



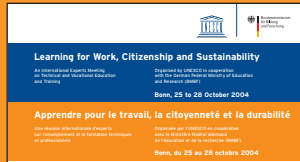
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> Editorial <

Orienting TVET for Sustainable Development

In October 2004, the Division for Secondary, Technical and Vocational Education of UNESCO (Paris), the UNESCO-UNEVOC International Centre (Bonn) and the German Federal Ministry for Education and Research (BMBF) will host, in Bonn, the 5 year review of progress since the Second International Congress on Technical and Vocational Education (TVET) which was held in Seoul, Korea, in April 1999. Over one hundred international experts, drawn from a broad cross section of UNESCO Member States, will attend the Seoul plus Five follow-up meeting. Proceedings will focus on two main areas, as participants:

- >> Assess the extent to which TVET systems in UNESCO Member States have developed since the 1999 Seoul Congress; and
- >> Examine how TVET systems may be re-oriented to contribute to sustainable development.

The question of how TVET may contribute to sustainable development, already an important topic, is likely to emerge as being of increasing importance once the UN Decade of Education for Sustainable Development commences in 2005. UNESCO is the lead agency for the decade, and the UNESCO-UNEVOC Centre is preparing to take a leadership role on this issue within the international TVET community.

Many of the articles in this Bulletin focus on how TVET, in a number of diverse settings, can be focused on aspects of sustainability. This editorial provides some background to the connection between TVET and sustainable development.

The Legacy of Seoul 1999

Discussions on the central theme of the 1999 Seoul Congress – life-long learning and training for all, a bridge to the future – led to the conclusion that a new paradigm of both sustainable development and TVET was needed. As the Preamble to the Recommendations in the Final Report stated:

*'We have considered the emerging challenges of the twenty-first century, a century that will be an era of knowledge, information and communication. Globalization and the revolution in information and communication technology have signalled the need for a new human-centred development paradigm. We have concluded that Technical and Vocational Education (TVE), as an integral component of lifelong learning, has a crucial role to play in this new era as an effective tool to realize the objectives of a culture of peace, environmentally sound sustainable development, social cohesion, and international citizenship.'*¹

The Millennium Development Goals and TVET

The notion of a 'new human-centred development paradigm' was elaborated at the Millennium Summit of the United Nations General Assembly in September 2000, which agreed to a set of Millennium Development Goals (MDGs).² The MDGs include: halving extreme poverty and hunger, achieving universal primary education and gender equity, reducing under-five mortality and maternal mortality by two-thirds and three-quarters respectively, reversing the spread of HIV/AIDS, halving the proportion of people



without access to safe drinking water, and ensuring environmental sustainability. They also include the goal of developing a global partnership for development, with targets for aid, trade, and debt relief. The MDGs offer a longer-term strategic vision.

Effective TVET is integral to finding and implementing solutions to all of these issues. In this way, TVET underpins every one of the MDGs and the achievement of sustainable development. It is impossible to think of making gains in poverty reduction, job creation, health or environmental concerns without a strong and focused TVET effort, and it is equally true that a focused and well-managed TVET system can lead to huge improvements in education, gender equality and living conditions. In essence, achieving the MDGs requires the development of appropriate forms of TVET.

The Crucial Role of TVET in Achieving Sustainable Development

Reflecting such imperatives, the Seoul Congress looked to an innovative paradigm of technical and vocational education based upon 'a learning culture' that encourages and educates people 'to be productive and competitive, and to care

for the well-being of its people'. It was agreed that 'a vibrant training culture is a key factor in attaining that goal ... and empower[ing] youth and adults to play a part in the new development paradigm'.³ As a result, the Final Report of the Congress stated:

*'Technical and vocational education, as an integral component of life-long learning, has a crucial role to play in this new era as an effective tool to realise the objectives of a culture of peace, environmentally sound sustainable development, social cohesion and international citizenship.'*⁴

*'... the TVET of the future must not only prepare individuals for employment in the information society, but also make them responsible citizens who give due consideration to preserving the integrity of their environment and the welfare of others.'*⁵

These statements represent a broadening of TVET from the narrow task of providing training for industry-specific and occupation-specific skills to the broader task of workforce development and lifelong learning for sustainable development and citizenship.



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Thus, the Recommendations on Technical and Vocational Education for the Twenty-First Century, published jointly by the International Labour Organization (ILO) and UNESCO in 2002, state that, as 'a vital aspect of the educational process in all countries' TVET should:

'(a) Contribute to the achievement of the societal goals of greater democratization and social, cultural and economic development, while at the same time developing the potential of all individuals, both men and women, for active participa-

1 UNESCO (1999) *Final Report, Second International Conference on Technical and Vocational Education*, UNESCO, Paris, p. 61.

2 See <http://www.un.org/millenniumgoals/>.

3 UNESCO (1999) *op.cit.*, p. 54.

4 *Ibid.*, p. 1 and p. 61.

5 *Ibid.*, p. 27.

6 UNESCO and ILO (2002) *Technical and Vocational Education for the Twenty-First Century: ILO and UNESCO Recommendations*, UNESCO, Paris, and ILO, Geneva, p. 9.

“*Technical and vocational education, as an integral component of life-long learning, has a crucial role to play in this new era as an effective tool to realise the objectives of a culture of peace, environmentally sound sustainable development, social cohesion and international citizenship.*”

tion in the establishment and implementation of these goals, regardless of religion, race and age;

(b) Lead to an understanding of the scientific and technological aspects of contemporary civilisation in such a way that people comprehend their environment and are capable of acting upon it while taking a critical view of the social, political and environmental implications of scientific and technological change;

*(c) Empower people to contribute to environmentally sound sustainable development through their occupations and other areas of their lives.'*⁶

Key Questions for Bonn 2004

These ways of re-conceptualising TVET are central to orienting TVET for sustainable development. But what has been the progress in individual countries? How has TVET been re-oriented to sustainable development? What successful approaches have been developed in pre-employment courses and in worksite-based training? Which industry – and training – sectors have led the way? Which ones have lagged? What factors are essential to success? What further actions need to be taken – by individual instructors and trainers, TVET colleges and managers of TVET systems? What support roles can be played by UNESCO-UNEVOC Centres?

In particular, what actions can UNESCO undertake to support instructors, schools and colleges and continuing TVET systems? This is especially important as the United Nations has declared 2005 – 2014 to be a special Decade of Education for Sustainable Development and has recommended that all countries take progressive steps to integrate sustainable development into their education plans at all levels and in all education sectors.

Questions such as these will be discussed at the UNESCO International Meeting of Experts on 'Learning for Work, Citizenship and Sustainability' in Bonn in October 2004.

The UNESCO-UNEVOC International Centre in Bonn, in consultation with a number of UNEVOC Centres and partner agencies, prepared a Discussion Paper which provides an overview of key concepts, trends and issues in the field of TVET for sustainable development in order to inform for the discussions at the Seoul plus Five Meeting in October.

Objectives of the Meeting

In considering the topic of TVET for sustainable development, the meeting will:

1. Review national initiatives in integrating sustainable development into TVET policies, programmes and practices, identifying common and contextually specific influences that have encouraged and limited the success of these initiatives.
2. Review initiatives by business, industry and civil society groups to integrate sustainable development into TVET policies, programmes and practices, identifying ways in which they can be scaled up to encourage wider adoption and support national initiatives.
3. Identify problems and issues facing the integration of sustainable development into TVET policies, programmes and practices and ways in which these can be addressed through policy review and development, curriculum and professional development, networking, research and evaluation.
4. Develop a draft action plan to guide TVET initiatives during the United Nations Decade of Education for Sustainable Development.

More information

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From Productivism to Ecologism

As a major supplier of skilled labour, TVET is directly implicated in the reproduction of 'productivism', the predominant ethos which assumes that economic growth is a permanent and necessary feature of human existence, regardless of its environmental impact and consequences. Productivism prioritises the needs of 'industry' over all others, and reifies 'work' (as paid employment) as the principal source and measure of social worth.

At present, TVET is based on two normative assumptions; that the principal, if not sole, purposes of TVET are to: promote economic growth through the development of the human resources required to increase productivity and profit; and produce skills for work, thereby enhancing employability.

Productivism and the 'training-for-growth' and 'skills-for-work' assumptions no longer constitute a rational or legitimate basis for TVET. Scientific evidence of deep-seated and potentially irreversible environmental problems shows that permanent economic growth is untenable. The



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demise of full-time, standard employment largely invalidates the ideology of 'work' and the discourse of 'employability'.

The time has come for a new post-productivist vision of TVET, based on values and assumptions that promote learning for the new world of work, global citizenship and ecological responsibility. TVET learners should develop a more reflexive and holistic understanding of their roles as ecological actors, and of the consequences of their production and consumption activities in and beyond the workplace.

TVET institutions and teacher educators have a responsibility to teach effectively, but they also have a dual responsibility to initiate a critical examination of the social and environmental con-

sequences of economic growth, and facilitate lifelong learning and skills development for ecological sustainability. If TVET is to serve the interdependent interests of nature, society and economy, productivism and the myth of perpetual economic growth must be replaced as the bedrock of TVET by a new ethos of 'ecologism' and the global imperative for democratic, equitable and sustainable development.

More information

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Using Work-Based Learning to Develop Education for Sustainability

Education for Sustainability (EfS) advances traditional environmental education by adding a social dimension and critiquing behaviour such as mass consumerism. Dr Neil Taylor (University of New England School of Education) and Dr Richard Coll (University of Waikato) suggest in a joint article that work-based learning could act as a vehicle for delivering EfS. They indicate three possible models:

The first involves 'EfS training occurring in the workplace'. The education that occurs in the workplace also involves enculturation of newcomers into a 'community of practice', in an apprentice/student-master type of relationship. This clearly has a social component and might, for example, allow near graduates to come to an understanding of EfS issues as part of their workplace experience.

Second is a model in which EfS training occurs in the classroom and is later taken into the workplace by students. They could be taught about EfS in specific classes, or as part of technology, management or related classes. Such courses would provide students with an understanding

of EfS allowing them to take knowledge of such issues into their work placements. Students going on placement are often hesitant about addressing potentially emotional issues like sustainability. It would seem appropriate that they have the necessary information available to inform their decisions.

The third model is one in which work-based learning and EfS are integrated. Work-based learning is seen by proponents to be most effective when it involves work-integrated learning. Indeed, this is a key feature of sandwich degrees and one of the main reasons for 'sandwiching' the work placement between on-campus learning. In work-integrated learning students are expected to take knowledge into the workplace and to bring back workplace knowledge into the classroom after completing their work placements.

The World Association for Cooperative Education (a professional body that advocates work-based learning) suggests that students bring their on-the-job experiences back to the classroom for further analysis and reflection. Hence,

the third model is essentially a combination of the first two models described above. For example, students could be required to report about sustainability issues in appropriate classes (e.g. using case studies about their placements) or on open-days when they give presentations (e.g. the 'industry day' at British universities).

For a description of other forms of experiential learning, see the 'International Handbook for Cooperative Education' referred to in the section 'Publications' at the end of this Bulletin.

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Skills to Last for the Canadian Workforce

If the principle of sustainable development is to be implemented successfully there is a need for a workforce which is equipped with sustainable-development-related knowledge, skills and attitudes (KSAs). There is a general consensus that the workforce must be prepared so that it can contribute to national sustainable development goals. However, the implementation of workforce education and training for sustainable development pre-supposes that sustainable-development-related knowledge, skills and attitudes are known. An extensive review of literature indicated that this is not the case.

The National Centre for Workforce Development (UNEVOC Canada) conducted a study to identify the broadly transferable sustainable development skills required by the Canadian workforce. In Phase I of the study, an extensive review of literature and research was conducted to identify KSAs related to the three elements of sustainable development: Environment, Society and Economy. In Phase II, these KSAs were validated

using a focus group of individuals representing Canadian diversity, and with expertise in environment, sustainable development and workforce development. The experts confirmed that the great majority of the KSAs were relevant to the goals of sustainable development. Six major themes emerged:

1. **Ethics and Values** are defined as the attitudes needed to behave and act ethically.
2. The **Integrated Decision-Making** theme is defined as the knowledge and skills needed to process information effectively and efficiently.
3. **Responsible Use of Resources** is defined as the knowledge and skills needed to use resources responsibly.
4. **Valuing Diversity** is defined as the knowledge and skills needed to contribute to, and support, diversity.
5. The **Healthy Lifestyle** theme is defined as the knowledge and skills needed to maintain workplace health and safety.

6. **Continual Improvement** is defined as the knowledge and skills needed to improve quality of life.

These skill clusters were used to organise and classify the KSAs. This activity generated the Sustainable Development Skills Profile (SDSP). The SDSP provides a list of the broadly transferable, sustainable-development-related knowledge, skills, and attitudes required by the Canadian workforce in order to apply the principles of sustainable development in their day-to-day activities, regardless of job function, sector of activity, and level of education and training. It is broadly applicable to general education, adult education and TVET.

Under the address below, readers can get a complete skills profile and/or the full report of the study.

More information

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Pushing 'Learning to Last' up the Policy Agenda in the UK

Between 2001 and 2003 the Learning and Skills Council (LSC) in the UK funded two phases of small scale development projects which the Learning and Skills Development Agency (LSDA) led and managed. They were called Learning to Last projects and their outputs (Good Practice Guide; Learning to Last Toolkit) can be found on the LSDA website. The LSDA wanted to push sustainable development for TVET up the policy agenda and so commissioned two strategic reports, published in September 2004. The main aim was to explore ways in which TVET for sustainable development could be located *within* existing priorities for the learning and skills sector and in the language that practitioners understand.

The first commissioned report, written by Martin Yarnit, has provided an analysis from cross-government policy documents of what is meant by the notion of sustainable communities (learning communities, active communities etc.) and the implications for the learning and skills sector. Yarnit features the definition of sustainable community provided by the recent Egan Review and welcomes this as a national 'starting point' for the debate.

Egan advocates that learning providers should

be part of a national campaign to raise the profile of the core occupations for this agenda, that is: environment professionals like planners and architects; decision-makers like local authority members and officers; and influencers like leaders of community and voluntary organisations. He highlights the central need for a continuing programme of professional development for staff. Learning providers' contribution to sustainable communities should be recognised in inspection and funding regimes so that there is an incentive to take part. (The Egan Review is also referred to in the section 'Publications' at the end of this Bulletin.)

Yarnit challenges the learning and skills sector and providers to:

- >> Assess what Egan means for the forthcoming LSC sustainable development strategy;
- >> Assess how sustainable development should impact on planning and funding the sector;
- >> Assess how sustainable development should be integrated into the national Skills Strategy.

The second commissioned report is written by Stephen Martin and shows how to tackle the issue expressed in the third bullet point above. It takes TVET policy as its starting point. There is room here only to cover Martin's thoughts on

the Government's Skills Strategy and its central theme of gaining greater engagement with employers across the whole of the TVET system. He sees this as 'a major opportunity to maximise the integration of sustainable development into the planning, design and delivery of demand-led provision because sustainable development has profound implications for all occupations'. He argues that providers in the TVET system should target business leaders in ethical, environmental and sustainable development terms to forge strategic and operational partnerships in order to create new forms of provision.

Targeting industries where sustainable development practice is already developed, the LSDA is working with its Centres of Vocational Excellence to engage with these employers and allow them to teach the new sustainable development skills.

Both of these reports focus on major TVET policy imperatives – and offer a sustainable development contribution. It is a win-win situation. If adopted, this would improve implementation of policy, develop sustainable development practice, and offer interesting learning experiences for both students and teachers.

More information

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Training Young People as Environmental Educators in Angola

The Ecological Youth of Angola (JEA) is a non-governmental, voluntary-based organisation established in Angola in 1991. Its aim is to contribute towards environmental protection and promote sustainable development principles, while taking into account environmental issues affecting young people and their communities. JEA works in four areas: environmental education and training; materials development; research; and environmental awareness through media.

Working in a country that has just emerged from a long period of civil war and considering the inefficiency of both the secondary school and vocational education systems in Angola, JEA invests in providing TVET to its members. Its work is guided by four principles:

Sustaining Human Resources

As an organisation which is partially donor-dependent, JEA cannot afford to pay salaries to its members. Therefore, the work that the members do on behalf of the organisation is com-

pensated through TVET. The main aim is to provide members with skills, knowledge and abilities for them to implement and sustain JEA's activities independently. An example is the annual school-based Environmental Olympics project. The best learners become members of JEA and help to run the project in the following year.

Contextualising Learning in a Developing Context

The training needs of JEA change according to the changes in the Angolan context. The skills demanded by the market change in such a rapid way that often school curricula cannot follow immediately. Therefore, JEA develops training programmes which are contextualised according to the current environmental issues and skills and knowledge required to address these issues. The programmes vary in contents, methodologies and materials according to the provinces where the activity is taking place.

Developing Accessible and Flexible Learning Support Materials

Many of JEA's training activities are implemented by using learning support materials. JEA is not able to run environmental education and training everywhere. Thus, materials which are

accessible (in terms of costs, contents and language) are produced and widely disseminated. These materials are also flexible, so that they can be used in a one-week training course, half-day session or environmental media programme.

Exploring the Relationship between Research and other Sources of Knowledge

JEA undertakes constant research projects which also draw extensively on other sources of knowledge, particularly indigenous and local knowledge. These create synergies which enable JEA to provide responsive, culturally appropriate and locally relevant TVET.

Apart from these four basic principles, JEA's TVET programmes focus on learning by doing – the importance of praxis in environmental education – and education as a continuous process towards the development of skills, knowledge and abilities to address current and emerging environmental issues. This is done in a way that fosters skills for lifelong learning in every member of JEA.

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Targets and Activities of the German Government

Vocational training has taken on a particular responsibility now that sustainable development has been recognised as a guiding principle also in state activities. Excellent and efficient work is called for in planning departments, workshops, offices and administrations in order to meet this challenge. More than ever before, every member of staff must:

- >> Be aware of the effects of his or her work on production processes in utilisation cycles and learn how to influence these;
- >> Learn to understand the essentials of an 'integrated product policy', become familiar with its consequences for products, and analyse and shape the relevant operational processes from the point of view of sustainable development; and finally

- >> Recognise the role that human beings play as an economic being in both areas (in 'producing' and 'consuming').

The demands on vocational training for sustainable development have been examined and discussed extensively in Germany by all the stakeholders. The result is a framework for orientation which describes the cross-trade, central competences and the specific vocational competences required for ensuring sustainability as integral parts of professional activities. It also shows ways to recognise future-oriented sustainable fields of activity at an early stage, open up new fields of technology and branches of growth for society and industry, and qualify the requisite staff for vocational training.

The central challenges for vocational training remain: How do I succeed in enabling a person to proceed from insight to action? What factors determine whether a person manages this step, what factors encourage him or her and what factors deter them? In addition, product quality has to meet the requirements of both the supplier and the customer.

The German Federal Ministry for Education and Research (BMBF) has just initiated a programme of pilot schemes with industry to test ways of introducing sustainable methods in initial and continuing training.

It is of the greatest importance – and also in the interest of industry – to implement the idea of sustainable development. Anyone who wishes to assert himself on the market will have to combine the development of new technologies and processes with corresponding training for production, service and advisory staff. In the long term, sustainable management will thus become a guarantee for future viability. The BMBF will support these efforts by taking part in the national plan of action for the UN Decade of Education for Sustainable Development.

More information

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Sustainable Strategies in International Staff Development

In the past, Germany's TVET co-operation focused on the promotion of TVET system development. The approach was about dependent employment and resulted in the over-emphasis of Germany's dual model with its combination of state and private industry sponsorship. In many

countries this model only met with weak interest on the part of businesses.

This led to a paradigm change. The principle of shared public-private responsibility was not dropped, but purely dual approaches in interna-

tional staff development were combined with other forms. This included shorter or more flexible training courses as well as innovative certification methods. Furthermore, the protection of the environment was strongly integrated in TVET curricula. TVET still plays a key role in economic, social and ecological sustainability in areas of qualification which are relevant for the future, for example:

- >> Increased vocational flexibility by emphasis on individual capacities to find and create employment;
- >> Improved general education combined with hands-on technological qualifications and commercial knowledge for self-employed income generation (in particular for the poor);
- >> Distinctive skills for individual and group training (up to 80% of vocational learning takes place at the workplace) in industry, integrating aspects of environmental protection in industrial based production.

Capacity Building International (InWEnt) established in its training programmes for experts of the TVET sector of developing countries the following priorities:

- >> German know-how is based on a differentiated functional responsibility, which links



Training of multipliers in eco-friendly motor vehicle technologies

understanding of the labour market and vocational training with efficient occupational information systems and proficient policy advice. 'Neighbouring areas' (labour markets, employment systems) must be taken into consideration to achieve employability and consequently social and economic sustainability.

- >> From a German perspective, management of vocational training functions in a way which is based on co-operation and co-determination of capital and labour. This triggers off dynamics of innovation that purely bureaucratic systems without private participation can only dream of. Private sector participation provides strong links to the prevention of ecological problems in industrial production – a precondition for environmental sustainability.



- >> Nowhere else in the world do we find technological qualifications accompanied with a systematic integration of environmental protection in TVET curricula.

The outlined fields of action provide a basis to compose detailed programmes for specific countries with respect to the local requirements. Forms of co-operation which are relevant to promote business and/or fight poverty, and which are adapted to the dynamics of change and social problems, are just as important as systems approaches embedded in sustainable strategies.

More information

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German Technical Co-operation in TVET (I)

The German Agency for Technical Co-operation (GTZ) contributes to economically sustainable development of partner countries through the development of qualified human resources. Improving the employability of target groups, in particular disadvantaged groups, increases their chances of (self-)employment.

To achieve social and economic sustainability, GTZ's TVET section develops tailor-made solutions in participatory processes with stakeholders in partner countries, taking into account labour market demands. It supports the incorporation of market elements into TVET systems and the close co-operation with private industry in all issues related to training.

GTZ TVET currently has projects in more than 60 countries in three main areas of co-operation:

Labour market-oriented TVET systems increase the employability of graduates and meet the economy's demand for qualified staff. GTZ offers policy consulting for decision-makers in relevant ministries with regard to financing, decen-



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Training in a workshop in Afghanistan

tralisation and privatisation, and legal frameworks. GTZ also supports the establishment of sustainable structures on the intermediate level, aiming at the optimisation of transitions between the TVET system and the labour market.

Centres for advanced and applied technology training and services increase productivity, innovative power and competitiveness of small and micro-enterprises. GTZ focuses on the establishment of institutions to improve the technological competence of enterprises through the training of technical and management staff and the provision of complementary advisory services.

Employment-oriented training for and in the informal sector aims at direct poverty reduction. It provides target groups – such as socially marginalised groups, victims of wars and natural disasters, former combatants – with the necessary skills to earn their own income through (self-)employment and with the ability to articulate and represent their interests. GTZ focuses on the establishment of institutional networks, including an appropriate political framework, steering mechanisms and measures for specific target groups.

Social and economic sustainability are interdependent with political stability: Obtaining economic and social progress in politically unstable systems is difficult. Conversely, political stability is hard to achieve without economic and social advancement. GTZ TVET aims to prepare target groups not only for the world of work, but also promotes their ability to actively part-

ticipate in shaping their working and living environment, accepting responsibility for social as well as environmental issues.

To achieve environmental sustainability, lasting structures are created for the training of staff

for environmental management and environmental technologies. Simultaneously, environmental issues are integrated into training measures as a cross-cutting subject (for details, see the article below).

More information

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German Technical Co-operation in TVET (II) – A Project Example

As reported above, the TVET section of the German Agency for Technical Co-operation (GTZ) has two complementary objectives. The first is to support the development of qualified human resources in order to increase the competitiveness of enterprises. The second is to increase the employability of individuals. Both objectives include a focus on sustainable development, providing access to resources and opportunities for a better quality of life, including environmental aspects.

The Sector Project described here focuses on environmental sustainability but also takes into account its economic and social dimensions. Political decisions for sustainable development in general indicate an increasing need for qualified manpower in the environmental sector. Following this rationale, the GTZ project aims at integrating environmental aspects into various TVET areas by developing multidimensional concepts oriented towards activities on the macro, meso and micro levels. This includes:

- >> Approaches on the integration of environmental aspects into occupational profiles;
- >> Integrating environmental aspects into TVET teacher training, training institutions and curriculum development;
- >> Design and development of teaching and learning materials;
- >> Initiating networks and co-operation structures for exchanging experiences on issues related to environment and TVET.

The Sector Project is closely linked with selected GTZ activities in several partner countries, both to obtain experiences and provide support.

This is shown in the following example: In Ethiopia the project supports the introduction of a concept for integrating environmental aspects into a TVET teacher training institution by means of a *multi-dimensional* approach. The overall goal is that TVET graduates act responsibly and according to the environment of their workplaces. This includes awareness of environmental issues in general as well as the efficient use of working materials and resources such as water and energy, waste disposal, improved workplace safe-



Environmental management – a challenge in Ethiopian teacher training

ty and health protection. For this purpose, environmental management is integrated into the training of multipliers, TVET managers and teachers as well as into the teacher training curricula. Following the concept of 'learning by doing', the teacher training institution itself operates according to environmental management standards.

More information

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> Private Sector Involvement <

Opel: A Learning Workforce for a Learning Car Company

At Opel, sustainability means balancing the social responsibility the company assumes for its employees and communities as well as society at large with the need to preserve the natural environment and resources, while ensuring the long-term profitability of the company's operations. In fostering employee training and education Opel sees both business sense as well as social responsibility. As a learning enterprise, Opel's success depends on highly qualified, motivated employees because the qualifications, knowledge and skills of the workforce are a key strategic asset in a dynamic and competitive auto industry.

A pyramid can illustrate how training, education and career development activities all come together and build on each other. It starts with vo-

cal training and extends to various qualification opportunities and work-integrated university studies all the way to leadership training with international assignments within the General Motors organisation.

Vocational Training in Technical and Commercial Professions

With approximately 844 apprentices (as per 31 December 2003), Adam Opel AG is one of Germany's largest providers of vocational training opportunities. The company currently offers 17 different training programmes, twelve in technical areas and five in commercial professions.

At Opel, building social and personal skills is just as important as developing job qualifications. Making a car or being responsible for a model range requires the ability to be productive within a team. That is why teamwork and communication skills are important areas in the Opel vocational training approach.

Experienced trainers mentor apprentices through a process called the 'Training Contract'. All the trainees in each group reach a consensus on fundamental issues: Why did we enrol in this programme? What are our goals? How do we want to interact within the team? In this way, apprentices can continuously refer to the agreed points and track their own development. At the same time, the trainer makes sure that all the required learning content is covered and internalised. The trainer and the team then jointly develop strategies so that each individual in the group can acquire the necessary knowledge and work on filling any learning gaps.

Work-Study Programmes

Opel also takes the initiative when it comes to combining academic studies with job training. With the Co-operative Systems Engineering Degree Programme incepted almost two years ago, mechatronics apprentices can obtain a Systems Engineering Degree in association with the local University of Applied Sciences. The unique course programme, in which the classroom ex-



Apprentices in a modern workplace

tends to the workplace and vice versa, ensures a dynamic and pragmatic learning process.

A Broad Spectrum of Ongoing Education Opportunities

Opel employees can choose from a broad range of continuing education and training programmes. The company actively encourages employee qualification at its training centres, in areas such as new technologies, workplace safety, business administration, communication, data processing and foreign languages. In addition, employees can take advantage of the extensive curriculum of General Motors University (GMU).

One important innovation was the integration of e-learning into Opel's existing training programmes. Modern technology – including the Internet and company intranets – makes knowledge acquired within the GM organisation available to all employees worldwide in a flexible and productive learning environment.

More information

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SAP Software: Public Private Partnership for Teacher Training

The South African education system is currently facing a serious shortage of qualified primary and secondary school educators. This is particularly prevalent in the strategically important learning areas of science, mathematics and technology.

According to President Thabo Mbeki, 'special attention needs to be given to the compelling evidence that the country has a critical shortage of mathematics, science and language teachers, and to the demands of the new information and communication technologies.'

In response to this situation, the Africa Drive Project (ADP) was born. Designed to alleviate the shortage of suitably qualified teachers in the physical sciences, mathematics and technology areas, the programme utilises blended learning, including e-learning, to improve the competencies of educators. They, in turn, can provide students with relevant, quality education.

Initiated by the Department of Education in a Public Private Partnership with the University of

North West, SAP Research and other partners, the project will be run from the Mafikeng Campus of the North West University. The ADP learning portal has been commissioned, four of the eight learning centres opened. Formal learning, preceded by basic computer (keyboard and application) skills and educator exposure to a transformation intervention, commenced in July 2004.

Another project in the e-learning space is planned in Paraguay. The name of Paraguay Association for Blended Learning Online (PABLO) reflects the intention of the Paraguayan Government and its associates in this initiative: to develop a strategic platform to face the educative challenges using new technologies and concepts of learning that will benefit the whole country.

The main goal of the project is to face the urgent needs of training for all the teachers in the country in an effective and economical way. For the first time, a strategy of training where all the teachers will be able to access the same quality of education will be possible. This is a landmark, which radically improves the current approach of 'cascade training'. It allows the personalisation of the training according to the preparation of each teacher.

The targets of PABLO are, for example, to:

- >> Make possible the qualification of 81,000 teachers and supervisors of the Ministry of Education;
- >> Develop the possibility of distance education programmes using Internet in the country;
- >> Provide technical assistance and training to develop educational materials;
- >> Develop a blended learning model which best adapts to the curriculum defined by the Ministry of Education;
- >> Evaluate the students during the different stages of their training.

More information

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Umberto: Training for Product Life Cycle Analysis With Modelling Software

With regard to regional and global impacts and damages to health and the environment caused by the production and consumption of goods, sustainable development has become the leading concept for improved processes, products and services.

Global supply chains and production systems have reached such a complexity that product or process improvements are a great challenge for researchers, engineers and decision-makers who have to judge alternatives. Changes in the making or buying of products or any adaptation of

a process have to be assessed with regard to the impacts on the three dimensions of sustainability along the whole life cycle of the product.

Furthermore, legal or other market-driven requirements, such as product declarations or the ban of certain substances, put enterprises under pressure to adapt instruments that have been developed to support sustainable development. The enterprises require trainees and young employees to be capable of using instruments such as Material Flow Analysis, Material Flow Accounting and Life Cycle Assessment. The basis for any assessment and improvement is transparency concerning the related material and energy flows for the relevant production processes of the life cycle.

The very old and simple truth that one can only improve an object that one knows, totally applies in the field of sustainable development. Reaching a better understanding of complex systems can be supported to a high degree by modelling software tools. Such tools allow graphical visualisation of complex models and provide a functionality to assess environmental, economic and social impacts related to the production systems.

Based on the commercial modelling and assessment tool Umberto, courses and technical trainings have been developed by the University of Lüneburg in co-operation with ifu Hamburg GmbH and the University of Hamburg in Germany. The courses are offered to students of environmental science, environmental engineer-

ing, economics, computer science, geo-ecology and other subjects. The trainings provide both knowledge on relevant methodologies, as mentioned above, and modelling skills. For the trainings two case studies have been used to develop e-learning units: one example of a brewery and one of cement production.

In other universities students also do data collection in enterprises that are interested in introducing one of the instruments for process or

product innovation and develop the first models for a part of the production process. Students then work in groups quite independently like consultants for the enterprises. They receive guidance and model reviews by their professors or more experienced students.

Umberto based trainings are widely used at German universities, but also in Latin America and Asia. Contacts and information about special conditions for train-the-trainer packages in de-

veloping countries can be requested under the addresses below.

More information

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SEQUA: Twinning International Business Organisations for Demand-Driven TVET

The Foundation for Economic Development and Vocational Training (SEQUA) is a non-profit development agency established by the German chambers' and employers' organisations. SEQUA's experience shows that TVET projects are more likely to contribute to sustainable development if they are based on demands of the private sector and try to facilitate a close co-operation between government and enterprises. The following case study analyses in detail how such a co-operation can be initiated and brought to sustainable results.

The State of Pernambuco in Northeast Brazil is the least developed part of the country, with 60 percent of the local urban population living below the poverty line. With about 140,000 jobs, mainly for women, the clothing industry is the most important sector in Pernambuco. It consists mainly of small and medium-size enterprises (SMEs).

The growth of the sector is threatened by a lack of qualified textile technicians (middle management level). Until recently, training courses for these technical managers were unavailable in the federal state. Three new vocational training

centres were established by the parastatal national institution for vocational training SENAI.

In one of the centres 60 technicians for the garment industry are trained per year. Each full-time course lasts three years and is financed by SENAI. The other two vocational training centres offer special courses for the garment industry, which last between 8 and 120 hours each. They are paid by the participants themselves, but partly subsidised.

The local association of the garment industry (SINDIVEST-PE) successfully lobbied for this innovation. Instead of establishing its own training centre, which would have been a heavy financial burden for the small 300-member association, SINDIVEST-PE lobbied vis-à-vis local governments and parastatal institutions to adapt existing training facilities to the needs of local enterprises. Now SINDIVEST-PE is responsible for the supervision of the quality of the training and for the development of new curricula.

A crucial factor for this successful expansion was the long-term twinning with the training centres of the Bavarian Employers' Associations (bfz) in Germany, which increased SINDIVEST-PE's credibility. Furthermore, the German partners advised SINDIVEST-PE's board and staff on

how to improve their lobbying and assisted the new schools in the training of trainers. The donation of equipment proved to be an important stimulus for the Brazilian government to establish and conduct the training centres.

Lessons Learned

- >> Twinning up an organisation with an international partner can bring about a constituency for change.
- >> The exchange of technical expertise and staff training lies at the heart of these twinning arrangements.
- >> A co-operation between government and private sector can deliver better results than activities of one party in isolation.
- >> Successful public private partnership requires the participation of private sector representatives in the decision-making boards and committees.

More information

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> UNESCO - Education for Sustainable Development <



Promoting Quality Education in All Forms and at All Levels

An exciting international consensus emerged following the 1992 Earth Summit in Rio de Janeiro and became even stronger at the 2002 World Summit on Sustainable Development in Johannesburg: Education is central to achieving sustainable development. The United Nations Decade of Education for Sustainable Development (2005 – 2014) and the designation of UNESCO as the lead agency for the promotion of the Decade provide an important opportunity for all partners to:

- >> Advance progress made in human resource development, education and training to promote development which is socially desirable, economically viable and ecologically sustainable;
 - >> Promote an education that is relevant to the key problems of living in the twenty-first century, that empowers people to exercise their rights, and that cultivates good citizenship locally, nationally and globally.
 - >> Recognise that the 'education' in Education for Sustainable Development is not just formal schooling but embraces a wide range of learning experiences and programmes;
 - >> Understand that education for sustainability concerns not only education, but also health, environment, natural resources, planning, agriculture, commerce, and many other issues.
- As the lead agency for the Decade of Education for Sustainable Development, UNESCO is required to:
- >> Develop a draft international implementation scheme by establishing its relationship with the educational processes already in existence, especially the Dakar Framework for Action and the UN Literacy Decade; consulting with the UN agencies, international organisations, governments, NGOs, youth etc.

>> Provide recommendations for governments on how to promote and improve the integration of ESD in their educational strategies and action plans.

For more information, see the UNESCO ESD website (www.unesco.org/education/desd) in English, French and Spanish. This site shares elements of the framework for developing a draft international implementation scheme for the United Nations Decade of Education for Sus-

tainable Development in close consultation and collaboration with UNESCO's partners at local, national, regional and international levels. It also explains the concept of sustainable development endorsed at the World Summit on Sustainable Development in Johannesburg in 2002. The concept of education for sustainable development and its relationship with Education for All, the United Nations Literacy Decade and the Millennium Development Goals is clarified. These illustrate that quality education is a prerequisite

for education for sustainable development at all levels and in all modalities of education.

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Improving Sustainable Livelihoods of the Rural Poor

In developing countries, where typically most of the population and the employment are located in rural areas, TVET for sustainable development should better focus on promoting sustainable rural livelihoods and on addressing the needs of the rural poor.

Agriculture contributes to economic growth, employment generation and poverty reduction. However, there is a need to recognise that agriculture is no longer the only source of labour and income for rural people. Skills development issues in rural areas are determined by the transformation of rural labour markets. Rural non-farm employment tends to flourish in dynamic rural areas. Depressed rural areas tend to rely much on farm income. Nevertheless, the diversification of economic activities through skills development can complement low agricultural income and improve the livelihoods of rural poor communities.

There is evidence that education is a determining factor to access off-farm employment and better paid work. While persons with low levels of education are found in non-qualified occupations, those with higher educational levels can access better paid and more qualified positions.

However, in most countries, education policies, including in the field of vocational training, do not pay specific attention to rural areas. The government apparatus is usually more geared towards urban settings. By definition, ministries of agriculture are rural-oriented but mainly pre-occupied with farming, other rural activities and people being underserved. Progress towards rural sustainable development, therefore, requires an expansion of the scope of rural training policies beyond agriculture. It also involves a clear recognition in basic education of the distinct, yet diverse, needs of rural people.

The Education for Rural People (ERP) global flagship initiative, officially launched during the

World Summit on Sustainable Development in 2002, aims to build awareness of education for sustainable rural development. Furthermore, it will involve improved articulation between basic education and vocational training, formal and non-formal approaches. Such convergence would facilitate appropriate skills development to meet local needs and contribute to achieving the international objectives of food security, Education for All, gender equity and poverty reduction.

More information

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> UNESCO-UNEVOC Partner Agencies <

COL: Curriculum Development for Literacy and Livelihoods

The Commonwealth of Learning (COL) developed in the 1990s a Core Curriculum in TVET specifically to offer training in pedagogical skills to practicing technical and vocational teachers who are strong in their specialisation but lack teacher training. It was originally a joint venture between the Caribbean Community Secretariat (CARICOM) and COL to meet an expressed need of the island states in the Commonwealth Caribbean. Its development involved all Commonwealth Caribbean countries in the initial planning.

The project began in Nassau, Bahamas, in 1992, where TVET representatives from 14 countries developed the action plan. Between 1993 and 1999 COL contracted distance educators with curriculum development skills in TVET throughout the Commonwealth to write units and modules for

the Core Curriculum. The University of Technology, Jamaica (Utech), agreed to call it Special Diploma in Technical and Vocational Teaching (In-Service).

By 2000, COL and Utech had worked toward accrediting this Core Curriculum as a distance programme for technical and vocational teachers in the Caribbean. Tutor training workshops were held in both the Bahamas and Saint Kitts & Nevis in late 2000.

In 2003, the University of Education, Winneba, Ghana (West Africa), started a distance education programme for a Bachelor of Education in Technical and Vocational Training using open and distance learning (ODL). The programme consists of 56 courses in total, making use through adaptation of the existing Diploma of Technical and Vocational Teaching (In-Service) materials devel-



A video production workshop for teacher trainers in Samoa

oped by COL in conjunction with the Utech.

The Fiji Institute of Technology (FIT) is keen to use the COL/Utech Diploma Programme but is currently working hard to become dual mode. A FIT staff training has taken place in April 2004, to introduce staff to the use of ODL and the differences between face-to-face training and ODL.

Tuvalu has been introduced to the concept of

ODL and is developing capacity and processes to deal with the difficulty to increase human resource capacity.

Several learning models based on video materials produced by the small island states have been

developed (working with timber and working with bricks/blocks and concrete). They have led to the development of four further modules (motor mechanics, small engines, plumbing, and electrical) and will also serve as template for the development of other materials by the islands themselves.

Saint Lucia and Grenada started up the process of

establishing the TVET Diploma Programme by holding tutor-training workshops in mid August 2004.

Namibia is currently exploring the possibilities of adapting the programme for the country's context.

This year, COL decided to widen the TVET concept into Literacy and Livelihoods (L&L) to cater

for less endowed target groups. L&L will attempt to use ODL to reach out-of-school youth and rural women who do not qualify for formal TVET.

More information

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Cinterfor/ILO: Technical Co-operation on TVET and Sustainable Development



CINTERFOR

In harmony with various Latin American vocational training experiences that have introduced local and sectoral approaches on development as action frameworks, the Inter-American Research and Documentation Centre on Vocational Training (Cinterfor/ILO) is now carrying out different research, technical assistance and dissemination activities.

The numerous dimensions of vocational training and their reciprocal relations attain a more evident expression when they select as a framework a given territory, sector, productive chain and its particular economic, cultural and institutional patterns. Thus, the traditional objectives of improving young and adult workers' qualifications are combined with and supplemented by innovative actions, technological transfer, gender-sensitive equity policies, measures to promote social dialogue and, above all, devel-

opment strategies set up by actors in these fields.

The issue of sustainable development stands in a focal point in these experiences: not as an additional objective or content, but rather as a cross-cutting dimension of local and

sectoral development strategies, where institutions and their networks of centres participate along with other actors.

In contrast with centralised training schemes – where the network of centres basically implements decisions and programmes designed by central levels – training centres are increasingly seeking to insert themselves in regional, local and sectoral development strategies. They are working on an equal footing with other actors: municipalities, universities, enterprises, trade unions, social organisations, etc.

As a result the relevance of the training on offer is enhanced. It is defined on the basis of the demands and needs of the community or sector. On the other hand, many of these centres take advantage of their operative capacity (infrastructure, equipment), their staff and their knowledge to offer more services than strict

training: applied research, technical and technological assistance, consulting etc.

Cinterfor/ILO has been co-operating with vocational training institutions, basically through documentation and dissemination of experiences from Latin America and the Caribbean, as well as from other regions. Publications, the Centre's website (www.cinterfor.org.uy), and technical assistance activities – all help to inform on the main lessons learned from initiatives such as the National Technology Centres (SENAITECs) of SENAI (National Industrial Training Service), from Brazil; the Training and Technological Services Units of INA (National Training Institute), from Costa Rica; or the National System for Generating Technologically-Based Enterprises, promoted by SENA (National Training Service), from Colombia. In this way, training institutes in different countries strengthen their groundwork for exchanging information and learning and, fundamentally, for developing horizontal technical co-operation.

More information

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WHO: Building Health Competence Worldwide

TVET for sustainable development provides an opportunity to establish mechanisms for enhancing health competence. Since the 1990s there has been high-level political commitment for creating environments supportive to health. There has been enormous progress in political decision-making, global conventions and partnerships. This makes us even more aware of events or areas where the global community failed to build on this progress.

The AIDS epidemic has become a major crisis: inaction and delayed action, stigmatisation and lack of knowledge in many countries have stabilised the plateau at 40 to 50 million HIV infected people over the past years. More than a million victims dying annually, a disastrous toll to societies in general, impede economic development and stability.

Some countries have engaged in processes which de-stigmatise the disease, move private suffering up to a Public Health Agenda at global scale, and provide concrete help. The World Health Report 2004 of the World Health Organization (WHO) presents African companies, which begin to distribute antiviral drugs free of charge to their workers – unfortunately years after their 'human resources' were tangibly vanishing.

TVET will be a tool for supporting health competence development in two ways:

1. Working people have a chance to learn how to keep their competitiveness up, in terms of professional skills, but also by maintaining their physical and mental health conditions.
2. The workplace as a 'classroom': TVET presents opportunities to reach previously untouched audiences. A majority among

workers did not get adequate education. 'Lifelong and continuous learning' provides opportunities for enterprises to stabilise their staff, and in addition, to upgrade the health competence of the whole society by knowledge that is 'carried home'.

In this spirit, the agenda is to be developed towards *sustainable health management* at community and enterprise level. In the industrialised world, a specific set of actions and mechanisms exists, suitable for an organised system with workers' rights, public and occupational health services and the respective legislation. TVET might also become a tool that supports health competence in another type of working environment: Illegal, unprotected and exploiting labour under working conditions destructive to health, supervised by powerless authorities, inappropriately equipped public and occupational health services. This is the reality for millions of workers around the world.

The systematically organised services need and get their specific attention through the global engagement of the International Labour Organization (ILO), supported by WHO, UNESCO and other specialised international bodies. Success

at a global scale is equally dependent on the competence of individuals, who will be less dependent on the direct support or intervention from the health professional side.

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**Cedefop:
New Approaches
to TVET Through
Sport**

The 20th Agora Conference on 'New approaches to TVET through sport' took place at the European Centre for the Development of Vocational Training (Cedefop) in Thessaloniki, Greece, on 10 and 11 May 2004. It provided an opportunity for experts, sportsmen and -women and policy-makers to debate about new perspectives that sport can bring to TVET.

Since the 19th century, modern sport has been used as an educative tool – for example, to enable pupils to take on board the notion of rules and to regulate social conflicts. What remains nowadays of this 'socio-educational' function?

Through proclaiming 2004 as the European Year of Education through Sport, the European Commission wished to encourage a better balance between intellectual and physical activities in the school curriculum and more co-operation between educational institutions and sport organisations.

The experiences presented during the 20th Agora included: education associating TVET and high-level sport (Finland); football used to bring back isolated youngsters – facing educational or professional deadlock – to a normal social life (Scotland); creation of high-level sport clubs within companies to encourage workers to participate in sport activities (Germany).

All these experiences were successful, but their sustainability depends on policy-makers. To convince policy-makers, one has to show them concrete and immediate results: for example, that physical activity reduces workers' stress, and consequently absenteeism. Furthermore, the

practice of sport helps people to acquire professional competencies such as responsibility, team spirit, and the ability to define strategies and reach goals within a framework of rules – all of which can only increase productivity.

Perhaps the main positive aspect of sport goes beyond that. When Erica Terpstra, former Olympic medal-holder from the Netherlands, tells us that 'before learning how to win, one has to learn how to lose', is this not a statement that is valid for all the different stages of life, personal as well as professional? Finally, the main benefit of sport is maybe to provide those who practice it with a better sense of personal balance in their lives – or to use the Latin expression: *Mens sana in corpore sano* (A sound mind in a sound body).

More information

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**AIF: French-speaking World
– Joint Area for Sustainable
Development**

The subject of the 10th Summit of the Francophone Heads of State, which will be held in Ouagadougou from 23 to 27 November 2004, is 'Francophone world: joint area for sustainable development'. In preparation of this summit, an international colloquium on 'Sustainable development: lessons and perspectives' was organised in June 2004 by the Agence intergouvernementale de la Francophonie (AIF) and other partners.

In the field of TVET the initiative of the AIF continues the work of the Francophone Assizes of Bamako (1998), and the recommendations of the Conference of the Francophone Ministers of Education (Confemen). The conclusions of the Assizes of Bamako correspond to those of international meetings such as the Seoul Congress (1999) and the World Education Forum in Dakar (2000).

TVET as a specific sector of the educational system, which is open to the world of work and employability, is at the heart of the problems of the socioeconomic development of developing countries. TVET has to serve, at first, the local environment, a priority for sustainable development. Its legitimacy is based on its narrow link with

the socioeconomic development of a country. Anchored in basic education, TVET has to open up to the economy and to the world of work and employability by taking into account the needs of the economic actors, from the formal as well as the informal sector, and the training needs of youth in rural and urban areas.

This new concept of TVET implies a reform of the forms of management by building partnerships articulated around a redefinition of the role of the State and of all the actors in that field. This partnership dynamic requires the joint involvement of authorities, economic actors, training providers, civil society and development partners. The reforms of the educational systems in developing countries depend on the development of the endogenous human resources and on the available financial means. Thus, the most important questions concern the strategies of transfer of skills and technologies, and the role of the international donor agencies.

In order to support the states in this initiative, AIF has run, since 2000, a programme of support for the national TVET policies. The objectives of this programme are to:

- >> Identify, upgrade and transfer the expertise and the best practices among the francophone countries;
- >> Establish networks of information, ex-

change and assistance between officials and experts of the TVET systems; and

- >> Establish for them a set of shared tools for collaboration and documentation.

The question of TVET for sustainable development is an integral part of the common framework of TVET planning which consists of four main components:

- >> Definition of the political orientations and strategies;
- >> Central management of the system;
- >> Curriculum development; and
- >> Local provision of TVET.

Several working groups, set up with regard to regions and subjects, deal not only with the contents and the organisational and operational aspects, but also with the question of access to national and international funding.

More information

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UNESCO Brazil: Minimising Poverty and Inequality

Over the last few decades, Brazil has faced three outstanding challenges: the high level of poverty, extreme inequality in terms of income distribution, and significant regional differences. The country has sought to create a more equitable and just model for integral sustainable development.

Within the framework of co-operation with the Brazilian Government, UNESCO has tried to develop a policy strategy that aims to show the economic and social importance of education as a means to minimise poverty and inequality. For example, UNESCO has participated in the development of the Professional Education Expansion Programme (PROEP) of the Ministry of Education. The objective of this programme is to implement the reform of TVET in Brazil. The initiative is supported by the Inter-American Development Bank and the Ministry of Labour.

In 1998, UNESCO Brazil began participating in the implementation of the PROEP through direct assistance to Brazilian federal units (states that make up the Federation of Brazil). This was done specifically through technical co-operation agreements with 11 State Education Secretariats. UNESCO's participation has been focused on the development of public policies for the implantation of TVET systems that meet the challenges to be faced by the country in its project for sustainable social development. It encompasses everything from the restructuring of the agency that manages the State Public Professional and Technical Education Centres to defining guidelines for the political-pedagogical projects developed by these Centres.

UNESCO Brazil points out to its partners the importance of offering conditions for students to develop scientific, technological and social-cultural knowledge in a manner that favours their intellectual autonomy and their social citizenship skills. The Organization highlights the need for management tools that make it possible for social, economic and environmental dynamics to be observed. Thus, TVET can be permanently super-

vised and its quality and reach can be evaluated. In addition, UNESCO emphasises the need for TVET to be seen as a lifelong process that is an integral part of basic education for all.

The future of TVET depends greatly on the success of the Brazilian Government in terms of creating sustainable development models that make development and growth possible for the country while maintaining control over inflation. In addition, its future will depend on the development of strategies for TVET policies. These policies should make the creation of a national system possible in order to guarantee articulation and dialogue between different participants.

UNESCO believes that Brazil can face these challenges.

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Yemen: TVET and Clean Water Supply

As the rate of water consumption in Yemen is higher than the rate of renewable water creation, several measures have been taken to (at least) balance the situation. For example, the aquifer under Sanaa, the capital city, will be exhausted within the next ten years if water continues to be mined at the present rate.

Application of the concept of sustainable development in the water industry depends highly on the full understanding and commitment of this sector's employees to this concept. Therefore, the concept of sustainable development has been incorporated in the long-term training programme of the Yemeni water industry. Yemeni Water Utilities in co-operation with the TVET sector (including engineering faculties) have implemented an ambitious sustainable-development-oriented training programme aiming at developing the skills of utility staff working at the operation and maintenance (O&M) levels.

Over the last two years, the different training courses aimed basically at:

- >> Conserving the scarce water resources;
- >> Improving the satisfaction of the consumers by providing continuous supply of clean water and safe disposal of wastewater.

The training courses targeted all levels of O&M management, such as operatives and supervisors. They focussed on ground water management (e. g.

basics of ground water, water abstraction monitoring, operation and maintenance of submersible pumps) and water supply system management (e. g. leak detection and repairs).

In designing the training courses, it was considered that:

- >> Participants possess valuable knowledge and experience that can be utilised;
- >> Participants have specific demands that are expected to be met.

In implementing the training courses, several principles were incorporated, such as:

- >> Establishing an encouraging learning environment;
- >> Adopting a holistic and demand-driven approach;
- >> Encouraging the self-centred learning approach in which trainers act as facilitators.

Lessons Learned and Suggestions for Improvement

An assessment analysis has shown that the strengths of the training programme are for example:

- >> Selection of training subjects is demand-based;
- >> Training is practical, with less theory;

- >> Participatory adult learning approaches are applied.

However, there is still room for improvement, for example:

- >> Establishment of a national training centre for the water industry;
- >> Encourage training institutions in cities other than the capital to extend their services towards the water sector;
- >> Introduce the concept of sustainable development to all engineering departments that deal with water industry (civil and mechanical engineering);
- >> Build a pool of water-industry-related professional trainers, preferably those with some professional background in the water industry (not fully academics);
- >> Introduce the competency-based training approach that is based on the modular concept and recognition of prior learning;
- >> Finally, it is advisable to develop a certification system for the water training. The certification should be linked to salaries.

More information

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TVET Normative Seminars for the Arab States and Central Asia

UNESCO continued with its initiative of reinforcing standard setting in TVET in the Member States through two more advocacy seminars for high-level education policy-makers. The regions that benefited from this round of seminars were the Arab States and the Central Asian Republics. These seminars followed similar activities that were held for Asia and the Pacific, Eastern Europe, Latin America and West Africa.

The UNESCO normative instrument, the 'Revised Recommendation concerning Technical and Vocational Education' (2001), which was published together with the 'Conclusions concerning Human Resources Training and Development' of the International Labour Organization (ILO), has been the key resource material for this seminar series. The objective of these activities has been to convince education policy-makers to implement the internationally acknowledged sound standards and practices described in these two documents, in their national TVET systems.

A feature of the two recent seminars was the synergy achieved by the mobilisation of a range of UNESCO's resources from its Headquarters in Paris, its International Centre for Technical and Vocational Education and Training (UNESCO-UNEVOC) in Bonn and its concerned Field Offices. This combined delivery resulted in the participating Member States benefiting from truly comprehensive discussions that dealt with all aspects of TVET systems. Another contributory factor to the success of these seminars was the close involvement of the ILO. The ILO co-sponsored the seminar for the Arab States and provided two senior staff members as resource persons.

The seminar for the Arab States was held in Sanaa, Yemen, from 9 to 12 May 2004. Sanaa was selected as the venue for this important activity because of Yemen's firm commitment to TVET. The creation several years ago of a Ministry for Technical Education and Vocational Training is unequivocal evidence of Yemen's belief that economic growth is facilitated by the preparation of a competitive workforce. There was considerable enthusiasm among the participants for national TVET policy reform. They welcomed the Arabic version of the UNESCO normative instrument because they felt it empowered them to

initiate systemic reform. The 4 women among the 40 participants committed themselves to reinforcing gender inclusiveness in TVET with the aid of the Recommendations.

The seminar for Central Asia was held in Almaty, Kazakhstan, from 15 to 17 June 2004. This activity, too, brought together about 50 high-level education policy-makers and other TVET stakeholders. The transition economies are eager to modernise their TVET systems in order to enable the workforces to seize the opportunities that arise from globalisation as well as from the rapidly growing petro-chemicals industries. A major concern in the region is the need for life-long learning and training for the re-skilling of older workers who find themselves redundant as formerly protected industries modernise in response to the dictates of liberalised economies.

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Congress on Quality Management of Education and Training Systems in Rabat

Development of TVET to meet social and economic changes in the Arab States has been the focus of TVET policy-makers, experts and professionals with the objective that TVET should be an integral part of social and economic growth in the region.

The UNEVOC Centre in Morocco (L'Ecole Normale Supérieure de l'Enseignement Technique, ENSET-Rabat) organised the first International Congress on Quality Management of Education and Training Systems (Rabat, 14 to 16 April 2004). More than 300 participants from Africa, Asia, Arab States, Europe and North America attended the Congress. The topics of discussions and recommendations were: new visions for education

and training systems; engineering of training and quality management; approaches of effective education and learning systems; and evaluation. The Congress programme is part of Morocco's effort to improve the linkages between education, training and the world of work.

Both the UNESCO Beirut Office and the UNESCO-UNEVOC International Centre in Bonn provided technical and financial support to the Congress. Moreover, ENSET-Rabat organised a sub-regional co-ordination meeting for North African Arab States to discuss the joint proposals on co-operation in TVET. UNEVOC Centre directors from Algeria, Mauritania, Morocco and Tunisia attended the meeting.

The combination of knowledge, skills, culture and human capital development were seen as



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key factors in attracting young generations in the region to TVET programmes and specialisations. It is very important for parents and other groups of society to understand the social and economic values of TVET.

More information

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Lamphun Technical College: Extending the UNEVOC Network in Thailand

The UNEVOC Associate Centre at Lamphun Technical College, Thailand, has been considered as an excellent UNEVOC Associate Centre. The major activities of the Centre are:

- >> Develop the Thai Vocational Education database by collecting and processing information from research, innovations, inventions of vocational education students, and other related information;
- >> Establish information linkage with other institutions and UNEVOC Centres throughout the world in order to explore and up-

date TVET information; and

- >> Provide information services through UNEVOC Centre networks and the Internet.

The strengths of the UNEVOC Associate Centre at Lamphun Technical College include the commitment of the Director and other administrators, its efficient IT programme and qualified staff. Incentives are provided to those who are responsible for the achievement of the Centre's objectives.

In order to carry out the activities of the Centre effectively, the staff of Lamphun Technical College are divided into three groups. The first group is responsible for the hardware system, which involves computer and electronic technicians. They are responsible for installation, maintenance and control in order to ensure that the system is smoothly implemented. The second group takes care of the software system and consists of computer programmers and information systems managers. They develop the database system, explore information, and provide training to the Centre's staff as well as to external participants. Since English is the second language in Thailand, translators form the third

group. These three teams are working under the supervision of the IT Academic Management Committee of Lamphun Technical College.

The UNEVOC Associate Centre at Lamphun Technical College provides extensive services to students, teachers and staff. They can use 100 computer sets in the IT Service Centre in order to have access to information. Infrastructures for developing information networks and the exchange of information with other international centres are still not developed effectively, but are in the process of renovation. This is due to the Ministry of Education's policy of reforming the infrastructure of its IT system (MOE NET).

The experiences of this Centre help the Office of Vocational Education Commission (OVEC) in Thailand in its planning to establish at least four Associate Centres in other regions of the country. This would extend the TVET communication network for sharing knowledge, experiences and innovations.

More information

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OVEC: Thai TVET Projects for Neighbouring Countries

The Office of Vocational Education Commission (OVEC) of the Thai Ministry of Education has provided support in terms of TVET projects to neighbouring countries like Lao People's Democratic Republic, Cambodia and Viet Nam.

In Lao, OVEC has provided assistance to establish a TVET model school. The project started in 1994 and has been continued until today. During the first phase, Thailand assisted in designing TVET curricula in the fields of electricity, construction, agriculture, and dress-making according to the needs of Lao. Four vocational training workshops were constructed and provided with necessary equipment and teaching media. Teacher training took place both in Lao and Thailand. Study visit programmes were organised for high-level administrators and teachers. Recently, the experiences of these TVET model schools have been transferred to other TVET schools in Lao. Thailand and Lao continue their co-operation in the field

of TVET curriculum as well as staff development.

OVEC has provided similar support to Viet Nam and Cambodia. The projects of co-operation in Viet Nam – e.g. with the Namdin Vocational Training Centre – have mainly focussed on staff development, provision of equipment and teaching media.

A major project in Cambodia includes the following activities: staff development; teaching and learning system development; curriculum development; and equipment procurement. The focus is on four areas of specialty: electronics, electricity, agriculture, and livestock/fishery. The project aims at providing vocational education to secondary school students in order to enable them to earn their living in their communities.

In October 2003, 40 students enrolled in each of the above-mentioned specialty areas at Kampong Shertian College in Cambodia, making the total number of 160 students as targeted. Some of these students were unable to continue their studies in the second year due to the problems of poverty and students' need to turn to the academic stream.

It has been requested that those teachers with general education background and training in vocational skills, should be retrained until they have obtained vocational qualifications. This is because the Ministry of Education of Cambodia announced that only those teachers with a bachelor's degree in vocational fields would be allowed to teach second year students. Under this project the teachers who have been trained in vocational skills have shown a lot of effort to become vocational teachers in their specialty areas. This project started in 2001 and has been carried on until the present.

In conclusion: it is a good opportunity for Thailand to share experiences with neighbouring countries and to serve as a focal point for co-operative projects of other countries and international agencies with the aim of launching a partnership system of meaningful co-operative projects.

More information

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> Forthcoming Events <

12th World Congress of Comparative Education Societies



Date: 25-29 October 2004, Havana, Cuba;
Languages: English, French, Spanish

Organiser: Association of Cuban Pedagogues (ACP/APC), The World Council of Comparative Education Societies (WCCES), Conference of Havana, Cuba

Information:
<http://12wcces.cujae.edu.cu/default.asp>

Third Saudi Technical Conference and Exhibition (STCEX 2004)



Date: 11-15 December 2004, Riyadh, Saudi Arabia; Languages: Arabic and English

Organiser: General Organisation for Technical Education and Vocational Training (GOTEVOT)

Information:
www.stcex.gotevot.edu.sa/english/

More information

An updated list of forthcoming events can be found at www.unevoc.unesco.org/events

> Forthcoming Training Courses <

'Meeting of Directors of Vocational Training Authorities for Network Creation'
27-30 September; Turin, Italy; Language: Arabic²

'Training of instructors on the Portworker Development Programme (PDP)'
04-13 October; Turin, Italy; Language: English³

'Concepção de programas de formação baseados em competências'
22 November-03 December; Turin, Italy; Language: Portuguese¹

More information

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² Tel.: [+39] (011) 6936 757, fax [+39] (011) 6936 451, email: emp@itcilo.it

³ Tel.: [+39] (011) 6936 372, fax [+39] (011) 6936 350, email: socdial@itcilo.it

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> Inside UNESCO-
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Centre <

Visitors to the Centre

April 2004

Mr Werner Mauch, Research Specialist, UNESCO Institute for Education (UIE), Hamburg, Germany

Mr Itaru Yasui, Vice-Rector, United Nations University, Tokyo, Japan

Mr Nagano Hiroshi, Secretary General, Japanese National Commission for UNESCO

May 2004

Dr Dieta Lohmann, Dr Stefan Stupp and Mr Dieter Lenzen, Federal Ministry for Education and Research (BMBF), Bonn, Germany

Ms Karina Veal, Consultant, UNESCO Headquarters Paris, France

Mr Arūnas Pliškūns, Director, General Education Department, Ministry of Education and Science, Republic of Lithuania

June 2004

A group of visitors joined the Outreach Programme for a presentation of Ms Esther Subhashini, Co-ordinator of the Adolescent Girls Programme of the M. Venkatarangaiya Foundation, Andhra Pradesh, India

Mr Bremley Lyngdoh, Programme Manager, Youth Employment Summit Campaign, USA

Ms Margarita Marino de Botero, Founder and President of the Board of the Corporación Colegio Verde de Villa de Leyva, Colombia

Mr Peter Platte, Co-ordinator of International Activities of the Humanitarian Aid Task Force, Federal Foreign Office, Berlin, Germany

A delegation from the Wuhan University of Science and Engineering, China, visited the Centre to discuss a possibility of establishing a UNEVOC Centre at the University

July 2004

Prof. John Fien, EcoCentre, Griffith University, Australia, and Prof. David N. Wilson, Ontario Institute for Studies in Education, Canada, participated in the Centre's planning meeting for the UNESCO International Experts Meeting on 'Learning for Work, Citizenship and Sustainability' in October 2004

A delegation from 5 African and Asian countries who participated in the Educational Policy and Planning Programme run by InWent (Capacity Building International)

Mr Stéphane Thuong, Assistant Training Adviser, EU DG EuropeAid, Brussels

Dr Philipp Grollmann and Dr Joachim Dittrich, University of Bremen, Germany

Mr Wataru Iwamoto, Director, Division for Secondary, Technical and Vocational Education, and Mr Mohan Perera, Chief, Section of TVE, UNESCO Headquarters Paris, France



INTERNATIONAL CENTRE
for Technical and Vocational
Education and Training

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> Publications <



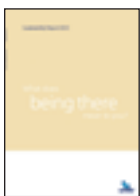
<< **'Behind the Mask: The Real Face of Corporate Social Responsibility'**
Christian Aid (London, UK); can be downloaded at
<http://www.christian-aid.org.uk/indepth/0401csr/index.htm>

'ENVIROCARE' (CD-ROM) >>
developed by ENVIROCARE Partnership; a multimedia training tool for TVET students to learn environmental awareness; can be ordered free of charge at
<http://www.ctc-cork.ie/envirocare>



<< **'Future-driven: the 2003 Human Resources and Sustainability Report'**
Deutsche Telekom (Bonn, Germany); can be downloaded at
http://download-dtag.t-online.de/englisch/company/9-sustainability/040402_humanresources_sustainability_report_2003.pdf

'International Handbook for Cooperative Education: An International Perspective of the Theory, Research, and Practice of Work-Integrated Learning' >>
Richard Coll and Chris Eames (eds.),
World Association for Cooperative Education (WACE); can be ordered at
https://www.waceinc.org/publications/handbook_order.shtml



<< **'Sustainability Report 2003: What does being there mean to you?'**
Novo Nordisk (Bagsvaerd, Denmark); can be downloaded at
<http://www.novonordisk.com/sustainability>

'The Egan Review: Skills for Sustainable Communities' >>
Office of the Deputy Prime Minister (ODPM, London, UK); can be downloaded at
http://www.odpm.gov.uk/stellent/groups/odpm_urbanpolicy/documents/page/odpm_urbpol_028549.hcsp



A group of visitors from UNESCO Afghanistan

Prof. Colin Power, former Assistant Director-General for Education of UNESCO Paris (1989 to 2001), who was one of the major forces in establishing the Centre.

More information

For further publications in the area of TVET for Sustainable Development you may refer to the following website, which is permanently updated: www.unevoc.unesco.org/sustainable (click 'Documents and Websites')