building and rehabilitation in Germany, stimulated by the German Alliance for Work and the Environment, a joint agreement between the Government, employers' organizations, trade unions and environmental NGOs. Private training providers, universities, chambers of commerce and business organizations, such as regional crafts associations, have responded and developed continuous training programmes (UNEP, 2007).

405. In South Africa, technological catching up in the *renewable energy sector* has been coordinated with skills development programmes. The Government's White Paper on Renewable Energy (2003) supports the establishment of renewable energy technologies (solar water heating and biofuels) with the potential to create 35,000 jobs. The Government is designing new occupational skills in agriculture, for example to grow oil-bearing crops for bio-diesel and for solar heating (Visagie and Prasad, 2006). In China, the Government adopted the 2003–10 National Rural Biogas Construction Plan, providing new employment opportunities for many unemployed farmers in rural areas. In order to meet the shortage of technical capacity for the operation and maintenance of the digesters in Shanxi Province, 40 training courses were held and by 2005 over 4,000 people had been awarded the National Biogas Professional Technician Certificate (Kuhndt and Machiba, 2007). Further research continues, not only on skills and markets for biofuels, but also on their long-term environmental costs and benefits.

406. In the *waste and recycling sector*, competences and social capabilities are needed for the technical mastery and management of the process, as well as to devise new technologies and facilitate the emergence of new generations of designers and product developers who take fully into account the composition of the materials used for the manufacture of products. Skills and competencies of this type are still largely missing in universities and TVET institutions, and in the business and public sectors. Japan has

[2] See, for example, European Commission, 2005; Apollo Alliance, 2004; Kuhndt and Machiba, 2008.

[3] For details, see http://www.worldwatch.org (Oct. 2007).

placed recycling and the material-cycle society high on the agenda and has developed a national plan which includes capacity building through technical cooperation and support, with a view to developing the relevant systems (Government of Japan, 2005).

407. Improved knowledge of the employment and skills impact of climate change is needed so that governments and the social partners can agree on joint solutions to face the challenges of climate change at the national, industry and company levels. The above examples emphasize that appropriate skills development (so-called green skills for green jobs) can offer proactive support for the creation of new jobs through mitigation and adaptation measures, thereby fostering sustainable development. However, there will also be a growing need to help reskill the workers who are affected and build the capacities of the most vulnerable workers in developing countries so that they can respond more effectively to the local consequences of climatic changes.

408. Supportive policies can at the same time promote sustainable enterprises and sustainable development, as pointed out by Juan Somavia, the Director-General of the ILO, in his foreword to the conclusions of the general discussion concerning the promotion of sustainable enterprises (ILO, 2007e):

> Promoting sustainable enterprises is about strengthening the institutions and governance systems which nurture enterprises – strong and efficient markets need strong and effective institutions. It is also about ensuring that human, financial and natural resources are combined equitably and efficiently in order to achieve innovation and enhanced productivity. This calls for new forms of cooperation between government, business, labour and society at large to ensure that the quality of present and future life and employment is maximized whilst safeguarding the sustainability of the planet.

409. In conclusion, this brief overview underlines the value of the efforts made by labour ministries, trade unions and employers' organizations to integrate skills development issues and strategies into the design of policies on trade, technology and the environment. Coordination with the ministries and agencies responsible for policy design and implementation in these areas is therefore required if national education and skills development systems are to be able to: (1) equip workers, employers and young women and men with the skills required by emerging industries and jobs; and (2) build national capabilities to manage the transition between declining and growing sectors and occupations. Without such measures, the result will be skill gaps, high individual and social adjustment costs, and missed opportunities to boost productivity, accelerate employment growth and expand development.

Main policy orientations arising out of the report

1. Meet skills demand in terms of relevance and quality

- Increase the capacity of schools, training institutes and enterprises to deliver relevant and high-quality skills, and to respond to rapidly changing skills needs.
- Expand the availability of good quality basic education as an essential right and as a foundation for vocational training, lifelong learning and employability.
- Upgrade informal apprenticeship systems to deliver skills and knowledge as a basis for higher value added activities and more advanced technologies.
- Facilitate recognition of skills for the effective and efficient matching of workers' skills with skills required in enterprises (irrespective of where the skills were gained).
- Promote equal opportunities for women and men in access to relevant and quality education, vocational training and workplace learning, and to productive and decent work.
- Target training and employment services on women and men in disadvantaged population groups to help them realize their potential for productive work and for contributing to economic and social development.
- Improve the capacity of labour market institutions to collect and communicate reliable and up to date information on skills needs in current labour markets as a basis for better informed choices of stakeholders and career guidance.
- Promote social dialogue in training at the enterprise, sectoral and national levels to improve the relevance of skills training to market needs.

2. Mitigate adjustment costs

- Promote the capacity of workers and enterprises adversely affected by technology, market or climate changes to adapt to the new conditions.
- Reduce the risk for women and men of long-term unemployment or underemployment by updating skills and reskilling workers in a proactive way, in particular by anticipating changes and their implications for skills development.
- Extend the availability of affordable training in new skills and occupations as part of opportunities for lifelong learning with a view to maintaining the employability of workers and the sustainability of enterprises.
- Encourage the reintegration of unemployed workers into employment by combining training with job guidance and employment services.

- Ease the transition between jobs by strengthening social protection measures in coordination with active labour market policies.
- Enhance the capacity of governments and employers to effectively manage the shift from declining sectors into more competitive activities and sectors.
- Promote social dialogue in training for effective adjustment processes.

3. Sustain a dynamic development process

- Promote skills development policies as a strategic component of national development strategies and plans.
- Foster the coordination and alignment of basic education, vocational training and employment services with R&D, industrial, trade, technology and macroeconomic policies.
- Build up social capabilities to prepare for new technologies and emerging opportunities in domestic and global markets.
- Facilitate a continuous process of lifelong learning.
- Improve the capacity of labour market information systems to create, update and disseminate information on future skills needs to inform forward-looking skills development policies.
- Extend access to good quality training in the informal economy and build systems to recognize the skills acquired outside formal training in order to assist workers and employers to move into the formal economy.
- Develop and maintain institutional arrangements through which ministries, employers' and workers' representatives and training institutions recognize and respond to changing skills needs, in particular due to changes in technologies, trade and climate.
- Foster the capacity of local enterprises to absorb new knowledge and skills.
- Encourage investment in skills training for new occupations and jobs.
- Promote social dialogue in training to build institutional trust, forge social consensus and facilitate policy coordination and cooperation between stakeholders.

Suggested points for discussion

1. How can skills development contribute to decent work, productivity and employment growth and what are the key challenges for governments, employers' and workers' organizations in this respect?
2. What policies and measures can best support skills development for sustainable enterprise development and productivity at the workplace and along value chains? What is the role of governments and the social partners in promoting these policies and measures and how can the ILO support their efforts?
3. How can governments, workers' and employers' organizations ensure that skills development helps to manage global drivers of change, such as technology, trade and climate change?
4. What policies and institutions can best encourage the early identification of skills needs to feed into national and sector development strategies and to ensure workers' employability? What is the role of governments and the social partners in promoting such policies and institutions and how can the ILO support their efforts?
5. What policies and inter-ministerial coordination measures can best strengthen linkages between basic education, vocational training, labour market entry and lifelong learning for women and men? What is the role of governments and the social partners in this respect and how can the ILO support their efforts?
6. What are sustainable ways of expanding skills development for people in rural communities, for people in the informal economy as a means of effecting the transition to the formal economy and for other groups with special needs, with a view to helping them to achieve decent and productive work?

Bibliography

Abramovitz, J. et al. 2002. *Adapting to climate change: Natural resource management and vulnerability reduction* (World Conservation Union – IUCN, Worldwatch Institute, International Institute for Sustainable Development – IISD, Stockholm Environment Institute/Boston).

Acemoglu, D.; Pischke, J.-S. 2001. *Minimum wages and on-the-job training*, Discussion Paper 384, Institute for the Study of Labor (Bonn, IZA).

Aedo, C.; Nunez, S. 2003. *The impact of training policies in Latin America and the Caribbean: The case of Programa Joven*, Inter-American Development Bank Research Network Working Paper R 483 (Washington, DC, IADB).

African Union. 2007. *Strategy to revitalize technical and vocational education and training (TVET) in Africa*, Meeting of the Bureau of the Conference of Ministers of Education of the African Union (COMEDAF II+), 29–31 May 2007, Addis Ababa, Ethiopia.

Aidt, T.; Tzannatos, Z. 2002. *Unions and collective bargaining* (Washington, DC, World Bank).

Alex, G.; Rivera, W. 2004. *Extension reform for rural development: Case studies of international initiatives.* Available at: www.worldbank.org, Agriculture and Rural Development web site.

Amabile, T. M. 1996. *Creativity in context* (New York, Westview Press).

Amer, M. 2005. *Background paper on Egypt*, prepared for the European Training Foundation (ETF) in the framework of its project on the functioning of labour markets in the Mediterranean region, 2005.

Apollo Alliance. 2004. *New energy for America: The Apollo jobs report: Good jobs & energy independence*, jointly produced by the Institute for America's Future and the Center on Wisconsin Strategy with economic analysis provided by the Perryman Group, Waco, Texas. Available at: http://www.apolloalliance.org.

Arora, A.; Gambardella, A. 2004. "From underdogs to tigers: The rise and growth of the software industry", in *Some emerging countries* (Oxford, Oxford University Press).

Ashton, D.; Sung, J.; Raddon, A.; Riordan, T. 2008. *Challenging the myths about learning and training in small and medium enterprises: Implications for public policy* (Geneva, ILO, forthcoming).

Asian–Pacific Newsletter. 2005. "Agriculture", in *Asian–Pacific Newsletter on Occupational Health and Safety*, Vol. 12, No. 3, Nov. Available at: http://www.ttl.fi/Internet/English/Information/Electronic+journals/Asian-Pacific+Newsletter/.

Assaad R.; Roudi-Fahimi, F. 2007. *Youth in the Middle East and North Africa: Demographic opportunity or challenge?* Population Reference Bureau MENA policy brief, April.

Asset Skills. 2006. *Skills needs assessment for the east of England region* (United Kingdom).

Atchoarena, D.; Gasperini, L. 2003. *Education for rural development: Towards new policy responses*, joint study conducted by FAO and UNESCO (Rome/Paris, FAO/UNESCO–IIEP).

Auer, P.; Efendioglu, U.; Leschke, J. 2005. *Active labour market policies around the world: Coping with the consequences of globalization* (Geneva, ILO).

Australian National Training Authority. 2004. *Bridging pathways: Blueprint for implementation*, revised blueprint (Brisbane, Australian National Training Authority).

Australian Public Service Commission. 2006. *Employment of people with disabilities in the APS*, Management Advisory Committee No. 6 (Canberra, Commonwealth of Australia).

Avila, M.; Gasperini, L. 2005. *The MDGs and sustainable rural development in sub-Saharan Africa: Challenges and implications for education for rural people*, FAO working document (Rome, FAO).

Bach, S. 2003. *International migration of health workers: Labour and social issues*, Working Paper No. 209, Sectoral Activities Programme (Geneva, ILO).

Barrett, A.; O'Connell, P. 2001. "Does training generally work?", in *Industrial and Labour Relations Review*, Vol. 54, No. 3, pp. 647–662.

Barro, R.J.; Lee, J. 2000. *International data on educational attainment: Updates and implications*, CID Working Paper No. 42.

Batra, G. 2001. *Skills upgrading and competitiveness in developing countries*, Presentation to the World Bank Institute, Labour Market Policies, 23 April–4 May (Washington, DC, World Bank Institute).

Bauer, S.; Finnegan, G.; Haspels, N. 2006. *GET ahead for women in enterprise training package and resource kit* (Bangkok, ILO).

Beaudry, P.; Patrick, F. 2005. *Managerial skill acquisition and the theory of economic development*, NBER Working Paper No. W11451.

Beaumont, P.; Hunter, L.; Sinclair, D. 1996. "Customer-supplier relations and the diffusion of employee relations changes", in *Employee Relations*, Vol. 18, No. 1, pp. 9–19.

Beblo, M.; Beninger, D.; Laisney, F. 2003. *Methodological issues related to the analysis of gender gaps in employment, earnings and career progression: Final report*, Employment and Social Affairs, European Commission.

Belussi, F. 1996. "Local systems, industrial districts and institutional networks: Towards a new evolutionary paradigm of industrial economics?" in *European Planning Studies*, Vol. 4, No. 1, pp. 5–27.

Bennell, P. 1999. *Learning to change: Skills development among the economically vulnerable and socially excluded in developing countries.* Employment and Training Papers No. 43 (Geneva, ILO).

Biasiato, F. 2007. *Gender notes: Preliminary contribution towards mainstreaming gender throughout the report on "Skills for productivity, employment growth and development"*, background note for the ILO, unpublished document.

Biggs, T.; Shah, M.; Srivastava, P. 1996. *Technological capabilities and learning for African enterprises*, Regional Program on Enterprise Development (RPED) (Washington, DC, World Bank).

Bird, A. 2006. *Together: Making national skills strategies that work – for all: With lessons from Australia, Singapore, Malaysia and South Africa*, unpublished, ILO Asian Regional Office (Bangkok, ILO).

Blair, J.; Gereffi, G. 2001. "Local clusters in global chains: The causes and consequences of export dynamism in Torreon's blue jeans industry", in *World Development*, Vol. 29, No. 11, pp. 1885–1903.

Blom, R. 2006. *An introductory guide to recognition of prior learning: Conceptual and practical issues for policy-makers*, unpublished report (Geneva, ILO).

Botswana Training Authority (BOTA). 2006. *Policy on mainstreaming gender into vocational training*, Government of Botswana.

Brewer, L. 2004. *Youth at risk: The role of skills development in facilitating the transition to work*, Skills Working Paper No. 19 (Geneva, ILO).

Briscoe, J.; Dainty, A.; Millett, S. 2001. "Construction supply chain partnerships: Skills, knowledge and attitudinal requirements", in *European Journal of Purchasing and Supply Management*, Vol. 7, pp. 243–255.

Brown, C. 1990. "Empirical evidence on private training", in *Research in Labor Economics*, Vol. 11, pp. 97–113.

Brown, P. 1999. "Globalization and the political economy of high skills", in *Journal of Education and Work*, Vol. 12, No. 3, pp. 233-251.

Bulgarelli, A. 2006. *Four years on: Reviewing the priorities for cooperation in vocational education and training*, presentation to an informal meeting of Education Ministers, Helsinki, 5 December 2006, CEDEFOP.

Burchardt, T. 2005. *The education and employment of young disabled people: Frustrated ambition*, published for the Joseph Rowntree Foundation by The Policy Press.

Burchell, B.; Deakin, S.; Michie, J.; Rubery, J. 2003. *Systems of production: Markets, organizations and performance* (London, Routledge).

Camagni, R. 1991. *Innovation networks: Spatial perspectives* (London, Belhaven Press).

Cantwell, J.A. 2005. "Innovation and competitiveness", Ch. 20 in J. Fagerberg, D.C. Mowery and R.R. Nelson (eds), Oxford Handbook of Innovation (Oxford and New York, Oxford University Press).

CAPLAB. 2007. *Informe de resultados y efectos del Programa de Capacitación Laboral*, 1997–2006, Centro de Servicios para la Capacitación Laboral y el Desarrollo.

Carr, M.; Chen, M. 2004. "Globalization, social exclusion and gender", in *International Labour Review*, Vol. 143, No. 1–2, pp. 129–160.

Cazes, S.; Nesporova, A. 2006. "Combining flexibility and security for employment and decent work in the western Balkans", in *South-East Europe Review for Labour and Social Affairs*, 9(2) (Dusseldorf, Hans-Boeckler-Stiftung).

CEDEFOP. 2007. Agora XXVI. 2007. *Building a European VET area*, conference held in Thessaloniki, 26–27 April 2007, conference statement. Available at: http://www.cedefop.europa.eu/index.asp?section=3&sub=1&read=2339 [13 Feb. 2008].

Cheon, B. 2008. *Skills development strategies for moving up the high road to development: The case of Republic of Korea* (Geneva, ILO, forthcoming).

Clark, P.F.; Stewart, J.B.; Clark, D.A. 2006. "The globalization of the labour market for health-care professionals", in *International Labour Review*, Vol. 145, No. 1–2, pp. 37–64.

Coe, D.T.; Helpman, E. 1995. "International R&D spillovers", in *European Economic Review*, Vol. 39, pp. 859–887.

Cohen, W.M.; Levinthal, D.A. 1990. "Absorptive capacity: A new perspective on learning and innovation", in *Administrative Science Quarterly*, Vol. 35, No. 1, pp. 128–152.

Combs, J.; Liu, Y.; Hall, A.; Ketchen, D. 2006. "How much do high performance work practices matter?", in *Personnel Psychology*, Vol. 59, No. 3, pp. 501–528.

Committee of Donor Agencies for Small Enterprise Development. 2001. *Business development services for small enterprises: Guiding principles for donor intervention* (Washington, DC).

Confederation of British Industry. 2007. *Shaping up for the future: The business vision for education and skills.* Available at: http://www.cbi.org.uk/pdf/skillssuftf0407.pdf [Jan. 2008].

Cörvers, F.; Hensen, M. 2007. "Forecasting regional labour market developments by occupation and education", in M.T.O. Strietska-Ilina and M. Tessaring (eds): *Systems, institutional frameworks and processes for early identification of skill needs* (Luxembourg, CEDEFOP), pp. 56–72.

—; de Grip, A.H. 2002. "Beyond manpower planning: A labour market model for the Netherlands and its forecasts to 2006", in M. Neugart and K. Schömann (eds): *Forecasting labour markets in OECD countries* (Cheltenham, Edward Elgar), pp. 185–223.

Cousins, P.D.; Crone, M. J. 2003. "Strategic models for the development of obligation based inter-firm relationships", in *International Journal of Operations and Production Management*, Vol. 23, No. 12, pp. 1447–1474.

Crouch, C.; Le Gales, P.; Trigilia, C. 2001. *Local production systems in Europe: Rise or demise?* (Oxford, Oxford University Press).

Dasgupta, P. 2000. "Trust as a commodity", in D. Gambetta (ed.): *Trust: Making and breaking cooperative relations* (New York, Basil Blackwell).

De Ferranti, D. et al. 2003. *Closing the gap in education and technology*, World Bank Latin American and Caribbean Studies (Washington, DC).

De Gobbi M.; Nesporova, A. 2005. *Towards a new balance between labour market flexibility and employment security for Egypt*, Employment Policies Unit, Employment Strategy Department (Geneva, ILO).

de Silva, S. 1996. *Collective bargaining negotiations*, Bureau for Employers' Activities (Geneva, ILO).

Dell'Aringa, C.; Ghinetti, P.; Lucifora, C. 2003. *High performance work systems, industrial relations, and pay setting in Europe* (Catholic University, Milan). Available at: http://cep.lse.ac.uk/piep/papers/DAGL-final2.pdf [30 Oct. 2007].

Docquier, F.; Lowell, L.; Marfouk, A. 2007. *A gendered assessment of the brain drain*, IZA Discussion Paper Series No. 3235 (Bonn, IZA).

—; Marfouk, A. 2005. *Measuring the international mobility of skilled workers (1990–2000)*, World Bank Policy Research Working Paper No. 3381.

Doeringer, P.B.; Evans-Klock, C.; Terkla, D.G. 2002. *Start-up factories: High performance management, job quality, and regional advantage* (New York, Oxford).

—; Terkla, D.G. 1995. "Business strategy and cross-industry clusters", in *Economic Development Quarterly*, Vol. 9, No. 3, pp. 225–237.

Dyer, J.H.; Singh, H. 1998. "The relational view: Cooperative strategy and sources of inter-organizational competitive advantage", in *The Academy of Management Review*, Vol. 23, No. 4, pp. 660–679.

Dyson, C.; Keating, J. 2005. *Recognition of prior learning: Policy and practice for skills learned at work*, Skills Working Paper No. 21 (Geneva, ILO).

Dumont, J.-C. 2007. *International migration of health professionals and nurses: New evidence and recent trends*, presented at the conference "A Call to Action: Ensuring Global Human Resources for Health", 22–23 March, Geneva.

—; Lemaître, G. 2005. *Counting immigrants and expatriates: A new perspective*, Social, Employment and Migration Working Papers No. 25 (Paris, OECD). Available at: http://www.oecd.org/dataoecd/34/59/35043046.pdf.

The Economist. 2007. *Asia's skills shortage: Capturing talent,* 16 Aug. 2007. Available at: http://www.economist.com/displaystory.cfm?story-id=9645045 [4 Dec. 2007].

Elwan, A. 1999. *Poverty and disability: A survey of the literature*, Social Policy Discussion Paper No. 9932 (Washington, DC, World Bank).

Enos, M.D.; Kehrhahn, M.T.; Bell, A. 2003. "Informal learning and the transfer of learning: How managers develop proficiency", in *Human Resource Development Quarterly*, Vol. 14, No. 4, pp. 369–387.

European Association of Cities for Second Chance Schools. 2007. *Second chance schools (SCSs): Spain*, Human Resources Development Database, Skills and Employability Department, ILO. Available at: http://www.ilo.org/public/english/employment/skills/hrdr/init/spa-3.htm [13 Aug. 2007].

European Commission. 2007. *Towards common principles of flexicurity: More and better jobs through flexibility and security*, {SEC(2007) 861, 862}, COM(2007) 359 final (Brussels).

—. 2005. *Green paper on energy efficiency: Doing more with less* (Luxembourg).

European Foundation for the Improvement of Living and Working Conditions. 1999. *An employment pact for older workers?* European Industrial Relations Observatory online. Available at: http://www.eurofound.europa.eu/eiro/1999/03/feature/at9903135f.htm [13 Feb. 2008].

European Trade Union Confederation. 2007. *Climate change and employment*, European Trade Union Confederation (ETUC), Instituto Sindical de Trabajo, Ambiente y Salud (ISTAS), Social Development Agency (SDA), Syndex, Wuppertal Institute.

Evans, S. 2007. *Disability, skills and work: Raising our ambitions*, published by the Social Market Foundation. Available at: http://www.smf.co.uk/assets/files/publications/Disability,%20skills%20and%20work.pdf [2 Dec. 2007].

Fahim, Y. 2008. *Skills, productivity and decent work in Arab States*, Employment Sector Working Paper, joint publication by the ILO Regional Office for the Arab States and the Employment Sector (Geneva, ILO, forthcoming).

Fashoyin, T.; Sims, E.; Tolentino, A. 2006. *Labour–management cooperation in SMEs: Forms and factors* (Geneva, ILO).

Freedman, D. 2008. *Improving skills and productivity of disadvantaged youth*, Employment Sector Working Paper (Geneva, ILO).

Freeman, R.B.; Medoff, J.L. 1984. *What do unions do?* (New York, Basic Books).

Frölich, M.; Heshmati, A.; Lechner, M. 2004. "A micro-econometric evaluation of rehabilitation of long-term sickness in Sweden", in *Journal of Applied Econometrics*, Vol. 19, No. 3, pp. 375–396.

Galhardi, R. 2004. *Statistics on investment in training*, SKILLS Working Paper No. 18 (Geneva, ILO).

—. 2002. "Financing training: Innovative approaches in Latin America", in G. Rodgers et al.: *Training, productivity and decent work* (ILO/Cinterfor, Uruguay), pp. 73–104.

Gallart, M.A. 2008. *Desafíos y aproximaciones para articular las calificationes y competencias de los trabajadores y el crecimiento del empleo: El caso de América Latina*, Employment Sector Working Paper (Geneva, ILO).

Garrett, G. 2004. *The three worlds of globalization: Market integration, economic growth and the distribution of income in high-, middle- and low-income countries*, UCLA (unpublished).

Gasskov, V. 2006. *Vocational education and training institutions*, a management handbook and CD-ROM (Geneva, ILO).

—. 2001. *Government interventions in private financing of training* (Geneva, ILO).

Gephardt, M.; VanBuren, M. 1996. "Building synergy: The power of high performance work systems", in *Training and Development Journal*, Vol. 50, pp. 22–36.

Ghose, A.; Majid, N.; Ernst, C. 2008. *World employment challenge*, 2008 (Geneva, ILO, forthcoming).

Global Forum on Migration and Development (GFMD). 2007. *Summary report, First meeting*, Brussels, 9–11 July 2007. Available at: http://www.gfmd-fmmd.org.

Godfrey, M. 2003. *Youth employment policy in developing and transition countries: Prevention as well as cure*, Social Protection Discussion Paper Series (Washington, DC, World Bank).

Gospel, H.; Fiedler, M. 2007. *The long-run dynamics of big firms: The 100 largest employers, from the US, UK, Germany, France, and Japan, 1907–2002*, King's College, University of London (mimeo).

—; Pendleton, A. 2005. *Corporate governance and labour management: An international comparison* (Oxford University Press).

Government of Japan. 2005. *Japan's action plan for a world-wide sound material-cycle society through the 3R initiative. "Japan's action plan to promote global zero-waste societies"* (Tokyo). Available at: http://www.env.go.jp/recycle/3r/en/approach.html [15 Nov. 2007].

Government of South Africa. 2003. *White paper on renewable energy* (Pretoria, Department of Minerals and Energy).

Government of the Czech Republic. 2005. *National reform programme of the Czech Republic* (Prague).

Graffam, J.; Smith, K.; Shinkfield, A.; Polzin, U. 2002. "Employer benefits and costs of employing a person with a disability", in *Journal of Vocational Rehabilitation*, Vol. 17, pp. 251–263.

Greenberg, D.; Michalopoulos, C.; Robins, P. 2003. "A meta-analysis of government-sponsored training programs", in *Industrial and Labor Relations Review*, Vol. 57, No. 1.

Grossman, G.; Helpman, E. 1991. *Trade, knowledge spillovers and growth*, NBER Working Papers No. 3485 (Cambridge, NBER).

Hansen, E. 2006. *Career guidance: A resource handbook for low- and middle-income countries*, Skills and Employability Department (Geneva, ILO).

Hausmann, R.; Rodrik, D. 2003. "Economic development as self-discovery", in *Journal of Development Economics*, Vol. 72 (Dec. 2003).

Hayter, S. 2002. "Collective bargaining and income equality in an integrating world", in *Labour education: Paying attention to wages*, 2002/3, No. 128 (Geneva, ILO).

Henaff, N. 2008. *Skills development strategies for moving up the high road to development: The case of Viet Nam* (Geneva, ILO, forthcoming).

Hendry, C.; Brown, R.; Defillippi, R.; Hassink, R. 1999. "Industry clusters as commercial knowledge and institutional networks: Opto-electronics and six regions in the UK, USA and Germany", in A. Grandori (ed.): *Interfirm networks: Organizational and industrial competitiveness* (New York, Routledge), pp. 151–184.

Henry, C. 2008. *Improving skills development in rural communities*, Employment Sector Working Paper (Geneva, ILO, forthcoming).

Heyes, J. 2007. "Training, social dialogue and collective bargaining in Western Europe", in *Economic and Industrial Democracy*, Vol. 28, No. 2, pp. 239–258.

Hilbert, C.; Schömann, K. 2004. "The need for early identification of future skill requirements in the European Union", in S.L. Schmidt et al. (eds): *Identifying skill needs for the future: From research to policy and practice*, Reference Series 52 (Luxembourg, CEDEFOP), pp. 50–62.

Hill, E. 1995. "Labor market effects of women's post-school-age training", in *Industrial and Labor Relations Review*, Vol. 49, No. 1, pp. 138–149.

Hirsch, B.T. 2003. *What do unions do for economic performance?* IZA Discussion Paper No. 892.

Hope, T. 2003. *Disabilities: Aid groups call for a UN Convention to protect rights*, UNWire, 14 Feb. 2003. Available at: http://unwire.org.

Hunter, L.W.; Hitt, L.M. 2001. "What makes a high-performance workplace? Evidence from retail bank branches", in *Labor and Industrial Relations Review*.

Imbs, J.; Wacziarg, R. 2003. "Stages of diversification", in *American Economic Review*, Vol. 93, No. 1, pp. 63–86.

Imel, S. 1991. *Older worker training: An overview.* ERIC Clearinghouse on Adult Career and Vocational Education No. 114 (Columbus, Ohio, ERIC Digest).

Imparato, A. 2002. *United States: The impact of ADA on employment opportunities for people with disabilities*, Disability World web site, Issue No. 17. Available at: www.disabilityworld.org/01-03_03/index.shtml.

Institute for Labour Studies. 2007. *China Employment Report in 2006 and 2007*, Ministry of Labour and Social Security, Beijing.

Intergovernmental Panel on Climate Change (IPCC). 2007a. "Mitigation from a cross-sectoral perspective", in *Mitigation of climate change*, Working Group III report, IPCC Fourth Assessment Report, Ch. 11 (Cambridge, Cambridge University Press).

—. 2007b. "Africa", in *Impacts, adaptation and vulnerability*, Working Group II report, IPCC Fourth Assessment Report, Ch. 9 (Cambridge, Cambridge University Press).

International Development Association (IDA). 2007. *Stipends help triple girls' access to school in Bangladesh* (Washington, DC, World Bank). Available at: http://worldbank.org [27 Aug. 2007].

International Labour Office (ILO). 2008a. *Promotion of rural employment for poverty reduction*, report for the International Labour Conference, Report IV, 97th Session (forthcoming).

—. 2008b. *Skills development through community-based rehabilitation (CBR): A good practice guide*, Skills and Employability Department (Geneva, forthcoming).

—. 2008c. *Global Employment Trends 2008* (Geneva).

—. 2008d. *Representational gap for workers in small enterprises*, joint publication by EMP/ENT and ACTRAV (Geneva, forthcoming).

—. 2007a. *Key Indicators of the Labour Market* (KILM), fifth edition (Geneva).

—. 2007b. *Know About Business (KAB) country programme assessment in frames of primary vocational education system in the Kyrgyz Republic*, International Programme on the Elimination of Child Labour (IPEC) (Bishkek).

—. 2007c. Eleventh African Regional Meeting, Addis Ababa, 23–27 April 2007, AfRM/XI/D.4(Rev.). Available at: http://www.ilo.org/public/english/standards/relm/rgmeet/11afrm/report.pdf [7 Jan. 2007].

—. 2007d. *Working poverty model*, Employment Trends Unit (Geneva).

—. 2007e. Conclusions concerning the promotion of sustainable enterprises, ILC, 96th Session, June 2007 (Geneva).

—. 2007f. *The promotion of sustainable enterprises*, Report VI, ILC, 96th Session (Geneva).

—. 2007g. *Labour and social trends in ASEAN 2007: Integration, challenges and opportunities*, Regional Office for Asia and the Pacific (Bangkok).

—. 2007h. *EmployAbility: A resource guide on disability for employers in Asia and the Pacific*, D.A. Perry (ed.) (Bangkok).

—. 2007i. *Portability of skills*, Committee on Employment and Social Policy, Governing Body, 298th Session, Geneva, March 2007, GB.298/ESP/3.

—. 2007j. *Report of the Committee on Employment and Social Policy*, Governing Body, 300th Session, Geneva, November 2007, GB.300/15.

—. 2007k. *Director-General's introduction to the International Labour Conference: Decent work for sustainable development*, Report I(A), ILC, 96th Session, Geneva.

—. 2007l. *The Decent Work Agenda in Poverty Reduction Strategy Papers (PRSPs): Recent developments*, Committee on Employment and Social Policy, Governing Body, 300th Session, Geneva, Nov. 2007, GB.300/ESP/3.

—. 2007m. *Collective bargaining and the Decent Work Agenda*, Committee on Employment and Social Policy, Governing Body, 300th Session, Geneva, November 2007, GB.300/ESP/1.

—. 2007n. *Conclusions of the Tripartite Meeting on Decent Employment for Young People*, Subregional Tripartite Meeting of Experts on Decent Employment for Young People, Ljubljana, 6–7 December 2007.

—. 2007o. *Global employment trends model, November 2007*, Employment Trends Department (Geneva).

—. 2007p. *Sustaining productivity and competitiveness as a foundation for decent work*, Asian Employment Forum: Growth, Employment and Decent Work, Beijing, 13–15 August 2007.

—. 2006a. *Changing patterns in the world of work*, Report of the Director-General, Report I (C), ILC, 95th Session, Geneva.

—. 2006b. *Global employment trends for youth* (Geneva).

—. 2006c. *Realizing decent work in Asia*, Report of the Director-General for the 14th Asian Regional Meeting, 29 August–1 September 2006, Busan.

—. 2006d. *Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy*, adopted by the Governing Body at its 204th Session (November 1977), Geneva, amended at its 279th Session (November 2000) and 295th Session (March 2006).

—. 2006e. *Occupational safety and health: Synergies between security and productivity*, Committee on Employment and Social Policy, Governing Body, 295th Session, Geneva, March 2006, GB.295/ESP/3.

—. 2006f. *Factory Improvement Programme: Viet Nam final evaluation*.
—. 2006g. *Women's Entrepreneurship Development and Gender Equality (WEDGE) Programme: Progress report – 2006*, ILO–Irish Aid Partnership Programme, Small Enterprise Development (IFP/SEED) (Geneva).
—. 2006h. *Productivity and competitiveness of GEA member companies*, ILO–Georgian Employers' Association (Tbilisi).
—. 2006i. *Survey on workplace learning practices in Mauritius*, report by F. Pyke (Geneva).
—. 2006k. *Youth employment*, Committee on Employment and Social Policy, Governing Body, 297th Session, Geneva, November 2006, GB.297/ESP/4.
—. 2006l. *SYNDICOOP: Organizing out of poverty in the informal economy*, Job Creation and Enterprise Development, Technical Cooperation abstract. Available at: http://www.ilo.org/dyn/empent/details.techcoopdetails?p-unique=171520&p-lang=EN&p-tech-coop-id=187 [10 Dec. 2007].
—. 2006m. *Employers' organizations and enterprise development in the informal economy: Moving from informality to formality*, CD produced by the Bureau for Employer's Activities (Geneva).
—. 2006n. *Tackling hazardous child labour in agriculture: Guidance on policy and practice*, International Programme on the Elimination of Child Labour (IPEC) (Turin).
—. 2006o. *Thematic evaluation of skills training interventions to prevent and eliminate child labour*, International Programme on the Elimination of Child Labour (IPEC) (unpublished).
—. 2005a. *World Employment Report 2004–05: Employment, productivity and poverty reduction* (Geneva).
—. 2005b. *Decent work: Safe work*, introductory report to the XVIIth World Congress on Safety and Health at Work: Prevention in a Globalized World: Success through Partnerships, Orlando, 18–22 September 2005. Available at: www.ilo.org/public/english/protection/safework/wdcongrs17/intrep.pdf [17 Oct. 2007].
—. 2005c. *Better Factories Cambodia.* Available at www.betterfactories.org [29 Oct. 2007].
—. 2005d. *Resolution concerning youth employment*, adopted by the ILC at its 93rd Session. Geneva, June 2005.
—. 2005e. *Youth: Pathways to decent work: Promoting youth employment: Tackling the challenge*, Report VI, ILC, 93rd Session, Geneva, June 2005.
—. 2005f. *Multilateral Framework on Labour Migration: Non-binding principles and guidelines for a rights-based approach to labour migration*, adopted by the Tripartite Meeting of Experts, Geneva, 31 October–2 November 2005.
—. 2005j. *Economia Informal en las Americas: Situacion actual, prioridades de politicas y buenas practicas*, Regional Office for Latin America and the Caribbean (Lima).
—. 2004a. Human Resources Development Recommendation (No. 195).
—. 2004b. *Starting right: Decent work for young people*, background paper for the Tripartite Meeting on Youth Employment: The Way Forward, Geneva, 13–15 October 2004.
—. 2004c. *Conclusions concerning a fair deal for migrant workers in a global economy*, adopted by the ILC at its 92nd Session, Geneva, June 2004.
—. 2004d. *Success Africa: Reducing poverty through decent work: 30 stories*, the ILO contribution to the Social Partners Forum, Ouagadougou, 3–4 September 2004.
—. 2004e. *Conclusions of the Tripartite Meeting on Youth Employment: The Way Forward*, Geneva, 13–15 October 2004.
—. 2004f. *Global employment trends for youth* (Geneva).
—. 2003a. *The guide for training women economic groups*, Project for Promoting the Linkages between Women's Employment and the Reduction of Child Labour (Dar es Salaam).
—. 2003d. *Thailand country profile: Employment of people with disabilities: The impact of legislation (Asia and the Pacific)*, ILO InFocus Programme on Skills, Knowledge and Employability (Geneva).
—. 2002. *Conclusions concerning decent work and the informal economy*, adopted by the ILC at its 90th Session, Geneva, June 2002.
—. 2000a. *Conclusions concerning human resources training and development*, adopted by the ILC at its 88th Session, Geneva, June 2000.
—. 2000b. *Training for employment: Social inclusion, productivity and youth employment*, Report V, ILC, 88th Session, Geneva, June 2000.

—. 2000c. *Employing youth: Promoting employment-intensive growth*, report to the Inter-regional Symposium on Strategies to Combat Youth Unemployment and Marginalization, Geneva, 13–14 December 1999. Available at: http://www.ilo.org/public/english/employment/skills/youth/publ/youthdoc.htm [21 Aug. 2007].

—. 1999. *World Employment Report 1998–99: Employability in the global economy: How training matters* (Geneva).

—/FAO/Liberia Ministry of Agriculture. 2007. *Comparative study of the job-creating and efficiency of crops and related activities in Liberia*, second draft report, submitted to FAO/ILO/MOA–Liberia in Sep. 2007.

—/World Trade Organization (WTO). 2007. *Trade and employment: Challenges for policy research*, M. Jansen and E. Lee (Geneva, ILO/WTO).

Ishikawa, J. 2003. *Key features of national social dialogue: A social dialogue resource book*, InFocus Programme on Social Dialogue, Labour Law and Labour Administration (Geneva, ILO).

Job Accommodation Network (JAN). 2007. *Workplace accommodations: Low cost, high impact*, Fact Sheet Series, Office of Disability Employment Policy, US Department of Labor.

Jochem, E.; Madlener, R. 2003. *The forgotten benefits of climate change mitigation: Innovation, technological leapfrogging, employment, and sustainable development*, ENV/EPOC/GSP(2003)16/FINAL (Paris, OECD)

Johanson, R.A.; Adams, A.V. 2004. *Skills development in sub-Saharan Africa*, World Bank Regional Sectoral Studies, (Washington, DC, World Bank).

Joshi, G. 2005. *The other India at work: Job quality in micro and small enterprise clusters*, ILO Subregional Office (New Delhi).

Kale, P.; Singh, H.; Perlmutter, H. 2000. "Learning and protection of proprietary assets in strategic alliances: Building relational capital", in *Strategic Management Journal*, Vol. 21, No. 3, pp. 217–237.

Katseli, L.T.; Lucas, R.E.B.; Xenogiani, T. 2006. *Effects of migration on sending countries: What do we know?* OECD Development Centre Working Paper No. 250 (Paris, OECD).

Kawakami, T.; Arphorn, S.; Ujita, Y. 2006. *Work improvement for safe home action: Manual for improving safety, health and working conditions of home workers*, (Bangkok, ILO).

Keeble, D.; Lawson, C.; Moore, B.; Wilkinson, F. 1999. "Collective learning processes, networking and 'institutional thickness' in the Cambridge region", in *Regional Studies*, Vol. 33, No. 4, pp. 319–332.

Kletzer, L.G.; Rosen, H. 2005. "Easing the adjustment burden on US workers", in C.F. Bergsten (ed.): *The United States and the world economy: Foreign economic policy for the next decade*, Institute for International Economics, pp. 313–342.

Klinger, B.; Lederman, D. 2004. *Discovery and development: An empirical exploration of "new" products*, Policy Research Working Paper Series 3450, (Washington, DC, World Bank).

Kochan, T. 2006. "Taking the high road", in *MIT Sloan Management Review*, Vol. 47, No. 4, pp. 16–19.

Krueger, A.; Rouse, C. 1998. "The effects of workplace education on earnings, turnover, and job performance", in *Journal of Labor Economics*, Vol. 16, No. 1.

Kuhndt, M.; Machiba, T. 2008. *A review of literature on impacts of climate change on employment and incomes*, UNEP/Wuppertal Institute Collaborating Centre on Sustainable Consumption and Production (CSCP) (Geneva, ILO, forthcoming).

Kuwan, H. 2007. "Transfer of research results into policy and practice: On the road to implementing research: Some observations and conclusions based on Germany's network of early identification of skill and qualification needs", in M.T.O. Strietska-Ilina and M. Tessaring (eds): *Systems, institutional frameworks and processes for early identification of skill needs* (Luxembourg, CEDEFOP), pp. 182–190.

Lall, S. 2000. *Skills, competitiveness and policy in developing countries*, QEH Working Paper Series, Vol. QEHWPS46.

Lazonick, W. 1990. *Competitive advantage on the shop floor* (Cambridge, Massachusetts, Harvard University Press).

Leggett, C. 2007. "From industrial relations to manpower planning: The transformations of Singapore's industrial relations", in *The International Journal of Human Resource Management*, Vol. 18, No. 4, pp. 642–664.

Leiponen, A. 2005. "Managing knowledge for innovation: The case of business to business services", in *Journal of Product Innovation Management*, Vol. 23, No. 3, pp. 238–258.

Lewis, M.A.; Lockheed, M.E. 2007. "Getting all girls into school", in *Finance and Development*, Vol. 44, No. 2, p. 17.

Lincoln, J.A.; Ahmadjian, C.L.; Mason, E. 1998. "Organizational learning and purchase–supply relations in Japan: Hitachi, Matsushita and Toyota compared", in *California Management Review*, Vol. 40, No. 3, pp. 241–264.

Locke, R.; Qin, F.; Brause, A. 2006. *Does monitoring improve labor standards? Lessons from Nike*, MIT Sloan Working Paper No. 4612-06, MIT Sloan School of Management (Massachusetts Institute of Technology).

Lowell, B.L.; Findlay, A. 2002. *Migration of highly skilled persons from developing countries: Impact and policy responses*, International Migration Papers No. 44 (Geneva, ILO).

Lucas, R.E.B. 2005. "International migration to the high-income countries: Some consequences for economic development in the sending countries", in F. Bourguignon, B. Pleskovic and A. Sapir (eds): *Are we on track to achieve the Millennium Development Goals?* Annual World Bank Conference on Development Economics – Europe (Washington, DC, World Bank), pp. 127–181.

Lynch, L.M. 1997. "Do investments in education and training make a difference?", in *Policy Options*, Institute for Research on Public Policy, July–August.

Lynch, L.; Black, S. 1998. "Beyond the incidence of employer provided training", in *Industrial and Labor Relations Review*, Vol. 52, No. 1, pp. 64–81.

Mangozho, N. 2003. *Current practices in labour market information systems development for human resources development planning in developed, developing and transition economies*, Skills Working Paper No. 13 (Geneva, ILO).

Mansoor, A.; Quillin, B. (eds): 2007. *Migration and remittances: Eastern Europe and the former Soviet Union*, Europe and Central Asia Region (Washington, DC, World Bank).

Mayer, J. 2001. *Technology diffusion, human capital and economic growth in developing countries*, UNCTAD Discussion Paper 159 (Geneva, UNCTAD).

Maylett, T.; Vitasek, K. 2007. "For closer collaboration, try education", in *Supply Chain Management Review*, 1/1/2007. Available at: http://www.scmr.com/article/CA6406207.html [9 Jan. 2008].

McArdle, T. 2007. *Skill development, productivity improvement and the impact of HEART Trust–NTA in Jamaica*, paper prepared for the ILO/Cinterfor technical meeting "The Role of Vocational Training in Productivity, Employment and Development in Latin America and the Caribbean", Salvador, Bahia, September 2007.

McCartney, M. 2004. "Dynamic versus static efficiency", in *Post-autistic Economics Review*, Vol. 26.

Mechitov, A.; Moshkovich, H. 2004. *Specifics and dynamics of Russian business education* (Business Quest, University of West Georgia). Available at: http://www.westga.edu/~bquest/2004/russia.htm [29 Oct. 2007].

Mertens, L. 2007. *Formación y productivida: Guía SIMAPRO: Participar – aprender – innovar – mejorar* (Montevideo: ILO/Cinterfor).

Metts, R.L. 2000. *Disability issues, trends and recommendations for the World Bank* (Washington, DC, World Bank).

Mishel, L.B.; Voos, P.B. 1992. *Unions and economic competitiveness* (New York, ME Sharp).

Monge Naranjo, A. 2008. *Skills development strategies for moving up the high road to development: The case of Costa Rica* (Geneva, ILO, forthcoming).

Moran, T.H.; Wallenberg, M. 2007. *A perspective from the MNE Declaration to the present: Mistakes, surprises, and newly important policy implications*, a joint publication of the Job Creation and Enterprise Department and the Multinational Enterprises Department (Geneva, ILO).

Morris, E. 2006. *Globalization and its effect on youth employment trends in Asia*, paper presented to the Regional Expert Group Meeting on Development Challenges for Young People, Bangkok, 28–30 March 2006.

Murphy, P.R.; Poist, R.F. 1998. "Skill requirements of senior-level logistics: Practitioner perspectives", in *International Journal of Physical Distribution and Logistics Management*, Vol. 28, No. 4, pp. 284–301.

Murphy, S.T.; Rogan, P.M. 1995. *Closing the shop: Conversion from sheltered to integrated work* (Baltimore), quoted in J. Kregel and D. H. Dean, 2002: *Sheltered vs. supported employment: A direct comparison of long-term earnings outcomes for individuals with cognitive disabilities*. Available at: http://www.worksupport.com/Main/downloads/dean/shelteredchap3.pdf.

Murray, A.; Boros, R. 2002. *A guide to gender-sensitive microfinance*. FAO Socio-economic and Gender Analysis Programme (SEAGA) (Rome, FAO).

Nelson, R.R.; Winter, S.G. 1982. *An evolutionary theory of economic change* (Cambridge, Belknap Press/Harvard University Press).

Neugart, M.; Schömann, K. 2002. *Employment outlooks: Why forecast the labour market and for whom?* FS I 02 – 206 (Berlin, WZB).

New Zealand Department of Labour. 2004. *The workplace productivity challenge*, summary of the report of the Workplace Productivity Working Group.

North, D.C. 1990. *Institutions, institutional change and economic performance* (Cambridge University Press).

Nübler, I. 2008a. *An institutional approach to apprenticeship*, Employment Sector Working Paper (Geneva, ILO, forthcoming).

—. 2008b. *Economic impact of social dialogue on training*, Employment Sector Working Paper (Geneva, ILO, forthcoming).

Ooijens, J.; Espinoza Vergara, M.; Tampe Birke, A. 2000. *Education for work in poor rural areas: A viable strategy of non-formal education*, International Training Centre of the ILO (Turin).

Organisation for Economic Co-operation and Development (OECD). 2007a. *OECD Economic Outlook 2007* (Paris).

—. 2007b. *International migration outlook*, annual report (Paris).

—. 2006a. *Boosting jobs and incomes: Policy lessons from reassessing the Jobs Strategy* (OECD).

—. 2006b. *Economic survey of Japan* (Paris).

—. 2005. "Trade-adjustment costs in OECD labour markets: A mountain or a molehill?" in *OECD Employment Outlook 2005*, Ch. 1 (Paris), pp. 23–62.

—. 2003. *Transforming disability into ability: Policies to promote work and income security for disabled people* (Paris).

—. 2002. *Small and medium enterprise outlook* (Paris).

—/WTO. 2007. *Aid for trade at a glance* (Paris, OECD).

—/—. 2006. *Report on trade-related technical assistance and capacity building* (TRTA/CB) (WTO).

O'Higgins, N. 2001. *Youth unemployment and employment policy: A global perspective* (Geneva, ILO).

Okada, A. 2004. "Skills development and interfirm learning linkages under globalization: Lessons from the Indian automobile industry", in *World Development*, Vol. 32, No. 7, pp. 1265–1288.

Osman-Gani, A.M. 2004. "Human capital development in Singapore: An analysis of national policy perspectives", in *Advances in Developing Human Resources*, Vol. 6, No. 3, pp. 276–287.

Osterman, P. 1995. "Skill, training, and work organisation in American establishments", in *Industrial Relations*, Vol. 34, No. 2, pp. 125–146.

Otsuka, K.; Yamano, T. 2006. *The role of rural labor markets in poverty reduction: Evidence from Asia and East Africa*, working paper for the World Development Report 2008 (Washington, DC, World Bank).

Oxenham, J. 2002. *Skills and literacy training for better livelihoods. A review of approaches and experiences*, World Bank findings 209. Available at: http://www.worldbank.org/afr/findings [Jan. 2008].

Ozaki, M. 1999. *Negotiating flexibility: The role of the social partners and the State* (Geneva, ILO).

Palmer, R., 2007. *The role of skills development in creating a new cycle of opportunity for the poor: Impact and lessons from developing countries*, background paper (unpublished) (Geneva, ILO).

Pianta, M. 2004. "Innovation and employment", in J. Fagerberg, D.C. Mowery and R. Nelson (eds): *The Oxford handbook of innovation*, Ch. 21 (New York, Oxford University Press).

Pieck, E. 2007. *Post-primary education and skills development in Latin America*, presented at the Paris meeting of the Working Group for International Co-operation in Skills Development, 13–15 November 2007.

Pienkos, A. 2006. *Caribbean labour migration: Minimizing losses and optimizing benefits* (Port-of-Spain, ILO).

Pineda, J.C.M. 2007. *Productivity, entrepreneurship and employment*, paper prepared for the ILO/Cinterfor technical meeting "The Role of Vocational Training in Productivity, Employment and Development in Latin America and the Caribbean", Salvador, Bahia, September 2007.

Polanyi, M. 1962. *Personal knowledge: Towards a post-critical philosophy* (New York, Harper Torchbooks).

Porter, M.E. 1990. *The competitive advantage of nations* (New York, Free Press).

Powell, M. 2007. Consultancy on the establishment of a labour market observatory in Botswana and a benchmarking visit to other countries on labour market observatories (Geneva, ILO, unpublished).

PricewaterhouseCoopers. 2006. *Remploy: Review of future business options*, advisory report for the UK Department for Work and Pensions and Remploy (London, PricewaterhouseCoopers).

Provincial Government of Alberta. 2006. *Canada–Alberta Labour Market Agreement For Persons with Disabilities, 2005–2006 Annual Report*, Ministry of Employment, Immigration and Industry (Edmonton, Canada, Government of Alberta).

Rao, T.V. 2004. "Human resource development as national policy in India", in *Advances in Developing Human Resources*, Vol. 6, No. 3, pp. 228–296.

Ratnam, C.S.V.; Chaturvedi, A. 2008. *Challenges and approaches to connect skills development to productivity and employment growth*, Employment Sector Working Paper (Geneva, ILO, forthcoming).

Remploy. 2007. *Modernization proposals*, external consultation paper. Available at: http://www.remploy.co.uk/downloads/modernisation-external-consultation.pdf [20 Sept. 2007].

Rivera, W.M. 2001. *Agricultural and rural extension worldwide: Options for institutional reform in developing countries* (Rome, FAO).

Rodrik, D. 2004. *Industrial policy for the 21st century*, Kennedy School of Governance, Working Paper RWP 04-047 (Harvard, KSG).

—. 2006. *What's so special about China's exports?* Kennedy School of Governance (Harvard, KSG).

Rosal, M.H. 2007. *La experiencia de la educación para el trabajo del POCET/CENET, Honduras 1990–2007*, Subregional Office for Central America (San José, ILO).

Rosenberg, N. 1975. *Perspectives on technology* (Cambridge, London and New York: Cambridge University Press).

Russian SME Resource Centre (RSMERC). 2004. *Analysis of the role and place of small and medium enterprises in Russia* (Moscow, RSMERC).

Rychly, L.; Vylitova, M. 2005. *National social dialogue on employment policies in Europe*, Social Dialogue, Labour Law and Labour Administration Department, DIALOGUE Paper No. 8 (Geneva, ILO). Available at: http://www.ilo.org/public/english/dialogue/ifpdial/downloads/papers/national.pdf.

Sakamoto, A.; Marchese, M. 2005. *Skills development for industrial clusters: A preliminary review*, Skills and Employability Department (Geneva, ILO, unpublished).

Sako, M. 1999. "From individual skills to organizational capability in Japan", in *Oxford Review of Economic Policy*, Vol. 15, No. 1, pp. 114–126.

Scharlowsky, V. 2007. "The system of early identification of skill needs in Germany", in M.T.O. Strietska-Ilina and M. Tessaring (eds): *Systems, institutional frameworks and processes for early identification of skill needs* (Luxembourg, CEDEFOP), pp. 83–90.

Schömann, K.; Siarov, L.; van den Heuvel, N. 2006. *Managing social risks through transitional labour markets*, WZB Discussion Paper SP 2006-117.

Schumpeter, J.A. 1942. "The process of creative destruction", in *Capitalism, socialism and democracy*, Ch. VII (New York, Harper), pp. 82–85.

Shanahan, M.; Hand, C. 2008. *Skills development strategies for moving up the high road to development: The case of Ireland* (Geneva, ILO, forthcoming).

Shenggen, F.; Hazell, P.; Thorat, S. 1999. *Linkages between government spending, growth and poverty in rural India*, IFPRI Research Report 110.

Sievers, M.; Vandenberg, P. 2004. *Synergies through linkages: Who benefits from linking finance and business development services?* SEED Working Paper No. 64 (Geneva, ILO).

Silveira, S.; Matosas, A. 2001. *Hacia una formación decente para las mujeres: Avances y asignaturas pendientes para la participación femenina en la formación professional y técnica en América Latina*, Boletin Trabajo Decente y Formación Professional No. 151 (Montevideo, ILO/Cinterfor).

Snower, D. 1996. "The low-skill, bad job trap", in: A. Booth and D. Snower (eds): *Acquiring skills* (Cambridge, Cambridge University Press).

South African Qualifications Authority (SAQA). 2004. *Criteria and guidelines for the implementation of the recognition of prior learning* (Pretoria).

Sparreboom, T. 2001. "An assessment of labour market information systems in southern Africa", in *Africa Development*, Vol. 26, Nos 3&4, pp. 149–181.

—. 2004, "Skills development information systems in demand-driven markets: The case of South Africa", in *South African Journal of Labour Relations*, Vol. 28, No. 1, pp. 127–144.

Spilsbury, D. 2003. *Learning and training at work*, IFF Research, Research Report RR3 99, Department for Education and Skills (United Kingdom, UK Government).

Stapleton, D.; Burkhauser, R. 2003. *The decline in employment of people with disabilities: A policy puzzle*, W.E. Upjohn Institute for Employment Research.

Stegner, J.R.; Butterfield, B.; Evers, C.T. 2002. *John Deere Supplier Development Program*, 87th Annual International Conference Proceeding, Institute for Supply Management (San Francisco). Available at: http://www.ism.ws/files/Pubs/Proceedings/StegnerFA.pdf [31 Oct. 2007].

Stein, D.; Rocco, T.S. 2001. *The older worker: Myths and realities*, No. 18, ERIC Clearinghouse on Adult, Career and Vocational Education (Ohio State University, Columbus, Education Resources Information Center).

Stern, N. 2007. *The economics of climate change* (New York, Cambridge University Press).

Strietska-Ilina, M.T.O. 2007. "Review of systems of early identification of skill needs in the EU based on Cedefop/ETF information", in M.T.O. Strietska-Ilina and M. Tessaring (eds): *Systems, institutional frameworks and processes for early identification of skill needs* (Luxembourg, CEDEFOP), pp. 204–213.

Tabatabai, H. 2006. *Eliminating child labour: The promise of conditional cash transfers*, International Programme on the Elimination of Child Labour (Geneva, ILO).

Tan, H. 2006. *In-service skills upgrading and training policy: Global and regional perspectives*, presented at the MNA Regional Conference on Job Creation and Skills Development, 4–6 December 2005, Cairo, Egypt (updated 1 Nov. 2006), Investment Climate Capacity Enhancement Program, The World Bank Institute. Available at: http://etools.worldbank.org/etools/docs/library/206983/Tan%20In-Service%20Training%20Global%20%26%20MENA%20Views.pdf.

Tan, H.W.; Batra, G. 1995. *Enterprise training in developing countries: Overview of incidence, determinants and productivity outcomes*, Private Sector Development Department, PSD Occasional Paper No. 9 (Washington, DC, World Bank).

Tessaring, M.; Wannan, J. 2004. *Vocational education and training: Key to the future*, Lisbon–Copenhagen–Maastricht: Mobilising for 2010, CEDEFOP synthesis of the Maastricht Study (Luxembourg, CEDEFOP).

Te Velde, D.W. 2005. *Globalisation and education: What do the trade, investment and migration literature tell us?* Working Paper 254 (London, Overseas Development Institute).

The Conference Board. 1999. *Turning skills into profit: Economic benefits of workplace education programs*, Research Report 1247-99-RR (New York, The Conference Board).

Trinidad National Centre for Persons with Disabilities (NCPD). 2006. *Annual Report 2006*. Available at: http://www.ncpdtt.org/.

Tuck, R. 2007. *An introductory guide to national qualifications frameworks: Conceptual and practical issues for policy makers*, Skills and Employability Department (Geneva, ILO).

UK Health and Safety Commission. 2004. *The business of health and safety: Case studies*. Available at: http://www.hse.gov.uk/businessbenefits/casestudy.htm [17 Oct. 2007].

United Nations. 2005. *2004 World Survey on the Role of Women in Development: Women and international migration*, Division for the Advancement of Women, Department of Economic and Social Affairs (New York).

—. 2006a. *International migration and development: Report of the Secretary-General*, United Nations, New York, June 2006, A/60/871. Available at: http://www.un.org/esa/population/migration/hld/Text/Report%20of%20the%20SG%28June%2006%29_English.pdf.

—. 2006b. *Summary of the high-level dialogue on international migration and development*, General Assembly, note by the President of the General Assembly, 13 October 2006.

—. 2006c. *The Millennium Development Goals Report 2006* (New York, United Nations).

United Nations Children's Fund (UNICEF). 2007. *National Education Statistics*. Available at: http://www.childinfo.org/areas/education/ [17 Aug. 2007].

—. 2004. *Innocenti Social Monitor 2004: Economic growth and child poverty in the CEE/CIS and the Baltic States*, The MONEE Project (Florence, UNICEF Innocenti Research Centre).

United Nations Conference on Trade and Development (UNCTAD). 2003. *Africa's technology gap: Case studies on Kenya, Ghana, Tanzania and Uganda* (New York and Geneva)

—. 2007. *The Least Developed Countries Report 2007: Knowledge, technological learning and innovation for development* (Geneva).

United Nations Development Programme (UNDP). 2006. *Human Development Report 2006: Beyond scarcity: Power, poverty and the global water crisis* (New York).

—. 2005. *Human Development Report 2005: International cooperation at a crossroads: Aid, trade and security in an unequal world* (New York).
United Nations Economic Commission for Europe (UNECE). 2003. *The Statistical Yearbook of the Economic Commission for Europe 2003: Trends in Europe and North America* (Geneva).
United Nations Educational, Scientific and Cultural Organization (UNESCO). 2007. *Education for All Global Monitoring Report 2007: Regional overview: Sub-Saharan Africa* (Paris).
—. 2006. *Participation in formal technical and vocational education and training programmes worldwide: An initial statistical study*, UNESCO Institute for Statistics, UNESCO–UNEVOC International Centre for Technical and Vocational Education and Training (Bonn).
—. 2004. "Assessing progress towards the EFA goals", in *Education for All Global Monitoring Report 2005*, Ch. 3 (Paris).
United Nations Environment Programme (UNEP). 2007. *Labour and the environment: A natural synergy* (Nairobi).
United Nations Industrial Development Organization (UNIDO). 2005. *Capability building for catching-up: Historical, empirical and policy dimensions* (Vienna).
Uzzi, B. 1996. "The sources and consequences of embeddedness for the economic performance of organizations: The network effect", in *American Sociological Review*, Vol. 61. pp. 674–689.
van Ark, B. 1999. *Economic growth and labour productivity in Europe: Half a century of East-West comparisons*, Groningen Growth and Development Center and University of Groningen (Groningen). Available at: http://www.eco.rug.nl/ggdc [17 Oct. 2007].
—; O'Mahony, M.; Ypma, G. (eds). 2007. *The EU KLEMS productivity report*, Groningen Growth and Development Centre, University of Groningen, University of Birmingham.
Vandenberg, P. 2004. *Productivity, decent employment and poverty: Conceptual and practical issues related to small enterprises*, SEED Working Paper No. 67 (Geneva, ILO).
Van Eekelen, W.; De Luca, L.; Nagwa, I. 2001. *Youth employment in Egypt*, InFocus Programme on Skills, Knowledge and Employability (Geneva, ILO).
Van Empel, C. 2007. *LED Story Ghana: Rooting public–private dialogue* (Geneva, ILO).
Visagie, E.; Prasad, G. 2006. *Renewable energy technologies for poverty alleviation South Africa: Bio diesel and solar water heaters* (Cape Town, University of Cape Town).
Volberda, H.W.; van den Bosch, F.A.J. 2004. *Rethinking the Dutch innovation agenda: Management and organization matter most*, Research Paper ERS-2004-009-STR, Erasmus Research Institute of Management (ERIUM), RSM Erasmus University (revised 15 Dec. 2005).
Von Braun, J.; Pachauri, R.K. 2006. *Promises and challenges of biofuels for the poor in developing countries*, Annual Report Essay, International Food Policy Research Institute (Washington, DC, IFPRI).
Wahl, M.; Meier, R. 2005. *How a business membership organization can contribute to improving the business environment: Case study – North Brazil*, SEQUA-BFZ. Available at: http://www.businessenvironment.org/ [29 Oct. 2007].
Walker, S. 2005. "Role of education and training in agricultural meteorology to reduce vulnerability to climate variability", in *Climatic Change*, Vol. 70, pp. 311–318.
Wickramasekara, P. 2007. *Policy responses to migration of health workers: Retention, return and circulation*, presentation to the international conference "A Call To Action: Ensuring Global Human Resources for Health", Geneva, 22–23 March 2007.
—. 2003. *Policy responses to skilled migration: Retention, return and circulation*, Perspectives on Labour Migration 5E, International Migration Programme (Geneva, ILO).
Wilk, E. de O.; Fensterseifer, J.E. 2003. "Use of resource-based view in industrial cluster strategic analysis", in *International Journal of Operations and Production Management*, Vol. 23, No. 9. pp. 995–1009.
Wirth, L. 2004. *Breaking through the glass ceiling: Women in management*, 2004 update (Geneva, ILO).
Wong, P.K. 2001. "Singapore's strategy to become a knowledge-based economy", in N. Chee Yuen and C. Griffy-Brown (eds): *Trends and issues in East Asia 2001* (Tokyo, International Development Research Institute).
World Bank. 2007. *World Development Report 2008: Agriculture for development* (Washington, DC).
—. 2007a. *Sénégal: A la recherche de l'Emploi: Le chemin vers la prospérité* (Washington, DC).
—. 2006. *Development and the next generation: World Development Report 2007* (Washington, DC).
—. 2003. *Lifelong learning in the global knowledge economy: Challenges for developing countries* (Washington, DC).

—. 1997. *Malaysia: Enterprise training, technology and productivity: A World Bank country study* (Washington, DC).

World Commission on the Social Dimension of Globalization (WCSDG). 2004. *A fair globalization: Creating opportunities for all* (Geneva, ILO).

World Economic Forum. 2007. *Global Competitiveness Report*. Available at: http://www.gcr.weforum.org/pages/home.axp [14 Jan. 2008].

World Resources Institute/UNDP/UNEP/World Bank. 2005. *World resources 2005: The wealth of the poor: Managing ecosystems to fight poverty* (Washington, DC, WRI/UNDP/UNEP/WB).

Wright, P.M.; Snell, S.A. 1998. "Toward a unifying framework for exploring fit and flexibility in strategic human resource management", in *Academy of Management Review*, Vol. 23, No. 4, pp. 756–772.

WTO. 2006. *World Trade Report: Exploring the links between subsidies, trade and the WTO* (Geneva, WTO).

Wu, W. 2007. "Cultivating research universities and industrial linkages in China: The case of Shanghai", in *World Development*, Vol. 35, No. 6, pp. 1075–1093.

Young, M. 2005. *National qualifications frameworks: Their feasibility for effective implementation in developing countries*, Skills and Employability Department (Geneva, ILO).

Zachmann, R. 2008. *Training in times of change: Chronicle of an industrial revolution*, Employment Sector Working Paper (Geneva, ILO, forthcoming).

Zadek, S.; Scott-Parker, S. 2001. *Unlocking potential: The new disability business case* (Geneva, ILO).