

**REPORT OF CONFERENCE 27 - 29 JANUARY 1999
PAN EUROPEAN EXPERT MEETING ON SUSTAINABLE
DEVELOPMENT AND ENVIRONMENTAL EDUCATION
SOESTERBERG
THE NETHERLANDS**

Organisers:

The Dutch Inter Departmental Steering Group on Environmental Education

The Steering Group is a collaboration of six ministries:

- ◆ Ministry of Agriculture, Nature Management and Fisheries
- ◆ Ministry of Housing, Spatial Planning and Environment
- ◆ Ministry of Transport and Water Management
- ◆ Ministry of Health, Wellbeing and Sport
- ◆ Ministry of Education, Culture and Science
- ◆ Ministry of Foreign Affairs and Development Co-operation

These six ministries have taken the initiative to join forces in giving an extra impulse to environmental education to contribute to the sustainable development in the Netherlands. The programme with the name 'an extra impulse to environmental education', has several spearheads: capacity building and quality management, biodiversity, global issues, mobility, nature appreciation and sustainable development. The programme is managed by an external programme manager and administered by the National Committee for international co-operation and sustainable development (NCDO).

The IUCN Commission on Education and Communication (CEC)

Founded in 1948, IUCN – the World Conservation Union brings together states, government agencies and a diverse range of non-governmental organisations in a unique partnership. With some 914 members in all, spread across 140 countries.

The Commission on Education and Communication (CEC) is one of IUCN's six commissions, a global network of voluntary active and professional experts in environmental communication and education. CEC specialists are experts in learning processes, how behaviour is changed and in communication management. The CEC network advocates the value of education and communication to conserve and sustainable use biodiversity as a basis of sustainable development for present and future generations. CEC facilitates exchange and capacity building as how to motivate and guide people's participation in a learning process. E-mail address CEC: ctn@hq.iucn.org

NCDO

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I INTRODUCTION

How to read this Conference Report

A little more than two months after the Meeting in Soesterberg, the organisers are pleased to present you with the report on the Pan European Expert meeting on Sustainable Development and Environmental Education. In this introduction you find the philosophy of the expert meeting, a short description of the programme and an indication of what the meeting triggered off as a follow-up. In Chapter two you find the summaries, texts and overhead transparencies of the key note speeches. Chapter three consists of summaries of the discussions and recommendations of the working groups. In Chapter four you find the addresses of all the participants to facilitate your networking.

The organisers have chosen not to print in hardcopy all sheets because of the abundance of the material. However, the full report including all sheets can be accessed at <http://www.nme-rotonde.nl/>

Background

No doubt, the most important result of the United Nations Conference on Environment and Development in 1992 in Rio de Janeiro is the Agenda 21. This agenda for sustainable development can be seen as a compass for all nations on the complex voyage towards sustainability. Although on the international level progress since Rio appears to be rather slow, on the national and especially on the local level many initiatives have been taken.

Local authorities see sustainable development as a pro-active way of integrating policies, bridging the gap between government and citizens and developing a vision together with their communities for the long term. The



Roundtable discussion during diner pensant, from left to right: Astrid Sandas, Ernst Klatte, Elda Moreno, Branka Hlad, Wendy Goldstein, Susana

corporate sector sees sustainable development as prerequisite for continuity and responsible corporate citizenship. Environment, sustainable development and responsible care are no longer a taboo in the vocabulary of CEO's.

In many sectors of society sustainable development is taking shape. But this is not an easy process. More and more it is recognized that this voyage towards sustainable development is a learning process. Learning on an individual basis, learning as organisations and 'social' learning in communities.

Changes in Environmental Education

Chapter 36 of Agenda 21 on public awareness, education and training formulates for the environmental education specialists these new challenges of learning towards sustainability. Challenges which are already visible in the changing practice of environmental education. The focus of only on nature, has broadened to

the grey environment and further to sustainable development. Target groups widen from primary education, to secondary education and to various citizen groups.

The support and services, which environmental education organisations provide, broaden from materials to educational projects within curricula and to the management of participation programs. And finally we see new actors enter the stage of environmental education: development educators, trade union trainers, cadres of women or community centers, youth organisations, corporate trainers, communication divisions of local authorities, open universities etc.

Context for a Pan European Expert Meeting

The changes in environmental education – from nature to sustainable development – are a learning process in itself. On top of that society is rapidly changing. Major trends carrying these changes are internationalisation, individualisation and information. Europe itself is changing too. Borders disappear, various forms of pan European co-operation emerge. This all means extra challenges for environmental education in the greater Europe.

It is in this context that the Dutch Government asked 6 Ministries to join forces and give – during four years – an extra impulse to environmental education in the Netherlands to meet the challenges of sustainable development set out by Agenda 36. And it is this same context which led to the initiative to exchange lessons learned on learning for sustainability in a Pan European Expert Meeting.

Objectives of the Expert Meeting

To realise this Pan European Expert Meeting the Dutch Government entered into partnership with the IUCN Commission on Education and Communication, which brings in the necessary networks and international expertise. The organisers envisaged two days of ‘thinking aloud together’. Reflection on lessons learned on specific issues for learning towards sustainability related to major trends in society. They aim of the organisers has been to bring together those who have more “to bring” than “to take”. Experts from international organisations, European governments, NGO’s and education institutions. Enhancing input from the Netherlands with that of Western, Central and Eastern Europe, on an equal basis. The meeting also offered participants the opportunity to do some shopping for new ideas and approaches. And last but not least an opportunity for networking and informal professional exchange especially in a Pan European context.



Peter Bos

Trends a leading principle for the expert meeting

To structure the meeting and make choices out of the myriad of existing projects and initiatives all over Europe, the organisers have chosen for the three major trends to be a leading principle and the choice of themes for the nine working groups.

Internationalisation means more trans-boundary projects. It means working from a global perspective. It is a context for formulating a Local Agenda 21.

Individualisation has brought us a generation of youth between 12 and 18 with a huge purchasing power and a very critical attitude towards established norms and values. It has affected lifestyles in a way that target groups cannot longer anymore be defined according to income or education. It also enters education where schools want to create a distinct profile and integrate sustainable development into their image.

Information finally is an all pervading trend. The information and communication technique in itself provides new opportunities and challenges. The availability of data and information on ecosystems, species and genes is the basis for the new concept of biodiversity. Finally corporations increasingly want to employ 'informed' workers, employees who know how to form responsible corporate care.

The Pan European Expert meeting in Soesterberg

From 27 – 29 February 1999 more than hundred experts from more than thirty European countries gathered in Soesterberg. They were welcomed by Paul de Jongh, Director Nature Management of the Dutch Ministry of Agriculture, Nature Management and Fisheries. He gave a special welcome to the many participants from Central and Eastern Europe. During the dinner on the first night he gave his views on education as a policy instrument and called for a fruitful exchange between experts and admonished them not to forget that education also should be fun. The 'diner pensant' was made interactive by two roundtable discussions in between the courses of the dinner. At the end of the dinner Peter Bos, of the same Minister offered some 'final thoughts' summarising the what was said by the speakers and round tables and adding some personal comments.

The second day brought a plenary, where the seating arrangement and the keynote speakers made it possible to reflect in small groups on the thoughts and ideas of the speakers. In the afternoon and evening there were lively working groups and poster sessions. The next day was reserved for in depth discussion in nine small groups of experts. It all ended in a plenary in which the lessons learned from each working group and suggestions for Pan European co-operation were presented. The Conference was closed.

Credits

Financial support for the Conference was provided by the Dutch Interdepartmental Steering Group for Environmental Education and the Dutch Ministry of Foreign Affairs and Ministry of Agriculture PIN-Matra Fund. The IUCN Commission for Education and Communication (CEC) was instrumental to access the right expertise and promote the Meeting. The Dutch Commission for Sustainable Development (NCDO) took upon itself all the logistical support. Project management and Advise on the contents, marketing and interactive structure of the conference was handled by SME MilieuAdviseurs, the Dutch Institute for Environmental Communication.

Follow-up

After the conference two small groups of participants stayed and were joined by others from their networks: the European Globe Coordinators (see further on in this report) and the European CEC members, who had a preparatory meeting with members of WCPA (the IUCN World Commission on Protected Areas) on workshop they are jointly organising on education in protected areas later this year.

The participants from the European Union made it clear during the Soesterberg Meeting that they would take into account the discussions and recommendations of the Soesterberg meeting in the Conference on Environmental Education and Training they are organising in Brussels from 3-4 May 1999. During this conference they would like to discuss new policies for the European Commission in the field of environmental education. Quite a few participants of Soesterberg will attend the conference in Brussels and will be able to make input and bring the ideas from Soesterberg further.

To facilitate further networking and provide a framework for professional dialogue after the Expert Meeting, the IUCN Commission for Environmental Education and Communication invited participants to become member of the Commission. This will give them access to electronic and other means of communication on environmental education and communication.

As a result from the Soesterberg Meeting, the World Business Council for Sustainable Development (WBCSD) has taken the initiative to organise a workshop for top CEOs and opinion leaders in the business community on environmental education and learning for sustainability. WBCSD intends to organise this workshop in co-operation with the UN Economic Commission for Europe, IUCN and other partners.

The Dutch Interdepartmental Steering Group committed itself to a follow-up of the conference in the form of a moderated internet discussion on a special web-site. This discussion should be innovative both in its interactive form and in its contents: the cutting edge innovations in learning for sustainability. The project is meant to start in May and end in December 1999.



Conference Organiser Frits

Frits Hesselink

Conference Organiser

II SOCIETAL TRENDS AND EDUCATION

In this chapter, four presentations are reported. First a summary of each presentation is given, then a more extended description and/or sheets follow.

Environmental Education as A Policy Instrument

*Drs. P. E. de Jongh,
Ministry of Agriculture, Nature Management and Fisheries*

There has been much discussion in the Netherlands about the role different policy instruments can play in achieving environmental targets. Before, the importance of social instruments was often neglected. Over the years evidence has shown that applying social instruments is always necessary. These instruments serve several purposes. Firstly, financial instruments and regulations if applied isolated, have proved to be ineffective. Secondly, social instruments are needed to stimulate basic understanding of environmental concerns. Thirdly, this type of instruments contribute to internalisation: making target groups aware of the need for environmentally friendly behaviour in specific situations.

If one looks at the development of environmental education programmes in the Netherlands, it becomes clear that the scope of has broadened from in-school education to education that gives shape to learning for sustainability. An important starting point of new policies is the involvement of all relevant actors. Co-operation between ministries, provinces, municipalities NGO's and business in existing networks needs to be stimulated. Further, there is more focus on the local level. Outreach improvement is also an aim of new policies : attention will be given to reach target groups that so far have not participated to a high extent, for instance immigrants. Last but not least, the further development of the professional level of the EE sector is necessary to develop education as an instrument for sustainability.

Internationalisation, Individualisation, Information: how do these basic societal trends influence Learning towards Sustainability?

*Stephen Sterling,
South Bank University, U.K., author of Education for Sustainability*

Stephen Sterling gave an impressive presentation focusing on current changes in society. He showed that these changes mean an important challenge for environmental education and for education in general. Sustainability needs to be in the centre of the educational debate, and education and learning in the centre of the sustainability debate. These are both difficult goals to achieve, partly because they are largely perceived as separate discourses. One of our collective tasks, is to help bring the two debates together.

So far, efforts to 'reorient' education towards sustainable development have been disappointing. Why has education not more fully responded to present challenges? There are different perceptions and paradigms of sustainable development, and largely corresponding to these, there are different education paradigms. Just as dominant models of economic development do not serve us well for the sustainability transition, neither do dominant models of education.

If we want education to be a an agent of change, educational methods and models need to be changed first. Stephen Sterling challenged the participants to broaden their horizons and adapt to societal changes taking place today. A rapid evolution of learning about learning is required to be able to cope with environmental problems.

Learning towards Sustainability: from education by persuasion to dialogue and participation

Manfred Oepen,

Managing Director ACT, Appropriate Communication in Development, Germany

Manfred Oepen gave a clear overview of different models for environmental education and communication. A lot of progress has already been made. Before, 'old models of education' were mostly used. Education was perceived as a top down process, focusing mainly on 'bombarding' the ignorant masses with messages and products. Experience however has proved these type of models to be ineffective.

Currently the horizontal model of education and communication is more widely accepted. This model stresses the importance of dialogue in order to create shared meaning. The focus is on process, feedback, dialogue and people instead on products, messages, issues and technologies. Communication is seen as a two-way process. Experiential learning is an more effective method than cognitive learning. Furthermore, it is of increasing importance to identify all relevant actors, and involve them in the process.

Manfred Oepen ended his presentation with a number of challenges, making it very clear that a lot of work remains to be done before the potential of environmental as an instrument to achieve sustainability is a fully used.

Learning towards Sustainability in the realities of economies in transition

Dr. Branko Bosnjakovic,

Regional Advisor on Environment UN ECE, United Nations Economic Commission for Europe, Netherlands

Branko Bosnjakovic illustrated the complex difficulties countries in transition experience trying to reach sustainable development. Five statements were posed showing the obstacles these countries face:

- ◆ Political and public priorities in countries in transition are presently dominated by economic and social problems.
- ◆ Growing disparity between countries in transition necessitates tailor-made approaches to learning.
- ◆ Sustainability is impossible without building sustainable economic and institutional infrastructure.
- ◆ The economic sector and public awareness are the most important immediate targets for environmental education in countries in transition.
- ◆ Sustainable development requires change towards co-operative mentality.

The lecture made it very clear that the transformation process that sustainable development requires, is even more difficult for countries in transition, and that learning is of vital importance for success.

1 ENVIRONMENTAL EDUCATION AS A POLICY INSTRUMENT

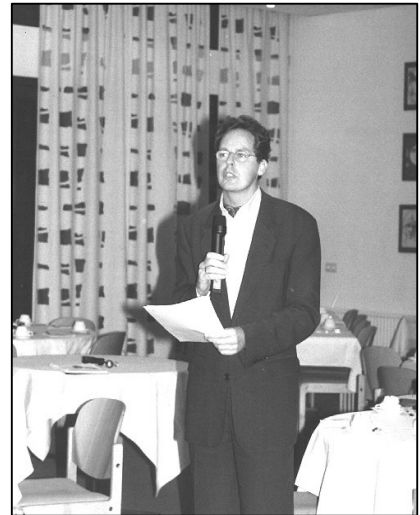
*Drs. P.E de Jongh,
Department of Agriculture, Nature Management and Fisheries*

Introduction

Reading Agenda 21, chapter 36, about the role of environmental education in the framework of sustainable development, it becomes clear that a huge task has to be carried out. It also becomes clear that this task is complicated: even reading Agenda 21 requires education. After Rio, the United Nations Commission on Sustainable Development (CSD) produced many documents but too little has actually been achieved on the international level. On the national level however, often more progress was made.

Environmental education as a policy instrument

In the Netherlands for instance, a second and a third National Environmental Policy Plan (NEPP 2 & 3) have been developed and progress was made achieving emission reductions and establishing a national ecological framework. Education plays a role of importance as a policy instrument in these NEPP's. There has been much discussion about the role policy instruments can play in achieving environmental targets.



Paul de Jongh

Regulations

Regulations are often necessary to achieve targets. CITES (Convention on International Trade of Endangered Species) is an example. In the Netherlands several regulations, for instance concerning soil quality standards, are a guiding principle to judge what steps should be taken in a specific situation. It is important though to realise that overkill of regulations can be ineffective, and that the enforcement of regulations can be a problem if other instruments are not applied simultaneously.

Financial Instruments

Financial instruments refer to instruments to promote environmentally friendly behaviour by adjusting cost/price ratios. These instruments consist of levies, fiscal measures, deposits and grants. Experience shows much can be achieved with financial instruments and that there is still much to win in this field. Implementing these instruments however is a step by step process.

Social instruments

A broad range of social instruments are available, for instance:

- ◆ Education
- ◆ Training

- ◆ Voluntary agreements
- ◆ Learning by doing

It has become clear that applying social instruments is always necessary. These instruments serve several purposes. Firstly, financial instruments and regulations if applied isolated, have proved to be ineffective. So they should always be implemented in combination with social instruments. Secondly, social instruments are needed to stimulate basic understanding of environmental concerns. Thirdly, this type of instruments contribute to internalisation: making target groups aware of the need for environmentally friendly behaviour in specific situations.

Differences in focus of environmental education

There are many different views on the focus environmental education: ranging from nature education to education in the framework of sustainable development. Basic aim of environmental education is to realise behavioural change of all actors concerned. To achieve behavioural change it is important to address target groups with a credible story that directly concerns their own needs and perceptions. Efforts must have a certain amount of continuity to reach goals and must be based on win-win solutions: solutions that result in joint earning. Both the environment and the target groups must benefit from actions.

Good examples of environmental education in the Netherlands, are:

- ◆ Field work with children
- ◆ Education of teachers (standard curriculum)
- ◆ Eco teams
- ◆ Codename future
- ◆ Children farms in towns

Stages in Dutch environmental education programmes

If one looks at the development of environmental education programmes in the Netherlands, one can distinguish three different stages:

1. Specialised programmes

These programmes are mainly focussed on in-school education

2. Extra Impulse - Environmental Education 1996-2000

As environmental education developed, the scope of education broadened from in-school education to education that gives shape to learning for sustainability. This development proves to be highly demanding on the innovative capacity of the EE-sector. Therefore the Dutch government launched the Extra Impulse Policy. It was initiated by six collaborating departments (Department of Agriculture, Nature Management and Fisheries, Department of Housing, Spatial Planning and Environment, Department of Transport and Water Management, Department of Health, Wellbeing, and Sport, Department of Education, Culture and Science, and the department of Foreign Affairs and Development Co-operation). The core objectives of Extra Impulse are:

- ◆ Reinforcement of the attention for nature, environment and sustainability in education.
- ◆ Conceptual renewal, by working on themes such as biodiversity,



Roundtable discussion during diner pensant, from left to right: Monica Lieschke, Malgorzata Boszko, Douwe Jan Joustra, Tetiana Hadarshuk, Peter Townsend, Adolfo Rojas Breedy

nature awareness, mobility, sustainability and globalisation.

- ◆ Renewal with respect to target groups and methods, with a central role for the professionalisation programme.
- ◆ Quality improvement by paying attention to quality control of programmes and activities and increased attention for the development of quality criteria.
- ◆ Impact of the intended renewal and quality improvement.

3. National Environmental Education Programme for the 21st century

Right now the Dutch government is preparing new policies in the field of EE for the next century. Important starting points of these new policies are:

- ◆ The involvement of all relevant actors. Stimulation of co-operation between ministries, provinces, municipalities NGO's and business in existing networks and with much focus on the local level.
- ◆ Professionalisation of the EE sector to stimulate the further development of education as an instrument for sustainability.
- ◆ Outreach improvement: attention will be given to reach target groups that so far have not participated to a high extent, for instance immigrants.

Conclusion

"Guiding principles" for the Pan European Expert Meeting on Sustainable Development and Environmental Education should be:

- ◆ Let us learn from experience of others.
- ◆ Let us learn from the experience on the local level.
- ◆ Let us be a bit more strict on standards ("what every high school pupil has to know")
- ◆ Let us manage by objectives.
- ◆ Let environmental education be fun.

2 INTERNATIONALISATION, INDIVIDUALISATION, INFORMATION: HOW DO THESE BASIC SOCIETAL TRENDS INFLUENCE LEARNING TOWARDS SUSTAINABILITY?

*Stephen Sterling,
South Bank University, U.K., author of Education for Sustainability*

'It was the best of times, it was the worst of times'.

Charles Dickens' line in his book 'A Tale of Two Cities' on the French Revolution, might be applied to our millennial age. We live in revolutionary times too, times of uncertain transition marked by paradox; times of both extraordinary opportunity and extraordinary risk which co-exist and define the character of the current post-modern age.

Two years ago, I produced a book with John Huckle 'Education for Sustainability' which aimed to help 'put sustainability in the centre of the educational debate, and education and learning in the centre of the sustainability debate'. These are both difficult goals to achieve, partly because they are largely perceived as separate discourses. One of our collective tasks then, and perhaps an outcome of this conference, is to help bring the two debates together. Slide 3 summarises the challenge of the first part of the equation.



Paradox

Any change requires understanding of context. It's impossible to navigate unless we have some sense of the map. The problem here is that we are on the ground, in the midst of change, it is difficult to achieve a reliable overview. What we do know is that we live in paradoxical times, and appreciation of this is a key to at least some clarity.

When I was born in the mid-century, people had jobs for life, we lived in sovereign nation states, resources and the absorbing capacity of the environment were assumed to be infinite if thought about at all, progress was assured for all, economic activity was primarily local, familiar townscapes and landscapes didn't change that much over time, the climate was assumed to be stable, and we had scientific certainty. None of this applies any more. We have left behind old certainties that were associated with the modern age, and the pace of change has quickened in the last 20 years, yet much educational practice is based on old assumptions.

Things are not either/or, black or white, but often 'both'. Many political, economic and social trends exist in a state of contradiction, uncertainty and ambiguity, while both physical and conceptual borders are becoming blurred. Slide 4 gives some examples.

Paradoxes include the increasing integration of Europe, but also signs of disintegration; a blurring of political and cultural borders yet affirmation and need for local identity; overall prosperity but increasing

disparity between the 'haves' and 'have-nots'; a shared neo-American culture among the young particularly, mixed with considerable cultural diversity.

The common engine of change and of paradox in Europe, as elsewhere, is 'globalisation'. Some ten years ago, the term was hardly used, but now it is everywhere. Globalisation is part of the rationale of European Monetary Union, where it is hoped that integration will provide economic security in volatile times.

Globalisation and the spread of information technology have gone hand in hand with the effect that time and space have lost the meaning that they had for most of mankind's history, yet despite our age of information overload we have little direct knowledge of how our consumption patterns link into distant social and environmental effects.

In politics, there appears to be gradual shift of the locus of governance to the transnational level at the top and the community level at the bottom, with the governments of the nation states becoming less powerful and relevant over time.

Meanwhile, the decline of mass production, the nuclear family and central government provision mean that individuals must take more control over their lives. In this culture, social cohesion comes neither from tradition (which is the Right's response) or from state controls (which is the Left's response) but autonomous choice and a sense of and exercise of responsibility. While young people across Europe identify with themselves and their peer groups first, they often share concerns on universal issues such as human and animal rights, gender equality, and the environment.

A further and vital example of the blurring of borders is the relation between people and nature. Whilst we tend to think of these two categories as distinct, it is hard to say where the distinction lies such is the degree of linkage between natural systems, including our own bodies, and the effects of science, technology and economic activity.

There is an increasingly high degree of linkages between areas of political, economic, social, cultural, psychological, technological and environmental concern, between local and global scales, and past, present and future trends. So that even labels have to be seen as 'fuzzy' concepts – for example, there is no such thing as a purely environmental issue.

In sum, the world of predictability is being replaced by one characterised by complexity, interdependence, risk and uncertainty and this is the world that our children will inherit.

If globalisation is perhaps the major force in the world, sustainability or sustainable development is an equally, and potentially perhaps more powerful idea. While the nature of sustainable development is itself contested, my own view is if we are to earn a passage to a safe and humane future, it must become the guiding ethos.

Perception and sustainable development

While there is now a burgeoning literature on sustainable development, I refer here to a major



Participants of plenary listening to keynote speakers

study, 'The Politics of Agenda 21 in Europe' funded by DGXII of the European Commission, and carried out by Tim O' Riordan and Heather Voisey. Slide 5 is a quote from the book.

The authors say there is 'no template for the transition to sustainability. Nevertheless, there is a direction and there are principles...' (pxv).

There is a spectrum of views about what constitutes sustainable development, some of which lie within dominant neo-classical economic paradigm, some of which attempt to extend this paradigm to include ecological and equity issues, and some of which argue that a new ecological view and an alternative ecological economics and politics is necessary. For me, it is new thinking and practice at this more radical end which holds the key and the promise of the scale of change which I and many others believe to be necessary.

Slide 6 shows the three conditions which O'Riordan suggests should underpin 'any serious analysis of sustainable development' and which are mutually necessary.

The challenge is to achieve economic and political systems where the generation of economic and material wealth is not at the cost of damaging other forms of wealth or capital, these being natural capital, social capital and human capital, but in fact enhances these capitals. The challenge of sustainability in my view is to encourage resilient and social, political, economic, and ecological systems which are diverse and flexible. This awareness is yet dim with most policymakers.

Slide 7 summarises the necessary transition to 'very strong sustainability' with this phase involving much closer integration between environmental and economic policy, a cultural shift in public awareness, and a renewal of emphasis on local democracy and activity.

While globalisation is double-edged in its effect, overall I would argue that it tends to reduce sustainability, to undermine the resilience and diversity of local economic and ecological systems. Evidence from the living world, upon which much of the economy is based, points clearly to non-sustainability of present lifestyles. The WWF's 1998 'Living Planet Report' a new – to be annual – report presenting what it calls the Living Planet Index which tries to measure change in the health of the world's natural ecosystems since 1970, due to consumption pressure. According to WWF the LPI has declined by about 30% relative to 1970, which means that the world has lost around a third of its natural capital in that time, while consumption pressure has increased by about 5% a year.

The key to more authentic sustainable development modes lies in change of perception, and to that end, the changes of the postmodern age associated with internationalisation, globalisation, information technology and individualisation perhaps give us the possibility – the conditions for change – that are needed, as we are becoming more freed from old ideas, institutions and ways of doing things. We live in 'watershed times' – as many people sense – where things could become a good deal better or a good deal worse.

Pedagogy

Agenda 21 talks of the need to 'reorient' education towards sustainable development (UNCED 1992). Yet the response has been disappointing – why has education not more fully responded to these calls? There are different perceptions and paradigms of sustainable development, and largely corresponding to

these, there are different education paradigms. Just as dominant models of economic development do not serve us well for the sustainability transition, neither do dominant models of education.

This calls into question our view of education and learning. Following O'Riordan's sequence, it is possible to construct an idea of staged change in education and learning, from weak to strong education for sustainability, from accommodation of sustainability in the present educational paradigm to changing the educational paradigm itself.

We need to start of course, where the current systems are. For example, in 1998 I was involved in writing a report for the Panel for Education for Sustainable Development (England and Wales) which was submitted to the UK government.

This aimed to help change decision makers' perceptions in discussions on the national curriculum in England and Wales. Slide 8 shows seven principles of sustainable development which we presented as a basis for the whole curriculum.

At the same time, we need some vision of where we are headed. Unless we have some vision of where education is going, should be going, it is hard to see how it can assist the sustainability transition, especially given that there is some urgency involved in changing course. I have researched a number of commentators' views on this – what interesting is the degree of commonality amongst them. All advance a much more holistic, open, flexible, participative and dynamic view of learning and education, much more a view of learning as democratised and continual change, rather than building concrete foundations of knowledge according to centralised decree. Slide 9 summarises some ideas from Banathy (1991), a systems thinker, while Slide 10 shows some similar ideas I have put in a recent paper.

If we return to the given themes of internationalisation, information and individualisation, its clear that these visions are not just 'wish lists':

- ◆ the rapid economic and social change associated with globalisation and information technology are requiring decision makers to reassess the nature of education and learning – which presents opportunities for change;
- ◆ the huge increase in availability of computer technology and use of the Internet means that centralised control of curricula and information is no longer tenable (although most governments are trying to hold onto central control);
- ◆ and the mood of individualism and resurgence of locality works against educational uniformity.

If a more radical view of education for sustainability is to progress, we need to learn from and form alliances much more with the myriad emerging social and environmental movements that are working towards sustainable development. So there needs to be much more contact between educators and theorists and practitioners in such fields as community regeneration and Local Agenda 21, new economics, sustainable agriculture, renewable energy, ecological design, social auditing, eco-efficiency in business, ethical investment, holistic health, and so on, because such movements are building the systems that represent (O'Riordan's) conditions of sustainable development. And they also manifest the new ways of thinking and social learning that are needed.

Instead of an ethos of manipulation and control, these movements emphasis the value of 'capacity building', and facilitating and nurturing self-organisation in the individual and community as a necessary basis for 'systems health' and sustainability. This applies as much to the way we work with marginalised groups, countries and ecosystems, as it as it does children in the classroom.

I believe a more holistic, integrative, systemic, ecological, humane, just and ecological worldview is gradually emerging, – not prescriptive but indicative, not deterministic but purposive. And it is something we are learning our way falteringly towards, indeed its emergence is evidence of learning. The very fact of the recent and rapid evolution of 'education for sustainability' ideas and concepts shows that we are 'learning about learning'. This is a very healthy and critically important tendency.

Ervin Laszlo, the President of the Club of Budapest argues that as a species, we now need to think reflexively about our thinking, to take conscious charge of and accelerate our cultural evolution to be able to assure some kind of sustainable future. In my view, this is learning in its deepest sense and that it constitutes the most exciting and difficult challenge that all educators face (see Slide 11).

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Discussion questions

- ◆ Do we, as concerned educators, fall largely within a shared 'band-width' of interpretation about the meaning and implications of sustainable development?
- ◆ What are the main blockages and current opportunities to genuinely sustainable development?
- ◆ How far are dominant models of education and learning part of the problem or part of the solution?
- ◆ What should be the three top priorities of environmental educators to help realise a more sustainable future?
- ◆ How can education address the urgency of sustainable development effectively without becoming prescriptive, that is be purposeful but not directive?

**Pan European Expert Meeting on
Sustainable Development and
Environmental Education
January 27-29 1999**

**Internationalisation,
Individualisation, Information:
how do these basic societal
trends influence learning
towards sustainability?**

Section headings

- PARADOX
- PERCEPTION
- PEDAGOGY

Key Question

**If sustainability requires fundamental
change in most areas of life and human
organisation, what sorts of change in
education and learning are also required**

**- particularly as education is seen by
Agenda 21 and other international and
national rhetoric as a crucial and
unique agent of change?**

Paradox in the postmodern world

- * European integration - and dis-integration
- * Increasing prosperity - and exclusion
- * Uniformity of culture - and also diversity
- * Information rich - but wisdom poor
- * Globalisation - and local renewal
- * Individualism - but universal concerns

**Predictability replaced by complexity,
interdependence, risk and uncertainty**

Blurring of borders of all kinds

'The Politics of Agenda 21 in Europe'
funded by DGXII of the European Commission,
by Tim O'Riordan and Heather Voisey, UEA

'...sustainability can never actually be attained,
or at least cannot be envisioned by people
because of the immense and fundamental changes
in our society that it entails.....The sustainability
transition, therefore, is the process of coming to
terms with sustainability in all its deeply rich
ecological, social, ethical and economic
dimensions.

The transition is as much about new ways of
knowing, of being differently human in a
threatened but cooperating world, as it is about
management and innovation of procedures and
products.' p3

**O'Riordan suggests three conditions
should underpin 'any serious analysis of
sustainable development' and which are
mutually necessary:**

- * continuation, durability and reliability
of economic performance
- * stewardship, trusteeship and a duty of
care towards vulnerable ecosystems and
peoples, and to future generations
- * localism, democratic innovation, and
greater self-reliance in communities

The transition to sustainability

	<i>Environmental Policy</i>	<i>Economic Policy</i>	<i>Public Awareness</i>	<i>Public Discourse</i>
Stage 1: very weak sustainability	Lip service to policy integration	Minor tinkering with economic instruments on a case-by-case basis; some reinvestment of income toward the goal of sustainability	Dim awareness and little media coverage	Corporatist discussion groups and consultation exercises
Stage 2: weak sustainability	Formal policy integration and specific targets, backed by new institutional structures	Substantial restructuring of economic incentives; largescale reinvestment of income toward the goal of sustainability	Wider public education involving 'perforated' classroom walls	Roundtables, stakeholder group participation and legislative surveillance
Stage 3: strong sustainability	Binding policy integration and strong international agreements coupled to performance targets and indicators	Full valuations of the cost of living, green accounting, and creation of a 'civic income' for social use	Curriculum integration, with local educational initiatives geared to community growth	Community involvement, pairing of initiatives in the developed and developing worlds
Stage 4: very strong sustainability	Strong international conventions, national duties of care, and statutory and cultural support	Formal shift to sustainability accounting locally, nationally and internationally	Comprehensive cultural shift coupled with technological innovation and new community structures	Community-led initiatives become the norm

From: 'The Politics of Agenda 21 in Europe' Tim O'Riordan and Heather Voisey, Earthscan 1998

Key Concepts of Sustainable Development

- 1 Interdependence - of society, conomy and the natural environment, from local to global
- 2 Citizenship and stewardship - rights and responsibilities, participation, and cooperation
- 3 Needs and rights of future generations
- 4 Diversity - cultural, social, economic and biological
- 5 Quality of life, equity and justice
- 6 Sustainable change - development and carrying capacity
- 7 Uncertainty, and precaution in action

EDUCATION FOR SUSTAINABLE DEVELOPMENT IN THE SCHOOLS SECTOR - REPORT TO DFEE/QCA by the Panel for Education for Sustainable Development 1998

Banathy (1991) argues for a shift

- to higher order learning content (from data and information to knowledge and wisdom)
- from product to emphasis on learning as process
- from 'maintenance learning' to 'anticipatory and innovative learning'
- from competition to competence in cooperation as a method of learning
- towards competence in systems thinking

Banathy, B 1991, 'Systems Design of Education' Educational Technology

A shift of educational values, including:

From:	Towards:
curriculum control	curriculum empowerment
fixed knowledge	provisional knowledge
abstract knowledge	applied/local knowledge
teaching	learning
restricted learning styles	multiple learning styles
passive instruction	participative enquiry
uncritical learning	reflexive/critical learning
formal education	learning for life
specialism	generalism in teachers and learners
disciplinarity	inter- and transdisciplinarity

From Sterling, S 1999, 'Towards sustainable thinking for sustainable education' *Development Education Journal* 1999

- *3rd Millenium The Challenge and the Vision*, Report of The Club of Budapest Gaia Books, 1997

'For the most part, our generation attempts to cope with the conditions of the coming 21st century with the thinking and practices of the 20th....To live in the third millenium we shall need more than incremental improvements on our current rationality; we shall need new thinking joined with new ways of perceiving and visioning ourselves, others, nature and the world around us.'

- Ervin Laszlo

3 LEARNING TOWARDS SUSTAINABILITY: FROM EDUCATION BY PERSUASION TO DIALOGUE AND PARTICIPATION

Manfred Oepen,

Managing Director ACT, Appropriate Communication in Development, Germany



Participants of plenary reflecting together on the presentations of keynote speakers



Manfred Oepen



Learning and Communicating towards Sustainability
From Instruction and Persuasion to Dialogue and Participation

ACT

Appropriate Communication in
Development

Manfred Oepen

Wedemark
Germany



The Dilemma of Environmental Education and Communication

The Books

The Arguments

Environmental Awareness

de Haan/Kuckartz 1996

Academic „No impact at all“

There is no relationship between environmental knowledge, awareness and attitudes on one hand and behavior on the other hand.

Eco - Pessimism

Maxeiner/Miersch 1996

Pragmatic „Take it for granted“

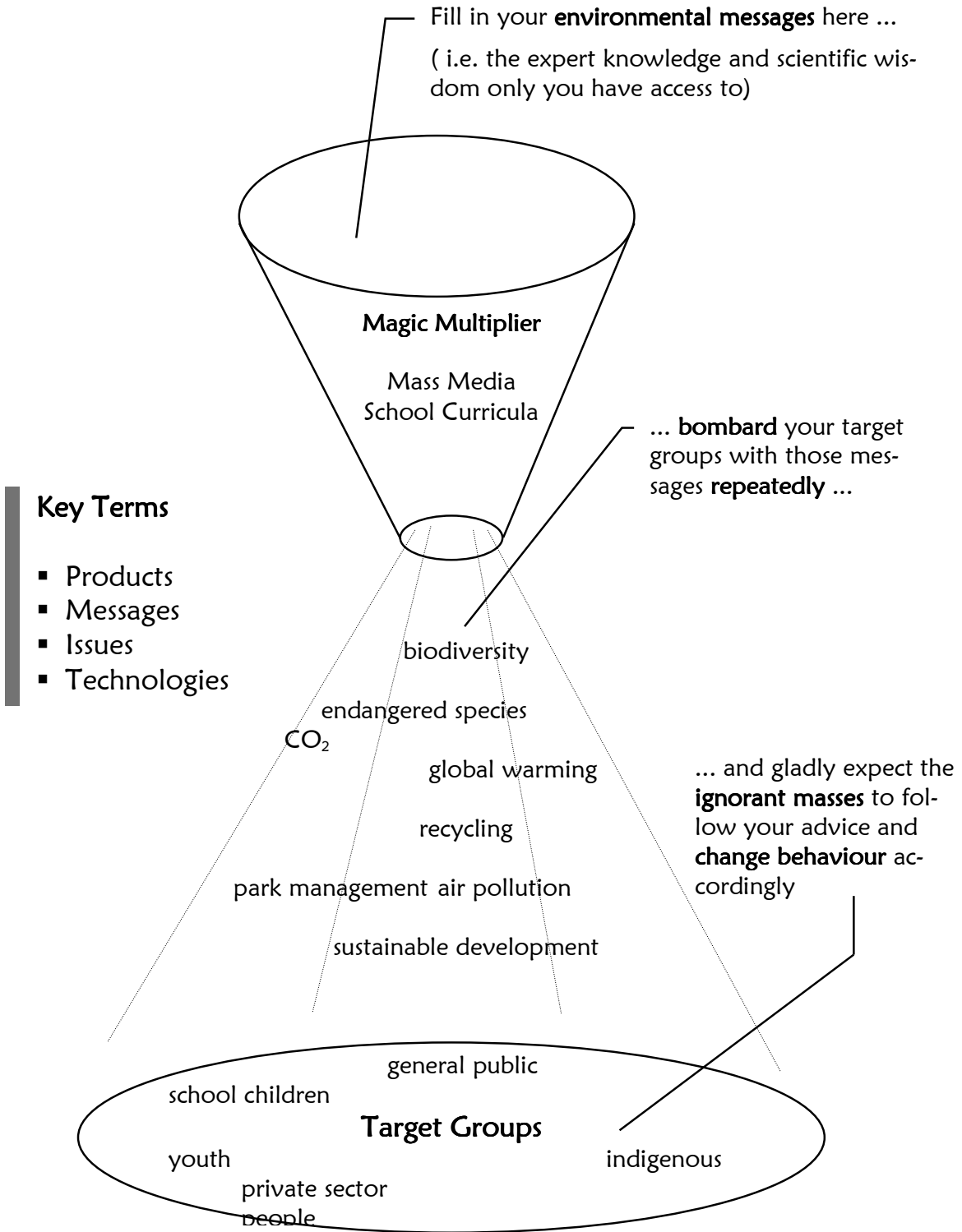
'Green thinking' has become common place because of successful environmental awareness raising, education and communication - 'green' production lines, 3 liter car, fish in the River Rhine again, the return of the wolves. Therefore, eco-pessimism will backfire as many people tend not to believe in end-of-the-world scenarios any more.



The Consequences for Environmental Education and Communication?

- The Attitude - Behaviour Model is *NOT* the 'ultima ratiom' - knowledge will not automatically transform into the 'right' awareness, attitude and behaviour, and reason will not necessarily triumph over ignorance
- The value-added and action perspective of education and communication in policy or project life cycles must be proven each and every time

Vertical Model of Environmental Education and Communication





The Attitude - Behaviour - Model

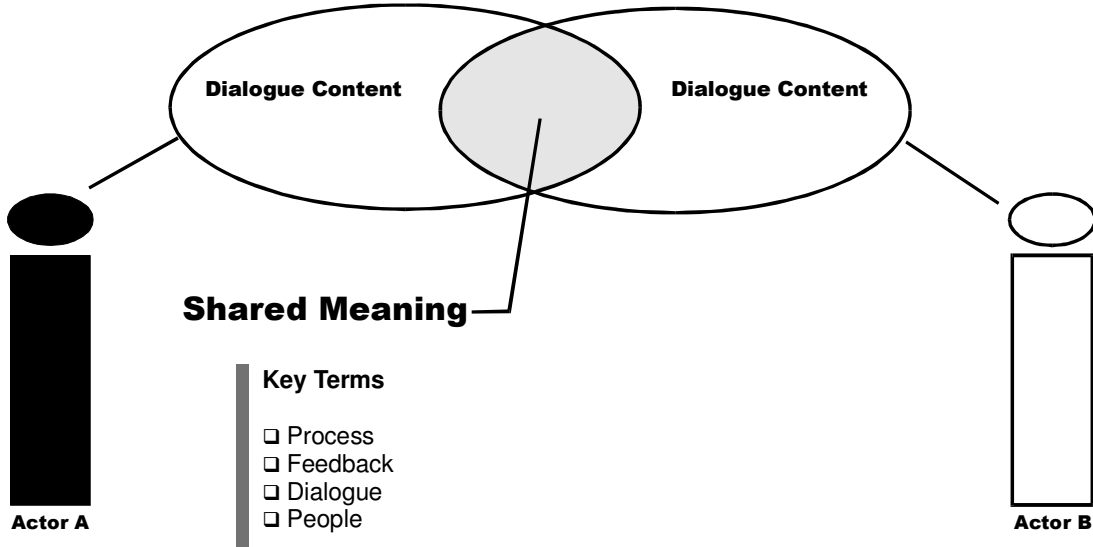
Five Reasons

why it
has not been
successful

- 1 The relationship between environmental awareness and behaviour is very weak
- 2 Behavioural change rarely results in lasting and significant effects in respect with environmental quality
- 3 Expected changes in behaviour as an objective can be counter-productive as they often violate individual self-determination and self-motivation
- 4 Specified behaviour changes tends to fragmentize environmental knowledge and to isolate environmental degradation as personal problems
- 5 As such, the Attitude - Behaviour - Model often produces docility instead of critical thinking, empowerment and environmental competence



Horizontal Model of Environmental Education and Communication



Environmental Education and Communication for Sustainable Development

In the current debate on sustainable development, communication and education as the driving forces of environmental learning processes do have an impact on at least three levels

- 1 Environmental awareness is determined by cultural contexts, visions, life-styles and value judgements - all of which are learned through communication and education
- 2 Criteria and options for decisions regarding sustainable practices are a result of public discourse and transparently communicated alternatives
- 3 Sustainable development cannot be based on behavioral manipulation but relies on reflection and plurality which will help civil society to develop adequate skills to overcome the ecological crisis.

Environmental Education and Communication Principles

Environmental Education and Communication, in a nutshell ...

missing link

... is the missing link between the subject matter of environment issues and socio-political processes of policy making and public participation

Strategic and systemic

...uses strategic planning and an integrated systems approach for networking among various actors

Process over product

... relies more on cost-effective and creative communication processes than on expensive media products

Integrated approach

... uses multi-faceted and integrated approaches involving mass media and community media, individuals, groups and masses, and stakeholders comprising state authorities, NGO, community-based organizations, private sector, research institutions etc.

strategic planning

... makes use of step-by-step strategic planning as part of a policy or project life cycle

ecological socialization

... fosters responsible resource management through an environmentally concerned socialization of individuals and groups

social learning

... means managing a social learning process that motivates and mobilizes for change through strategic alliances among stakeholders



Three Trivial, yet Neglected Rules in Pedagogics

Rule	Consequence
Pick learners up where they stand	If new concepts, especially complex and controversial ones, do not connect to what people know and believe, and to how they see things, the innovation tends to be rejected. Therefore, communicators and educators should make great efforts to understand and master the language, terms, rationales, mental images, historical and social context of the people they engage with. Only when those are understood, new concepts can carefully be linked to and built on them.
Didactics won't work – learners imitate others	Action is stronger than words. Therefore, acommunicators or educators should not only preach but practice, they should always practice what they preach and, if possible, they should have some powerful role models - like sports heroes or other idols - increase their impact.
You can only learn with your own head	You cannot learn „for“ someone else. People have a tendency not to listen and to learn if they don't have an interest in the issue at stake. This is why media produced for people are less effective than media produced by or with the people concerned. Learning <i>and</i> teaching is based on active listening which requires understanding, i.e. reconstructing and interpreting a subject matter in question by means of one's own terms, experiences and perceptions. Educators, therefore, should always stimulate this active listening and be able to shift to the learner's level of concepts and language.

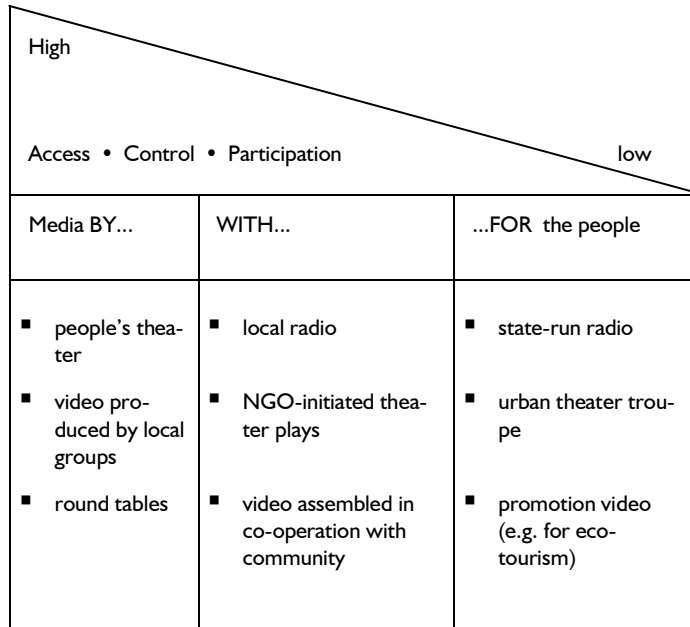


Participation

is a process of enabling people to use their human and material resources by motivating and mobilizing them to take their lives and their hopes in their own hands

- The keyword is "ownership". It should be taken literally in terms of media products and communication processes not *for* or *about* people but *with* and *by* the people themselves.
- It is difficult to 'own' TV, video, or radio. It is much easier to 'own' a people's theater production or other community media.
- But, strategic alliances with 'mass media', journalists and other groups should be built.

Degree of Participation in Media for Sustainable Development





Evaluating Participation

Indicators for the Degree of Participation

10-grade Scale

- Initiatives, activities, changes in practice on various levels
- Evaluates the degree of influence by actors from "no involvement" via "represented" to "autonomous decision".

Levels	Influence by				
	Out-siders	Local Elite	Local Motiva-tors	Individual concerned	Group concerned
1 - Planning and Agenda Setting					
2 - Media and Content Selection					
3 - Media Production					
4 - Evaluation					
5 - Follow-up					



Examples of Interactive Education and Communication for a Sustainable Future

- | | |
|-------------|---|
| Netherlands | <ul style="list-style-type: none">■ Interactive Policy Making between farmers and government involves the actors in learning from each other, and understand their interdependencies in moderated dialogue. Through integrative negotiation, they create the 'cake' they want instead of fighting over a piece of it. |
| Netherlands | <ul style="list-style-type: none">■ Environment and Society, an education and public awareness program of six ministries at the interface of a modern industrial society and its natural surroundings. The approach facilitates two-way communication between 'difficult' partners, understands education as critical thinking and rejects one-sided natural science-oriented problem definitions. |
| Indonesia | <ul style="list-style-type: none">■ 'Forum Komunikasi' on Recycling in Bandung and Surabaya for local government, citizen groups, NGO, waste pickers and the media. These groups meet regularly to discuss and design municipal and local pilot area action plans and communication strategies supporting waste separation and the integration of informal sector waste pickers in large-scale recycling and composting schemes. As a 'side-product' this process became an exercise in the newly established civic society discourse and as such triggered an LA21 initiative. |
| Malaysia | <ul style="list-style-type: none">■ The 'Consumers' Association Penang - CAP', since the mid 70s, established a nation-wide net-work of discussion fora linking environmental concerns with consumers' protection. To date, CAP runs the second largest newspaper in Malaysia, organizes round tables on 'hot' issues and assists community groups in setting up action plans. Also, training courses for journalists, NGO, managers, community groups or government agencies are facilitated in which 'empowerment' and a pro-active stand on democracy always was regarded a prerequisite for environmental action. |

Challenges for Environmental Educators and Communicators

- What?
- Clarify 'ill-defined' concepts such as 'sustain-ability', 'nature', 'participation' etc. through tentative arrangements of priorities.
 - Elaborate a limited, coherent and comprehensive core curriculum of environmental education, divided into 'Must Know', 'Should Know' and 'Nice to Know'.
- How?
- Learn complex concepts - both, scientifically and politically controversial - in short and mostly random learning situations.
 - Make use of interactive experiential learning through games, exercises, simulations, role plays etc. instead of relying on cognitive learning only.
 - Share the vast methodological experience with colleagues in other fields, e.g. development communication, adult education, moderation and visualization techniques, agricultural extension, health and family planning education etc.
 - Facilitate training of trainers in environmental education and communication, both – related to environmental subject matters, and education and communication methods, instruments and techniques.

The Future of Public Participation in Environmental Education and Communication for Sustainability

Visions & Trends

- From one-way to two-way communication
- From cognitive to experiential learning
- From 'school' as an institution of top-down teaching (vertical) to 'school' as a meeting point for teachers, students and parents who engage in interactive dialogue (horizontal)
- From a product orientation (media, messages, curricula, training courses) to a process orientation (round tables, action competence)
- From one-dimensional and linear ecological moralization to a discourse on a variety of value judgements from competing social, economic, ethical and other points of view
- From stakeholders to shareholders, or - from conflict positions to 'shared meaning'
- From distributive to integrative negotiations
- From isolated, factual and compartmentalized knowledge to the ability to deal with complexity, uncertainty and risk
- From 'behaviour change' to self-efficacy, social, communicative and environmental competence and personal responsibility

4 LEARNING TOWARDS SUSTAINABILITY IN THE REALITIES OF ECONOMIES IN TRANSITION

*Dr. Branko Bosnjakovic,
Regional Advisor on Environment UN ECE, United Nations Economic Commission for Europe,
Netherlands*



"Casino" seating arrangement during plenaries



Branko Bosnjakovic

Learning towards sustainability in the reality of economies in transition

Dr. Branko Bosnjakovic

Regional Adviser on Environment

UN Economic Commission for Europe

Political and public priorities in countries in transition are presently dominated by economic and social problems”

Legacies of the past:

- ° Most CIT underwent dramatic drops in GDP in the last decade
 - 20% - 40% in Central Europe
 - 20% - 75% in CIS
- ° Economic recovery has started in Central Europe, little recovery in CIS
- ° Drop in production has caused some reduction in environmental pollution, but also deterioration of basic services
- ° Remedial action still needed for environmental legacies of the past; economic recovery new threat for environment
- ° The process of transition to market economy and democracy is often very painful:
 - unemployment (ranging from 3% - 40%, typically 10%)
 - drop in income
 - unveiling of many previously hidden weaknesses
 - real or perceived loss of security
 - health stress: decreasing life expectancy
 - criminality, violent conflicts
 - real or perceived increase of inequality

“Growing disparity between countries in transition necessitates tailor-made approaches to learning”

- countries negotiating accession to EU (CZ, EST, POL, H, Slovenia):
 - strong pressure and motivation, as well as growing ability, to comply with EU environmental legislation
 - strong environmental awareness of all stakeholders

 - countries in the queue for the negotiations with EU (LAT, LIT, Slovakia, BG, RO):
 - pressure and motivation, but limited ability to comply with EU environmental legislation
 - environmental awareness of stakeholders overshadowed by unresolved economic and social issues

 - CIS (12 newly independent states):
 - no significant ability to comply with modern environmental requirements
 - environmental health a looming problem (e.g. water quality)
 - selective or under-developed environmental awareness among all stakeholders

 - disadvantaged countries experiencing, or recovering from, the consequences of military conflicts (at least 8 countries):
 - damage to environment and related infrastructure
 - very specific priorities (de-mining, reconstruction)
 - wide range of motivation and ability to introduce modern environmental requirements
 - selective or under-developed environmental awareness
-

“Sustainability is impossible without building sustainable economic and institutional infrastructure”

- Sustainability requires sustainable market infrastructure and basic economic instruments:
 - banking and bankruptcy laws
 - orderly privatisation
 - liability
 - taxation laws

- ... and basic democracy
 - functioning parliaments
 - realistic laws and law enforcement
 - independent justice
 - civil society (right to know, participation in decision-making)

- Sustainable investments require credit-worthiness through:
 - stable economic development
 - adequate role for local and regional authorities (including financial prerogatives)
 - creative management
 - eliminating corruption

- Abilities needed to introduce and adopt:
 - new political culture
 - new economic thinking and instruments

“Sustainable development requires change towards cooperative mentality”

Mental legacy of the past needs to be changed:

- Lack of understanding how crucial cooperation is also for environment
 - between central governmental institutions
 - between different levels of government
 - among NGOs
 - within many enterprises

 - Many (new) transboundary or sub-regional environmental issues require improved cooperation between (groups of) countries through:
 - improved information exchange
 - setting up of (bilateral) joint bodies
 - accession to and implementation of international conventions

 - Skills to learn:
 - strategic thinking
 - interactive involvement of stakeholders
 - negotiating and playing win-win games
-

“The economic sector and public awareness are the most important immediate targets for environmental education in countries in transition”

- Win the cooperation of the economic sector by emphasising the economic consequences of environmental deterioration:
 - river floods;
 - chemical and nuclear accidents;
 - quantitative and qualitative losses of fisheries;
 - tourism.

- Use education of the public to empower the citizens in formulating their interests and goals, and exerting pressure:
 - environmental activism
 - environmental journalism
 - public relations

- Train all stakeholders in the techniques of financing environmental projects:
 - bank credits including micro credits, green banking
 - sustainable municipal financing (revolving schemes, bonds)
 - economic incentives (tax and customs relief)
 - environmental funds
 - joint implementation (Kyoto Protocol)

- Capacity-building more important for institutional and mental development, including modern management and communication skills, than for traditional technical skills.
 - environmental management schemes, ISO 14000
 - cleaner production
 - “greening” of the markets

- External assistance is necessary but should be:
 - better coordinated (among donors and recipients)
 - should not lead to new dependence.

III NEW DEVELOPMENTS AND INITIATIVES

1 ACROSS BORDERS

Practical experiences with trans-boundary co-operation in nature education

Arnold Schut,

Senior Consultant, IVN Association for Environmental Education, The Netherlands

Co-operation between Holland and Poland has been very effective. It has resulted in the exchange of knowledge and experience. Moreover, exchanging experiences also has resulted in personal friendships. As time goes by, the co-operation between the countries develops and intensifies.

The European Union and trans-boundary co-operation for environmental education

Eusebio Murillo,

Director Research & Development, Education and Information of DG XI, European Commission, Belgium

The role of the EU is mainly one of supporting projects and managing the network of professionals whose work is related to environmental education. Stimulating the exchange of expertise is of high importance. Member States can learn from each projects, policies and curricula in other countries. The EU encourages non-members to participate; multi-nationality is an important keyword.

Success and failure factors for trans-boundary co-operation: experiences of IUCN

Wendy Goldstein,

Coordinator of the environmental education programme, IUCN The World Conservation Union, Switzerland

The IUCN – the World Conservation Union – brings together states, government agencies and a diverse range of non-governmental organisations in a unique partnership. IUCN exists to serve its members – to represent their views on the world stage and to provide them with concepts, strategies and technical support they need to achieve their goals.



Working Group Across Borders

The Commission on Education and Communication (CEC) is one of IUCN's six commissions, a global network of voluntary active and professional experts in environmental communication and education. They work in NGOs, governments and international organisations, professional networks and academic institutions. Members' daily work is about how to encourage people to take responsibility in their personal and social behaviour for the environment. CEC specialists are experts in learning processes, how behaviour is changed and in communication management.

The CEC network advocates the value of education and communication to conserve and sustainable use biodiversity as a basis of sustainable development for present and future generations. CEC facilitates exchange and capacity building as how to motivate and guide people's participation in a learning process. E-mail address CEC: ctn@hq.iucn.org

Discussion

During the discussion, attention was given to the experiences concerning education projects in different countries. The focus was on the critical aspects and the success factors in international co-operation.

Practical instruments essential for success

It was noted that it is necessary to translate theoretical concepts for practical use on the local level. Working only with theoretical concepts does not have proved to be ineffective. One of the main obstacles for effective co-operation is the gap between theory and the practice of environmental education.

Shift towards participatory approach requires new skills

There is currently a shift in environmental education from teaching environmentally related knowledge and values towards the supporting of learning processes. The development towards these participatory approaches makes careful project development in good partnership even more important. A balanced strategy is needed to effectively apply a more participatory approach. Firstly, a number of key skills have to be mastered: How do you present an idea? How do you plan a project? How do you identify the position and role of the people you want to reach?

Co-operation with target groups is important

Secondly, it is essential to develop educational programmes in co-operation with the target groups. Awareness is needed of your own way of working and of the qualities of the people that have to be reached. When international co-operation occurs, projects should not just be copied from



Participants networking across borders

one country to another. Suggestions about activities and about strategies are very useful, but countries can not be forced to implement projects without adaptation to national circumstances. For instance, Western approaches are not always effective in Eastern countries. It is therefore important to listen carefully to the needs for co-operation and to develop projects in partnership. Every country has his own culture and his own way of working.

Networking with stakeholders is effective

Thirdly, networking is an important success factor for effective trans-boundary co-operation. Exchanging of information will avoid invented the wheel twice. Projects in other countries should be used, but in order to do so, an inventory of relevant projects has to be made. An fourth success factor is to get stakeholders involved in realising education plans. This requires being very clear about your goals, strategy and plans.

Personal contact is needed for trans-boundary co-operation

A potential obstacle for trans-boundary co-operation is distrust between countries. Support from all actors involved in the countries co-operating is vital to establish follow-up activities. Lack of support leads to isolated results. Tot cross cultural difference, personal contact is important. Work with handbooks concerning the culture of the countries involved can be very helpful. Furthermore one must pay attention to the political structure of the countries involved, for example environmental legalisation can be a crucial factor. Insight in the relevant institutional actors has to be gained as well.

Do's and don'ts:

Do

- ◆ Translate theoretical concepts for practical use on the local level.
- ◆ Pay attention to the political structure of the countries involved
- ◆ Make sure that there is understanding and support for projects.
- ◆ Invest in thorough preparation.

Opportunities for trans-boundary co-operation:

- ◆ Setting up of concrete projects and activities, such as: initiating a clearing house, constructing a EU web site with information on EU funded projects and projects in Member States, starting up newsgroups.

New developments and initiatives

- ◆ Using international conferences and expert meetings to produce formal documents in order to get more political and societal attention for environmental education. For instance: the results and recommendations of the Soesterberg Expert Meeting could be presented to the European Commissioner and to national governments requesting them for support for follow-up.
- ◆ Organising a 'Master class' for high level professionals.
- ◆ Innovating methods of environmental education. Investing in the design and preparation of projects and programmes.

The workshop sheets can be accessed at <http://www.nme-ronde.nl/>

2 GLOBAL PERSPECTIVES

Introduction

The workshop focussed on the combination between the developmental and environmental approaches in sustainable development education. At the moment, these two approaches are often isolated. Sustainable development education can be an instrument to integrate different educational approaches. Several terms are used to address approaches which integrate subjects, such as Global Education. This is education concerning the globe, the global aspects of sustainability and the globalisation process going on in the world. Three presentations were given:

Integrating development and environment issues: practical experiences in the U.K.

*John Baines,
consultant for WWF U.K.*

Integrating development and environment issues: practical experiences in the Netherlands

*Madeleine Vreeburg,
Senior Education Officer, LSO National Support Centre for Development Education, The Netherlands*

A perspective from the reality of Costa Rica: lessons for educators in Europe?

*Adolfo Rojas Breedy,
Director of VIDA, Voluntarios de Investigacion y Desarrollo del Ambiente, Costa Rica*

Discussion

Experiential aspects are of importance

Sustainable development education aims to introduce a holistic approach, as opposed to the reductionist approach common in most education systems nowadays. It was stressed that besides cognitive aspects, exper-



Working Group Global Perspectives

riential aspects are of importance as well. Pupils need to be taught concrete abilities, which can be put into practice in every day life. To accomplish this goal, out-of-the-classroom-activities are of vital importance. One hour outside the classroom is often more effective than 8 hours inside.

How to motivate students

Education needs a positive tone of voice. Too often, environmental education is based on doom-scenarios and as a effect experiences as burdensome. Sustainable development needs to be based on a hopeful vision of the future.

The following questions arise when environmental education is applied: How do you motivate students? How do you teach children to care? How do you stimulate pupils to be critical?

A method to motivate students, is to use the classroom as an example. The children usually have different ethnic backgrounds. You can use this as a basis for education about different cultures. For example: "The School garden": Ask children to grow their own food on the premises of the school. Many different kinds of vegetables will be grown, illustrating the different ethnic backgrounds of the children. This method has proved to be effective in making the children aware about the globalisation.

A different tactic is to exchange information and ideas with pupils overseas, for example ecological footprint comparisons. Doing so, pupils are actively involved with reality "on the other side".

Example from Costa Rica

In Costa Rica primary school children are taught about the green Macoa, a bird threatened with extinction. A man dressed as a bird comes into the classroom, and pupils can ask him questions. Hereafter, the pupils make drawings of the bird. The next day, a visit to the natural habitat of the Macoa is planned. Finally, the children support the protection of the bird by carrying out certain out-door activities.



Working Group Global Perspectives

What is the aim of environmental education?

To conclude, it was stated that most important is to ask the right questions at the start of projects. These questions need to be used as starting points whenever new methods of environmental education are developed: What needs to be accomplished, what is our aim? Which changes in students do we find desirable? Another important question is: What do we want to get out of education? A possible answer was given to this question: "A Human Being embedded in a social, cultural, and spiritual context in every region of the world!"

The workshop sheets can be accessed at <http://www.nme-rotonde.nl/>

3 LOCAL AGENDA 21

Facilitating participatory LA 21 initiatives as an instrument of Norwegian policy towards sustainable development

*Sylvi Ofstad,
Senior Policy Advisor, Ministry of Environment, Norway*

Local Agenda 21 is to abstract

Local Agenda 21 is difficult to implement because the document is very abstract, even 'fluffy'. To achieve efforts on the local level, activities have to be concrete. In Norway citizens are often involved in organisations on local levels: varying from dog clubs and sports clubs to cultural organisations. It is important to use these social structures when trying to integrate sustainable development on local level.



Presenter Douwe Jan Joustra in discussion during one of the plenaries

Good example: project 'Last Chance'

The project 'Last Chance' for example, aims to motivate local communities to register species in their region ('biodiversity mapping'). Seven pilot communities are momentarily involved in this project. According to plan, ninety communities will map the biodiversity in their surroundings in the year 2000 and in the year 2003 all 435 Norwegian communities will participate. The data are collected in a national database, so a national biodiversity monitoring system will be accomplished.

Good example: forest protection in co-operation with farmers

Another example is a project aimed at achieving forest protection in a specific area. The forest is partly owned by farmers. Before, they refused to co-operate to protect the forest. But when they were approached in a very open way, asking how they could contribute to the protection of the forest, 50 were willing to sign a joint declaration on how to manage vulnerable areas and which areas to protect. In this way 50% of the forest is saved. This example proves that communication is an essential success factor for achieving co-operation and involvement of local actors. The motto: 'Believe that you can make a difference!' should inspire educators.

Involving citizens in the sustainable development of the city of The Hague through Master Classes

Douwe Jan Joustra,

Programme manager Extra Impuls for Environmental Education, National Committee for international co-operation and sustainable development, NCDO, The Netherlands

Starting points for Local Agenda 21

The city of The Hague has shown a lot of commitment to Agenda 21. The city decided to contract a professional consultant to facilitate the process. After an analyses of the situation, the consultant defined three important starting points:

- ◆ Develop a vision and make this vision visible. Show people what sustainable development could mean and make it concrete and understandable.
- ◆ Identify partners and start a dialogue.
- ◆ Do what can be done: identify potential projects. Examples of projects which were identified: a shared car project called Green Wheels, a manifest about mobility and a project aimed at creating more parking space for bicycles.

Master Class

Another project which was carried out, was the Master Class 'The Hague sustainable in 2025'. This project aimed to generate input for sustainable development in The Hague by visualising what the city would look like in 2025. Furthermore the Master Class was a Think Tank producing ideas for what can be done at local level to achieve sustainability. A third central aim was to stimulate individual and social learning processes. Starting point of the method is 'the wheel for social learning'. One of the concrete results of the Master Class was the foundation of a financial institution aimed at supporting Sustainable Development initiatives on local level.

Discussion

The participants acknowledge the fact that the translation of Local Agenda 21 into concrete actions is necessary. The document is too abstract which has proved to be an important obstacle for implementation. Methods for achieving sustainable development on local level are not given. As a consequence many local governments do not know how and where to start.

Exchange of information essential

In the Netherlands the National Committee for international co-operation and sustainable development stimulates the exchange of information and experience on Local Agenda 21. A platform LA 21 has been initiated through which NGO's can exchange ideas. Furthermore, there are funds avail-



able for activities. Another platform where exchange takes place, is the Association of Netherlands Municipalities, which has working groups and regular meetings on Local Agenda 21. A third example is the regular exchange of experience of ten municipalities which are working in an innovative way on Local Agenda 21.

Learning processes need attention

The workshop was concluded by stressing that learning processes are of fundamental importance to sustainable development on the local level. It is necessary to identify key factors of success on how to involve citizens and local organisations in the process of sustainable development. Dialogues have to be started, and have to result in concrete actions.

The workshop sheets can be accessed at <http://www.nme-ronde.nl/>

4 YOUTH

Involving young people in nature conservation, learning for sustainable development

*Carol Huston,
Senior Countryside Ranger, The City of Edinburgh Council, U.K.*

The rangers in Scotland have a two-way approach to reach children and teenagers. Firstly, different youth groups are approached, for instance church groups, scouts and sport clubs. In cooperation with leaders of these clubs programmes are developed. Secondly, children join the rangers on their own account or via school. The Rangers offer several programmes for these children, many of which involve artistic media to let young people see the importance of the environment. Important lesson learned is: "never try to be cool, just be yourself".

Involving young people in sustainable development: practical experiences in Russia

*Marina Dobrolioubova,
Senior Policy advisor, Ministry of Education, Russia*

Russia is a country in transition which lacks sufficient funding to set up national programmes. Attention towards environmental subjects therefore mainly depends on the dedication of teachers and their willingness to deal with that subject matter. The fact that teachers' salaries are minimal, makes it even more difficult to motivate them for extra activities. At the moment 72 schools in Russia are involved in the GLOBE project. Children take scientific measurements in order to monitor environmental changes. It is an attractive programme because it involves children from a very early age in the monitoring of nature and the degradation of nature. A few obstacles are present, however. In Russia, not every school has access to Internet. Another obstacle is language: non-of the participating scientists is Russian, so participating children need a sufficient knowledge of English.

Codename Future: involving young people in sustainable development initiatives in the Netherlands

*Robin Berg,
Programme Coordinator, Foundation
Codename Future, The Netherlands*

Codename Future is developed for students in secondary schools. Codename Future offers children a framework of questions and subjects which they can choose



Working Group Youth

from. There is a teacher who coaches the student, there is access to information of many different organisations and there is financial support from the business community. Next step is to share experiences with other countries. The newly developed European schoolnet is a valuable instrument for this purpose.

Discussion

Younger children are more easily reached and motivated than teenagers. It is very important to create opportunities for teenagers, instead of forcing things upon them. Furthermore, priorities have to be made: one can not reach all the target groups at the same time.

Use the media of the target group

The educational system is not the only way to approach youth with environmental education. Young people can also be reached through their own channels like youth groups or media (MTV, children's programmes, etc.). Co-operating with youth groups offers young people positive environmental experiences in their "own" interest group. Working with group leaders has furthermore proved to be very effective. Another important success factor is to make results visible: for instance by offering an award for certain achievements.

An potential obstacle is lack of government funding for projects or for training for teachers. It can be very effective to think of alternative sources of funds, like foundations, the business community, NGO's and international organisations.

Do's and don'ts

Do:

- ◆ Offer attractive and interesting programmes
- ◆ Offer tangible and visible results
- ◆ Create opportunities
- ◆ Award students
- ◆ Reach out to their level, language and culture
- ◆ Use their channels and media
- ◆ **Let them solve problems**
- ◆ Offer responsibility
- ◆ See them as different but equal
- ◆ Ask them for support

Don't:

Opportunities for trans-boundary co-operation

International projects, like the GLOBE project, offer an opportunity for children from all over the world to co-operate. Exchange programmes are beneficial for children's understanding. The creation of networks furthermore offers opportunities for young people –and the professionals who focus on them– to share experiences, work out new ideas and work together towards a sustainable future.

The workshop sheets can be accessed at
<http://www.nme-rotonde.nl/>



*Participants registering for one of the nine
workinn arnuns*

5 ECO SCHOOLS

Introduction

Implementing sustainable development in schools to educate students for global citizenship is an essential strategy for a sustainable society. Central in this working group was the exchange of experiences with the greening of curricula, management and culture in schools. Presentations took place as well as a discussion on how to improve projects for greening schools and international co-operation.



Experiences with the greening of curricula, management and culture in schools in the Czech Republic

Jana Ledvinova,

Senior project manager of TEREZA, Association for Environmental Education, Czech Republic

In the Czech Republic, more than 1000 schools are involved in 15 environmental education projects. Some of them are international projects (e.g. GLOBE, ozone). Due to the changed political situation teaching shifted from knowledge towards skills oriented. She stressed the importance to use the open minds of children to base education on. Motivating teachers and applying a broad range of disciplines are important success factors.

Experiences with the greening of curricula, management and culture in schools in Norway

Sergio Santos,

European Co-ordinator Eco School Program, U.K.

The Eco School Programme is a European programme for environmental education and management, based upon a simple methodology which any school can adopt. Pupils are encouraged to use their environmental knowledge in the everyday life of the school. This strategy facilitates

pupils to see the relevance of what they learn in the classroom. The Eco-Schools programme involves seven steps that any school can adopt. A committee in the school is the core of the Eco-Schools process.

Green school award

The Green School Award project has been very successful. Schools are motivated to write green action plans that are published and evaluated on internet. An assessment is made to judge if schools have reached the targets agree upon. If so, they acquire a diploma, which is valid only temporarily: three years. This way, schools are stimulated to work continuously on sustainable development.

Towards a system of standardization and certificates for schools

Maarten Pieters,

Deputy Director SLO, National Institute for Curriculum Development, The Netherlands

Research has been carried out aiming to identify quality criteria for environmental education and to develop a system of standardisation and certification. Six domains of schools are relevant:

- ◆ the policy
- ◆ the organisation
- ◆ the activities
- ◆ the place of environmental education in teaching
- ◆ external relations
- ◆ environmental care

Embedding environmental aspects in the policy and organisation is essential. If this is not realised, schools might react defensively towards environmental education. Another potential bottleneck when integration in policies does not occur, is that environmental education will only be tolerated, but not actively worked on. A possible side effect of integration is assimilation: environmental education is completely integrated in education renewal, but the environmental perspective is forgotten at the end.



Participants "thinking aloud together"

Discussion

Environmental education is not a single issue, but it's closely linked to value education, human rights education as well as health education. That is why co-operation between these subjects should be promoted. Momentarily an overkill of projects is confusing troubling schools and

teachers. The importance of empowering teachers instead of starting up new projects was stressed.

Teacher needs

Teacher needs are:

- ◆ good methodology
- ◆ ready-to-use materials
- ◆ positive feedback
- ◆ empowerment
- ◆ trust and confidence

Policy level of vital importance

Environmental education should not only be promoted at the level of teachers; the policy level is essential for success. Environmental education should furthermore be linked to words that are important to schools policies like citizenship or quality. Using these 'buzz words' can contribute to the effective integration of environmental education in school policies. Measuring by performance indicators is possible, but a policy document with the environmental targets is essential to guarantee continuity and consensus in the school organisation.

Governmental support can help

It can also be effective to put pressure on the government to integrate environmental aspects in the national curriculum. The most efficient way to co-operate on an international level is to exchange examples of green schools and projects by internet. The web site of Eco Schools (<http://www.eco-schools.org>) is a perfect platform for such an exchange. Sergio Santos is willing to facilitate ideas in that field.

Do's and don'ts

Don't:

- ◆ forget to adjust to the organisation and policy of schools
- ◆ start up new projects without co-ordination with other projects

Do:

- ◆ help teachers by providing practical information as well as materials
- ◆ work together with other (environmental) education projects
- ◆ spread information about experiences
- ▲ find the buzzword

Conclusion

To become a green school requires a lot of effort on the local level. Most important is to facilitate and empower teachers. It is also important to formalise environmental education goals. The most efficient way to co-operate is to exchange examples of green schools and projects for teachers on internet.

The workshop sheets can be accessed at <http://www.nme-rotonde.nl/>

6 LIFESTYLE

Introduction

“Change your lifestyle!” is a phrase that makes most people bristle in fear of losing their most cherished little life enjoyments. “In order to make a difference for the environment even small changes in the consumption behaviour matter” is the way to suggest a more sustainable way of life. Based on practical experience of working with the general public, important conclusions were drawn on the factors of that make campaigns for changing lifestyles effective.



Working Group Lifestyle

Influencing lifestyle through education and communication in Poland

*Marta Kaczynska,
Senior Programme Manager, REC Regional Environment Centre, Poland Bialowieza Forest National Park*

It is essential to start with gaining insight in people’s concerns and needs. Local communities in proximity to the Bialowieza Forest National Park have been approached to solicit their support for the expansion of the protected area as well as work together towards a more sustainable lifestyle pattern. The vulnerable area around the park requires that local communities have higher awareness of their impact on the environment.

Access for local people necessary

On the other hand, local communities face similar economic problems as the rest of the country. As a result, communities living close to the protected areas regard environmental protection as a threat to their livelihood. It is important to ensure that local people have as much access to the protected areas as possible and at the same time help them find a more sustainable way of

life and doing business. The Polish Government support is therefore concentrated on transforming the communities life without affecting the economic situation and without foregoing protection of the environment.

Can lifestyles be changed?

The question is if attitudes and lifestyles can be changed. Certain individuals have pioneered a sustainable way of life in the area but these are primarily people from urban areas who chose individually to move to the National Park. Considering the age structure of the local community, such a profound change can not be expected. It is interesting to analyse the pressure from outside the community and its effect on the process. NGOs provide a very potent power in this case, however, they are not supposed to make decisions for the local people. Local communities should be encouraged to participate in the decision making process that affects protected areas.

Influencing lifestyle through the GAP energy saving initiatives

*Peter van Luttevelt,
Director GAP, Global Action Plan The Netherlands*

It takes a big step from being aware of your impact on the environment to taking actions to protect the environment in your day-to-day life. The Eco Team Programme aims at changing consumption patterns and it uses work in groups to stimulate behavioural change and a feedback system which provides information on people's contribution. The results of the ECO-TEAM programme are very impressive: the effects are more long term than traditional educational programmes. The key success factors of the programme, are:

- ◆ recruiting of new members from the local teams;
- ◆ forming coalitions with actors in the local community;
- ◆ solutions suggested by the citizens;
- ◆ cost effectiveness;
- ◆ new approach - business door-to-door selling of ideas;

The most important success factor in convincing people to join the programme is the local leader. People tend to get involved when approached by a local leader.

Consumption Patterns, lifestyle and succes and failure factors for change: experiences from Austria

*Monica Lieschke,
Director Forum Umweltbildung, Institute for Environmental Education, Austria, Chair of the IUCN European Committe for Environmental Education*

Success factors and obstacles

Environmental education should aim at a more modest goal, not changing lifestyle. Success factors for environmental education, are:

- ◆ Participation
- ◆ Communication – concerns, actions, success
- ◆ Creativity and self-expression
- ◆ Problem solving – intelligent/creative solutions
- ◆ Reflection with fun
- ◆ Chances of action and experience
- ◆ Joint motivation and motives
- ◆ Models of good practice
- ◆ Peer groups – “sharing” –daily life experiences and intense single experience.

Potential obstacles for success, are:

- ◆ moralise
- ◆ simplifying concepts of awareness and behaviour of lifestyles
- ◆ knowing targets but not target groups
- ◆ failing to identify key-people and key-questions



Lifestyle of educators?

Project Mobility Tomorrow

The particular Mobility Tomorrow project, developed by the Institute for Environmental Education aims at building socially and environmentally friendly mobility habits among young people. The motto "Don't drive a car!" has proved to be ineffective. "Be mobile with intelligence!" is a better way to approach. The project identified three key players: parents, driving schools, and schools, and aimed at increasing safety, encouraging pro-social behaviour, reducing/avoiding environmental impact, and economic efficiency. The project is of great interest both to the government, which wants it to be incorporated in the curriculum, and to insurance agencies.

Discussion

Behavioural change is difficult to accomplish. It takes a patience to reach people and it requires unorthodox methods to get the message across. The Eco Teams were preceded by national publicity, which was done by the government, and were set up by recruiters and supported by coaches. Since working in Eco Teams is highly appreciated by participants, most of the people involved in the programme become recruiters and coaches themselves. An incentive is that people are anxious to meet their neighbours in a positive way.

Success factors

Success factors are: responsibility delegation (local communities involved in the decision making), group learning and support (influence individual lifestyles by peer pressure), and co-operation. High expectations of national programmes aimed at changing lifestyles are often not met, since lifestyles are personal can not be changed at a national scale. Furthermore, programme should not suggest an ascetic lifestyle. The tone of voice should be positive: "Look for alternatives without living in a less comfortable way".

Trans-boundary co-operation

In the field of trans-boundary co-operation, a start up meeting of a mobility project was suggested. Furthermore, it was stressed that for international co-operation and exchange more instruments are needed than just the Internet. Information can also be distributed in letters to key players with the notice that further information is available at a certain internet sites. Another useful suggestion is to publish lists of professionals linked with information on the projects on which they are working.

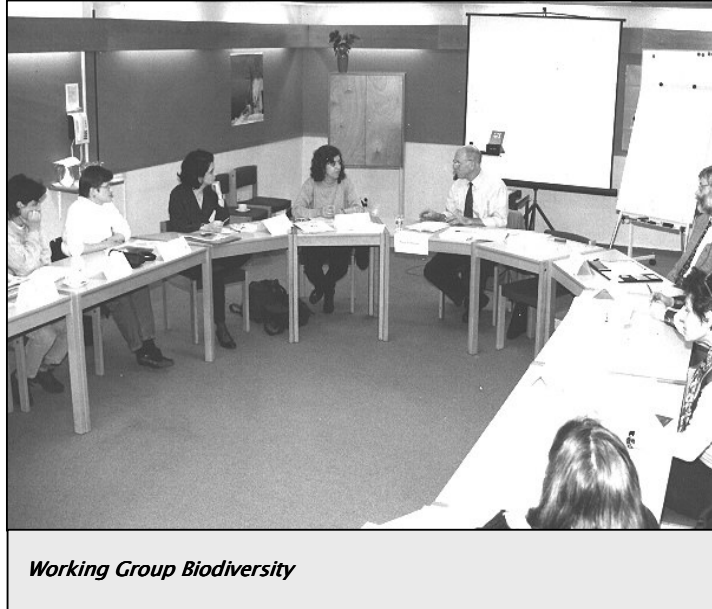
The workshop sheets can be accessed at <http://www.nme-rotonde.nl/>

7 BIODIVERSITY

Scare crows: practical experiences in informing and involving people in biodiversity conservation

*Teresa Andresen, Conceicao Lopes,
Associate Professors of Environment, c.q. Communication of the University of Aveiro, Portugal*

The aim of the project 'Scare Crows' is to seek human development through the simultaneous promotion of art and ecology in education. The making of scare crows can contribute significantly to environmental education. By making scare crows from materials collected in the local environment, children and adults learn to work with natural resources and connect to the cycle of life. The scare crow is explored as a very unique communication tool for self-environmental and artistic awareness, as well as for learning about arts and sciences. Scare crows are



ideal instruments for the enlightenment of our cosmic and aesthetic references.

Informing visitors on biodiversity in National Parcs in Bulgaria

*Kamelia Geogieva,
Senior Policy Advisor Biodiversity, Ministry of Environment, Bulgaria*

The most important lesson learned in implementing projects in and around national parks in Bulgaria, is that changing lifestyles of adults is very difficult. Experience has shown that awareness is most effectively raised by using a win-win approach. Using methods that are valuable to all parties concerned, can result in understanding that the question about biodiversity is also about economy, safety and health.

Educating about ill defined concepts: strengths and weaknesses, threats and opportunities

Arjen Wals,

Associate Professor Agricultural University of Wageningen, The Netherlands

Top-down concepts of biodiversity need to be contextualised: the concept needs to be transformed to a bottom-up concept in order to make the concept clear for everybody: from politician and government official, to ordinary man.

Discussion

Information is an important source of power. Unfortunately people do not always share useful information. The main focus of the discussion was how information can be made accessible for governments, NGOs and people, in order to achieve the best possible outcome for the conservation of the biological diversity.

Co-operation and interaction are vital for success

Co-operation between states should be intensified as well. The Pan European Biological and Landscape Diversity Strategy (PEBLDS) introduces several topics for policies and projects. Governments often concentrate on only a few of these topics. Furthermore, countries often working on the same kind of projects in many case do not exchange experience.

More interaction and communication is needed to realise targets. This can, among other things, be achieved with existing communication instruments, such as e-mail or a shared web site. Through communication about problems, project and results, learning processes will be stimulated and more effective. It prevents re-inventing the wheel. Besides communication between countries, communication within countries is an important success factor as well.

Practical implications should be clear

Furthermore, daily life has to be linked to the complex notion of biodiversity. The relation between the loss and conservation of biological diversity and personal behaviour is often far from clear. Practical behavioural alternatives have to be presented to all people who want to make a change in lifestyle. It is essential to praise all behavioural changes, whether small or large.

The communication with citizens must be interactive. This kind of communication is the most demanding, making training for the professionals an absolute necessity. To transform the concept of biodiversity from a top-down concept into a bottom-up one, governments need to link biodiversity with personal contexts. Research needs to be done to define peoples interests, and ways to link the issue of biological diversity to these inter-



Monica Lieschke and Malgorzata Bosko with diversity of Dutch winter flowers

ests. Biodiversity needs to be communicated in an inviting way, using language that is appealing to 'ordinary people'.

Trans-boundary co-operation

Information needs to be shared on a trans-boundary level. Different actions can be taken to make communication more effective. Information needs to be translated to concrete, effective measures. Concrete plans of action can be developed during international conferences, where experts on different subjects, from different countries have the opportunity to co-operate. Conferences are a very effective means to exchange experience and expertise. Furthermore, twinning has proven to be an effective method for effective trans-boundary co-operation. Last but not least, the development of networks, like the Pan European Ecological Network, can give a meaningful contribution to the effective exchange of information about the conservation of biological diversity.

The workshop sheets can be accessed at <http://www.nme-ronde.nl/>

8 BUSINESS

Initiatives in education for sustainable development by the business community in Finland

*Heikki Hirvonen,
Senior Policy Advisor, Ministry of Education, Finland*

How to interest the business community for initiatives in environmental education? Experience shows that companies are most often willing to support initiatives if they are approached in conformity with their own strategies. So one must know which 'language' decision makers speak, and what values they have. Insight in these matters enables a tactic which makes win-win solutions possible.



Presenters Heikki Hirvonen and Hans-Christian Lillehagen (on the back) during plenary

Natural Step, practical experiences within the business sector in The Netherlands

*Ernest van Hezik,
Director, Natural Step, The Netherlands*

Natural Step offers companies support to start thinking about their future direction. How does Natural Step set the correct targets for each company? Companies are supported to define and redefine their core-business. The core-business of Shell for example is not oil, but energy. The core-business of KLM is not aeroplanes, but 'transport'. And the core business of Coca-Cola might not be soft-drinks, but 'fashionable things'. Approaching the core activities and future activities in this way, enables companies to create a new vision of the direction they want to choose in order to be sustainable.

Education for sustainable development in the business sector: success and failure factors

Hans-Christian Lillehagen,

Programme Manager Education and Training, World Business Council for Sustainable Development

The World Business Council for Sustainable Development offers a education and training programmes for sustainable development. The courses are all through internet, during the one-year course the participants meet three times for two days. Most courses are free of charge; the accompanying books have to be bought. The university is financially supported by company donations.

Discussion: workshop/conference for business sector

In order to gain interest of the business sector for an 'environmental education expert meeting', such a meeting should be organised in very strong co-operation with this sector. Using this principle as a starting point, the working group generated the idea of a two-day workshop/conference for the business sector. This workshop/conference should be organised in co-operation with key figures from business, involving trade unions and NGO's that are concerned with business.

Aim of the workshop

The aim of the workshop/conference would be communication and training for sustainable development. Large companies which have incorporated sustainable development in their strategies are a potential target group. They need to exchange experiences in the field of training for sustainable development. Decision makers in the training and learning departments of companies, and in the human resource management departments are possibly interested.

Issues during the workshop/conference could for example be long-term-planning, training for technical improvements towards sustainability, organisational changes, social issues, investment strategies and internalisation of sustainable development. Practical examples should play a dominant role in the workshop/conference. Appointments were made for organising the workshop-conference for the business sector.

Do:

Gain interest for sustainable development within companies through prominent actors in the business-sector rather than through NGO's which whom they have less bindings

It is advisable to present 'sustainable development' towards companies as a way of thinking on how they can survive and make profit on the long run, taking their ecological, social and economical strategies into account. It is equally advisable to

Opportunities for trans-boundary co-operation

Certainly there is a need within the business sector to know more about the way companies from countries abroad work on sustainable development. Organising a workshop/conference in an international setting in close co-operation with businesses is therefore a very fruitful idea.



Business-like discussions in plenary

9 ICT

Introduction

This workshop dealt with the use of computers and internet to further education on environmental and sustainable development issues.

Information and communication technology as a tool in environmental education: the example of GLOBE

Martin Bosch,

Senior Advisor, SME MilieuAdviseurs, Institute for Environmental Communication, GLOBE co-ordinator for Europe, The Netherlands

The GLOBE programme was initiated by US vice-president Al Gore to involve young people in environmental science. The project focuses quite strictly on the natural sciences aspect of environmental science and does not address the broader issue of sustainable development as such. Schools in more than 80 countries are now participating.



Monitoring the state of the environment

Teenage students go out of their classrooms to perform measurements concerning the state of the environment, for instance soil samples and water samples. The results are sent by email to a centre in Colorado, USA to be processed into a world wide database. The students can access the results via the WWW. Furthermore, the GLOBE home page features possibilities for teachers, students and scientists attached to the programme to interact. Students are also given a satellite image of their own environment which they can analyse to determine land use.

The GLOBE Programme focuses on the student; the teachers main role is to provide a context for the measurements and to support the students to explore scientific concepts. The most important uses of ICT in this programme are to process data, transfer and visualise information and to communicate with other participants.

Expanding the GLOBE project

Our attention was called to a report by the German GLOBE managers which focused on the possibilities of expanding the project to encompass more issues linked to the concept of sustainable development. The idea is to link field measurements to a number of subjects in the triangle Ecology–Society–Economy –such as closed production and consumption cycles, a green economy, land use, urban living conditions and international equity.

ICT and environmental education in the perspective of sustainable development: experiences in Norway

*Karl Hetland,
Director Dalen Vidaregaande Skule, Norway*

SOLIS (SOLar energy In Schools) is a project of the ministry of education and involves students in physics who are nearing graduation (17 to 18 years old). As with GLOBE, SOLIS focuses completely on natural sciences. The project started out with 2 universities and 5 schools and now includes over fifty schools, including some in Finland and Latvia.

The project uses computers to measure the incoming solar radiation and temperature every 30 minutes throughout the year. This information is then compiled into an annual report. Just as with the GLOBE project, these data are also being used by scientists. Some of the imaging software was actually programmed by a participating students who were unsatisfied with the old programmes. To take a step beyond measurements, the students also conducted projects using solar energy. Most of these involved the use of solar energy for heating or photovoltaic cells to generate electricity. Several of the projects even made it on national television.

ICT as a tool for trans–boundary co–operation in education for sustainable development

*John Verheijden, Joop van Gent,
Director MOOI Foundation Nijmegen, and General Manager TNO–TPD Division Information systems Delft, The Netherlands*

The Project 21 is was initiated to meet the demand for exchange of information and experiences between people involved in Local Agenda 21 projects. The project was funded by the DG XIII (ICT) and was a collaboration between Stichting MOOI and TNO. The project aims to create ‘a poor man’s door to the information society’.

Firstly, the needs of the partner NGO’s were assessed. Most important was the demand for a cheap, fast, accurate and up-to-date database of experiences. The system



Communication over dinner

had to be interactive and had to be multi-lingual. The challenging task was fulfilled by creating a web site that is essentially a search engine that sifts through a huge Local Agenda 21 database both on-site and elsewhere.

Research indicated that the largest and most time-consuming part of any advanced information system (75% of the work) is not to provide visitors with information in the database, but actually the work of disclosing information so that it may be accessed. In order to overcome this problem, a technology was developed to scan 100 pages of text per minute, convert them to HTML, index them and use machine translation to convert them to any of the system's languages. It currently operates in Dutch, English French and German and work is being done to add Spanish and the Scandinavian languages. The machine translation is flawed, but it is of sufficient quality for a reader to extract the core of the message. The disclosure technology is now used for external clients as well.

European Environment Agency (EEA)

Ernst R. Klatte,

Project Manager Communications/Institutional Relations/Public Affairs

The mission statement of the EEA concentrates on providing information. The EEA provides a number of products on environmental issues and the state of the environment in the EU. One of the tasks of the EEA is to 'ensure broad dissemination and accessibility'. The EEA gathers its information through a wide range national agencies and European Topic Centres. The results are used primarily by DG XI and other EU institutions. Due to the policy of publicising all the information they provide, their products are also used by other groups in society. Others are encouraged to submit their own data if they feel they can contribute.

New guidelines call for the EEA to become a repository for environmental information, making heavy use of ICT. The EEA web site should be the first door of entry to environmental Europe. The web site is currently also providing links to other pages. EEA also provides thematic navigation, information in the readers native language, an events calendar, a chat and BBS area and interaction with EEA staff. These features bear a striking resemblance with the Project 21 site. Apparently this is the direction in which web sites should evolve to meet users demands. Technology developed within project 21 will be invaluable to disclose information that is now in hidden in archives.

Discussion

How can educational projects like SOLIS and GLOBE be expanded to include the broader issue of sustainable development? By providing the proper context the scope these projects can be broadened in many ways. An obstacle is that sustainable development is a very abstract 'container' concept. Students, especially teenagers, have difficulty grasping it and might lose interest. To avoid loss of interest, sustainable development could be translated into a number of themes. Energy, as in SOLIS, is one of them.

Information management is necessary

Students can use internet to search for information on a theme that captivates their interest. However, one must avoid an overkill of mostly useless information. Therefore, information needs to be properly categorised. If so, a good selection of (for instance) age groups, topic and geographical areas will result in a sufficient number of documents.

Teachers need to be trained

As sustainable development is a new issue, teaching aids and textbooks not very accessible. Successful projects have been carried out, but it is difficult to trace these projects. Language can be another obstacle. The technology of Project 21 seems to meet many of the current demands for information.

Once methods are available, the next step is to support teachers who need to work with them. Many teachers, especially older ones, are not very well acquainted with internet and computers in general and are reluctant to learn. This has been a major obstacle in implementing ICT aided

environmental education programmes in the past. Still, ICT is progressing at a rapid speed. It might be very rewarding for the environmental community to develop programmes to supply teachers with the proper context and skills for using ICT while others, such as ministries of education, supply the necessary hardware.

Potential future actions

Several "ICT" instruments were identified in which activities/actions/projects/etc –which have the potential to introduce sustainable development in schools or in education– can be connected to the core activities of the GLOBE Programme. GLOBE as a network of schools interested in environmental matters offers excellent opportunities for schools to engage in sustainable development activities with an international exchange component.

As suggestions for this were presented:

from Andy Tasker (Country Co-ordinator of UK):

- ◆ Working sheets to introduce parameters in the GLOBE Programme for a world wide investigation of sustainable development (prepared for the following Conference of the Country Co-ordinators of GLOBE in Europe)

from Bernd Tissler (Country Co-ordinator for Education, GLOBE GERMANY):

- ◆ Brochure to use GLOBE as a tool for SD: "Local observations and development in the environment – global learning for the environment – thoughts of environmental education for sustainable development, GLOBE GERMANY Programme"

Authors: Prof. Dr. Dietmar Bolscho, Universität Hannover, Herbert Hollmann, Behörde für Schule Jugend und Berufsbildung, Hamburg, Prof. Dr. Hansjörg Seybold, Pädagogische Hochschule Ludwigsburg, Bernd Tissler, Institut für Lehrerfortbildung

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World Wide Web: <http://agenda-hamburg.de/globe/paedleit.html>

- ◆ The installation of the River Rhine Co-operation between European partners from Switzerland to the Netherlands (GLOBE Schools, administration and scientists monitor the living situation along the river and her adjoining creeks)
- ◆ The "agenda-hamburg.de"- Server as an instrument of participation in the process of the local agenda 21 of Hamburg / Germany, installed from a GLOBE school of that area.

The workshop sheets can be accessed at <http://www.nme-rotunde.nl/>

Follow-up

The conference of the Country Co-ordinators of GLOBE in Europe, which took place after the Soesterberg expert meeting, identified the connection of the GLOBE programme to education for sustainable development as a field of interest for European countries. Experiences and traditions of many years –ranging from projects to and more defined access from areas of environmental education–serves as a strong background for the partners to formulate common context and promoted areas.

A working group "SD in GLOBE" of Country Co-ordinators was installed:

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