The Contribution of Technical and Vocational Education and Training to Sustainable Development
by Hans Krönner, former UNESCO-UNEVOC staff
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Abstract
On 01 January 2005, the United Nations have launched the Decade of Education for Sustainable Development. Member States are requested to “integrate sustainable development into education systems at all levels of education in order to promote education as a key agent for change”. How are decision-makers and stakeholders in technical and vocational education and training expected to translate this request into action in their particular areas of responsibilities? In view of the diversity of systems and structures in technical and vocational education and training worldwide, the author does not come up with specific recommendations. Instead, efforts are made to explain the concept and the dimensions of sustainable development, starting from some of its historical roots, and relating them to technical and vocational education and training. Particular attention is paid to sources that will help participants in the development of national action plans.
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1 Introduction: What is a "knowledge worker"?

The terms of "Knowledge Worker" and "Knowledge Economy" have been used to determine the purpose of this workshop.

What do we actually mean when we refer to "knowledge"? There are plenty of definitions. Let us look at some of them:

1. Knowledge is "a body of information relevant to job performance" (CCHRA)
2. Knowledge is "meaningful links people make in their minds between information and its application in action in a specific setting" (Dixon 2000, p.13)
3. Data = Unorganized Facts
   Information = Data + Context
   Knowledge = Information + Judgment (Working Council)
4. "Knowledge worker": a worker whose achievement lies in doing the right things through exercising his expertise, rather than doing things right as in mechanical production line work. Knowledge workers need to be autonomous. They learn and find better ways of doing things. They make educated judgements and they do not just do what they're told to do (Drucker)

Although these references originate from very different sources and decades, they have elements in common which I have highlighted in the quotations above:

- Knowledge is seen as contextual and application-oriented information
- Knowledge relates to judgement and decision-making.

When reflecting on sustainable development, it becomes obvious that contextualisation, application, judgement and decision-making are the essential tools that allow us to embed our professional economic activities in a context of sustainable development. The application of these tools will allow us to identify the contribution that technical and vocational education and training (TVET) can make to a more sustainable world.

2 From ecology to sustainability

2.1 Ecology and economy

Ecological and environmental issues have been on the international agenda for many decades. Initially they were a matter of a few far-sighted experts only. Some 50 years back, it was Rachel Carson (1907-1964), an American biologist and writer, who addressed the disastrous impacts of use of chemicals on nature. In her book "The Silent Spring" (1962), she drew the attention to the extermination of animals due to extensive use of pesticides in agriculture in the United States of America. She attracted the attention of the general public, but also of the United States Congress, where she spoke out for new policies to protect not only human health, but also environment and ecosystem as a whole.

Ernst Friedrich Schumacher (1911-1977), a German economist who spent most of his professional life in the United Kingdom, and who was most familiar with various aspects of industrial society, started addressing the adverse impact of unrestricted economic growth on plants and livestock, but also as a threat to the very foundations of humankind.
When Schumacher visited India in 1960, he started praising the benefits of intermediate and appropriate technology particularly for rural areas, also referred to as "appropriate technology: earth- and user-friendly technology matched to the scale of community life" (Hädecke 1982 p. 273). Prior to this, when travelling to Burma in 1955, Schumacher had developed the principles of what he called "Buddhist economics", based on the belief that good work was essential for proper human development and that "production from local resources for local needs is the most rational way of economic life."  

In 1973, Schumacher published his famous book "Small is Beautiful: Economics As If People Matter", in which he analysed production processes in industrialised as well as in developing countries, while always keeping the human being in focus.

The Club of Rome, founded in 1968, with its report "The Limits to Growth" (1972) may be considered as another cornerstone in the advancement of ecological awareness, focusing on a global perspective. Carson's and Schumacher's books and the report issued by the Club of Rome have had considerable impact on the ecological “green” movement that emerged in many countries worldwide the last three decades.

2.2 The human and social dimension

While economical and ecological considerations seem to prevail, both Carson and Schumacher also clearly address the human dimension. Human health is an integral part of Carson’s concern.

On the evening before Schumacher died in 1977, he presented his views in Switzerland. He said: “Currently, we do not look at economy primarily from the perspective of human beings. We look at it primarily under the aspect of production of goods. Human beings are ranked on the second place only. They are a means of production. This is the kind of industry that we bring to developing countries. At the bottom of our hearts we know that this kind of industry does not have a future. Nature cannot cope with it, commodities cannot cope with it, and human beings cannot cope with it.” (Kieffer, 1993).

The United Nations “Declaration on the Right to Development” (1986) reflects this by “Recognizing that the human person is the central subject of the development process and that development policy should therefore make the human being the main participant and beneficiary of development”, and it appeals to States to “…ensure, inter alia, equality of opportunity for all in their access to basic resources, education, health services, food, housing, employment and the fair distribution of income” (Declaration on the Right to Development, 1986).

In the report of the World Commission on Environment and Development ("Brundlandt Commission") entitled “Our Common Future”, published in 1987, the term "sustainable development" is used to link the environmental and the developmental concerns:

"Sustainable development is 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, 1987

3 The concept of “sustainable development” and TVET

In literature, there is broad agreement on the definition of “sustainable development” along the lines set forth in “Our Common Future”. However, “sustainable development” apparently is a very context-sensitive concept. It has different meanings in different socio-economic contexts, and it has different dimensions in various areas of human activity. This might explain why there has been progress at different speeds with respect to operationalisation of this concept. Technical and vocational education and training (TVET) for sustainable development seems to be one of the areas where not much progress has been achieved thus far.

1 now Myanmar
2 The “Schumacher College”, currently lead by Satish Kumar, keeps Schumacher’s insights alive: http://www.schumachercollege.org.uk (07.08.2005)
3.1 **The principal aspects of sustainable development**

In order to depict the possible contribution of TVET to sustainable development, it is helpful to recall what the principal aspects of sustainable development are.

The concept of sustainable development combines three principal aspects:

- **Economic**: An economically sustainable system must be able to produce goods and services on a continuing basis.

- **Environmental**: An environmentally sustainable system must maintain a stable resource base, avoiding over-exploitation of renewable resource systems, and depleting non-renewable resources only to the extent that investment is made in adequate substitutes. This includes maintenance of biodiversity, atmospheric stability, and other ecosystem functions not ordinarily classed as economic resources.

- **Social**: A socially sustainable system must achieve distributional equity, adequate provision of social services including health and education, gender equity, and political accountability and participation.

(Holmberg 1992; Reed 1996)

The principal objective is: **Quality of Life**.

For UNESCO, this approach is not new. Back in 1989, when adopting the "Convention on Technical and Vocational Education", Member States stressed that: "Technical and vocational education programmes should meet the technical requirements of the occupational sectors concerned and also provide the general education necessary for the personal and cultural development of the individual and include, inter alia, social, economic and environmental concepts relevant to the occupation concerned." (UNESCO 1989, Article 3.3)

When reading the Activity Profile of this International Workshop on Workforce Development for the Knowledge Economy, I was particularly pleased reading that participants are expected to improve their understanding of the social, cultural and economic impact of the knowledge economy. It is evident that there is a wide area of overlap between the objective of this workshop on the one hand, and the concept of sustainable development on the other hand.

3.2 **The role of TVET**

How can the principle aspects of sustainable development translated into goals and activities in the area of technical and vocational education and training (TVET)?

The United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, in 1992 – also called the "Earth Summit" – has provided some guidance in the comprehensive document entitled “Agenda 21”. Chapter 36 of Agenda 21 "Promoting Education, Public Awareness and Training" encompasses both formal and non-formal education and training. It covers three programme areas:

- Reorienting education towards sustainable development;
- Increasing public awareness towards sustainable development;
- Promoting training towards sustainable development.
Chapter 36 of Agenda 21

A. Promoting training

Basis for action

36.12. Training is one of the most important tools to develop human resources and facilitate the transition to a more sustainable world. It should have a job-specific focus, aimed at filling gaps in knowledge and skill that would help individuals find employment and be involved in environmental and development work.

Objectives

36.13. The following objectives are proposed:

(a) To establish or strengthen vocational training programmes that meet the needs of environment and development with ensured access to training opportunities …
(b) To promote a flexible and adaptable workforce of various ages equipped to meet growing environment and development problems and changes arising from the transition to a sustainable society,…
(d) To ensure that environmental and human ecological considerations are integrated at all managerial levels and in all functional management areas, such as marketing, production and finance.

Activities

36.14. Countries with the support of the United Nations system should identify workforce training needs and assess measures to be taken to meet those needs...
36.15. National professional associations are encouraged to develop and review their codes of ethics and conduct to strengthen environmental connections and commitment...
36.16. Countries and educational institutions should integrate environmental and developmental issues into existing training curricula and promote the exchange of their methodologies and evaluations.
36.17. … specialized “training of trainers” programmes should be established to support training at the national and enterprise levels...
36.18. Countries should strengthen or establish practical training programmes for graduates from vocational schools, high schools and universities, in all countries, to enable them to meet labour market requirements and to achieve sustainable livelihoods...
36.19. Governments are encouraged to consult with people in isolated situations, whether geographically, culturally or socially, to ascertain their needs for training to enable them to contribute more fully to developing sustainable work practices and lifestyles.
36.20. Governments, industry, trade unions, and consumers should promote an understanding of the inter-relationship between good environment and good business practices…
36.22. Countries should enhance the ability to gain access to, analyse and effectively use information and knowledge available on environment and development. Existing or established special training programmes should be strengthened to support information needs of special groups. The impact of these programmes on productivity, health, safety and employment should be evaluated. National and regional environmental labour-market information systems should be developed that would supply, on a continuing basis, data on environmental job and training opportunities. Environment and development training resource-guides should be prepared and updated, with information on training programmes, curricula, methodologies and evaluation results at the local, national, regional and international levels.
36.23. Aid agencies should strengthen the training component in all development projects, emphasizing a multidisciplinary approach, promoting awareness and providing the necessary skills for transition to a sustainable society. The environmental management guidelines of UNDP for operational activities of the United Nations system may contribute to this end.
36.24. Existing networks of employers’ and workers’ organizations, industry associations and non-governmental organizations should facilitate the exchange of experience concerning training and awareness programmes.
36.25. Governments, in cooperation with relevant international organizations, should develop and implement strategies to deal with national, regional and local environmental threats and emergencies, emphasizing urgent practical training and awareness programmes for increasing public preparedness…

From: Agenda 21, Chapter 36 (excerpt)
3.3 Need for further conceptualization

For primary and secondary education, and also for the training of teachers, a broad range of instruments, curricula and materials have been developed to facilitate the incorporation of the concept of sustainable development in curricula. Not many of them, however, do address the specific role of TVET. It is therefore a challenge for the global community of policy-makers, of researchers, of teachers as well as of administrators to operationalise the contribution that TVET can make to sustainable development.

As far as the accommodation of environmental issues in theory and practice of TVET is concerned, a number of concepts and curricula have been developed. However, as a rule, they are restricted to the particular dimension of environmental issues, without paying much attention to the economic and the social dimensions of sustainable development.

Therefore, for the area of TVET, further conceptualisation is useful, so as to develop a basis for a substantive contribution of TVET to sustainable development.

4 Dimensions of TVET for sustainable development

As compared to primary, secondary and even higher education, TVET seems to encompass a broader scope of varieties, levels, types, responsibilities and stakeholders:

- The level ranges from post-primary to secondary and post-secondary;
- The learning arrangements might be formal or informal;
- The responsibility might be with the government, with the private sector, or a combination of both;
- The learner might be a young person during initial training, but also a skilled worker acquiring additional qualifications;
- The educational objective might primarily be the development of work-related knowledge and skills, but it might also be individual development and active citizenship.

This illustrates the broad scope of TVET. How can the focus be narrowed down to dimensions and issues of sustainable development that are specific to TVET? Is it feasible resorting to the wider range of issues of sustainable development that have already been identified for general education, for scientific and technological education, for teacher education and other areas? In order to respond to these questions, it is necessary to recall the characteristics of TVET as compared to other area of education. In doing so, we will resist the temptation to provide an overall definition of TVET. Given the variety of systems and provision of TVET worldwide, it will be left to the reader to identify the elements that might be suitable in a particular context.

4.1 Orientation towards the world of work

The key to this seems to lay in the orientation of TVET towards the workplace.

TVET prepares individuals for the world of work. Frequently, TVET is being delivered not only in specialised institutions for education and training, but also directly at the workplace. The prevailing work environment therefore particularly affects TVET in a double sense. An economic environment of an industrial type might require a fundamentally different content of TVET as compared to the situation of an agricultural setting, or of a small island state.

What are the implications of the close linkages between TVET and the world of work with respect to the three dimensions of sustainable development?

- TVET typically prepares for economic activities, such as the production of goods and services either individually (self-employment) or in the context of an enterprise or production unit. Frequently the products and services are delivered in a competitive market situation. Thus, the economic aspect of sustainable development is, in most cases, an integral component of any vocational activity, and needs therefore to be reflected in TVET.
For the performance of production processes, all kinds of **resources** are required as **inputs**, such as commodities, soil, energy, fresh water, tools, transport capacities etc. These processes often do produce not only the desired products and services, but also **unintended outputs** such as garbage, waste, pollution, soil erosion, noise, accidents, and health risks. Thus, vocational activities do have immediate impact on **ecological and environmental issues** that need to be addressed in TVET.

Vocational activities take place in **work environments** ranging from household and small farms and crafts shops up to multinational enterprises. Thus, work relations, teamwork, communication at the workplace, accountability, relations between employers and employees, collective bargaining as well as interaction with external market participants, such as suppliers and customers, but also communication with public authorities, are integral part of vocational practice. Hence, the **social aspect** of sustainable development needs to be addressed in TVET.  

TVET takes on a complex and distinctive character with regard to sustainable development. This is because – both directly and indirectly – TVET produces and consumes resources, as well as affects attitudes towards sustainability held by future workers. The manner in which production and consumption is managed can either contribute to sustainability or to practices and conditions that are not sustainable. During education and training, the greater the exposure of trainees to sustainable concepts, practices and examples, the more likely the desired workplace culture change will take place in the future. (UNESCO-UNEVOC 2004 para 21)

### 4.2 Identifying key areas of work relevant to sustainable development

Sustainable development is interlinked with a broad range of TVET issues. “Sustainability is not the result of a particular technology or vocation. TVET for Sustainable Development aims at a deliberate change of behaviour; it covers all vocations and workplaces.” (BMBF 2003 p.10)

Nevertheless, it is useful identifying key areas of vocational activity (and, as a consequence, of TVET), the content of which carries particular potential for contributing to sustainable development. Since a broad range of vocational activities is focusing on the economic dimension anyway, it seems more appropriate focusing on the other two dimensions – the ecological and the social one.

Some work has been done to identify areas of environmentally relevant vocational activities (e.g. GTZ, BIBB, IUB, 2003). Typically, the following areas are being referred to as particularly sensitive with respect to the **ecological dimension**:

- Management of fresh water;
- Use of renewable energies to ensure continuous supply;
- Soil (e.g. agriculture, mining); impacts such as erosion and desertification;
- Livestock production and rural development;
- Management of organic substances;
- Recycling to reduce exploitation of natural resources;
- Waste management for the conservation of the environment;
- Garbage and sewage treatment;
- Life cycle analysis of products.

When it comes to the **human and social dimension**, the following areas are frequently referred to:

- Construction and housing;
- Safety and health at work;
- Health and food standards for the prevention of pandemics;

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4 Michael Härtel, TVET professional at the German Federal Institute for Vocational Training (BIBB), has inspired this chapter
• Teamwork in a multicultural work environment;
• Applying ethical standards when interacting with market participants.

The following areas are frequently referred to under both the ecological as well as the social dimensions:
• Preservation and a culture of maintenance;
• Indigenous and traditional technologies;
• Human settlements;
• Rural development;
• Transport systems;
• Management of tourism to avoid its adverse effects;
• Health and food standards for the prevention of pandemics;
• Noise emission.

4.3 The workplace
No matter how TVET is being defined in a particular national context, it typically covers the preparation of individuals for effective participation in the world of work, in the various sectors of economic and social life (e.g. UNESCO 1989; UNESCO 2001).

Knowledge, skills and attitudes related to sustainable development need to be identified in order to have them incorporated in vocational education and training programmes for the workforce. It seems, however, that not much relevant information is available internationally (Skills to Last, 2003).

For this reason, it is particularly important to examine the role of the three dimensions of sustainable development in a workplace environment, as this will provide insights concerning the most effective areas of intervention for policy makers in TVET.

5 Learning from the workplace
The workplace is an important place of vocational learning. From a life-long perspective of the working individual, the workplace is frequently the main place of vocational learning throughout life. Thus, it is important to understand how the workplace relates to the three dimensions of sustainable development. "Informal learning, including work-based learning, has an important part to play in turning awareness of sustainable development education into practice …" (Cohen, J. et al. 2002)

5.1 Workplace dominated by economic dimension
Workplaces, in their overwhelming majority, are dominated by economic objectives. This can certainly be assumed for economies with competitive markets, where given goods and services are typically produced with a minimum of inputs. Adverse social and ecological effects are not necessarily considered as cost factors incurring in the production process, but rather as a problem that will be solved elsewhere in society or environment- As long a this attitude prevails, is likely that the social and the ecological dimensions will be subordinated to economic considerations.

5.2 Increasing awareness for ecological and social considerations
Nevertheless, there are signals that even in the private sector, ecological and social considerations are no longer considered as a mere burden, but also as potential benefits for various reasons:
• Customers might be increasingly inclined to buy products that are not produced using such ingredients as child labour, forced labour, undue exploitation of farmers and workers, pollution, or degradation of land;
• Expectations and forecasts may indicate that, at a long run, pollution of water, soil and air, noise emissions, waste and garbage deposit and so on may even impact on the economic performance.
Examples of such considerations can be observed at workplaces in the private as well as the public sectors. Their dimensions and numbers are increasing rapidly. The following examples are taken from a report in which a large private sector enterprise presents its increased awareness of the ecological and social dimensions.¹

- In the procurement process of this company, selection of vendors takes into account not only economic, but also environmental and increasingly social aspects. Particular awareness is being created with respect to procurement from countries that hold problematic human rights records.

- The company has adopted a Social Charta which is based on internationally accepted norms, guidelines and standards of the International Labour Organization (ILO) and the Organisation for Economic Co-operation and Development (OECD), which include such items as the acceptance of and respect for the diversity of nations and societies, a ban of forced labour, abolishing the exploitation of child labour, rejecting discrimination, and meeting standards for labour and health protection. These standards are also included in the general terms and conditions for procurement.

- In Germany, commuters drive in excess of 943,000,000 km every day, accounting for annual CO₂ emissions of approximately 40,000,000 tons, which constitutes about one third of total traffic emissions in Germany. New patterns of work organisation, such as teleworking and video conferencing, can help to substitute traffic, and reducing its adverse environmental effects.

- Training of the company’s employees and support for initiatives to maintain employability is a guideline particularly relevant in this context.

(Deutsche Telekom, 2003)

This is the example of one large private sector enterprise only. Many more examples can be found in documents and reports of enterprises across the world.

6 The international context

6.1 The United Nations Decade of Education for Sustainable Development

The General Assembly of the United Nations, on 20 December 2002, proclaimed the 10-year period beginning on 1 January 2005 as the United Nations Decade of Education for Sustainable Development (United Nations, 2002b). In doing so, the United Nations seek to promote one of the major recommendations of the World Summit for Sustainable Development (WSSD) held in Johannesburg in 2002. In the Plan of Implementation adopted at the WSSD (United Nations, 2002a), participants recommended to

"Integrate sustainable development into education systems at all levels of education in order to promote education as a key agent for change" (para 121), and to

"Develop, implement, monitor and review education action plans and programmes at the national, subnational and local levels, as appropriate, that reflect the Dakar Framework for Action on Education for All and that are relevant to local conditions and needs leading to the achievement of community development and make education for sustainable development a part of those plans" (para 122).

The General Assembly of the United Nations designated the United Nations Educational, Scientific and Cultural Organization (UNESCO) as lead agency for promotion of the Decade, asking it to develop a draft international implementation scheme, clarifying the Decade’s relationship with such existing educational processes as the Dakar Framework for Action adopted at the World Education Forum in 2000, and the United Nations Literacy Decade.

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¹ The examples are taken from a modern sector enterprise in an industrialized country. This does not imply that sustainable development is primarily a matter of these industries, or that these examples necessarily represent best practice. The purpose is simply to depict areas in which an enterprise has potential to contribute to sustainable development. For a more critical appraisal, see e.g. Christian Aid: Behind the Mask. The real face of corporate social responsibility (Christian Aid 2004)
For the international TVET community, this raises the question whether and how it can provide a specific contribution to an international implementation scheme from the perspective of education and training for the world of work.

As UNESCO points out, from the goal to provide Education for Sustainable Development (ESD), although being global, one cannot derive one single action plan that would be applicable globally:

“... while there will be overall agreement on "What is ESD?", there will be nuanced differences according to local contexts, priorities and approaches. This is a critical point. It means that there will be no single “right” definition of ESD …” (UNESCO, 2003, para 31)

Moreover, how can we identify those specific issues of TVET for sustainable development that do not just repeat what has already been elaborated for general education? Are there any common concepts, guidelines and instruments that would serve the TVET community in developing its specific contribution to the Decade on Education for Sustainable Development?

### 6.2 The Global Compact

The Global Compact is a rich resource that can be tapped by stakeholders worldwide when translating the principles of sustainable development into content and practice of TVET. The Global Compact was initiated by United Nations Secretary-General Kofi Annan to bring companies together with UN agencies, labour and civil society to support ten principles in the areas of human rights, labour, environment and anti-corruption.

#### The Ten Principles of the Global Compact

The Global Compact asks companies to embrace, support and enact, within their sphere of influence, a set of core values in the areas of human rights, labour standards and the environment. The principles are as follows:

**Human Rights**
- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
- Principle 2: make sure that they are not complicit in human rights abuses.

**Labour Standards**
- Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- Principle 4: the elimination of all forms of forced and compulsory labour;
- Principle 5: the effective abolition of child labour; and
- Principle 6: the elimination of discrimination in respect of employment and occupation.

**Environment**
- Principle 7: Businesses should support a precautionary approach to environmental challenges;
- Principle 8: undertake initiatives to promote greater environmental responsibility; and
- Principle 9: encourage the development and diffusion of environmentally friendly technologies

**Anti-Corruption**
- Principle 10: Businesses should work against all forms of corruption, including extortion and bribery.  
  (UN 1999; Principle 10 added later)

It is evident that three of the above areas – Human Rights, Labour Standards and Anti-Corruption – are closely associated to the "Society" component of sustainable development, whereas the area of Environment is a constituent component of sustainable development anyway. Thus the Global Compact recalls that economic objectives – that may be taken for granted in business anyway – should be complemented by the "Society" and "Environment" perspective.

Hundreds of companies from all regions of the world are engaged in the Global Compact. Thus, decision-makers and stakeholders in TVET might wish to identify Global Compact members in their
respective countries, as these members might be valuable partners in the orientation of TVET towards sustainable development.

Again, I recommend you studying these principles. While they are primarily addressed to the private sector, you will find out that many of them can be applied to TVET, in two different contexts:

- The principles can be translated, in one way or another, into principles that should apply in the education and training system as well;
- The principles are worth being incorporated in TVET curricula. Our future knowledge workers need to know them; this will enable encourage and them to strive for their implementation at the workplace.

6.3 The UNESCO Experts Meeting

At the invitation of UNESCO, some 120 experts met for an International Experts Meeting held in Bonn, October 25-28, 2004, presided by Professor Jang-Ho Kim, President, Korea Research Institute for Vocational Education and Training (KRIVET). Participants adopted a "Bonn Declaration" as well as suggestions for action planning.

The suggestions for action planning provide seven interlinked strategies:

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<td>1. Advocacy and vision building</td>
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<td>2. Support for the Review and Development of National TVET Policies</td>
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<td>4. Capacity Building and Training Programmes</td>
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<td>5. Learning Support Materials, Resources and Equipment</td>
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<td>6. Networking and Partnerships in TVET</td>
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<td>7. Ongoing Monitoring, Evaluation and Research. (UNESCO 2004b)</td>
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For each of these strategies, the suggestions cover short-term, medium-term and long-term activities (see annex to this paper).

Since it is the objective of this workshop here in Seoul to develop national strategies and key initiatives for survival in the knowledge economy, I commend you to study carefully this matrix. While you will note that it provides suggestions for action to be taken by UNESCO, most of these suggestions can well be translated into corresponding suggestions for action at the regional and national level.

7 Towards national action plans

The United Nations Decade of Education for Sustainable Development is a global process. The international TVET community is called upon to incorporating issues of sustainable development relevant to TVET at all levels – at the national policy level, at the level of curriculum development and training of teachers and trainers, at the level of institution management, at the level of access to TVET, and at the level of delivery, to name just a few of them.

I invite participants in this workshop to draw on existing concepts, approaches and experiences in drafting their National Action Plans. The "Suggestions to UNESCO for Action Planning in TVET for Sustainable Development" provide a range of ideas. In addition, on 11 August 2005, UNESCO released the "Draft International implementation scheme for the United Nations Decade of Education
In order to translate the "Suggestions to UNESCO" and the "Draft International implementation scheme" into recommendations to your respective governments and TVET agencies, you will need to be knowledge workers yourselves:

- You will need to contextualize the suggestion with respect to your national or even local environments and development needs,
- You will need to make judgements to properly reflect the three dimensions of sustainable development – the economic, the social and the economical dimensions.

Or, as Dixon puts it, to whom I referred in the beginning:
You will need to create links between information and its application to action in a specific setting.

Thus, your appropriate judgements and your action plans will hopefully contribute to achieving our common goal: Enhancing the capacity of technical and vocational education and training to contributing to a more sustainable world.

I wish you all success in your efforts.
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Translation of quotations into English, where applicable: Hans Krönner
### Annex: Suggestions to UNESCO for Action Planning in TVET for Sustainable Development (SD)

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<th>Strategy</th>
<th>Short-term activities (1-3 years)</th>
<th>Medium-term activities (4-6 years)</th>
<th>Long-term activities (7-10 years)</th>
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</table>
| 1. Advocacy and Vision-Building for TVET for Sustainable Development (SD) | • Conduct high-level consultations with all relevant ministries of governments to encourage access and commitment to TVET and awareness of, the importance of integrating sustainable development as a core theme in TVET  
• Translate and disseminate relevant TVET for Sustainable Development documents in local languages  
• Recognise premier institutions as ‘centres of excellence’ in TVET and sustainable development to play a lead role in promoting the field  
• Develop a communication plan for the dissemination on TVET for Sustainable Development, including:  
  ▪ Disseminating regular briefing materials to UNESCO magazines, the educational press and mass media  
  ▪ Engaging National Commissions, UNESCO Clubs, ASP-Net schools and other relevant bodies affiliated with UNESCO in Member States  
  ▪ Engaging the Education, Youth and other relevant Caucuses at the CSD in advocacy of TVET for Sustainable Development  
  ▪ Maintaining a UNESCO website on TVET for Sustainable Development | • Review, revise and maintain the communication plan  
• Publish case studies that illustrate ways in which TVET is integrating sustainability principles at national, institutional and programme levels  
• Produce campaign materials (eg TV programmes, multimedia and documentaries) from activities implemented in the first 3 years for mass distribution  
• Hold interim consultations with member countries to gauge the extent of the awareness and recognition given to TVET and to take appropriate measures for its implementation | • Conduct an end-of-Decade review of the impact of the Advocacy and Vision-Building programme |
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<th>Strategy</th>
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• Prepare and trial flexible guidelines to inform the review of national/regional policies supporting TVET for Sustainable Development. The guidelines should include, among other elements, advice on policies for:  
  - Strategies for multi-stakeholder dialogue as part of the policy review and development process  
  - ways of relating TVET to national MDG and EFA goals  
  - exit and entry to/from TVET and other educational systems  
  - a system of credit for prior working experience, especially in the non-formal sector  
  - enhancing values, as well as cognitive and skill, education through TVET, emphasising “education of the heart” by putting ‘action’ at the centre of TVET education e.g. skills PLUS values, attitudes, self esteem | • Make TVET for Sustainable Development a central theme of a Seoul+10 international meeting in 2009  
• Conduct capacity building programmes to facilitate the review of education policies to promote TVET for sustainable development  
• Establish a dynamic knowledge base that demonstrates detailed successful implementation of SD based TVET systems  
• Review the status of TVET for Sustainable Development in national/regional education policies | • Review the status of TVET for Sustainable Development in national/regional education policies |
| 3. Guidelines for Planning and Implementation of TVET for SD | • Develop and pilot sample guidelines for integrating sustainability principles into the operating procedures and programmes of TVET institutions, especially emphasising the importance of comparable profiles and standards  
• Conduct regional workshops to adapt the guideline  
• Conduct regional training workshops for key personnel from Member States, including UNEVOC Centres, on using the guidelines for planning and implementation strategies  
• Develop and trial sample guidelines on assessment processes that facilitate the achievement of quality TVET standards | • Conduct regional workshops to report on the use of the guidelines in different national contexts and industry sectors.  
• Conduct inter-country benchmarking of TVET for Sustainable Development  
• Develop and trial guidelines for evaluating the success of planning and implementation strategies for TVET for Sustainable Development | • Repeat benchmarking  
• Evaluate the impact of the planning implementation guidelines |
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| 4. Capacity Building and Training Programmes for TVET for SD | • Adapt relevant modules in the UNESCO multimedia programme, Teaching and Learning for a Sustainable Future to suit the pre-service and continuous in-service professional development needs of TVET educators, policy makers, curriculum developers, etc.  
• In partnership with UNESCO field offices and UNEVOC centres conduct regional training workshops on how to integrate Teaching and Learning for a Sustainable Future in TVET into relevant pre-service and continuous in-service courses  
• Prioritise development of sample guidelines and training materials to support capacity building and training for TVET in rural transformation, the non-formal sector and for women, unemployed youth, indigenous people and persons with disabilities  
• Prioritise professional development materials on values education in TVET | • Evaluate, revise and maintain a programme to support the pre-service and continuous in-service professional development needs of TVET educators, policy makers, curriculum developers, etc. in relation to TVET for Sustainable Development  
• Develop and trial demonstration projects on e-learning for professional development | • Evaluate, revise and maintain a programme to support the pre-service and continuous in-service professional  
• Evaluate the outcomes and impacts of these professional development support activities |
| 5. Learning Support Materials, Resources and Equipment for TVET for SD | • Develop exemplar learning support materials on environmental and values education for use in different TVET programmes, e.g. in relation to industry skills, work values, lifelong learning, developing personal and lifelong goals, and entrepreneurship  
• Develop guidelines and training packages in partnership with WHO for health competence and HIV/AIDS and values-driven TVET  
• Develop guidelines for instilling a culture of routine and preventative maintenance in the world of work  
• Provide staff training for using guidelines and training packages for TVET  
• Develop a virtual library with support materials for use in different TVET programmes  
• Collaborate with IITE to establish and maintain open courseware to support TVET for Sustainable Development | • Review curriculum and learning materials on learning for work, citizenship and sustainability, and evaluate achievements in consultations with employers and community leaders  
• Monitor and evaluate the use of guidelines and training packages  
• Develop regional and international networking for the use of support materials, including ICTs  
• Review, revise and maintain the virtual library | • Revise the guidelines and training packages to keep up-to-date  
• Review, revise and maintain the virtual library |
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| 6. Networking and Partnerships in TVET for SD | • Request UNEVOC centres and other relevant networks to prepare action plans for TVET in the UN Decade of Education for Sustainable Development  
• Sharing research results, case studies, best practices via publications and web-sites  
• Support regional and national training programme networks and TVET professional associations | • Support networks in the conduct of their Decade activities  
• Organise meetings, conferences, events, etc. particularly in places where UNEVOC centres are strong  
• Joint research and publications | • Support networks in the conduct of their Decade activities  
• Joint research and publications                                                                 |
| 7. Ongoing Monitoring, Evaluation and Research on TVET for SD | • Develop agreed indicators and processes for monitoring the quality of outcomes and impacts of integrating sustainability into TVET programmes, institutions and systems  
• Develop agreed instruments for monitoring the knowledge, beliefs and behaviour of TVET students re sustainable development in all regions  
• Research and trial skill profiles appropriate to TVET for sustainable development | • Monitor and evaluate outcomes for Sustainable Development  
• Conduct benchmarking studies of the knowledge, beliefs and behaviour of TVET students re sustainable development in all regions  
• Validate and adapt skill profiles appropriate to TVET for sustainable development | • Monitor and evaluate outcomes for Sustainable Development  
• Repeat benchmarking studies of youth knowledge, beliefs and behaviour re sustainable development in all regions to assess the success of TVET for sustainable development during the UN Decade of Education for Sustainable Development |

(UNESCO 2004b)