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Vocational Education for Sustainable Development: an obligation for the European Training Foundation

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Introduction

While the democratisation and economic restructuring processes in Central and Eastern Europe determined policy in the early years after the creation of the European Training Foundation (ETF), new global problems which need to be taken into consideration in the donor agenda have now gained worldwide public attention. The main arguments of the international sustainability debate almost four decades on from the Club of Rome modelling of the limits to growth may be summarised as follows.

Data show that over the past six decades humanity has become richer. According to Sachs (2008, p. 19), 'a rough estimate suggests that the gross world product, the sum of the gross domestic products of every nation in the world, has risen by a remarkable eight times since 1950'. Despite this growing economic wealth worldwide — and this is the first argument — there are still high levels of poverty in some regions of the world and the gap between and within the richest countries has been widening. The poorest 40% of the world's population now account for 5% of world income, whilst the richest 20% account for 75% (United Nations Development Programme (UNDP), 2007). A record 1 billion people worldwide are now undernourished (www.fao.org/news/story/en/item/20568/icode/) and this figure will increase if the world community does not deal with the underlying causes.

Moreover, the human economic activity of recent decades has caused considerable partly irrevocable damage to nature, such as large quantities of human-generated emissions and waste, disappearing species, deforestation and desertification. It has reached such magnitude that it is believed to influence fundamental natural processes, including the climate. In addition, the global demand for natural resources has been growing fast and it is certain that, sooner or later, humanity will run out of certain types of non-renewable resources, such as oil, gas, uranium, copper or gold. The United Nations' Millennium Ecosystem Assessment concluded that human actions were putting such a strain on the natural functions of the planet that the ability of its ecosystems to sustain future generations can no longer be taken for granted (www.millenniumassessment.org/en/index.aspx).

Finally, the world has in the past and current centuries seen unprecedented population growth, which is expected to continue. The forecast of the UN Department of Economic and Social Affairs Population Division foresees that the global population will rise from 6.9 billion in 2010 to 9.15 billion in 2050 (http://esa.un.org/unpp/p2k0data.asp). Sachs estimates that 'the scale of human activity — rising eight times since 1950, and possibly another six times by 2050 — is

causing environmental destruction on a scale that was impossible at any earlier stage of human history' (Sachs, 2008, p. 29).

The combined arguments of rising inequalities and persisting poverty and of environmental damage, climate change and finite resources have pointed to the need for stronger sustainable development policies on the part of both the developed and the developing world. The Brundtland Commission defined sustainable development in an often-cited quotation as development that 'meets the needs of the present without compromising the ability of future generations to meet their own needs' (World Commission on Environment and Development (WCED), 1987, p. 24). The fuller definition contains two key concepts:

i) 'Sustainable development does imply limits — not absolute limits but limitations imposed by the present state of technology and social organisation on environmental resources and by the ability of the biosphere to absorb the effects of human activities', and
ii) 'requires meeting the basic needs of all and extending to all the opportunity to fulfil their aspirations for a better life', arguing that 'widespread poverty is no longer inevitable' and 'a world in which poverty is endemic will always be prone to ecological and other catastrophes' (World Commission on Environment and Development (WCED), 1987, p. 24f.)

Many analyses followed which pointed to the risk of overstepping the limits in the world, the need to adapt the use of natural resources to the long-term carrying capacities of the planet and the recognition that unequal opportunity and distribution of resources were at the heart of the problem (Hirsch, 1977; Daly & Cobb, 1994; Daly & Farley, 2004; Easterly, 2006; Stiglitz, 2006). The Stern review on climate change (Stern, 2006) provided an economic rationale for action, arguing that the longer the delay, the greater the cost.

Sustainable development calls for an *integration* of environmental and social aspects into economic and other sectoral policies. Parkin (2005) argues that 'it is only by thinking about the environment, people and the economy as an indivisible whole, that we will avoid trading one off against the other' (p. 26). The environment becomes the key determinant of society and the economy, rather than society following economic laws.

In a sustainability perspective, the important role of education and training and of donors operating in this field has been stressed time and again. This article sets out to analyse the knowledge and competences needed for sustainable societies and the implications thereof for VET reform and donors like ETF. After sketching the development of ETF since its foundation in 1995, the article outlines the nature of the challenge presented by sustainable development in terms of changing economic patterns and implications for knowledge and skills, basic and higher-level competences for sustainable development and didactic approaches through which these could be nurtured. The article concludes with a synthesis of the challenges faced by ETF and VET reform in partner countries.

The European Training Foundation Since 1995

ETF was established in 1995: 'to make an important contribution to the effective provision of training assistance to the countries of Central and Eastern Europe eligible for economic aid to support the process of reform' (European Council,

1990, p. 2). Such assistance was confined to vocational education and training as the Treaty on the European Union in force at the time did not give a role to the European Communities in other sub-sectors of education, such as primary or general education. Assistance for VET reform was intended to 'contribute to the development of mutual beneficial economic and commercial relationships between the countries of Central and Eastern Europe and the Community' (ibid.).

In a first phase of ETF's operation, partner countries comprised the now 12 new EU Member States of Central and Southeast Europe, as well as the successor States of the former Soviet Union. The group of countries which belongs to the ETF partner countries today include the Western Balkans and Turkey, the USSR successor States and the South Mediterranean countries. Many of these countries share borders with EU Member States with which they have trade and other links. Some are preparing for accession to the EU in the mid to long term.

ETF soon became directly or indirectly involved in the design and management of VET reform projects in its partner countries. In that period, Central European countries were undergoing major economic transition processes that had put the VET system partly out of tune with the newly emerging labour markets. Many jobs in large manufacturing enterprises disappeared following privatisation and restructuring. Demand no longer matched traditional VET supply. This, however, was not only due to new labour market requirements. Ongoing democratisation processes in the countries and modified perceptions by both society at large and young people about the types of knowledge and skills they valued and wanted to acquire altered the perspectives and expectations about education and training. Hence, a first dominant theme of ETF's work was to re-establish the system's external consistency by once again making VET relevant to the labour market and ensuring internal consistency by aligning teachers' skills, teaching materials and equipment with newly devised standards or curricula. The EU was the largest investor in VET reform in Central and Eastern European countries at the time, with Romania obtaining the largest share (€25 million) for its Phare 1995 VET project. ETF complemented curriculum revision, in-service teacher training and equipment upgrading activities, which were undertaken in pilot schools in the frame of the EU VET projects, with common regional projects. These included projects to develop national vocational standards, design VET policy, develop the capacities of the economic partners to become involved in VET, pre-service VET teacher training and continuing vocational training. All the latter topics were later taken up and supported with EU funding.

The model of Phare VET projects was then transferred to Western Balkan countries that gradually came aboard by 1999 and benefited from CARDS support. The challenges in VET were similar. However, differences included the major disruptions caused by the war in many countries of the region and, as a consequence, even tighter public budgets, largely disappearing links between vocational schools teaching theory and companies previously in charge of delivering vocational practice. Unemployment rates, and in particular youth unemployment rates, were already high at the start of the economic transition.

Around the Mediterranean, since the launch of the Barcelona Process in 1995, a number of MEDA programmes were financed in VET, the largest being carried out in Tunisia, Algeria, Egypt and Morocco. ETF was directly involved in their formulation.

The Tunisian Government's far-reaching MANFORME programme helped to build key elements for reform, such as support to companies to identify skills needs and develop a shared approach with social partners, quality assurance mechanisms, the modernisation of apprenticeships and a dual system scheme. Morocco — through the MEDA I and MEDA II programmes — introduced a competence-based VET approach and a dual system scheme in three strategically important sectors: textiles/ready-made clothes, tourism, and information technology. In Egypt, the MEDA project supported the creation of local partnerships between companies and VET, developed a dual training scheme and contributed to the modernisation of VET institutions. ETF complemented national VET reform efforts in Mediterranean countries with a regional Education and Training for Employment (MEDA-ETE) project carried out between 2004 and 2008. It helped to promote mutual learning across countries and engaged participants in topics such as national qualification frameworks, entrepreneurship, quality and quality assurance in VET, career guidance and eLearning. The project supported the setting up of expert networks involved in analytical work and peer-learning activities.

After 2000, ETF became involved in the revised Phare 2000 programme for the then EU candidate countries of Central Europe and later the Instrument for Pre-accession Assistance (IPA) programme for the Western Balkans and Turkey, which had a clearer EU accession focus. This meant that VET became more closely linked to the economic and social objectives of the Lisbon Strategy (European Council, 2000; 2005) and was embedded in the wider European Employment Strategy process with its three pillars of education, employment and social inclusion (European Commission, 2007). For the partner countries and ETF, this implied new emphases on training assistance, developing the basic skills of unskilled or low-skilled adults, active labour market measures, training for business start-ups or business growth, gender issues and support for social inclusion through education and training for groups of disadvantaged people — thus marrying the economic and social agendas of the EU.

Several issues need to be viewed critically in a sustainable development perspective. The first concerns the fact that the principal approach to implementing VET reform projects in the countries was through technical assistance, relying heavily on foreign expertise. Risks associated with such project management often include those of cultural bias and of transferring rather than building on models that are owned by the countries that fit to country contexts and that are affordable in the long run. ETF has recently developed the 'policy learning' approach, which changes the role of consultants (including ETF staff) into facilitators of participative mutual learning processes — a relevant approach in a sustainability perspective.

Problems inherent to the design of VET reform projects were often loose connections between pilot operations at local or sector level and strategy and legislative developments at national level, as well as capacity-building in the institutions underpinning the changes in the VET system, such as education or VET agencies, teacher training and curriculum development institutions, the education inspectorate, social partner organisations, and most importantly schools. VET reform requires major resources, national leadership, a central body that coordinates separate reform initiatives which work to a common strategic framework, competent institutions and a critical mass of reform actors that drives the reform process forward (Parkes *et al.*, 1999).

Another problematic area is the narrow skills conception, which was and still is being promoted throughout the countries. VET is seen as instrumental in enhancing learners' employability by making it more relevant to the labour market. This was often translated, with or without the help of employers, into rather narrowly defined sets of functional knowledge and skills and standardised learning outcomes that formed the basis for learning contents and assessments. This approach was generally advocated by the EU and member states, though not uncontested. Parkes (2001) pointed out that much more attention should be given in VET reform projects to improving learning environments and the learning process as such. This includes the changing role of teachers as organisers of learning processes as opposed to transmitters of knowledge, as well as a review of the contribution that classrooms and workplaces can make to acquiring vocational competences.

Basic and key competences, including learning to learn, fostering creativity and innovation, as well as school development, teaching and learning approaches that foster the development of key competences were addressed in separate ETF projects after 2006. However, it may be argued that respective findings and recommendations, with their focus on teachers, learning processes and the actual reforms in schools (Viertel, 2007; Nielsen & Nikolovska, in press) have hitherto not found their way into VET reform approaches that are widely promoted by ETF in its partner countries. Labour market specialisation prevails over forward-looking problem-solving. Hence, people rarely possess the knowledge and competence that are key to solving complex, cross-disciplinary, everyday life problems in an effective manner.

Finally, all the above-mentioned ETF or EU initiatives in VET reflect an economic rationale and, implicitly or explicitly, a social rationale. At the heart of the EU Lisbon Strategy is a demand or consumption-led growth model that drives entrepreneurs to produce ever new, better and cheaper products and whets the consumers' appetite for such products in endless spirals (Jackson, 2009). Economic and, within this context, training assistance by the EU to the countries lying at its borders is, on the one hand, motivated by the constant search for better conditions for (foreign) capital and for expanding markets; on the other hand, it is hoped that economic development in the beneficiary countries will create better conditions for the people living there, thus raising overall living standards and reducing migration pressures. VET is considered as a driver to foster individual entrepreneurship and employability, national competitiveness and social inclusion. However, to date, no emphasis has been placed on combining economic, social and environmental considerations.

The EU started to show its commitment to sustainable development by publishing an EU Strategy on Sustainable Development in 2005 (revised in 2006; European Council, 2006). It also referred to it in its strategies for development cooperation (European Council, 2001; European Parliament *et al.*, 2006; European Commission, 2008; European Commission, 2009). Nevertheless, such considerations have not found their way in a consistent manner into EU strategies for education and training and related sector assistance to third countries. Neither the recently adopted Recast Regulation of the ETF (European Parliament/ European Council, 2008) nor the *Strategic Framework for European Cooperation in Education and Training ('ET 2020')* (European Council, 2009) refer to environmental knowledge and skills or to sustainable development in the broader sense.

What is required is a new perception of VET that incorporates greater awareness of the need for institution-building and future-oriented policy-making, including lifelong learning, as well as a critical reflection on existing learning contents and arrangements. The VET system should be more open and responsive to the challenges of both uncertain, quickly changing labour markets and the complexity of issues faced by societies in a sustainable development context.

Changing Economic Patterns and Implications for Knowledge and Skills

Many commentators from the developed world argue that there is no alternative to continuing economic growth, as it can translate into job growth, thus curbing unemployment and facilitating public debt servicing and financing social welfare systems (Sachs, 2008; Sustainable Europe Research Institute (SERI), 2009; Jackson, 2009).

Likewise, 'pro-poor growth' has been recognised as the most suitable strategy to foster development and reduce poverty in the developing world (United Nations, 2000; World Bank, 2000a; World Bank, 2000b; Ravallion, 2002). The recent *Growth Report: Strategies for Sustained Growth and Inclusive Development* by the World Bank's Commission on Growth and Development uses 'sustained economic growth' as the underpinning concept, arguing that: 'Growth . . . makes it possible to achieve other important objectives of individuals and societies. It can spare people *en masse* from poverty and drudgery. Nothing else ever has. It also creates the resources to support health care, education, and the other Millennium Development Goals to which the world has committed itself' (World Bank, 2008, p. 1). The Commission thus considers that an important part of development is the creation of the necessary market and regulatory institutions.

As argued earlier, high and persistent growth rates are to the detriment of the environment through an exhaustive use of natural resources and a high degree of environmental pollution. Hence 'sustained economic growth', if it merely denotes long-lasting growth without considering environmental implications, may not be sustainable. The World Bank Commission did consider environmental concerns by arguing that 'growth strategies should take account of the cost of pollution from the outset' (World Bank, 2008, p. 8). In addition, the World Bank advocates measures that bring about structural shifts in industry, fight air pollution and deal with the consequences of climate change (World Bank Institute, 2004). The question is whether the economy should continue to have primacy over other policy concerns. Meadows *et al*. invalidate this argument, stating that 'the flows of energy and materials required to sustain industrial growth are depleting non-renewable resource stocks and deteriorating renewable resources' (2004, p. 129). This means that the resources and the environment set limits on economic growth.

The key to sustainable economic development is believed to lie in better technology and changing patterns of human behaviour (Sachs, 2008; Jackson, 2009). New ways must be found to produce and use energy, meet food and transport needs, and heat and cool homes that will cut back on oil, gas, coal, nitrogen-based fertiliser and other sources of climate-changing greenhouse gases. Sustainability problems must be avoided by eliminating wasteful production and consumption patterns and by considering efficiency and equity issues.

Economic patterns are already changing as the rules of the game are altered. The pace at which further changes will occur will be determined by the degree of political commitment, effective governance structures and well-designed policies.

Government support to applied research and technological innovation, general awareness-rising and the use of a range of tools that provide advice and assistance to companies are vital and could help to bring about the transition.

The latter is of particular importance to the ETF partner countries, where most businesses are small or even micro. The multidimensional constraints faced by small and medium-sized enterprises in terms of their contributions to sustainable industrial development have been discussed, among others, by the European Commission *et al*. (2008). In such contexts it is important to strengthen the role of business support or intermediary and training organisations, such as economic or crafts chambers, entrepreneurship centres, consultancies, training providers and incubator centres.

These changes in economic practices within a sustainability perspective will have an impact on knowledge and skills. They may be summarised as follows:

- People in all spheres of public and private life need to develop a general awareness of environmental issues (eco-sensitivity) and principles of social responsibility, or of the impact of their way of living and working on the world.
- Technological and business innovation to design and create sustainable products and services requires high-level technical and business skills of qualified people often working together in interdisciplinary teams.
- Businesses and related service providers require specific knowledge to be able to re-engineer purchasing, production, marketing, distribution and sales processes within their own businesses and across the entire supply chain.
- New jobs may emerge in areas related to sustainable engineering and design, and technical solutions to adapt to climate change, as well as in auditing, advising and assisting businesses or local government to change for sustainable practices, applying triple bottom-line assessments to projects or practices.
- It may be argued that for some 'green jobs' at skilled worker level, such as the installation of solar panels or the production of electric cars, not new but traditional crafts or technical skills are needed for which a short upgrading training may be sufficient.
- Given the complexity and speed of change, learning will have to continue across the lifespan, and ensuring this will be both an economic and a social factor.

Competences for Sustainable Development

Sustainable business practices should consider the impact of a product on the world across its entire lifespan — from design to final disposal — and would design services that appeal to ethical customers. This requires environmental awareness and knowledge, as well as specific technical and business knowledge and skills. To create a cohesive society and allow everyone to participate in work processes and the community, certain key and professional competences are necessary. They are typically associated with general education, rather than with VET, and initial education plays a key role in laying the basis for them. They are discussed here, as they should be expanded through lifelong learning, including VET. A knowledge or competence foundation on which people can build would include (adapted from Bund-Land Kommission (BLK), 1997, p. 11ff):

- mastery of the basic competences of reading and writing, of mathematical symbols and operations and the ability to communicate in one's own and other languages;
- a basic 'orientation' knowledge in disciplines that are central to society, in particular the environment, natural sciences, technical and business subjects;
- the ability to organise oneself and regulate one's learning. This implies meta-cognitive competences and motivation, as well as
- social competences, including empathy, solidarity, team work and the ability to motivate others.

Furthermore, research (Rensburg & Lotz Sistitka, 2000; Sterling, 2001; Fien *et al.*, 2002; Tilbury & Wortman, 2004) argues that learning for sustainable development should focus on:

- critical reflection;
- changing mental models that influence decisions and actions rather than solely changing individual attitudes;
- thinking about the future, the ability to create a sustainable future and individuals influencing structural change;
- the ability to deal with interrelated, complex, systemic problems within certain value frameworks;
- people as agents of change, and participatory and citizen action in new forms of interaction and collaboration.

Critical reflection about oneself and the environment is at the heart of changing thinking and action. Schön (1983) elaborated on 'reflexive practice' over two decades ago as a new way of problem-solving in organisations and communities. Thinking and acting reflectively imply 'the use of meta-cognitive skills (thinking about thinking), creative abilities and taking a critical stance. It is not just about how individuals think, but also about how they construct experience more generally, including their thoughts, feelings and social relations' (OECD, 2005, p. 9). Regular reflexive practice and continuing knowledge acquisition help individuals to reach a level of competence that allows them to distance themselves from social pressures, adopt different perspectives, make independent judgements and take responsibility for their actions.

Changing mental models and 'future-thinking skills' include the ability to assess the chances and risks of current and likely problems. Klafki talks about the importance of knowledge of 'key problems which are typical for a given epoch'. He calls this *'Konzentration auf epochaltypische Schlüsselprobleme'*, or structural problems that concern the whole society, several societies or even the whole world, but which are nevertheless key for the individual (Klafki, 1996, p. 60). Learning in this context is about anticipative thinking, the ability to deal with uncertainty and the search for creative, innovative solutions. The sustainability challenge asks us to reflect on new lifestyles that combine quality of life with respect for nature and other people and generate creative solutions. This requires cross-boundary, 'out-of-the-box' thinking. The future (in a democratic society) must be seen as open and at the same time amenable to influence, requiring the contributions of competent people. Creativity and imagination are important elements of this

competence. The consequence is a challenge to nurture the creative and innovative skills that are inherent in everyone, instead of hampering them through standardised learning outcomes and inflexible curricula or teaching practices (Sahlberg & Oldroyd, this issue).

Furthermore, in the sustainability context, learners need to be enabled to deal with interrelated, complex problems. This implies a multifaceted, interconnected approach to analysing and solving problems, to which experience gained in various life situations can also contribute. It implies considering the whole system, as well as the effects of operating within one system (e.g. the economy) on another system (e.g. the environment). The required interdisciplinary approach does not mean that the perspectives from one discipline are simply added to the other. Sustainable solutions to the various manifestations of the ecological and social crises are based on transdisciplinary knowledge rather than on specialised disciplines that marginalise how systems are nested in ever larger and interlinked systems (Jucker, 2002). What is called for is holistic thinking or *vernetztes Denken* (literally 'networked' thinking, a term coined by the German bio-cybernetician Frederic Vester; also cybernetic or systemic thinking), which becomes a key partial competence to solve problems in a sustainability perspective.

Solutions to complex global sustainability problems are often the result of (international) networking and collaborative ventures which are inclusive and overcome barriers, including cultural or language barriers. Gibbons *et al.* (1994) refer to the importance of 'socially distributed knowledge' or 'mode-2 knowledge' as a novel way of (scientific) knowledge production which involves multidisciplinary communities brought together for short periods to work on specific problems in the real world. Hence, another key competence is the ability to participate in new forms of interaction and collaboration in teams.

Finally, learners require action planning and implementation skills, as competence manifests itself not only through knowledge or by thinking about certain desirable attitudes (de Haan & Kuckartz, 1996). The planning and implementation competence includes considerations concerning the availability of resources in a sustainability context, how to access or establish networks of cooperation, the possible negative side effects of one's actions on the environment and how they could be avoided, etc. All these key competences are closely interlinked. They fit in well with OECD's DeSeCo framework, Definition and Selection of Competencies: Theoretical and Conceptual Foundations, a project commissioned by OECD and led by experts under the auspices of the Swiss Federal Statistical Office between 1997 and 2003. The DeSeCo framework was the result of prolonged research and consensus-building, which included numerous expert contributions, as well as an analysis by Trier (2003) of similarities and differences in the related concepts and approaches of 12 OECD countries. The latter identifies those competences that are, beyond reading, mathematical and scientific literacy, considered key to meet the demands of an increasingly interdependent and complex world. The key competences defined in this framework include:

- the effective use of spoken and written language skills and the ability to use both knowledge and information and technology interactively;
- interacting in heterogeneous groups, including the ability to relate well with others, to cooperate and to manage and resolve conflicts, and

- the ability to identify the consequences of actions and choose between different courses of action, the ability to form and conduct life plans and personal projects, and the ability to assert one's rights, interests, limits and needs (Rychen, 2003).

Overall, it remains important that learners acquire a sound knowledge and skills base related to their professional field, as being employed or being economically active is often the precondition for participating in society. However, as argued before, such knowledge and skills must not be too narrowly related to existing jobs. Being able to actively and responsibly shape society extends the concept of professional skills beyond their current functional labour market focus; it incorporates wider visions of a sustainable society and the development of the key competences mentioned above.

Implications for VET Reform in Partner Countries and ETF

Education for sustainable development has its roots in other cross-curricular themes, such as environmental education, development education and education for citizenship. International debates on education for sustainable development have centred on two contrasting approaches to reform. The first argues for the incorporation of sustainability knowledge and skills into existing curricula and for educating environmentally and socially conscious people; the second promotes the idea of changes in the concept and processes of education and learning as a whole (Sterling, 2001).

The former is essential and will have to be taken into consideration in the VET curriculum reform agenda. However, VET for sustainable development is not confined to educating people about ecology, nor is it only about training people to enhance their employability, although both aspects are inextricably linked to the process of social change. Moving towards sustainability requires changes in the way people think, live and work. UNESCO (2002) holds that the emphasis is not only on strengthening certain types of knowledge and skills, but also on challenging mental models that have led to non-sustainable patterns of living. The May 2003 Kiev Ministerial Declaration under the United Nations Economic Commission for Europe (UNECE) concluded that the overall aim of learning for sustainable development was to empower citizens to act for positive change and pointed to a process-oriented, participatory and action-oriented learning approach.

VET for sustainable development thus needs to be viewed as a comprehensive concept. It may be defined as VET that is generally geared towards developing the competences that allow individuals to actively and responsibly shape society and offer contributions to a just and environmentally sound development of the community (see also de Haan & Harenberg, 1999, who use a similar definition). These competences refer to complex ways of thinking, as well as to the ability to act responsibly in work and life situations. To undertake activities competently requires bringing together a range of knowledge, skills and behavioural attributes to be able to interpret information, create insights and act in the context in which people find themselves. Competence, as Weinert phrases it, comprehensively combines 'intellectual abilities, content-specific knowledge, cognitive skills, domain-specific strategies, routines and sub-routines, motivational tendencies, volitional control systems, personal value orientation, and social behaviours into a complex system' (Weinert, 2001, p. 51). Building competence is a longer process. Schools

and teachers can contribute to competence development by applying certain didactical approaches. However, a major problem in many ETF partner countries is that many young people do not reach higher levels of learning.

Addressing Inclusion and Equity Concerns

Large numbers of young people in many ETF partner countries still do not make the transition to secondary education or do not complete it. For example, in Turkey in 2001, 47% of 20- to 24-year-olds had not completed lower secondary education (OECD, 2007). Hence a first objective of governments and donors alike must be to ensure that education and training are inclusive in order to make sure that everyone is equipped with the necessary competences to participate in working life and society.

According to UNESCO, inclusion is seen as 'a process of addressing and responding to the diversity of the needs of all children, youth and adults through increasing participation in learning, cultures and communities, and reducing and eliminating exclusion within and from education' (UNESCO, 2003). OECD suggests that inclusive education practices include '*fairness*, which implies ensuring that personal and social circumstances — for example gender, socio-economic status or ethnic origin . . . [are not] an obstacle to achieving educational potential', as well as '*inclusion*, which implies ensuring a basic minimum standard of education for all' (OECD, 2007, p. 10). This in turn involves modifications in content, approaches, structures, strategies and finances.

Governments and donors need to better understand current patterns of access and retention, who is excluded from education at different stages and why, and the suitable measures to address these issues. A first effective strategy to meet the educational needs of those who are excluded or at risk of being excluded consists in promoting inclusion in pre-school education. This is paramount, especially for children from ethnic minority groups, to make up for possible language or other learning deficits. In addition, school choice may be a possible impediment to equity, as it may impact on the social composition of different schools. Avoiding streaming into special schools or classes (segregation) will help to foster inclusive education, as will teachers' professional development on intercultural education.

Other strategies to improve progression, completion and transition rates include fair and inclusive classroom and out-of-school practices, a careful monitoring and early identification of students at risk of failure, formative assessment, reading and maths recovery strategies and homework support and/or other extra interventions for those falling behind. There is the issue of keeping the curriculum flexible and attractive and avoiding repeating years that can condition early drop-out. Expert support for teaching professionals to develop their classroom techniques and good relationships between schools, parents and communities can also help to prevent dropping out before completion of primary or secondary education. In addition, donors could support governments and their partners by providing guidance and counselling experts to ease young people's choice at any point of transition in the education system. Avoiding dead-ends and offering second chance programmes for young people who dropped out or, indeed, lifelong learning opportunities for all are equally effective strategies.

However, all this is, of course, a matter of resources. Donors could influence overall educational expenditures, making sure that they are fair and inclusive. Contributions to equity imply that investments in pre-school education for all are

well balanced with those in tertiary education for a few and that funds for extra tuition support, ethnic minority groups, poor families, etc. are considered. Financial resources may be directed to students and regions with particular needs, and incentives for teachers provided to work in 'difficult' schools. Finally, donors could help governments and their partners to set national targets for equity in education, particularly with a view to reducing early school leaving and low school attainment.

Vocational gross enrolment ratios vary in the countries of concern to ETF from 3% (Palestinian Authority and Belarus) to 62% (Croatia) (UNESCO Institute for Statistics (UIS), 2006). Many countries direct more able students towards academic pathways and less able students towards vocational pathways. Students in VET programmes often have parents with lower academic levels and/or economic status. The more popular academic schools may attract more resources, better qualified and more highly motivated teachers, which may lead to poor quality teaching for lower ability groups and widen initial gaps in equality and educational outcomes. However, Ryan (2001) pointed out that there was some evidence that vocational courses led to better labour market outcomes than general education courses for school leavers. This finding has been confirmed by a study carried out in Hungary (Audas *et al.*, 2005), where those who attended a gymnasium school were less likely to find a job than those who attended a vocational school. This is an argument in favour of increasing participation in VET. However, the fact that these advantages pale in comparison with the gain from tertiary education, which is mainly accessed from general education (Ryan, 2001), suggests that routes of progression from vocational to tertiary education be strengthened and VET contents generally broadened.

In a number of ETF partner countries the restricted choice of VET programmes on offer within commuting distance of students, the poor matching of vocational programme contents to career progression in education or employment opportunities and the poor quality of provision in under-resourced, ill-equipped schools are issues of major concern, as they have a negative impact on equal opportunities and competence development.

Didactical Approaches to Foster Competences for Sustainable Development

A second set of issues relates to how competences for sustainable development can be fostered. Competence generally develops through adequate teaching and learning processes that include the selection of suitable learning goals and contents, methods and assessment practices, the organisation of learning experiences at appropriate learning sites, as well as the involvement of the local community, businesses, higher education providers and other partners.

In a sustainable development context it is important to select learning goals and contents that go beyond the boundaries of one discipline and are based on complex, interrelated real-life problems in a sustainability perspective. In order to define curricula for certain professional areas, rather than identifying narrow functional sets of knowledge and skills, it would be more appropriate to define major problem areas that learners are likely to encounter in their work or life situations. Environmental considerations, such as energy use and efficiency and the availability of resources and the need to recycle materials, would need to be incorporated into such problem or learning areas. Relevant school or team projects could address gender or ethnic issues in education or other basic human rights; they could centre on reducing waste collection, water consumption or saving

energy within the school or the entire community. They could increase native vegetation in the school grounds, develop kitchen gardens or implement a recycling policy for the school. Business schools, or entrepreneurship classes, would have to mainstream sustainability into their courses, covering the entire cycle from procurement, the manufacturing process, resource use, waste management, marketing, packaging, transport, etc.

Crucial in the development of competence is an active learner who is motivated and interested in the subject matter. An integral part of knowledge acquisition and competence development and, consequently, key determinants of lifelong learners are increasing self-regulation and self-guidance of the individual learner and respective teacher support. The role of teachers as transmitters of academic, pre-selected knowledge diminishes. Instead, teachers introduce a subject, they illustrate cases, use enquiry-based methods, delegate responsibility for learning and arrange problem-based work, posing more open questions or problems (also in tests) that allow for different solutions and a flexible application of what has been learned.

Lave and Wenger (1991) and Lave and Chaiklin (1993), who analysed learning through apprenticeship-type situations, found that knowledge was built by participating in groups whose members already possessed certain competences and who allowed the learner to become progressively part of their community. Lave and Wenger call this 'situated' learning, meaning that real understanding and competence are essentially a result of social, rather than individual activities and of learning embedded in sites of practice. Much of the knowledge acquired by participating in communities of practice is tacit and crosses the boundaries between disciplines.

Learning in (changing) interdisciplinary, problem-focused communities — and deliberate efforts in teaching and learning processes to build such communities — is a central requirement in the context of VET for sustainable development. Gonczi argues that 'a new education would emphasise the acquisition by learners of diverse generic capabilities and dispositions (including the capacity for ongoing learning as the nature of their professional practice evolves and expands) that would enable future professional practitioners to deal with a range of complex situations — and to do so within a set of moral principles. This can be done best through the knowledge building undertaken during work in the community of practice' (Gonczi, 2003, p. 127). He even goes as far as to advocate a 'focus on process at the expense of content' (ibid., p. 121), while it is clear that participation in social learning practices builds on a solid knowledge and competence base that in turn requires individual learning activities.

Participatory and reflective design, process and assessment techniques centred around cross-disciplinary, real-life problems help learners to develop competences to plan, communicate, cooperate, commonly seek solutions to problems and construct knowledge, as well as to assess and control risks and evaluate the entire endeavour. It is important in such group-learning exercises that individuals retain responsibility for making progress towards the end result, while sharing competences to construct new knowledge (Sharan, this issue).

Otterstrom holds that 'people develop every time they try something new' (Otterstrom, 2001, p. 7). In VET, the most suitable experiential learning takes place in practical school workshops or company-based learning sites. Examples in ETF partner countries of including practical training in the curriculum in a

structured manner are the EC MEDA programmes, as well as the German-funded GTZ VET projects in Egypt (Mubarak-Kohl initiative 1994–2008), the Former Yugoslav Republic of Macedonia and Croatia. ETF tested integrated work and learning approaches in the frame of the homonymous ETF project carried out in Hungary and Slovenia between 2000 and 2002.

In summary, if ETF support to VET reforms is to be effective, a strong emphasis must be put on schools and teachers and on what happens in the classroom or at other appropriate learning sites.

ETF is encouraged to promote didactical solutions that are anchored in inclusive, reflective, multidisciplinary and team-based approaches to real-life problem-solving, without which sustainable development practices would not be possible. Such approaches build on interactive forms of teaching and learning. They include an alternation between teacher- and self- or team-guided learning experiences on the one hand and experiential learning on the other, as well as at out-of-school, 'real-world' learning sites.

Furthermore, ETF may advocate a school and teaching culture that opens up to the learner and the school environment, that embraces participatory forms of teaching and learning, connects with the real world and organises much of the learning at, or close to, 'real-world' sites. Connecting the concrete fields of action and experience of learners to their learning, as well as cooperating with actors and institutions outside the school are important, as this would help to give teaching and learning at school a new meaning and prepare learners for their future work and life challenges.

Teachers' preparation would become a key priority for ETF's work and include far more elaborate induction programmes for new recruits, as well as the regular exposure, also of experienced teachers, to 'real-world' issues and practices. Pilot projects could assist school collectives to become communities of practice whereby teaching and learning competence could be built in collaboration with professionals from the outside world. Schools, teaching and learning, as well as research, would need to have close ties with the world of practice.

Conclusion and Outlook

Sustainable development may no longer be considered an option, but an obligation for ETF and VET reform in its partner countries.

A modern VET concept within a sustainability context takes account of the complex nature of current and future work and life challenges by creating a competence foundation that can be built on and expanded through lifelong learning. Such a competence foundation includes key reading, writing, mathematical, mother-tongue and foreign language communication competences; basic 'orientation' knowledge in areas relevant to a modern society; learners' self-organisation and self-regulation, as well as social competences. For VET, broader and higher levels of knowledge and skills relevant to a profession remain important, not least as being economically active often forms the basis for participating in society. In addition, people require reflection competence; future-oriented, creative and innovative thinking and problem-solving; thinking and acting in an interconnected, interdisciplinary way; new forms of interaction and collaboration, as well as planning and implementation competence.

ETF and its partners will have to pay attention to inclusive practices across the education continuum. This includes a careful monitoring and early identification

of students at risk of exclusion, formative assessment, recovery strategies and extra interventions for those falling behind. A flexible and attractive curriculum, as well as support to teaching professionals to develop their teaching and learning techniques, can help to increase progression and completion rates. In VET the widening of choices, the broadening of VET contents to allow for further learning and finding a job and the increase of resources to raise the quality of VET provision are issues of major concern.

Didactical approaches to foster competence development comprise a revision of learning goals and contents to focus on cross-disciplinary, real-life problems within a sustainability context. They build on interactive forms of teaching and learning, which include an alternation between teacher- and self- or team-guided learning experiences and the structured inclusion of experiential learning, including out-of-school, 'real-world' learning sites. Schools and teachers would need to open up to the learner and the school environment. Finally, there is an issue of teachers being more frequently exposed to real-life issues and becoming involved in communities of practice themselves.

Against the background of the need for sustainable development, ETF and partner countries alike may reflect once more about their strategies and the desired outcomes of reform. Changed learning goals and processes and the fundamental discussion about the role of schools, vocational teachers and trainers, the workplace and other real-world learning sites may now well be of a higher strategic value than a restricted focus on the labour market and on standardising and measuring outcomes, which have often dominated VET strategies so far.

Donors to VET, including ETF, could assist curriculum developers with the formulation of learning goals that focus on multidisciplinary real-life problems and integrate environmental and social aspects. Schools, teachers and their partners could be supported by collective school or community development projects where teaching, learning and assessment contents and approaches which are geared towards inclusion and competence development within a sustainability context are designed, practised and commonly evaluated.

Further debates and research are needed in all areas touched upon in this report, which ETF may explore further in collaboration with external partners. They include:

- the way economic and business patterns change and the implications thereof for environmental, technical and business knowledge and skills;
- patterns of exclusion in education and training and how to overcome them;
- the need for developing certain key and professional competences and how these are translated into curricula and suitable didactical approaches;
- the role of schools, teachers, businesses and civil society to develop the competences that allow individuals to actively and responsibly shape society; and
- how ETF or other donor organisations could adopt more sustainable business practices.

As this report demonstrates, adjusting VET to today's complex sustainability challenges is a major, but essential task. Grootings (1998) argues that a change in the 'logic' of the system requires a tremendous learning process that needs to be facilitated and intensified through adequate interventions and guidance. He also

warns that hopes have to be set on a grand design and a quick reform. The way in which ETF can put in place and guide such a learning process for the VET system remains the challenge to be addressed by the organisation.

NOTE

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