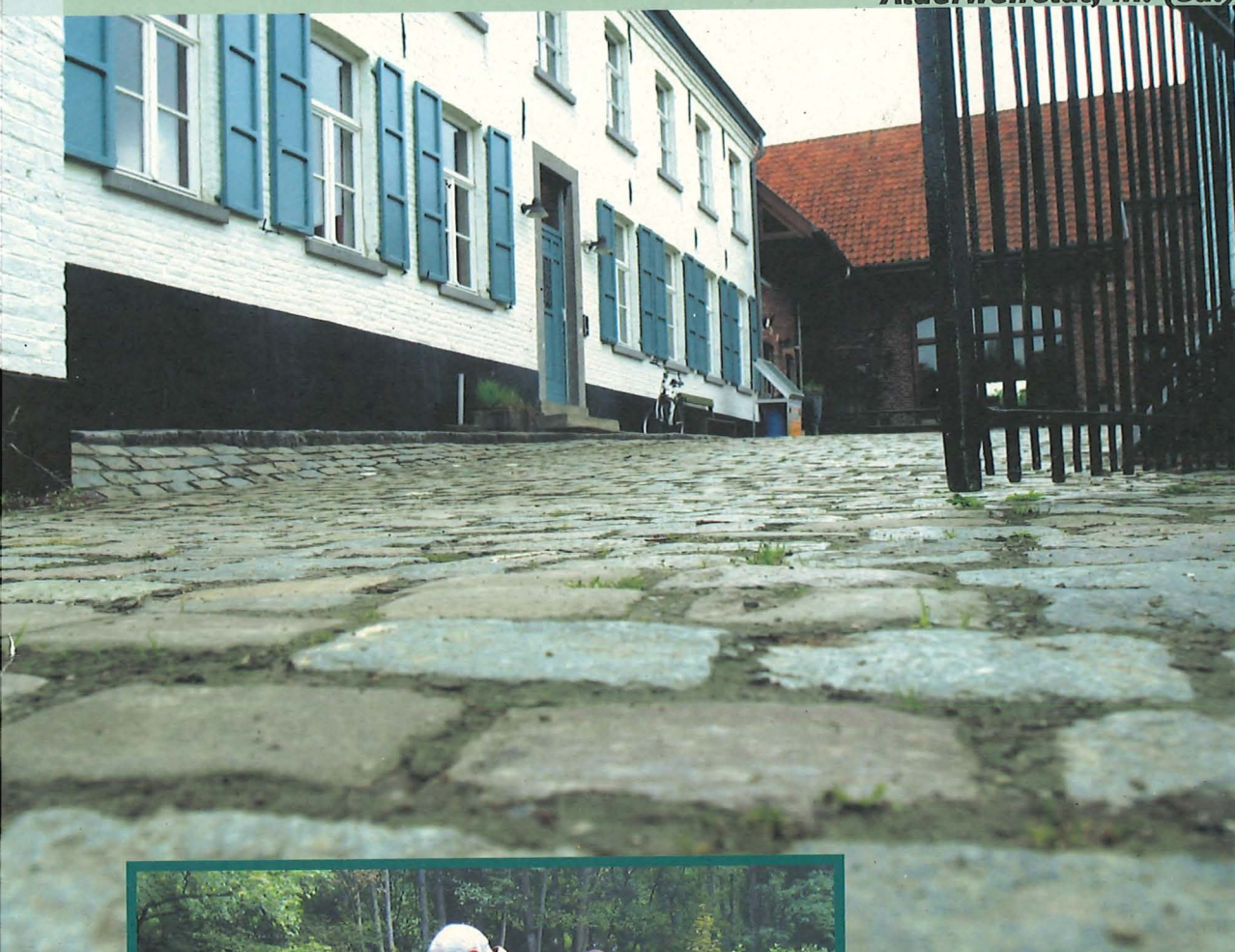


CEE

Gent 2002

***Learning for a sustainable future:
the role of communication, ethics and social learning
in environmental education***

Alderweireldt, M. (ed.)



Provincie
Oost-Vlaanderen

Provinciaal
natuureducatief
centrum



De Kaaihoeve

CEEE

Gent 2002



Learning for a sustainable future:

the role of communication, ethics and social learning in environmental education

Alderweireldt, M. (ed.)



Proceedings of the

VIIIth Conference on Environmental Education in Europe

10 - 14 September 2002

Gent, East Flanders (BELGIUM)



General introduction: Practicalities and programme of the conference

Part 1. Overview of the conference

- 1.1. Introduction: co-operation in environmental education in Europe (CEEE or C triple E): a historical overview.
(Mark Alderweireldt, Belgium)
- 1.2. General conclusions of CEEE Gent 2002.

Part 2. Education and a sustainable world

- 2.1. Challenges to EE in the 21st century.
(Walter Leal Filho, Germany & Paul Pace, Malta)
- 2.2. Towards sustainable education: re-visioning learning and change.
(Stephen Sterling, UK)

Part 3. Educational innovations

- 3.1. Embodying the environment in a sustainable society: some reflections in the UK.
(Phil Macnaghten, UK)
- 3.2. Information and communication technologies for enriching environmental education tools.
(Rita Birzina et al., Latvia)
- 3.3. Environmental ethics and mass-media in Romania.
(Carmen Bucova, Romania)

Part 4. Good practices

- 4.1. Environmental learning through student's participation in ecological research.
(Vladimir Galushin et al., Russia)
- 4.2. Communication and strategic planning of landscape education in East Flanders (Belgium).
(Tom Gorré & Mark Alderweireldt, Belgium)
- 4.3. The nature parent project and the strategy of environmental care systems in schools in East Flanders.
(Mike Stoens & Mark Alderweireldt, Belgium)
- 4.4. Waste Action Project: involving young people in community consultation.
(Wayne Talbot, UK)
- 4.5. Networking EE in East Flanders, Belgium : a brief sketch.
(Mark Alderweireldt, Belgium)
- 4.6. Development of Environmental Programs through co-operation and exchange of experience, ideas and knowledge between partner organizations from different countries.
(Stanimir Georgiev, Bulgaria)

Part 5. European developments

- 5.1. Towards a new alliance for environmental education in Europe.
(Chris Maas Geesteranus et al., The Netherlands)

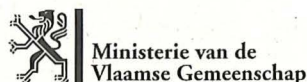
General introduction



Practicalities and programme of the conference

Collaboration

CEEEGent2002 is organised by the province East Flanders in collaboration with the Ministry of Environment of the Flemish community, the Province West Flanders and the City of Gent.



Programme committee

President:

Alderweireldt Mark, *Province East Flanders, Belgium, Department of Environmental Education*

Vice-president:

Maas Geesteranus Chris, *IUCN Commission on Education and Communication and ECNLV, The Netherlands*

Members:

Brijker Marinus, *Noordelijke Hogeschool Leeuwarden, The Netherlands*

Ciszewska Beata, *National Foundation for Environmental Protection, Warszawa, Poland*

De Boe Jan, *Province Vlaams-Brabant, Belgium, Department of Environmental Education*

Flapp Federica, *LaREA, Italy, Environmental Education Regional Centre of ARPA Friuli Venezia Giulia*

Loosveldt Eddy, *Ministry of Environment of the Flemish Community, Belgium, Department of Environmental Education*

Mestdagh Wim, *Province West Flanders, Belgium, Department of Environmental Education*

Neels Gike, *Province Antwerp, Belgium, Provincial Institute for Environmental Education*

Smyth John, *IUCN Commission on Education and Communication and European Committee, U.K.*

Stevens Jan, *Province Limburg, Belgium, Department of Environmental Education*

Van De Voorde Veerle, *City of Gent, Belgium, Department of Environmental Education*

Conference secretariat

CEEEGent2002 Conference secretariat

Province East Flanders

Department of Environmental Education

De Kaaihoeve

Oude Scheldestraat 16

9630 Zwalm (Meilegem)

Belgium

Tel.: +32 55 49 67 96

e-mail : ceee2002@oost-vlaanderen.be

General introduction

Organising committee

Province East Flanders, Departments of Environmental Education, Communication, Informatics, Technical Services, Logistics, External Affairs in collaboration with the City council of Gent, the Province West Flanders and the Ministry of Environment of the Flemish Community.

Target group

People and organisations of European countries (EU and other European countries) interested in environmental education (= EE) and education for sustainability (= EFS). These include EE practitioners, NGO's, EE centres, school teachers, teacher trainers, researchers, educators, public services, administrators of national, regional and local governments.

CEEE - Co-operation for environmental education in Europe

CEEE is an international network specially concerned with environmental education and education for sustainability and connecting people of every country in Europe (EU and other European countries). CEEE main objectives are: to implement environmental education, to have it integrated in all levels in the community, to enhance its quality and to organise exchange of experiences. This implies a co-operation between researchers, teachers, educators and other practitioners, members of NGO's and different governmental bodies. Thus CEEE links both formal and informal education and crosses the existing borders in Europe.

Every two years, CEEE organises a Conference on Environmental Education in Europe which is joined by a wider and varying group of people. These conferences give a perfect opportunity both to disseminate expertise helping participants to share and upgrade their knowledge and experience in order to achieve a better practical output.

The previous seven conferences took place in Roma, Italy (1988), Glasgow, Scotland (1990), Rotterdam and Leeuwarden, The Netherlands (1992), Riga, Latvia (1994), Härmösand, Sweden (1996), Lisboa and Sangalhos, Portugal (1998) and Codroipo, Italy (2000). After the latter meeting, CEEE entrusted the organisation of the VIIIth conference to the Provincial government of East Flanders, Belgium.

The Province East Flanders

The province East Flanders is an important regional governmental level in Belgium situated between Brussels and the Belgian coastline. Gent, a relatively small but very living medieval city is its capital. Gent is about 55 km from the international airport of Brussels and also on the crossroad of several main European motorway and high speed train connections. As Gent possesses the second largest University of Belgium, it is a very active congress and conference city providing all necessary facilities.

The provincial government of East Flanders develops a broad range of activities and policies in many different sectors. It has a strongly developed environmental policy and a well-equipped environmental administration. In this context, the province East Flanders erected a new department of environmental education in 1993. This department now exploits provincial EE-centres in all its aspects and is responsible for the organisation and co-ordination of the East Flanders EE-network. It also develops, for what EE is concerned, the framework for the environmental policy plans of the province and acts as a central supporting department for the 65 municipalities within the boundaries of East Flanders. A strong collaboration is also established with the EE-departments of the four other provinces in Flanders, with the EE-department of the Ministry of Environment of the Flemish community as well as with different important private organisations.



The rationale of CEEE Gent 2002

Chapter 36 of Agenda 21 (the Convention of the UNCED conference, Rio de Janeiro, 1992) made it clear that (environmental) education is a crucial instrument in the development of societies which may call themselves environmentally, economically, socially and culturally sustainable.

In the light of the Rio+10 conference (Johannesburg, 26 August - 4 September 2002) the question arises on which areas education should focus more in order to contribute better to this process and how education should accomplish that. It is clear that education in general and environmental education in particular did not yet fully develop the necessary theoretical and practical tools for such a consistent contribution. As far as environmental education is concerned, this constraint is a consequence of important social and cultural trends in the ways people identify with the environment, and, to close the circle, also to how these relate to the general understandings in the official models of sustainability. These social and cultural trends are crucial in social learning and in the way people deal with values. Ethics thus gets into the picture.

Answering questions

The CEEE Gent 2002 conference aims at tackling the following questions:

1. What is the impact of social and cultural trends on the ways in which people identify with the environment? Is this in concordance with the embedded understandings in official models of sustainability? How might 'the environment' be reconfigured such that it better resonates with how people are experiencing politics, environment and everyday life? And why does this matter?
2. Which methodologies can be grafted upon this? And what importance should be given to ethics in environmental education? How do providers deal with values and how are these incorporated in EE-products. Can ethics be viewed as an indispensable correction factor to be able to achieve, through education, the goal of sustainability?
3. And in the light of the developments of learning for sustainability, what major changes does environmental education have to face in the future? What effects do these changes have on the role of the educator, the methodologies and the management of the organisation to which the educator belongs? How do educators define sustainability in more or less operational terms? Is it in their view and from their particular perspective a new concept? Is it a process we all have to go through? Is it a way of living? And what are the parameters that can serve educators to help others learn about that?

General introduction

Programme outline

Monday 9 September 2002

Arrival of participants and registration. Registration offices will be set up at the accommodation facilities.

Tuesday 10 September 2002

Arrival of participants and registration. Registration will take place at the main auditorium, PAC "Het Zuid".

Installation of posters, media-corners, information desks, etc.

Plenary session

Chairman Dr. Mark Alderweireldt, Head of Department, Province East Flanders, Belgium

10.00 Welcome

Prof. Dr. Herman Balthazar, Governor of the Province East Flanders, Belgium.

10.10 Formal opening of the conference

Mr. Georges De Langhe, deputy of the Province East Flanders, Belgium.

10.20 Plenary introduction: "A sustainable world: are we getting closer?"

Mr. Paul De Jongh, Director Ministry VROM and National Platform for sustainable development, The Netherlands.

Setting the scene: keynotes

11.00 "Challenges to EE in the 21st century"

Prof. Dr. Walter Leal Filho, University of Harburg/Hamburg, Germany and
Dr. Paul Pace, University of Malta, Malta.

11.30 "Environmental ethics and its importance in EE"

Dr. Paul Gimeno, University Gent, Belgium.

12.00 "Towards sustainable education: re-visioning learning and change"

Mr. Stephen Sterling, EE consultant, UK.

12.30 Lunch

14.00 "Social learning: recent insights and methodologies which may help EE to evolve"

Prof. Dr. Danny Wildemeersch, Catholic University Leuven, Belgium.

14.30 "Embodying the environment"

Prof. Dr. Phil Macnaghten, University Lancaster, UK.

15.00 Questioning the keynote speakers

15.30 Coffee break

Poster session

16.00 Further installation of posters, media-corners, information desks, etc.

16.30 Active poster session, part 1.

18.00 Reception and welcome dinner in the historical centre of the city of Gent (offered by the city council).



Wednesday 11 September 2002

The bottom-up approach

Workshops on location requiring full participation of the conference members in collaboration with local EE-providers. Environmental education in practice focussing on the themes of the conference.

8.45 Conference excursions: EE-initiatives in Flanders in the light of the conference themes.

Please bring suitable clothing and good shoes in case of rainy weather.

Infrastructure type 1: Natural History Museum, "Schoolmuseum", Gent.

Infrastructure type 2: Botanical garden, "Hortus", Gent

Infrastructure type 3: Visitor centre, "Bourgoyen-Ossemeersen", Gent.

Infrastructure type 4: Regional EE-centre and EE department of regional government, "De Kaaihoeve", Zwalm.

Infrastructure type 5: EE-centre of national government, "De Helix", Geraardsbergen.

Infrastructure type 6: The "virtual" educational centre, "ICT", Zwalm.

12.00-13.00 Lunch: timing depends on the location.

14.30 "EE in coastal environments: unique target groups and communication strategies", Oostende.

17.00 Transfer to Brugge.

18.00 Dinner in the historical centre of the city of Brugge
(offered by the Province West Flanders)

General introduction

Thursday 12 September 2002

Tackling "The challenge of change"

(Environmental) education faces a number of major changes in its growth towards a new transfer system which will be treated in depth during 7 parallel workshops. The challenge for a new generation of environmental education lies not only in the widening of its scope but also in the role of the educator, the methodology and the management of the organisation to which the educator belongs. These workshops will also concentrate on how to develop new strategies for EE from the perspective as given above; a diversity of issues will be used as examples. The provisional output of the workshops on location during the excursions of Wednesday is basic material. Moreover, participants have been asked to prepare these workshops by summarising their own ideas and suggestions in advance on paper.

Return this text of 1-2 pages concerning the workshop topic you have chosen not later than 30 August 2002.

9.00

Workshop 1

"The evolution towards an education for change"

Chairman Dr. Paul Pace, University of Malta, Malta.

Workshop 2

"Learning to handle uncertainties in an educational setting"

Chairman Mr. Dirk Coolsaet, Pedagogical advisor, Belgium.

Workshop 3

"Leaving the traditional approach to make place for the integration of ecological, economic, cultural and social aspects; and in their wake: technology and science"

Chairman Prof. Dr. John Smyth, IUCN and EC, UK.

Workshop 4

"Globalisation of issues in education"

Chairman Mr. Chris Maas Geesteranus, IUCN and ECNLV, The Netherlands.

Workshop 5

"The development of participative and social learning"

Chairman Mr. Wayne Talbot, EE consultant, UK.

Workshop 6

"Increasing attention for professional target-groups which are in decision-making positions"

Chairman Prof. Dr. Raimonds Ernsteins, University of Latvia, Latvia.

Workshop 7

"Development of an educational system in which not teaching but learning is central."

Chairman Prof. Dr. Michel Škapa, Co-ordinator group EEE, Czech republic.

10.30 Coffee break

11.00 Continuation of workshop discussions

12.30 Lunch

Poster session

14.00-16.00 Active poster session part 2

General introduction



Friday 13 September 2002

Plenary session

Chairman Chris Maas Geesteranus, IUCN and ECNLV, The Netherlands.

9.30-10.40 Presentation of workshop results by the respective chairmen

9.30 Workshop 1, Paul Pace

9.40 Workshop 2, Dirk Coolsaet

9.50 Workshop 3, John Smyth

10.00 Workshop 4, Chris Maas Geesteranus

10.10 Workshop 5, Wayne Talbot

10.20 Workshop 6, Raimonds Ernsteins

10.30 Workshop 7, Michel Škapa

10.40 Coffee break

11.10 Plenary discussion and first integrative conclusions

12.30 Lunch

14.00 "Towards a new alliance for environmental education in Europe: propositions and discussion"

Prof. Dr. John Smyth, IUCN and EC, UK.

Mr. Chris Maas Geesteranus, IUCN and ECNLV, The Netherlands.

Dr. Mark Alderweireldt, Province East Flanders, Belgium.

14.45 "Summarising the outcome of the conference"

Mr. Chris Maas Geesteranus, IUCN and ECNLV, The Netherlands.

15.00 Coffee break

15.30 "The next CEEE"

Dr. Mark Alderweireldt, Province East Flanders, Belgium

16.00 Closing of the conference

18.00 Farewell dinner offered by the Province East Flanders

Saturday 14 September 2002

Post-conference excursions

09.00-18.00 Excursion 1: "Sport and adventure as input for EE"

Viroinval-Nismes

09.00-13.00 Excursion 2: "Medieval archaeology as input for EE"

Ename 974

Check-out and departure.

Sunday 15 September 2002

Check-out and departure.

General introduction

Participating countries

Nº Country

- 1 Albania
- 2 Bangladesh
- 3 Belgium
- 4 Bulgaria
- 5 Croatia
- 6 Czech Republic
- 7 Ecuador
- 8 Finland
- 9 France
- 10 Germany
- 11 Greece
- 12 Hungary
- 13 Latvia
- 14 Lithuania
- 15 Malta

Nº Country

- 16 Norway
- 17 Poland
- 18 Portugal
- 19 Republic of Armenia
- 20 Republic of Ireland
- 21 Romania
- 22 Russia
- 23 Slovak Republic
- 24 Slovenia
- 25 Spain
- 26 Sweden
- 27 The Netherlands
- 28 Turkmenistan
- 29 UK
- 30 Ukraine

Part 1: Overview of the conference



1.1. Introduction:

co-operation in environmental education in Europe (CEEE or triple E): a historical overview.

Mark Alderweireldt

Province East Flanders
Directorate Environment
Oude Scheldestraat 16
9630 Meilegem (Zwalm), Belgium

Introduction

It is easily shown that environmental education has gained more and more interest during the last, let's say one or two decades. This phenomenon is, with differences in intensity of course, visible worldwide and also within different compartments of society, e.g. non-governmental organisations, policy planning at governmental levels, private companies, formal education systems, and others. To mention only one source of information, this process of change was reflected for more than a decade in the themes and contributions gathered during two-yearly European meetings called 'Co-operation in Environmental Education in Europe', commonly abbreviated as CEEE (C triple E).

I was asked to sketch in this paper a brief historical overview of the consecutive CEEE events. As a consequence, this part of the paper is of an informative nature. The fast and explosive evolution of the EE sector however also had great impact on regional and local environmental policies. Therefore, I will try to summarise some aspects of the EE policy developed by a regional government such as the province East Flanders in Belgium, by shortly focussing on the provincial EE network (see chapter 4.5.).

1. CEEE: The history of a 'Virtual Organisation'

1.1. The starting point

The European Commission supported in 1988 a first CEEE conference which took place in Rome, Italy. The 'Centre di Iniziativa Democratica degli Insegnanti' took the lead. Although very little is known about the themes and contents of that first conference, a general conclusion was that there was "an urgent need to give much more attention to education for the environment". And that is exactly what happened in the years after because this European conference in Rome was the starting point for a two-yearly CEEE conference circuit. An important and very remarkable characteristic of CEEE however was that no formal and responsible central organisation or board was erected for it. Each CEEE conference was the result of efforts of a restricted and devoted group of people who managed to raise interest in their own countries - a situation maybe recognisable in several other aspects of EE history... CEEE was thus a 'virtual organisation'.

Part 1: Overview of the conference

1.2. Scotland 1990

"Ideas to action" was the theme of the first subsequent CEEE conference which was organised by Jordanhill College (nowadays part of Strathclyde University) in Glasgow, Scotland. The participants of the 2nd CEEE conference agreed that, and I cite literally:

"An international forum should be instituted in support of innovation leading towards the improvement of Environmental Education in the following contexts:

- 1 development and discussion of innovation models.
- 2 exchange of experience.
- 3 running (pilot) experiments.
- 4 exchange of experts and materials.
- 5 the European Community's ERASMUS, COMETT and TEMPUS schemes.

1.3. The Netherlands 1992

The joint forces of the Northern Highschool of Leeuwarden and the Rotterdam Highschool lead to the third CEEE conference that took place in The Netherlands in 1992. 'Co-operation in development' was the conference title. The central question that was brought up was: what knowledge, insight, skills and attitudes must a European citizen have acquired in order to behave in an environmentally conscious manner? The official conclusions of this conference were triple:

1. A centre for exchange of information on EE will be set up
2. A subsequent conference on EE will be organized in two year's time in Eastern Europe.
3. Further exploration of an option for courses on a European level.

An important result of this 3rd CEEE conference was its catalytic effect on the foundation in 1993 of the working group on environmental education within ATEE, the Association of Teacher Education in Europe.

1.4. Latvia 1994

The 1994 CEEE conference was in many ways memorable. The torch was taken over for the first time by one of the shortly independent Baltic states and as a consequence hosted a greater number of Eastern and Central European representatives than ever before. The information exchange that was the result of this made clear how pressing the need for support in EE in these parts of Europe was, and I think still is.

Another memorable fact was that the annual European meeting of IUCN (International Union for Conservation of Nature) immediately followed CEEE in the same resort. Long discussions originated from this on the desirability of a more profound collaboration between IUCN and CEEE. The establishment of a joint centre for the exchange of EE expertise came into the picture. However, till today both issues remain unfortunately unsettled.

1.5. Sweden 1996

Mid Sweden University took the lead in the organisation of the 5th CEEE conference. Under the theme 'Implementation of environmental education in the community' it took place in Härnösand in 1996. The programme showed a number of 'examples of good practice' in parallel seminars while in plenary sessions fundamental questions were tackled. An extensive overview of this can be found in WIKSTRÖM (1997). An important fact was the establishment, at the end of the conference, of a working group of people who were elected to prepare the next conference as well as the redefinition of CEEE as a whole.

Part 1: Overview of the conference



1.6. Portugal 1998

Under the presidency of ASPEA (Associação Portuguesa de Educação Ambiental - Portuguese Association for Environmental Education), the 6th CEEE was organised in Lisbon and Sanghalos in 1998. Through its official title 'Indicators of progress: evaluation in Environmental Education' it tackled probably one of the most important but also most complex issues in EE business. Besides this, the discussion was continued concerning a more secure structure for CEEE as well as concerning the 'old' need for a central EE-information centre (see further 1.8.).

1.7. Italy 2000

LaRea (Laboratorio Regionale di Educazione Ambientale - Regional Centre for Environmental Education), a department of the regional government of Friuli Venezia Giulia, Italy, organised the 7th edition of CEEE. Under the title 'Networking Environmental Education Networks' a very fruitful discussion was set up concerning the role, the trends, the communication and the integration of networks involved in education for the environment and sustainability. This was moreover placed within the context of local, national and European policies. After an inspiring plenary session, four parallel working groups were set up, depending on the nature of the networks discussed:

1. Networks mainly of schools aiming at realising their own EE projects.
2. Networks aiming at improving communication and interaction between EE centres and other organisations.
3. Networks mainly of NGO's trying to promote and implement their own EE programmes and campaigns.
4. Networks aiming mainly at EE training and formation.

Many of the conclusions of this interesting conference (see FLAPP & SICHENZE, 2000) meet the experience that was build up during the development of an operational network at a regional governmental scale. I therefore refer for this to the concrete example given in the third part of this paper.

1.8. Belgium 2002

With 160 participants from 30 countries, CEEE reached a new record during the meeting in Gent, Belgium in September 2002. Representatives of the large majority of European countries were present during this successful meeting organised by the province of East Flanders, a regional governmental body. Europe was covered sensu lato, including for instance Armenia, Turkmenistan and others for the first time.

The topics of the conference focussed completely on some of the most important, recent evolutions within the EE sector: 'Learning for a sustainable future: the role of communication, ethics and social learning in environmental education'. The evolution, broadening EE towards what is often called 'Education for Sustainability', is unmistakable. An overview of the contributions is given in ALDERWEIRELDT (2002). This CEEE conference was especially characterised by a new approach of the programme. Six high quality plenary lectures set the scene but all other contributions were canalised towards the poster sessions. In this way an unusually large amount of time became available for interactive methodologies and bottom-up approaches in different types of operational EE infrastructures.

A very important result of this CEEEGent2002 conference was that all participants agreed on an official declaration dealing with a structured alliance in Europe for education for sustainability (see 2).

Part 1: Overview of the conference

2. Establishing a network for education and sustainable development across Europe

The historical overview of the CEEE conferences given above shows that, despite it being a 'virtual organisation', it gained with time a large amount of professionalism and that it attracted a wide interest from a wide range of EE experts and organisations across Europe. This is probably due to some unique features of CEEE. An important one, among others, is that CEEE is the only network in Europe that regularly gathers all main 'subsectors' within the EE landscape: teachers and educators in general, teacher trainers, NGO's, governmental bodies, researchers, ... Teachers for instance are united in ATEE (see 1.3.) while teachers and their schools collaborate in a number of networks. NGO's for instance operate within their own networks as well with other NGO's. However, as we share a common interest, we should focus on the opportunities that arise from the unique CEEE situation.

During the history of CEEE, however, it became clear several times that at present there is no European wide association for professionals working in the field of education and sustainable development. As a direct result of this, there is little opportunity for practitioners to share good practice and offer mutual support. Moreover, Europe, in contrast to other continents such as North America, Australia, has not yet developed a common EE strategy. And last but not least, relevant governmental institutions have no central point of contact to consult over policies such as Agenda 21 or the development of European citizenship issues linked to environmental improvement.

For these reasons, during the CEEE 2002 conference in Belgium, the process was officially started to investigate the feasibility of a specific network on the European levels that meets the needs. The specific functions of such a network might be:

1. Exchange of views, expertise, through professional meetings and other channels (the platform function).
2. Gathering knowledge in issues of education and sustainability (the expertise function).
3. Meeting of supply and demand in the field of education (the market-place function).
4. Keeping governments in Europe, including the European Union, alert to the need for education in relation to sustainability issues (the agenda-setting function).

Acknowledgement

I am grateful to my colleague and friend Marinus Brijker from the Netherlands for great help with the historical overview of CEEE conferences. I also would like to thank the colleagues of the working group that is currently preparing the new network organisation, particularly Wayne Talbot, Chris Maas Geesteranus, John Smyth, Laura Zvingula, Athena Veneti and Paul Pace.

Part 1: Overview of the conference



References

Alderweireldt, M. (ed.) (2002)

Learning for a sustainable future: the role of communication, ethics and social learning in environmental education.

Abstract volume Province East Flanders, Gent, 172 pp.

Flapp, F. & Sichenze, S. (eds.) (2000)

Networking Environmental Education Networks: the role, trends, communication and integration of networks involved in education for the environment and sustainability within local, national and European policies.

Regione Autonoma Friuli-Venezia-Giulia, LaRea, 237 pp.

Wikström, R. (ed.) (1997)

Implementation of environmental education in the community.

Mid Sweden University, 320 pp.

Part 1: Overview of the conference

1.2. General conclusions of CEEEGent 2002

Chris Maas Geesteranus

IUCN and ECNLV,
The Netherlands

Mark Alderweireldt

Province East Flanders
Directorate Environment
Oude Scheldestraat 16
9630 Meilegem (Zwalm), Belgium

Friday 13 September

The last plenary session of this conference was chaired by Chris Maas Geesteranus from the Netherlands. First, the chairs of the workshops shortly reported on their findings. A discussion took place and after lunch the European Association for Education and Sustainable Development was introduced. Finally the conference was summed up and provisions were made to secure the next meeting.

Presentation of workshop results

Paul Pace reported on workshop 1: The evolution towards education for change.

Changes in human behaviour usually take place individually: it is regarded to be of personal concern. But everyone is a social being which then means that changes must be seen in that context. How then should such a process be started? First, social groups should be open to change at all: it is a continuous, a regular process. During the workshop mention was made of a hopeful Spanish experience. The conclusion was made that in fact this process was not new at all. Have we really tried to evaluate the old solutions?

Dirk Coolsaet reported on workshop 2: Learning to handle uncertainties in an educational setting.

Joyfully he described a system called 'game-hunting' which was seen as a method to bring about changes in groups (Mark, ik heb hier verder geen aantekeningen van).

John Smyth reported on workshop 3: Leaving the traditional approach etc.

This workshop dealt with integrating disciplines. Much promising is the integration of artistic domains into scientific ones. This, however, should be done systematically. It is of primary importance that the environment in which changes take place is moving along (take the role of governments as an example), not so much education as such. Changes like these may result in 'communities of learners'.

Vivian Siebering (for Chris Maas Geesteranus) reported on workshop 4: Globalisation of issues in education.

The central issue of this workshop was how one can live in his/her own cultural roots and at the same time be a citizen of the world. Learning to cope with differences of all kinds is a solution, but far from easy. Because: how can people be oriented towards global issues at all? The main conclusion was that in our part of the world globalisation is not just an issue that does or does not occur to us, it is a must to realise that you are part of a global system that we cannot escape from.

Part 1: Overview of the conference



Wayne Talbot reported on workshop 5:

The development of participative and social learning .

The workshop had noted that behaving sustainably is now something generally accepted but we tend to leave this responsibility to others. That is because we still tend to define many issues as personal issues while in fact the community should decide what is a problem and what not. Our personal role, then, is at least: to be informed, to be aware of our own values and morality, and acknowledge that we might (or might not) have to change anything.

What is it that motivates people? Undoubtedly there is an emotional element that drives us. That might lead us to look at good examples of human acting.

Michel Škapa reported on workshop 7:

Development of an educational system in which not teaching but learning is central

Most (educational) systems are fixed, conservative, in relation to change. The same applies to teachers, be it because of their social environment or for other reasons. There is a great need to evaluate present systems and develop new ones.

The workshop concluded as follows:

- the role of the teacher shifts from transmitting knowledge to knowledge management
- lessons (in-school) should be organised much more in a participative way
- open learning processes are to be developed
- one should be prepared to learn from experiences
- teacher training should use analytical methods in dealing with different cultures (of pupils)

Plenary discussion

The discussion took place along 3 questions which the chairman presented:

1. What is this conference really about?
2. What should be done to achieve change?
3. What will I do personally?

The participants generally felt that this conference has been about change: change in world operations, philosophy, about asking questions concerning change as such, and changing 'systems'. East-West contacts are indispensable to reach that, this conference as a 'market-place' serves that goal well. Meeting friends, colleagues, exchange of fresh ideas, listening and speaking: they are all valid in obtaining such situation.

But also obstacles were identified: fatigue, ignorance, lack of knowledge and power were seen as barriers to real changes. Finally one major question remained unanswered: how to deal with differences, real differences of worldviews for instance.

Having an open mind, was the ultimate advice the participants gave themselves to bring about changes. Keep the network together, but widen it, was seen as important to give shape to an earlier made statement in one of the workshops. Other statements were: be clear about targets and show achievements, make use of practical examples. Nevertheless it was felt that changes cannot take place at a great speed: be careful when suggesting changes..

Part 1: Overview of the conference

Many participants felt that they personally could do something to achieve changes in their own situation. Involvement of young people in projects, using new contexts in your daily work, talking to people about this issue who are ready to listen, and attending the next meeting were among the considerations people made. The adagium 'think globally, act locally' was seen as the overall context for everyone's working and acting.

Towards a new alliance for environmental education in Europe

In order to get the development process of the association off the ground, a mandate for a working group was signed and approved by the conference participants (see chapter 5.1.).

Summarising the outcome of the conference

The chairman summarised what he saw as the main results of the conference. These include:

1. There had been a good connection between the high, rather abstract, level of the speakers and the practical work outside.
2. It is encouraging that so many young people are present.
3. The significance of this conference lies in the following aspects:
 - the signing of the declaration about EAESD in the light of the forthcoming World Summit on Sustainable Development (Johannesburg, September 2002)
 - it gave ample impetus for the sake of environmental education on the national and international scale
 - socially, it enabled us to learn to know many colleagues working in the same field and thus helped new networks to come into being.
4. Though the programme had a complex structure, it led to many intellectual and practical connections and to unexpected, valuable outcomes.

Further he summarised what he had experienced and enjoyed during the 3 days of the conference.

On the first day emphasis laid on the formation of networks, the 'sterile world' we live in, the need for learning instead for pure teaching, the market versus a sustainable worldview, dealing with diversity.

On day 2 we learnt about educational action and reflection, about the issues which are too big to be solved by only ourselves, and about changes in education. A confrontation of theories and practice was the climax of the day.

Part 1: Overview of the conference



On day 3 we worked on 'systemic changes'; these do not just add to the existing curriculum but try to take away internal barriers for changes. Then, a number of issues came up which have to be taken into account if indeed such changes in education systems themselves would be our objective:

- the need for working on the 7 key concepts or **learning domains** as illustrated by an English paper in terms of an ethical framework:
 1. Interdependence - of society, economy 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.
- the **context of learning** which is global and either discipline-oriented or cross-curricular
- the **process** requires to look at what you are doing, to monitor and to evaluate
- change is our **responsibility** but also society's institutions
- concerning **methodology** we are not only aiming at knowledge transfer but also at the development of skills and creative approaches
- the **contents** of learning have long been one of separating issues; the only way to understand the relations between man and nature better is to connect issues
- **learning** is a process of participation, **teaching** is discussing values; nothing else.

One participant had put us before a dilemma: shall/should we try to influence one politician or 1000 teachers? The answer to this lies in the system in which one lives. In ours it is relevant to work with all those who in society have a responsibility, educationally or otherwise. But for educators one specific task lies ahead: look at yourself, be open to real changes and show the world what you contribute to a more sustainable society.

The chairman then thanked the Flemish organisers of the conference sincerely, knowing by own experience what it means to be at times nearly on your own but still having the responsibility to come up with a solid programme for a large number of participants. Both programme and facilities of technical, administrative and gastronomic nature had been appreciated very much by the participants.

Through the discussions about the European association and the coming conference in 2004, it was logic that a common denominator on (handling changes in) education in relation to issues of sustainability would be dealt with, as well as an emphasis on educational infrastructure in professional sectors like agriculture, commerce, tourism and fisheries. In this respect Mark Alderweireldt held a plea for the next conference to be held about a challenging subject like this one mentioned. The Working Group would be grateful to receive proposals from those interested in organising that meeting.

With these words the chairman closed the conference, thanking all for their inspiring contributions.

Part 2: Education and a sustainable world

2.1. Challenges to environmental education in the 21st century

Walter Leal Filho

TuTech, Kasernenstrasse 12

21073 Hamburg, Germany

Paul Pace

Dept. Maths, Science & Technical Education, Faculty of Education

University of Malta, Msida MSD 06, Malta

Fundamentals of the paper

1. the need to rethink, review and re-adapt EE to fit in with the goal of sustainable development
2. the need to provide training (teacher education and the broad environmental education of professionals)
3. the need to document and promote experiences

The background

In addition to benchmark documents such as the report "Our Common Future" (WCED, 1987) and Agenda 21 (United Nations, 1992), a number of events have in the past been dedicated to questions related to the usefulness and application of environmental education in both formal and non-formal education. The conferences and congresses held in Belgrade, Tbilisi, Moscow, Rio de Janeiro and Thessaloniki, among others, have discussed such issues at great length. In addition, substantial efforts were made in the past to promote environmental education at the national, regional and international level. One recurring theme was how to address the problems seen in respect of the implementation of environmental education initiatives, in particular:

- the lack of materials
- the lack of funds
- the lack of official recognition
- the lack of training

The last item, lack of training, will be looked in depth in this paper. Going back to the other issues, it was often suggested that ways to address them would have to include the principle of "decisions reached by consensus". This has posed its own problems in terms of asymmetrical bargaining relationships between developed and developing countries. In the final plenary session of the Thessaloniki Conference, a delegate, reporting back on a work session asked: "Why is it that developing countries are so much behind developed countries in implementing environmental education?" She proposed that one reason might be the natural availability of financial resources that she described as "gentle reminders of wealth" by the major trading powers in comparison of what a particular developing country spends in terms of environmental education and the level of support afforded to it. She said that new ways should be found to "safeguard the balance" between what industrialised and developing countries do in respect of using environmental education as a tool to environmental protection.

Part 2: Education and a sustainable world



This is perhaps precisely the point! As seen in many industrialised nations, environmental education in developing countries should be brought closer to mainstream environmental protection programmes. There is plenty to do. If we take the Global Environment Outlook-3 (GEO-3) of the United Nations Environment Programme (UNEP) for example, it says "the planet is at an important cross-roads with the choices made today critical for the forests, oceans, rivers, mountains, wildlife and other life support systems upon which current and future generations depend" (UNEP, 2002). The report provides a unique look at the policies and environmental impacts of the past 30 years, and outlines four possible policy approaches leading to different outcomes over the next 30 years. Two of the most contrasting scenarios include "Markets First" and "Sustainability First". One envisions a future driven by market forces; the other by far-reaching changes in values and lifestyles, firm policies and cooperation between all sectors of society. The report compares and contrasts the likely impacts on people and the natural world.

GEO-3 concludes that a great deal of environmental change has already taken place in the past 30 years since the 1972 Stockholm Conference, which led to the creation of UNEP. The report notes that improvements have occurred in areas such as river and air quality in North America and Europe, but indicates that conditions in developing countries have to a great extent deteriorated. Moreover, the international effort to repair the ozone layer by reducing the production and consumption of chloro-fluorocarbons (CFCs) is another notable success. But, the report also says, overall there has been a steady decline in the environment, especially across large parts of the developing world.

The declining environmental quality of the planet and the apparent increase in strength and frequency of natural hazards such as cyclones, floods and droughts are intensifying peoples' vulnerability (GEO-3, Chapter 3) to food insecurity, ill health and unsustainable livelihoods. Speaking of the poor, the sick and the disadvantaged, both within societies and in different countries and regions, the report warns of the widening gap between those able and those unable to cope with rising levels of environmental change.

The report highlights that:

1. environmental degradation is costing countries in many ways. India, for example, is losing more than US\$10 billion annually or 4.5% gross domestic product (GDP) with human-induced land degradation alone causing productivity losses of around US\$2.4 billion.
2. soil erosion is a key factor in land degradation. Around two billion hectares of soil, equal to 15% of the Earth's land cover, or an area bigger than the US and Mexico combined, is now classed as degraded as a result of human activities. Main types of soil degradation are water erosion, 56%; wind erosion, 28%; chemical degradation, 12% and physical or structural damage, 4%. Overgrazing is causing 35% of soil degradation; deforestation, 30%; agriculture, 27%; over-exploitation of vegetation, 7% and industrial activities, 1%.
3. declining environmental quality is also a rising health risk. Sewage pollution of the seas "has precipitated a health crisis of massive proportions," says the report. For example, the eating of contaminated shellfish is causing an estimated 2.5 million cases of infectious hepatitis annually, resulting in 25,000 deaths and a further 25,000 people suffering long-term disability due to liver damage. The global economic impact of marine contamination, in terms of human disease and ill health, may be running at nearly US\$13 billion.

Part 2: Education and a sustainable world

4. globally, sewage is the largest source of contamination by volume with discharges from developing countries on the rise as a result of rapid urbanization, population growth and a lack of planning and financing for sewerage systems and water treatment plants.
5. some 80 countries, amounting to 40% of the world's population, were suffering serious water shortages by the mid-1990s. Water-related disease costs break down like this: two billion people are at risk from malaria alone, with 100 million affected at any one time and up to 2 million deaths annually. There are about 4 billion cases of diarrhoea and 2.2 million deaths a year, equivalent to 20 jumbo jets crashing everyday.
6. the loss and fragmentation of habitats such as forests, wetlands and mangrove swamps have increased the pressures on the world's wildlife. Twelve per cent or 1,183 of birds and nearly a quarter or 1,130 mammals are currently regarded as globally threatened.
7. the total extent of protected areas, such as national parks, has grown from 2.78 million square kilometres in 1970 to 12.18 million hectares in 2000. The number of sites has risen from 3,392 to 11,496 over the same period. A survey of 93 protected areas has found that most are proving successful at stopping land clearing and to a lesser extent at tackling issues such as logging, hunting, fires and grazing pressures.

These problems are taking place - and many are getting worse - even though we now have hundreds of declarations, agreements, guidelines and legally binding treaties designed to address environmental problems and the threats they pose to wildlife and human health and well being. Moreover, most of these problems can be effectively addressed by the use of environmental education techniques and processes in conjunction with legal measures and other practical action. Yet, relatively little efforts are seen in this field. What is necessary, along with political courage and innovative financing, is the systematic and strategic engagement of environmental education in the environmental problem-solving process. It is against this background that the need to re-adapt environmental education is seen.

The need to review and re-adapt environmental education

As earlier stated, there is a need to bring environmental education more in line with the various issues and problems that affect the world. Indeed, as stated by Stempleski (2000), environmental education brings the real world into the classroom, empowering learners to make positive changes in their local communities and in the world.

For example, language teachers who introduce environmental topics such as rain forest destruction and endangered animal species into their lessons find that students are fascinated by the problems these issues present. The same line of thinking also applies to other subjects, both in the natural sciences and human sciences as well, including the Arts.

Besides serving as a rich and stimulating source of real-world content, environmental education:

- provides an effective framework for integrating skills such as calculation, logical analysis and thinking;
- bridges the gap between science, biology and other school subjects;
- develops critical and creative thinking skills;
- fosters the development of problem-solving skills;
- provides opportunities for exploring cross-cultural attitudes and values;
- encourages student interaction.

Part 2: Education and a sustainable world



Another reason, and perhaps one of the most important ones for bringing more environmental education and more practical discussions on environmental issues into the classroom is the urgency of the environmental situation itself. If students are to participate fully in solving the environmental problems of today and the future, **practical** environmental education is essential. Problems such as plant and animal extinction are pressing. All educators have an ethical and personal responsibility to contribute to students' awareness of environmental issues and to foster in their students the development of skills that promote sustainable development.

To be able to address its current problem in respect of implementation, environmental education has to be re-oriented with a view to:

- *becoming more practice-oriented*: a lot of discussions and debates over the past 20 years have focused on the theoretical aspects of environmental education, on what it is or on what it should be. Time has come to look at it on a pragmatic way, especially in respect of "how" to integrate it with sustainable development efforts;
- *achieving more visibility*: environmental education professionals are not always well versed into the art of promotion. Indeed, few have experience in how to promote their work in an effective way. Yet, this is an important factor in strengthening environmental education. There is a perceived need to make it more visible and to communicate more about works in this field. Environmental communication is an ally of environmental education and should be used more often;
- *involving more people*: the history of environmental education is characterised by the fact that a selected group of people have influenced its development internationally and at country level. In some countries, one can count on one's hand the number of people involved with environmental education. This has to be changed. We need more involvement, from more people and from different sectors (e.g. education, academia, industry, the voluntary sector) to spread it more evenly;
- *relating closer to sustainable development*: environmental education is and will carry on being environmental education. The various attempts to use different nomenclatures (education for sustainability, education for sustainable development, education for a sustainable future and so on) have failed to unite the people working in this field. Rather, they have been the source of unnecessary arguments. There is no doubt that there is a need to bring environmental education closer to efforts to pursue sustainable development. As the lack of progress since Thessaloniki has shown, a change in name has not helped the cause. What is necessary is the undertaking of practical initiatives and projects where, by the use of environmental education techniques, the various environmental problems outlined in the earlier part of this paper may be addressed.

Throughout this process, training, especially teacher training - or teacher education as some may prefer - plays a key role. The next section of this paper will look at it in more details.

Part 2: Education and a sustainable world

The role of teacher training

Considering the amount of energy and resources invested in environmental education projects in schools and in teacher education courses and the relative poor impact that they leave on the educational system when compared to other education approaches, one may erroneously conclude that environmental education has failed in reaching its goals. However, a closer analysis reveals that in most of the cases this apparent lack of success is actually not so: in fact it is mainly due to an inherent incompatibility between the principles of environmental education and the predominant cultures of formal educational institutions (Pace, 2000).

Formed over the years, these cultures define, within an institution, what constitutes good education, the characteristics of a proficient teacher, adequate assessment procedures and the role of the learners. Owing to their deep-rooted nature these strong cultural practices are difficult to eradicate overnight merely as a result of a set of conference recommendations ... much more is needed. When faced with the prospects of change, people (and institutions) tend to respond in one of three ways:

- *embrace the new lifestyle and face up the new challenges*: this option is usually adopted when the change is conceived from within (unlike the other options), i.e. the people/institution concerned feel the need for a change, desire the change and are actively involved in implementing the change. The change process is internalised in the lifestyle of the target population and success is guaranteed.
- *adopt practices that are only a travesty of the new lifestyle*: this occurs when the philosophy of the change is deemed desirable, but rather than opting for a radical restructuring of existing structures to cater for environmental education, most educational institutions opt for the easiest way out - re-labelling long established practices as 'environmental' (Francis, 1973). Consequently the change is superficial ... and although the outward manifestations (i.e. publications, workbooks, school activities) might be impressive in the short-term, their long-term impact is negligible.
- *renounce the change and keep on living as though nothing happened*: this option is adopted when the change is interpreted by the people/institution concerned as a threat to their 'trial tested' and 'seasoned' routines. The status quo is considered as the safest alternative and conformity to norms (rather than creativity) is what is expected ... and rewarded. These misgivings are further heightened when the change is proposed by a sector that is considered as alienated from the "harsh realities they have to face".

At face value, the latter two coping strategies can be viewed as buffers that slow down or obstruct any process of change, but at the same time they are an indication that people ... particularly if they are not involved in the change process ... need time to acclimatise themselves to the impending paradigm shift. Successful developments in education have usually involved a process of evolution rather than revolution with the sustained participation of teachers. Research in and the development of environmental education in formal educational institutions does not seem to have respected this line of development.

Part 2: Education and a sustainable world



As already highlighted, too much energy has been devoted (or SOME MAY EVEN say wasted) on trivial academic issues, that have served nothing more but to pump up personal CVs, at the expense of the development of practical environmental educational programmes. The negative impact this has had on environmental education can be summarised under four interrelated consequences:

- *Confusion:* the excessive use of technical terminology by environmental education researches has created a language that excludes, rather than informs, people who are not directly involved in the research. The issues raised and discussed become increasingly complex and the number of people who can actively participate in the debate becomes increasingly less.
- *Establishing an elite group of experts:* "control over language at one level becomes power over decision-making, resources and practices at other levels" (Robottom, 1987). Contrary to the goal of shared environmental responsibility that environmental education seeks to develop, this specialised language highlights the divide between the 'experts' (who can understand what's happening and can thus show the way forward) ... what Smyth (1995) calls "a priesthood of the environmentally enlightened" and the 'technicians' (who are expected to follow instructions). This dependency of people on authority for direction effectively forfeits their responsibilities towards the environment to those whose "decisions count" or who "know what they're talking about".
- *Alienation:* in formal education sector, the relegation of teachers to a technician's role effectively narrows their view of educational issues and systematically excludes them from being actively involved in curriculum development decision-making. Consequently the relationship between environmental education research and classroom realities becomes increasingly hazy and slim. Environmental education initiatives promoted in schools tend to be disjoint activities of dubious long-term benefits rather than core curriculum experiences.
- *Irrelevance:* superficial environmental education fails to contribute to the development of an environmental ethic that provides answers to the key questions raised by a conscious decision to adopt a sustainable lifestyle. Even more damaging are the conflicting messages that are picked up by learners, e.g. learning about the need to reduce energy consumption in an institution that has no energy saving policy. Research has shown that children learn to accept incongruencies, i.e. that you can learn about and through the environment without caring enough for it to take an active role in its protection.

Success stories in the implementation of environmental education in formal education have revealed a redefinition of the role of the people 'at the top', from that of change agents to that of catalysts of change providing support and training to those 'at the bottom' in order to help them become equal partners in the enterprise (Pace, 1996). The question is not whether teachers are being challenged to take an active role as change agents or not, but when will they take up the challenge. To become effective change agents, teachers need adequate preparation. Teacher education programmes need to prepare teachers for the following changes in the way that they traditionally approached environmental education:

Part 2: Education and a sustainable world

- *Conceptual changes* in the way they understand the environment and role humans have in it as well as what is and how to achieve effective education,
- *Revaluation of values* ensures that teachers are provided with opportunities to appraise their baggage of values. This is very difficult from the traditional role of learning institutions, which were seen as the sites where societal values were uncritically imparted. Research has shown that unchallenged values have very weak foundations that yield to the slightest pressure when questioned.
- *Changes in methodology* to develop learners who can think for themselves, listen and sift what others have to say, express and justify their own values and attitudes and decide on what action they can take to improve specific environmental issues.

As outlined at the beginning of this section, change never comes easy ... habits die hard! Effective teacher education needs also to help teachers identify and tackle the following hurdles to change:

1. *Procrastination*: Change generates a lot of uncertainty and people tend to postpone change for later. A radical change might be postponed because of the unreal feeling of security generated by initiatives that might give the false impression that environmental education is already occurring in schools hence easing up the pressure for urgent action.
2. *Threat to authority*: With its philosophy of empowerment, a move towards environmental education will lead towards the modification or even the tearing down of traditional power structures and institutions, particularly because of its interdisciplinary nature. This may not go down pleasantly with people who are currently in a position of power (e.g. academics, education authorities, teachers). Conflicts of interest, squabbles on 'territorial boundaries' and a redefinition of roles will have to be resolved if environmental education ever hopes to take off.
3. *The "better the devil you know" syndrome*: Having to teach within the old parameters for quite a number of years helped teachers to develop coping strategies to make up for the system's deficiencies ... and moreover allegations of teacher incompetence or lack of resourcefulness could always be blamed on the repressive nature of the system. Teachers have been caught in a dilemma: whether they should stay within the safe confines of the status quo or whether they should assume more responsibilities and venture into uncharted territory.

The need to promote and document experiences

This paper has so far listed some of the challenges that environmental education faces in the 21st century. In a nutshell:

- the need for a more pragmatic approach
- the need to achieve a closer integration to sustainable development
- the need to overcome the constraints posed by funds, materials and resources
- the need to efficiently address the problems seen in respect of teacher training

A further major challenge to environmental education in the 21st century is the documentation and promotion of experiences. The past records offer a sad view: from the hundreds of projects performed in the field of environmental education, only a few of them have been properly documented and promoted. As a result, a valuable body of knowledge, expertise and experience, which could help others and prevent a great deal of duplication, is simply not available.

Part 2: Education and a sustainable world



There are to date, a number of scientific publications and mechanisms to promote and disseminate the results of studies and research in environmental education and sustainability. However, when compared with the better established field of environment and ecology, environmental education looks much less organised. For one thing, the number of outlets to scientifically disseminate information is still rather limited, thus illustrating the need to address what is now becoming an increasingly perceived problem.

The body of knowledge and information on environmental education and sustainability currently available justifies the existence of suitable means to disseminate such information and experience. As stated in the volume "Communicating Sustainability" (Leal Filho, 2000), "it is reasonable to expect that a broader sense of awareness on sustainability (and the same line of thinking applies to environmental education!) is only to be realistically expected, if it is better communicated".

Although a significant step ahead in promoting efforts, the existence of academic journals such as the "Journal of Environmental Education" and "Environmental Education Research" is not enough to support the efforts to bring environmental education to a broad audience. The already considerable body of information and knowledge available, is continuously being complemented by new works, new initiatives and new projects, which makes it necessary to identify ways of enhancing the documentation and the dissemination of the relevant information.

Bearing in mind this state of affairs, a decision was made in early 1998, to bring to life a new series of academic publications, under the heading "**Environmental Education, Communication and Sustainability**". The chosen partner was Peter Lang Scientific Publishers, a well-established publishing house with offices in Germany, Switzerland and the United States. By means of authored, edited or co-edited works written in German or English (the series' working languages), the series is meant to:

- document experiences (projects, case studies, initiatives) in this area;
- promote good practices;
- foster networking and information exchange

While at the same time up-keeping the highest academic standards. Table 1 outlines the outputs of the series to date.

The continuous evolution of environmental education and of the sustainability debate and the ever-changing priorities in science and politics, mean that the series needs to be able to adapt itself to such changes and be able to report on the on-going progresses seen in this field.

As seen in a publication which addressed the link between environmental and agriculture education (Bor, Holen, Wals, & Leal Filho, 2000)', an integration of both areas is something which should be pursued with a view to effectively addressing local environmental questions and help community organisations with unmet research needs.

The great interest seen from the side of the readers, especially from universities which bear a prime responsibility for environmental education and sustainability efforts (Romero, 1995) and the fact that publications from the series are being used in support of teaching programmes, in further education schemes and as part of research projects, means that it also counts on a sound financial basis.

Part 2: Education and a sustainable world

Table 1: Outputs of the series "Environmental Education, Communication and Sustainability"

<i>Volume/Year</i>	<i>Title</i>
Volume 1 /1998	Umweltschutz und Nachhaltigkeit an Hochschulen
Volume 2/ 1998	Distance Education and Environmental Education
Volume 3/ 1998	Environmental Engineering: International Perspectives
Volume 4/1998	Environmental Education for Sustainability
Volume 5/1999	Sustainability and University Life
Volume 6/2000	Integrating Concepts of Sustainability in Education for Agriculture and Rural Development
Volume 7/2000	Communicating the Environment - Environmental Communication for Sustainable Development
Volume 8/2000	Communicating Sustainability
Volume 9/2001	Environmental Engineering and Employment
Volume 10/2002	Our Common Illiteracy
Volume 11/2002	Teaching Sustainability
Volume 12/2002*	International Experiences on Sustainability

(*) in preparation by the time this paper is written

For the future, it is planned to combine the publications deriving from the series, with a stronger marketing component, thus making more people aware of it and hopefully broadening a sense of environmental awareness in schools, higher education institutions and beyond.

Conclusions

Environmental education is not as politically safe and neutral as it was portrayed in the past. Although continuous discussions on its goals and strategies may be useful in modernising it; they have to be complemented by more pragmatic approaches: projects; case studies and fieldwork are some of the processes via which this may be achieved.

Helping learners to critically analyse the knowledge on offer, to construct their own baggage of relevant knowledge and to question their framework of values is definitely politically active and necessary. Perhaps one of the major challenges to environmental education, at all levels of education, is to help learners to anticipate, initiate and deal with change ... from within the person as well as from the surroundings.

Part 2: Education and a sustainable world



References

Bor, W. van den, Holen, P., Wals, A. & Leal Filho, W. (eds.) (2000)

Integrating Concepts of Sustainability in Education for Rural and Sustainable Development.

Peter Lang Scientific Publishers, Frankfurt.

Francis, G.R. (1973)

Objectives and approaches to environmental education: some first reflections from a beginning experiment. In Centre for Education Research and Innovation (CERI) *Environmental Education at University Level: Trends and Data.*

Organisation for Economic Co-operation and Development (OECD), Paris, France.

Leal Filho, W. (ed.) (2000)

Communicating Sustainability.

Peter Lang Scientific Publishers, Frankfurt.

Pace, P. (1996)

Top-down planning in school-based environmental education.

In Geesteranus, C.M. (ed.)

Planning Environmental Education: a Step or a Stride Forward?

Gland, Switzerland: European Committee for Environmental Education, IUCN.

Pace, P. (2000)

Attitudes towards environmental education in the Maltese formal education system.

In Leal Filho, W. (ed) *Communicating Sustainability.* Environmental Education, Communication and Sustainability Series No. 8. Frankfurt am Main, Peter Lang.

Robottom, I. (1987)

Towards inquiry-based professional development in environmental education.

In Robottom, I. (ed.) *Environmental Education: Practice And Possibility.*

Victoria: Deakin University Press.

Romero M., J.R. (1995)

The Role of the University in Sustainable Development: Challenge and Opportunities.

International Association of Universities. Kogan Page, London.

Smyth, J.C. (1995)

Environment and Education: a view of a changing scene.

Environmental Education Research. 1(1), pp.3-20.

Stempleski, S. (2000)

Environmental education. In *Language and Civil Society Series.*

US Department of State, Washington, D.C.

United Nations (1992)

The UN Conference on Environment and Development: a Guide to Agenda 21.

UN Publications Service, Geneva.

UNEP (United Nations Environment Programme) (2002)

Global Environment Outlook-3 (GEO-3).

UNEP, Nairobi.

WCED (World Commission on Environment and Development) (1987)

Our Common Future.

Oxford.

Part 2: Education and a sustainable world

2.2. Towards sustainable education: re-visioning, learning and change

Stephen Sterling

The old Forge

Frome St. Quintin

GB-Dorchester DT2 0HG

The theme of the paper is how we can increase the overall 'response-ability' of education. This challenge goes beyond the boundaries of the discourse and practice of environmental education and is relevant to the education community as a whole. The environmental and sustainability education debate is briefly reviewed and the argument that the environmental education community needs to go another step - towards what is called here 'sustainable education' is made, representing a change of paradigm. Some of the implications of reconceptualising education and reorienting it towards a more holistic and ecological basis in terms of changes in paradigm, purpose, policy and practice are examined. A range of possible learning responses to sustainability by education communities and practitioners is outlined, with an argument for a process of staged change over time. Lastly, the lessons of a brief case study are shown, and a simple model of change based on the key ideas of 'extension', 'connection' and 'integration' is suggested.

Introduction

Our collective actions in these opening decades of the new century will largely determine how the rest of the century will unfold. Globally, the major indicators of sustainability remain largely negative and in this context, education is widely seen as an essential part of any strategy to advance ecologically sustainable development. Yet education takes time, and time is in short supply. Further, there is a gap between the kind of education that is necessary to speed the transition to a more sustainable society, and the kind of education that prevails in most Western countries. Therefore, I argue, we need to look beyond the immediate and sometimes 'internal' concerns of the environmental education community, and look again at the meaning and possibility of the re-orientation of education *as a whole* - as advocated and indeed agreed, at the Rio Earth Summit of 1992.

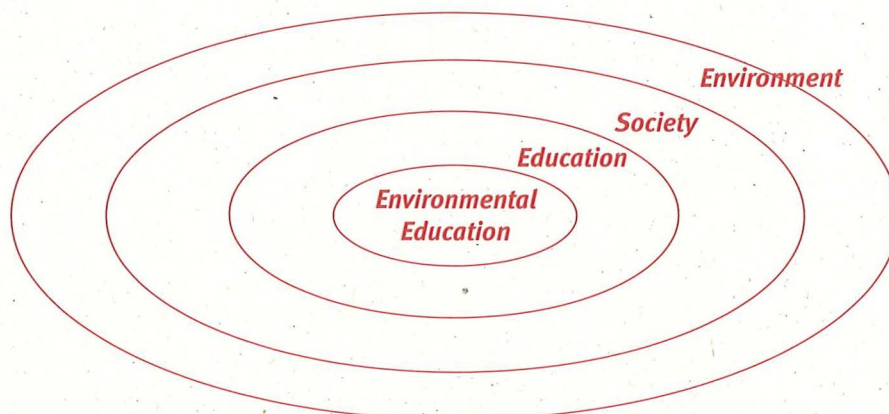
In essence, the argument is that, given the pressing conditions of unsustainability in which we now find ourselves, a respon-sible education has to become more response-able, that is able to respond to these conditions. To do that - and this is a critical point - educators, policymakers, and the wider public will need to engage in an intentional learning process which, inevitably, will challenge some dominant assumptions and norms. As a key UNESCO report, *Learning the lessons*, says, we have learnt to live unsustainably, now it is time to learn to live sustainably (UNESCO, 2002). In education, this requires a response in the three key areas of *purpose, policy and practice*, underpinned by a fourth area, the guiding *paradigm*.

Part 2: Education and a sustainable world



Environmental education and the next evolutionary step

Diagram 1: Nesting system levels



This diagram suggests that environmental or sustainability education can be seen as a subsystem, influenced and constrained by and occurring within the greater context of education as a whole. Educational thinking, policy and practice, in turn is influenced by social pressures, expectations and norms. At the same time, society (and economy for that matter), exist within the overall ecosphere (the outer system).

This diagram helps demonstrate why the common linear view 'that education about the environment leads to social change' is just too simple. Such a view of environmental education has to give way to a deeper more systemic understanding of the relationship between learning, society and sustainability.

While environmental educators have been concerned with raising environmental awareness - what might be called the 'learning of ecology', we need to give more attention to the larger context which constrains our efforts - what might be called the 'ecology of learning'.

This holistic view helps us overcome the rather stuck position we now seem to be in. Ten years on from the high hopes of Rio, we know that progress is disappointing. As *the Learning the Lessons* report on progress since the 1992 Rio Summit, prepared for the 2002 World Summit on Sustainable Development (WSSD) notes, "much of current education falls far short of what is required", and it calls for a "new vision" and "a deeper, more ambitious way of thinking about education" (UNESCO, 2002). Despite the genuine successes - new courses, websites, networks and exemplars, we have not succeeded in reorienting education as a whole, as Agenda 21 required. Whatever the reason, the world of education is largely oblivious to the most pressing social, cultural and environmental contextual issue of our time - which is how to move towards a more sustainable and sustaining way of living and organising ourselves.

There are two key questions here:

- Why is real progress so difficult?
- What would constitute an adequate response?

Part 2: Education and a sustainable world

Education has a double crisis - in its limited ability to contribute to a better world, and in its limited ability to assert humanistic and democratic values in the face of market and managerialist ideas which have dominated Western education systems in the last decade. To answer the above questions and move forward, I believe we need to work on three 'change dimensions' (at whatever level of the education system we might be engaged):

- *a deeper critique* - of where we are now in terms of prevailing or dominant educational values and purposes
- *a broader vision* - of where we want to go (that is, develop the basis for a changed educational culture or paradigm, echoing and supporting change towards sustainability in wider society)
- *an effective strategy* - to implement value, policy and practice change

If we are unable or unwilling to articulate these change dimensions, education for sustainability simply becomes accommodated or marginalised. The need for a deeper response is echoed in the following quote (from a book which seeks to outline the steps needed to shift towards a more sustainable society):

The biggest challenge for educationalists is the proposition that education for sustainable development cannot simply be added onto existing learning, but requires a systemic change to the learning process and priorities in education.

- Christie and Warburton, 2001

It is our challenge, in the environmental and sustainability education community, to articulate, first, what the basis of that systemic change is, and second, what it implies in all areas of education systems - **paradigm, purpose, policy, and practice.**

I suggest that such a broad approach is the next logical step in the evolution of our field. From a tradition of 'nature studies' through to 'environmental education (EE)', and then to 'education for sustainability' or 'education for sustainable development (ESD)' in the last decade, the story is one of increasing inclusiveness. This raises the question of labels. The term 'environmental education' remains perfectly valid and useful, but its separate identity is questionable if it is perceived to be a specialist interest by the mainstream. We should also be interested in, for example, development education, global citizenship education, peace education, futures education, health education, political and social education, and so on. There are many education for change movements striving for similar ends. What really matters are the values and assumptions which are brought to theory/practice, and beyond or beneath these, the educational worldview and epistemology which is contextualised and made meaningful in actual practice and experience. Inevitably, the more one goes into this debate, the more one has to ask questions about the nature of learning, the purpose of education as a whole, and so on, rather than just about the field of what we have reasonably called 'environmental education' for the past three decades.

I suggest is that the next stage in the evolution of our field is the elaboration of a new holistic paradigm for education as a whole. In my recent Schumacher Briefing (Sterling 2001) I call this 'sustainable education'. This book argues that the dominant social paradigm is narrowly instrumental and mechanistic, and that there is now emerging a contesting holistic, integrative and ecological paradigm - a relational view of the world which has implications for education as a whole.

Part 2: Education and a sustainable world



Whilst sustainable education is a holistic notion, the recent emphasis on vocationally and market-oriented education systems in Western countries has led to a narrowing of educational goals and purposes. It is questionable whether educational policy - based on managerialism, fragmentation, and a narrowly instrumental orientation - is compatible with a relational view of learning and sustainability, or that it can address the emerging conditions of risk, uncertainty, complexity, inequity and interdependence in the world. By contrast, the notion of 'sustainable education' addresses the nature of education itself and of educational systems, (not just the outcomes as in 'education for sustainable development'). It implies three descriptors: education which is sustaining, tenable and ethically defensible, and healthy.

Does most education really support and help all learners and teachers, support and promote healthy communities, and a healthy environment - is it part of the solution? Or does it merely reinforce individualism, competition, and consumerism?

I would argue that education is largely dragging behind movement in wider society towards what O'Riordan and Voisey (1998) call 'the sustainability transition'. Example of these movements include sustainable agriculture, local food networks, ecological design, sustainable housing and construction, community regeneration and participative democracy, ecological economics, fair trade and so on. These are movements with people and planet very much in mind, and there is a tide in this direction, involving a good deal of 'social learning'. According to O'Riordan and Voisey, 1998 the sustainability 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.' Responding to sustainability may require a technical response to do with management, efficient resource use and products, but it also requires a change of perspective, a change of mind, a change of heart and 'new ways of knowing'. So it also requires more than a skill-based technical education.

The question becomes - how can we transform education so that it can itself become more transformative? The new conditions of uncertainty, complexity, inequity and interdependence require a different sort of education.

Part 2: Education and a sustainable world

Re-thinking the four 'P's

We can usefully think about this transformative task in terms of four 'P's, as follows.

Basic shifts in the four 'P's

Paradigm: instead of education reflecting a paradigm founded on a mechanistic root metaphor and a reductionist and objectivist view of knowledge, it begins to reflect a paradigm founded on a living systems or ecological metaphor and view of the world, embracing holism, systemism and critical subjectivity. This gives rise to a change of ethos and purpose...

Purpose: instead of education being mostly or only as preparation for economic life, it becomes: a broader education for a sustainable society/communities; sustainable economy; sustainable ecology. This expanded sense of purpose gives rise to a shift in policy...

Policy: instead of education being viewed solely in terms of product (courses/materials/qualifications/educated people) it becomes: much more seen as a process of developing potential and capacity through life, at individual and community levels through continuous learning. This requires a change in methodology and practice...

Practice: instead of education being largely confined to instruction and transmission, it becomes: much more a participative, dynamic, active learning process based more on generating knowledge and meaning in context, and on real-world/situated problem solving.

Paradigm

In my Schumacher Briefing, I suggest there are two fundamental worldviews informing education. We can either see education and learning in a utilitarian and mechanistic way which emphasises standardisation and product, or in a more humanistic or ecological way which emphasises capacity and relationship. The following table illustrates some basic differences.

Table 1

Choose your paradigm	
<i>Mechanistic</i>	<i>Ecological</i>
- instrumental	- intrinsic values first
- prescriptive	- indicative
- inputs/delivery	- process
- specified outputs	- outcomes and emergence
- control	- participation

Clarification of these orientations empowers us and makes significant shift much more likely and achievable. But at the same time, we need to be careful not to be oversimplistic. We need an ecological, relational view of education, reclaiming much of the valid learner-centered and liberal ideas that have been cast aside in the last 15 years, but also recognise that we can't wish away the reductive paradigm and that some of its aspects have a degree of validity and use.

Part 2: Education and a sustainable world



Purpose

The underlying paradigm affects the perceived purpose of education.

What is education for? Deciding the purpose of a system is the most powerful lever of system change: Let's look at some of the key purposes of education:

- To replicate society and culture and promote citizenship - *socialisation function*;
- To train people for employment - *vocational function*;
- To develop the individual and his/her potential - *liberal function*; and
- To encourage change towards a fairer society and better world - *transformative function*.

Education systems have tended to look to only one or two of these functions, and often they are in tension - for example educating for maintenance (first function) and educating for change (fourth function) at the same time.

In the last 15 years in some Western countries including the UK, a very managerial and instrumental view of education linked to vocationalism has held sway, and I argue in my book that this is far too narrow a conception of education.

The point here is that just as we need an integrative rather than fragmented view of economic and environmental policy in sustainable development, so we need an integrated view of all these educational purposes.

So its not just a matter of adding a new goal about education for sustainability in your rationale - but checking whether there is consistency or contradiction with other goals that may exist for education in your national, local or institutional system.

Policy and practice

The following tables illustrate some of the changes that a shift towards a 'sustainable education' paradigm implies - from a static, top-down view of education towards a much more dynamic and flexible view more appropriate to the postmodern conditions of society, and more likely to nurture the engaged, participating, self-reliant citizen that many now agree is vital.

Table 2

Key shifts in policy and practice (I)	
- curriculum centrally controlled	- curriculum subsidiarity
- fixed knowledge	- provisional knowledge
- abstract knowledge	- real world knowledge
- teaching/instruction	- participative learning
- few learning styles	- multiple learning styles
- passive learning	- reflective/active learning
FROM	TOWARDS

Part 2: Education and a sustainable world

Table 3

Key shifts in policy and practice (II)	
- disciplinary	- inter and transdisciplinarity
- specialisation	- broadness and flexibility
- external assessment	- continuous internal assessment and reflection
- teaching organisation	- learning organisation
- formal education	- life-long education
FROM	TOWARDS
	

These tables do not imply that we need to abandon the left hand side, even if this were possible. Of course, we have to work from where we are.

Instead, they suggest that the policies and practices on the left have had too much prominence, and now we need to move towards more holistic and dynamic views of learning, whilst retaining the best of the old where appropriate or necessary. To some extent, this is already happening.

The next table summarises some of the shifts involved in moving towards more sustainable institutions.

Table 4

Towards sustainable institution	
FROM	TOWARDS
- incoherence and fragmentation	- systemic coherence and synergy
- large scale	- human scale
- closed community	- open community
- teaching organisation	- learning organisation
- microcosm of unsustainable society	- microcosm of sustainable society
	

Incoherence and fragmentation means lack of contact, communication and consistency between mission and activities, between policies, between departments, between subjects, between staff, and so on.

Part 2: Education and a sustainable world



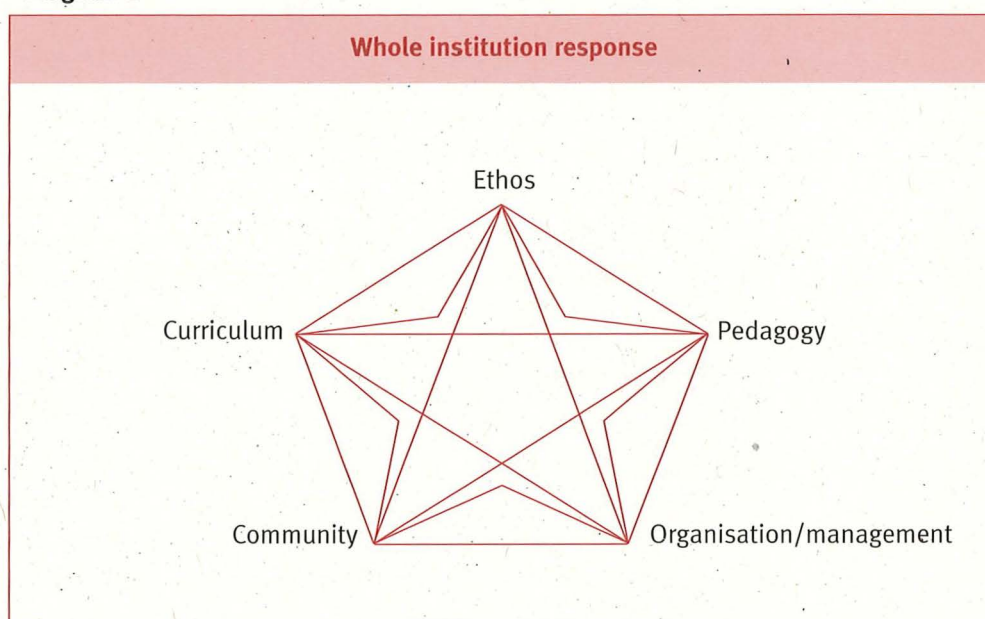
Systemic coherence and synergy means the benefits that come from pulling in the same direction, from teamwork, from participation, consistency and communication, rather than top-down command and control management.

The idea of an institution being primarily a learning organisation, or community, has taken off in the business world, but much less so in formal education.

Microcosm of a sustainable society means that the institution teaches sustainability, acts sustainably and democratically, obtains and uses its resources as sustainably as possible and so on. Consistency between what it says and what it does.

Progress requires a whole systems perspective. There are at least five main dimensions of any educational institution (Diagram 2):

Diagram 2



- *ethos* - probably the most important
- *curriculum* - the content, the message that is taught, not just by the taught syllabi, but by the way values are demonstrated in the institution, which brings us to the
- *organisation and management* - whether relationships are based on respect and democracy, and whether the place is seeking a light ecological footprint, for example
- *pedagogy* - engaging or passive teaching/learning methodology, and
- *community links* - how far the institution is engaged in both the local and wider community.

These dimensions are not separate. How far do these reflect and reinforce each other, or clash and contradict? For example, through my experience of working with WWF-UK's programme for four years, there is evidence that a sustainability approach emphasising consistency works. It is certainly a matter of curriculum, but also of ethos, of participative learning, sustainable resource use, aesthetic and welcoming décor, buildings and atmosphere, democratic organisation, strong community links, and so on. It leads to motivation and effective learning. It encourages creative and critical thinking, and builds practical skills. It nurtures responsibility and citizenship among young people. In short, sustainability provides an ethical, intellectual, and practical framework which not only helps schools work towards a more sustainable future, but also facilitates excellence in education.

Part 2: Education and a sustainable world

Staged change and learning responses to sustainability

Now I want to look briefly at the learning response of educational systems both to the crisis of unsustainability and the opportunities of sustainability.

Table 5

Possible responses to the challenge of sustainability	
- no response	- no change
- accommodation	- green "gloss"
- reformation	- serious reform
- transformation	- whole system redesign

There are four possible responses by policymakers, managers and practitioners to these conditions. The first is a *nil, or minimum response* through ignorance, denial or sheer difficulty. Beyond this there may be:

- *Accommodation*- in other words, we bolt on sustainability ideas to existing system. This is often a content-led response. At a deeper level, the response is:
- *Reformation* - build in sustainability ideas to existing system - more incorporated.

At a deeper, more thorough level still, the response may be transformative:

- *Transformation*- Rebuild or redesign on sustainability principles.

This is a model of stepped change, which involves greater challenge as individuals or an institution moves through the learning stages. Thus, these responses can be seen as *consecutive stages* in educational reorientation. These stages involve a good deal of *learning* by all the actors in education - policymakers, managers, practitioners.

These shifts are reiterated in the next table which indicates the difference between 'education about sustainability', 'education for sustainability' and 'sustainable education'.

Table 6

ESD: different levels of engagement	
- Education about SD: content emphasis. Easily accommodated into existing system.	
- Education for SD: values and skills emphasis. Greening of institutions. Deeper reform of policy and practice. Learning for change.	
- Sustainable education: learning as change. Capacity building and action emphasis. Sustainable institutions/communities.	

Thus, we can trace a progression from 'education about sustainable development' which is content-based, through to 'education for sustainable development' which is teaching values and skills oriented, through to 'sustainable education' which is action-oriented and oriented towards 'learning as change'.

Part 2: Education and a sustainable world



A superficial response to sustainability is piecemeal and fragmented, but may be the first step to a deeper and more systemic response. An example of an effort to instigate systemic change is that of the EU Socrates Thematic Network for Agriculture, Forestry, Aquaculture and the Environment (AFANet). Between 1997 and 2000, the AFANet European network sought to explore the implications of these challenges by developing a number of projects that sought to integrate sustainability concepts and practices in European educational institutions that worked in these topic areas. The main learning points of this experience are illustrated in the next slide (Van den Bor et al., 2000).

Table 7

Learning points from AFANet

- sustainability is *imprecise*
- integrating sustainability requires the *rethinking of institutional purposes*
- sustainability is *complex* and multifaceted
- teaching it requires the *transformation of mental models*
- programming sustainability requires a *rethinking of teaching and learning*
- there is no *universal blueprint* for educational change towards sustainability

(AFANet) found that sustainability implies far more than changing a few concepts in the curriculum. Agricultural education institutions will need to re-think their role, curriculum and operation in fundamental ways.

Change must be participative, and inclusive rather than imposed and exclusive, because:

- people fear change they feel they don't own or can't control and become defensive and entrenched
- the whole area is new and multifaceted and involves many stakeholders and there's no one right answer.

The best examples of change towards sustainability, either in the West or developing countries, are participatory and there an increasing number of methodologies (action research, cooperative inquiry, participatory rural appraisal etc) which reflect this. To this extent, sustainable education is more prevalent in the non-formal, community education sector rather than the formal sector.

Towards sustainable education - extension, connection, integration

Re-orientation of educational systems at any level - regional, national, local, institutional is a difficult and complex task, although a first step is always possible. I like to try to find simple models and keys that can help make such tasks more approachable, and help keep us keep things on track. Given all the complexity and all the theory and practice involved in this area, I've found a model of three key principles helpful.

At any level, reorientation involves three things: extension, connection, and integration.

Part 2: Education and a sustainable world

- First, extending current thinking, policy, purpose, and practice to take account of the sorts of ideas and shifts presented here.
- Second, seeing the relationships in the whole system - making connections between levels, between sectors, between stakeholders, between subjects and disciplines, methodologies, between people, between institutions and communities.
- Third, designing and carrying out work in a much more integrative, and participative manner. To appreciate these, think how far their opposites currently pertain: narrow thinking, disconnection, and fragmentation.

Our motto might now be, 'The context of learning is sustainable development: the process of sustainable development is learning'. These seem to me to be key principles in any attempt to put sustainability at the heart of learning, and learning at the centre of sustainable development. This involves a shift towards ecological thinking.

Our machines, our value systems, our educational systems will all have to be informed by this switch, from the machine age when we tried to design schools to be like factories, to an ecological age, when we want to design schools, and families and social institutions in terms of maintaining the quality of life not just for our species, but for the whole planet."

- Mary Catherine Bateson, in Zelov and Cousineau, 1997, 84

Our task now is to conceive, and to vision a much more whole, appropriate, responsible 'sustainable education'.

We need new belief systems, new policy-making systems, new education systems - or at least renewal. Because there seems to be an overall inertia in the reorientation of education. At the same time there are many hopeful signs. We can and must markedly improve the response-ability of education to the sustainability imperative

References

Bateson, M.C. (1997)

'Understanding Natural Systems', in Zelov, C. and Cousineau, P. *Design Outlaws on the Ecological Frontier*, Knossus Publishing, Philadelphia.

Christie, I. & Warburton, D. (2001)

From Here to Sustainability - Politics in the Real World, Earthscan, London.

O'Riordan, T. & Voisey, H. (1998)

The Politics of Agenda 21 in Europe, Earthscan, London.

Sterling, S. (2001)

Sustainable Education - Re-Visioning Learning and Change, Schumacher Society Briefing no 6, Green Books, Dartington.

UNESCO (2002)

Education for Sustainability - From Rio to Johannesburg: Lessons learnt from a decade of commitment, UNESCO, Paris.

Van den Bor, W., Holen, P., Wals, A. & Filho, W. (2000)

Integrating Concepts of Sustainability Into Education for Agriculture and Rural Development, Peter Lang, Frankfurt.

Part 3: Educational innovations



3.1. Embodying the environment in a sustainable society: some reflections in the UK

Phil Macnaghten

Lancaster University

Centre for the study of Environmental Change

GB-Lancaster

The theme of this edited collection is 'Learning for a Sustainable Society', the aim of which is to bring together different national and international perspectives on the role of communication, ethics and social learning in environmental education. In this paper I outline an interactive approach to environmental sustainability, one which is informed by a range of recent research findings on the social and institutional dynamics mediating how people respond to the environment, and which points to modes of interactive learning pertinent to programmes of environmental education.

Education is defined in Cassells Concise English Dictionary as the 'process of educating', or the 'systematic training of the intellectual and moral faculties' (Cassell 1994). Education for sustainability would imply that such systematic training is directed at questions of sustainability, commonly defined as 'development which meets the needs of the present without compromising the ability of future generations' (WCED 1987). As an academic working in the Institute of Environment, Philosophy and Public Policy at Lancaster University, I am deeply engaged with matters of education for sustainability, and in developing courses aimed at systematic inquiry into the conditions - social and institutional as well as moral and intellectual - prerequisite for sustainability. But in order to assess the particular role of education for sustainability, we need to examine the ways in which 'education', and the role of environmental information, is configured in dominant, institutionally recognised, models of sustainability.

The Context

Worldwide environmental problems continue to escalate (UNEP 1999). Governments, international institutions, industry and civic bodies, in different guises, have begun to recognise such realities, and have attempted to tackle such problems through formal programmes of sustainability. Indeed, across many countries, environmental sustainability requirements are reaching into more and more arenas of 'mainstream' policy, in such domains as energy, agriculture, industry, even fiscal policy. Following the Earth Summit in 1992 it has been commonly asserted that environmental problems extend beyond the traditional pariahs of 'dirty industry' and now include a wider array of economic and social actors and activities. Responsibility also is seen as extending beyond that of governments and industry. The rhetoric of 'shared environmental responsibility' has reverberated throughout the 1990s, in the UK and Europe, across both local government and international initiatives.

In this model 'education' is seen as a logical and necessary step in the move towards a more sustainable society. 'The public' needs to be educated so that people will act in more environmentally responsive ways. Just as governments and businesses need to develop environmental policies so too do ordinary people in their day-to-day lives. But what precisely does 'education' imply?

Part 3: Educational innovations

In the UK, for instance, a number of government information campaigns have been launched designed to 'educate' people as to the environmental impacts of everyday activities - such as driving a car, using public transport, recycling raw materials, throwing out waste, leaving the lights on, washing clothes and so on. 'Are you doing your bit', the Department for Environment, Transport and the Regions asks us (DETR 1999); are we following the 'Green Code', the Going for Green initiative inquires (DoE 1996). On a similar vein, environmental charities such as Global Action Plan have developed information packs aimed at helping people reduce their impacts on the environment at home, at work and at school (Global Action Plan 1998). Companies also seek to 'educate the public' to help reduce the overall 'ecological footprint' of consumer activities, both through purchasing activities and through forms of consumption. The company Unilever, for example, has developed an initiative called 'Washright', designed to 'educate' consumers in the ways in which they can reduce the environmental impact of domestic washing, both in reducing energy and detergents used (Unilever 2000). Further and Higher Education establishments are also seen as playing a key role in the development of environmental responsibility. A recent UK Government report, the Toyne report, on the issue made a set of detailed recommendations, including the need for more specialist courses; for increasing access to such courses through more flexible methods of course delivery; and for the promotion of environmental education across the curriculum (Toyne 1993).

Across all the above initiatives one can detect a common narrative, relating not simply to how 'education for sustainability' is understood, but how this itself is premised on a particular configuration of the environmental agenda itself. Put simply the environmental agenda is seen as arising from a misplaced 'Enlightenment' faith in science and technology as though it was operating in a world without limits. The idea of 'limits' is now thoroughly spatialised. Environmental issues no longer operate in local or even national spheres, but in truly global ones, and include such issues as global warming, ozone depletion, the maintenance of biodiversity, and the potential exhaustion of non-renewable resources. As the Toyne report states, what has become increasingly clear is 'our dependence on a global complex of environmental systems which are far more delicately-balanced, and require far closer care and maintenance, than centuries of human activity had previously assumed' (Toyne 1993: 20).

The 'environmental agenda' can thus be characterised as consisting of a series of problems which are primarily physical in origin, and which arise from an ill-placed faith in (bad) science. What is also suggested is that such problems can be solved by (good) science, which more accurately learns to understand the ecological limits and constraints of particular forms of economic activity. The role for 'environmental education' not only conforms to such an agenda but actively places 'the individual' at its centre. Through education, the Toyne report states, we can better understand:

- the functioning of the planet's life-sustaining system (at least in outline);
- the need to maintain the delicate balance of these systems by living in harmony with them, and the skills this will require;
- the reasons why non-sustainable activities come about, and the contribution which the individual makes to them (Toyne 1993: 22).

Part 3: Educational innovations



Such a model for 'education for sustainability' is essentially 'top-down' in that it relies on experts - scientists, regulators, educators and so on - determining ecological limits, presumably through science, and imparting such information to the public through education practices aimed at encouraging wider environmental awareness and more sustainable practices. In practice, the preferred techniques for dissemination are typically in the form of 'one-way' information provision. The model also can be seen as both moral and individualistic. Typically, a 'moral' code for environmental action is advocated to individuals, where moral responsibility is defined as to embrace wider, global ecological imperatives. In such ways education practices aimed at individuals is seen to be a key mechanism by which society can become more sustainable.

But, what tends to be insufficiently recognised is that individuals are also social beings, and that individual decisions always take place in social contexts that are both culturally and institutionally bounded. Indeed, it is the social context in which 'education for sustainability' takes place that tends to prove critical to the success, or otherwise, of such initiatives. For, if people are to genuinely participate in environmental sustainability initiatives, it is necessary that such initiatives connect with people, that is, that they reflect social trends in public values and sensibilities. What social trends are most relevant in this regard?

Perhaps most significantly, established forms of 'expert' knowledge, especially science, are being challenged across a diversity of domains, both in the UK and beyond. Such challenges reflect wider shifting public perceptions and values towards governments, industry, science, and indeed nature in its many guises. Understanding such dynamics may help inform the only limited success of official sustainability initiatives in harnessing sustained support and involvement (see Blake 1999; Burgess et al. 1998; Macnaghten et al. 1995; Smith et al. 1998). This raises a number of questions.

What is the impact of social and cultural trends on the ways in which people identify with the environment? Is the way in which people identify with the environment in concordance with the embedded understandings in official models of sustainability? How might 'the environment' be reconfigured such that it better resonates with how people are experiencing politics, environment and everyday life? And why does this matter?

How do people respond to different kinds of environmental information or education provision? How do people respond to those providing the information or programmes of education? How is this mediated by people's wider relationships to those providers? Under what conditions is 'information' trusted? What are the opportunities for the development of more two-way forms of interactive learning? And again why does this matter?

Arising from such questions I outline number of a suggested ways for developing 'education for sustainability' initiatives such that they become likely to galvanise public activity?

Part 3: Educational innovations

Languages of 'the Environment'

Above it was suggested that the idea of 'the environment' in formal sustainability initiatives tends to be predominantly global in scale and physical in origin. In a recent research project on 'Languages of the Environment' we examined how people in fact responded to a variety of global environmental issues (see Macnaghten 2003). What we found was striking: The global environment was seen as somewhat 'distant' and 'abstract'. Threats such as global warming, ozone depletion, loss of biodiversity, and resource depletion were perceived as a problem 'out there' and detached from everyday life, making it easy for people to turn off. The following passages are illustrative of public responses to global environmental threats, in the form of key icons such as the rainforest, the tiger, the whale, the smokestack, the blue globe:

- F** *the "Save the Whale" campaign and the "Save the Tiger" and stuff like that; it all seems a long, long way away; so it's not my concern really... It feels a bit removed ... We've all seen a pile of rubbish, but how many of us have actually seen a whale, or a rainforest, or been to an Amazonian forest or anything like that. You know about it and you're concerned about it, but it doesn't have the effect... (Single women's group)*
- F** *When I'm confronted by it, I think yes, yes, I want to do something, and yes, it's important. And then you get back on the treadmill of your life ... It's quite hard to reach that world. (Mothers group)*

This does not imply that people were ignorant of global environmental problems. By and large people were aware of a wide variety of threats and of the need for collective action. Environmental responsibility was seen as real, shared and increasingly global. As one man said:

We are custodians of the world, we are custodians at the moment, we've got to hand it on to the next generation, and so on and so on, in good condition. That's basically what it's all about. (Anglers' group)

Even though the reality of global environmental issues has become almost a commonplace, there was little sense that much could be achieved - either at the level of the individual or through existing avenues for collective action - to mitigate such threats. This perception of a fundamental lack of agency in the face of global environmental threats permeated all the groups. Individual action was seen as largely ineffective, both due to the global scale of the problems and to the perception of powerful commercial interests intractably embedded in systems of self-interest antithetical to global sustainability. Indeed, this whole domain of thinking about the environment was clouded in gloom and despondency, a finding that parallels previous research (see Macnaghten and Jacobs 1997; Macnaghten and Urry 1998). However, what appeared distinctive in these discussions were the strategies adopted. In different ways people were now choosing not to choose to dwell on global environmental threats, as a pragmatic response to apparently intractable problems, and in order to maintain a positive outlook on life:

- M** *Yes, it [life] is what you make of it; it's how you view things. I could be as miserable as sin, but there's no point in being miserable, so you make the best of what you've got, whatever it is. (Anglers group)*

Part 3: Educational innovations



- F** *I think when you are younger you think that your future is perhaps going to be far more worldwide, and that the whole of the bigger picture matters. But as you get older and you're just trying to survive through your humdrum lives, you realise that you don't matter to that huge world out there, unless something really exceptional happens out there.*
(Mothers group)
- M** *If you sat down and thought about that honestly, you'd be totally depressed all the time. You tend to close yourself off to it... You've got to get on with your own life.*
- M** *If we're honest, really we can only control our own domain, our own environment that we're for ourselves and our family. If you feel that strongly, if you want to get into the bigger picture, then you've got to be focused... you've got to get into the right group that will allow you to influence a bigger picture.*
- M** *You've got to be committed, haven't you.*
- M** *Yes, it's got to be a heavy commitment... I'd have to be comfortably well off to do it.*
- M** *Or be prepared to make sacrifices for the bigger picture.*
- M** *The sacrifice could impact part of your family life.*
(Parents group)

An added complexity was that people themselves felt implicated in global environmental problems. Although, on occasions, this led to a sense of the need for shared action, more commonly this led to feelings of resignation and detachment. For many people there were no easy answers; there was no longer a clear 'good guy' and 'bad guy', nobody to blame and no-one beyond blame. Constrained by everyday pressures of work and parenting, people accepted their own partial guilt as consumers, as motorists, as employees of business, and so on. All people could do was their (little) bit, thinking more about (manageable) local issues than (unmanageable) global ones:

- F** *All I do is try and do my bit, try and recycle things. I can't really see the whole thing because the whole thing looks fairly bleak... Things like global warming, I am aware of it, holes in the ozone layer and things like that, but I feel I'm powerless to do anything about it except the aerosol thing. Again I go back to the little things - unleaded petrol as opposed to diesel. You just try and do your bit.*
(Parents group)
- F** *You're supposed to do your own bit but I think I'm selfish enough to think about my own bit.*
- F** *Me too, what affects me.*
- F** *I try to recycle things but I am only thinking of my own environment, or my own area as opposed to the world as such. I don't even think of the whole country, I think of my own area.*
(Mothers group)

Part 3: Educational innovations

So far we have suggested that the idea of a 'global environmental agenda' appears distant and abstract, and unlikely to engage people in their day-to-day activities. This does not imply that people are no longer engaged or interested in environmental issues but that the character of public concerns towards environmental issues has subtly altered. There is a body of thinking that suggests that public engagement with environmental problems has shifted from distant threats 'out there' to more proximate threats 'in here'. Thus, issues such as Whales, the Amazon and Acid Rain, that were prevalent in the 1970s and 1980s, have migrated towards issues which impinge more directly and more immediately on 'me', my body, my family and my future - such as allergies, traffic, BSE and genetically modified foods (Jacobs 1999). Jacobs suggests that this shift in orientation, directly associated with sociological trends towards individualisation, changes how the environment is experienced and how people are likely to collectively respond to environmental initiatives and campaigns (1999: 24; see also Beck 1992; Giddens 1994).

In our research we found that the environment is experienced most intensely when it is part of the 'personal' realm of everyday life. The local and personal environment tends to 'hit home' and matter more. Indeed, it is often through personal, rather than mediated encounters, that people become involved in environmental matters:

- F** *A lot of what we are involved in has come out of personal situations, hasn't it, more than anything. Whereas something like this, with it being such as global [thing], it's sort of how we get actually involved in it. I think it's something we all know it's something we should be aware of, but it's quite hard to reach this world.*
- F** *I can't, I don't know who the leader is. There's no face to it.
(Mothers group)*

People don't think in terms of 'one big environment' which is the same for all people. Rather, there are many different 'environments', each connected to people's particular concerns, priorities, social relationships and responsibilities. For some, 'the environment' is a source of pleasure and escape from the burdens and stresses of everyday life. Activities of walking in the countryside, gardening, bee-keeping and fishing were discussed as ways of 'being in the environment', in proximity to nature, removed from modernity. Below is one such discussion of a young woman describing her passion for scuba-diving:

- F** *It's the tranquillity kind of thing, you know, all you're concentrating on is breathing or not with snorkling. And what's around you. It's like taking your life right back to basics, you know, you're alive, you're breathing and you're floating around and then there's the sort of thing like you're other world... it's just removes all the complications of modern life I suppose. For me that's why I go on holiday and spend most of the time under water. And it's so beautiful. The sort of crime and living in the city gets to me and that's one thing that is so completely the opposite that it's like, you know, some sort of therapy. It is like meditation, you're just concentrating on swimming or looking and just transported to another sort of level. It's so philosophical but you know what I mean.
(Single women's group)*

Part 3: Educational innovations



For other people the environment was seen as a set of problems, such as pollution, food safety and road safety, whose putative effects had to be tacked as part of people's evolving responsibilities as mothers and parents. The environment was very much an issue in relation to its known or unknown effects on oneself or one's family. Health and food issues were particularly prominent and especially mothers were familiar and concerned over an apparently unending succession of food-health scares in recent years: from Salmonella in eggs to BSE to pesticide residues to GM foods.

For others still, the environment was seen as providing an opportunity for maintaining important ties and bonds. Fathers, in particular, saw the environment as providing a context for the development of good parenting.

This suggests that the environment is commonly experienced, not as a set of physical issues, but tangled up as part of social life. The 'human' and 'relational' aspects of the environment are often what are resonant. The environment becomes meaningful when it engages with life, inhibiting or facilitating the development of on-going human relationships, whether in the context of the family, friends or communities of interest. Indeed, we found that it is often the 'peopled' images of the environment, those with the human dimensions of environmental irresponsibility in the foreground that are most compelling. In contrast, those focussing solely on 'nature' and lacking clear and strong human reference points tend to be less compelling and lasting in their effects.

At certain stages of life, the environment appeared to grow in significance. For many women, the experience of motherhood was accompanied by a growing sense of care and responsibility, both towards other people and the broader environment. Below, some women talk about the relationship between motherhood and environmental responsibility, starting with one woman describing the development of more global forms of empathy and its origins in motherhood:

- F** *I think very much when you give birth and you see your child, you become very much aware of that person as a person that lives and breathes and needs protecting,, and feels the same as you do. And therefore you can project that to any other person round the globe and what they're experiencing.*
(Mothers group)
- F** *Beforehand, I'd go down the pub, just me and my boyfriend. You don't give a toss about anything unless you're having a good time.*
- F** *Changing since I became a mother, I suppose I did, my eldest son is very sort of into the environment. For me, he's the one who's really persuaded me. And really with the council supplying this green box, it's so much easier.*
(Housewife group)
- M** *Can you think of where this [the environment] connects with your life?*
- F** *I suppose in time having children.*
(Manchester women)

A number of other social variables tended to be associated with a high level of environmental awareness. These included groups who lived in communities with strong local networks and social cohesion, those who lived a 'settled' life, those who were outward looking and generally reflective in outlook. While those groups who tended to be less environmental aware include people who were high in mobility, who tended to adopt a consumer-oriented lifestyle, who were 'self'-regarding, and who were traditional and unreflective in outlook.

Part 3: Educational innovations

In another research project we found that political culture was a key determinant in explaining national differences across Europe (Macnaghten and Yar 2001). In our pilot research study on perceptions of sustainability across four European countries we found substantially higher degrees of concern in Sweden and Germany, less concern in the UK and significantly less concern in Italy. The relatively higher levels of awareness and receptivity to 'sustainability' and analogous environmentalist concerns in Germany and Sweden is clearly attributable to the 'mature' place of such debates in the public agenda (environmentalist politics and policies are relatively mainstream). The Swedish case may be said to typify the 'Scandinavian model' - that of a corporatist and collectivist social contract or settlement, in which citizens both identify with, and accept as legitimate, the imperatives for the collective social good introduced by leading institutions. This contrast sharply with the much more individualist models of the UK and Italy, characterised by higher levels of scepticism in the UK and outright suspicion in Italy towards politics and political institutions. Somewhat in between is the German model, which we described as legal-rational, where environmental action was undertaken more out of duty and habit than active identification.

The Role and Limits of Information-based Learning

Environmental information is often seen as the key to 'education for sustainability'. Yet, little research has examined how people actually experience information. In this section I outline key findings of a research project set up to examine the role of information provision by 'experts' and to derive lessons for industry, government and the media (see Grove-White et al. 2001).

Experts within industry and government whose role was to provide environmental information designed to inform and educate the public, tended to see themselves as enriching the body of available fact available to the public at large. Whilst at one level this seems uncontroversial, nevertheless it begged its own questions. Repeatedly in the interviews with information providers, we encountered the assumption that people reached judgements on the strength of the 'facts' deployed, and that this lead to awareness, education, environmental responsibility and eventual shifts in behaviour. Providing information was thus assumed to constitute a straightforward extension of the body of propositional fact on which people at large were then able to draw. However, the group discussions suggested that in practice a more complex reality prevailed. Particularly in areas where there was controversy (GM foods or global warming for example), people appeared to interpret information in the context of what they knew about its assumed source. What is more, they appeared frequently to have a shrewd sense of the motives and interests of the provider in question.

Information, provided by a government, a company, an NGO, or the media, was assumed by the public not as objective, impartial and unbiased, but to be framed so as to advance the organisation's self interest. Indeed, it was taken for granted that any information on offer was framed with such interests in mind. Any previous experience, direct or indirect, of the particular provider was a crucial element in these judgements. Judgements of this kind were routine.

M *The words honest, government and debate just aren't synonymous'*
(Single's group)

M *Would you believe what a company like Monsanto told you?*

F *Er, no. I think they would only tell you what they wanted you to know.*
(Empty Nester group)



Part 3: Educational innovations

- F** *You always look to the bottom to see who sent you the information and if it's a supermarket who are in the business of selling food and want to make money - that's their line of thinking ... It's just a marketing angle, because they want to sell you food.*
(Mothers' group)
- F** *Well, as far as newspapers are concerned, it's all about selling newspapers, isn't it? It doesn't really matter what the headline is.*
(Mothers' group)
- M** *As far as they're concerned [Greenpeace], they're looking at the bad side only.*
(Fathers' group)
- M** *What you really want is truly independent advice and that's so difficult to come by, 'cos everyone's got an angle.*
(Internet group)

This suggests that the process by which environmental information is understood tends to be not as simple than that commonly assumed. While providers tend to assume that information is pure, objective, factual, and that people accept such information in a simple, predictable, step-by-step manner, the focus groups confirmed that people do not act in such a simple, rationalistic fashion. Rather, they tend routinely to decode information for its provenances, and to triangulate particular 'packages' with data available from other sources. While this does not imply that all efforts at information provision are futile, it does point to a far more complex relationship between information and the institutions responsible for such provision.

Historically, those professionally preoccupied with information provision have failed to emphasise areas of scientific uncertainties or ignorance around 'expert' understandings of environmental processes. In the case of GM foods for example, we found that it was precisely the sensed dimensions of uncertainty or ignorance ('we don't know what we don't know' - that is, the sensed likelihood of anticipate consequences) which have been giving rise to greatest concern. And reasonable so, we might add. Yet, we found that information providers and educators had a wholly inadequate way of conceptualising the issue, let alone communicating it.

This suggests a wider problem. Overall, it is a reality of human experience that honesty about unknowns and areas of lack of control is intrinsic to all resilient social relations of trust. People need and expect to be able to make social preparations for unknowns, surprises and the uncontrolled, as a routine feature of everyday life. It follows that institutions who appear not to recognise such realities are experienced as inherently suspect.

Some Implications

To conclude, I outline some implications for environmental education arising from the above research. These implications stem from a definition of education broadly defined, not on the particular locale of the classroom but on the relations between institutions with responsibility for environmental education - notably government, industry, NGOs and academia - and the wider public. They suggest that 'systematic training of the intellectual or moral facilities' is most likely to further the cause of sustainability when it is engaging and involving, dialogic and two-way. Particular proposals are outlined below.

Part 3: Educational innovations

1. Seek to engage with people within their own sense of environment

For many people, concern about environmental problems begins with personal experiences. People come to the issues through particulars that matter to them. Sustainability universals, such as global warming and energy consumption, need to be translated into lived particulars in their (non-universal) local terms. Hence, rather than talking about 'one environment', defined in physical terms using scientific paradigms, it may be more meaningful to engage people by talking about the environment as it touches their own 'local' lifeworlds. For example, pollution becomes real to fishermen when it involves fish contamination; GM becomes real to bee-keepers when it affects bee pollination; traffic issues become real to mothers when it threatens the health of their children.

2. Engage with people as social actors

It may be useful to connect with people not simply as individuals but as 'communities of interest', with shared concerns that coincide, at times, with global requirements of sustainability. Such communities of interest may be intensely passionate about the environment, but need to be approached within their own interests. Those outside the 'already committed' group of environmentally aware are likely to become involved only when their own world is touched.

3. Be aware that people do not assume that there is a problem

People, in general, resist being told what to do and how to think. Communication strategies need to be developed are not sloganeering, strident or hectoring. Approaches need to be developed that do not 'talk down' to people, but which respect people's intelligence and complex lives.

4. Develop strategies based on interactive understanding rather than one-way information

Interaction and dialogue with the public should not be conceived on the assumption that fully formed, intrinsic knowledge exists to be imparted by experts onto a naive public. The point of such dialogue is to engage in mutual learning and exploration. This requires a new spirit of humility by 'experts', in relation both to their own internalised assumptions, and to their relations with wider lay communities.

5. Openness about unknowns

Educators should pay greater attention to the unknowns and uncertainties surrounding sustainability. The open acknowledgement of unknowns - environmental, social, cultural scientific - needs to be encouraged as legitimate and necessary for constructive public debate.

6. Institutional reflexivity

Those involved with education for sustainability need to recognise that information is often judged in the context of what people know about its assumed source. In conditions of apparently increasing mistrust towards all kinds of traditional authority, one-way information should not be offered as definitive (as was frequently the case in information offered by government and industry in response to the recent GM crisis), but rather as reflecting one particular informed perspective amongst many. One-way information presented deliberately to assist a sophisticated public's processes of independent 'triangulation' stands a better chance of gaining respect than privileged claims to superior understanding.

Part 3: Educational innovations



7. Experiment with two-way deliberative processes

Informing all these various initiatives there should be a clear recognition of the need to stimulate new patterns of two-way social debate and insight around issues of environmental complexity and technological development, to complement and extend the one-way patterns which have tended to prevail hitherto. Government, industry and NGOs should experiment with two-way deliberative processes for 'qualitative interaction with an increasingly pluralised public on wider issues of citizen concern, with a view of generating richer, more ethically informed understandings of priorities and pre-occupations within society at large.

References

Beck, U. (1992)

Risk Society: towards a new modernity.
London: Sage

Blake, J. (1999)

'Overcoming the "Value-Action Gap" in environmental policy: tensions between national policy and local experience',
Local Environment 4 (3): 257-278

Burgess, J., Harrison, C. & Harrison, C. (1998)

'Environmental communication and the cultural politics of environmental citizenship',
Environment and Planning A 30: 1445-1460

Cassell (1994)

Cassell's Concise English Dictionary.
London: Cassell

DETR (Department of Environment, Transport and the Regions) (1999)

Every little bit helps: are you doing your bit?
<http://www.doingyourbit.org.uk/>

DoE (Department of the Environment) (1996)

What did you throw out this week?
London: Going for Green

Giddens, A. (1994)

Beyond Left and Right.
Cambridge: Polity

Global Action Plan (1998)

Action at Home: A catalyst for change.
London: GAP

Grove-White, R., Macnaghten, P. & Wynne, B. (2001)

Wising Up: The public and new technologies.
Centre for the Study of Environmental Change, Lancaster University

Jacobs, M. (1999)

Environmental Modernisation: The new Labour agenda.
London: The Fabian Society

Macnaghten, P. & Jacobs, M. (1997)

Public identification with sustainable development: investigating public barriers to participation.
Global Environmental Change 7 (1): 5-24

Part 3: Educational innovations

Macnaghten, P. & Urry, J. (1998)

Contested Natures.

London: Sage

Macnaghten, P. & Yar, M. (2000)

Languages of the Environment,

Centre for the Study of Environmental Change, Lancaster University

Macnaghten, P. (2003)

'Embodying the environment in everyday life practices',

Sociological Review, 51 (1): 63-84

Macnaghten, P., Grove-White, R., Jacobs, M. & Wynne, B. (1995)

Public Perceptions and Sustainability: indicators, institutions, participation.

Preston: Lancashire County Council

Smith, J. et al. (1998)

'Social learning and sustainable communities: an interim assessment of research into sustainable community projects in the UK',

Local Environment 4 (2)

Toyne, P. (1993)

Environmental Responsibility: An agenda for further and higher education.

London: HMSO

UNEP (United Nations Environment Programme) (1999)

Global Environmental Outlook 2000.

Nairobi: UNEP

Unilever (2000)

<http://www.washright.com/uk/index.html>

WCED (World Commission for Environment and Development) (1987)

Our Common Future.

Oxford: Oxford University Press

Part 3: Educational innovations



3.2. Information and communication technologies for enhancing environmental education tools

Rita Birzina

Faculty of Biology, University of Latvia,
Kronvalda blvd. 4, Riga, LV 1010, Latvia,
rb@lanet.lv

Diana Shulga

Institute for Environmental Science and Management,
Raina blvd. 19, Riga, LV 1586, Latvia,
diana@lanet.lv

Karlis Kalvinskis

Faculty of Biology, University of Latvia,
Kronvalda blvd. 4, Riga, LV 1010, Latvia,
karlo@lanet.lv

Vladimirs Visipkovs

Latvian Education Informatisation System project
vlad@itl.rtu.lv

Introduction: education and change

Societal changes of the 20th century - development of information and knowledge based society and the demand to acquire the extended amount of information and practice related skills have defined also changes in the teaching and learning processes, particularly - the transition from teaching to learning as a tool in succeeding the modern objectives in education. Yet research on teaching in the turn of centuries offered the same basic approach to class teaching, introduction of project work in education can be seen as an important novelty in education approaches, as promoting the horizontal link between teacher and learner and involvement of learners in planning and taking their own responsibility for the learning process as well as providing the positive ground for involving and developing individual potentials of different learners and target groups, thus fostering also the democratic processes in education. (Zogla I., 2001).

Enhancing of ICT application in Education in Latvia

On June 13, 1997, the Ministry of Education and Science of the Republic of Latvia and the Faculty of Physics and Mathematics of the University of Latvia, signed an agreement "On the Latvian Education Informatisation System" (LEIS) (www.liis.lv, 1998). The aim of this project is to support preparing students of primary and secondary schools and universities for life and work in a modern Information Society. The LEIS project covers a wide range of educational activities: curriculum development, management, information services, infrastructure and training of ICT users at several levels of the Education system: schools, regional school boards and Ministry of Education.

Information technologies within the framework of LEIS contribute to the support of Environmental Education by means of:

- background and teaching materials for teachers and students;
- building and maintaining of websites;
- training teachers for computer literacy;
- training teachers to use elaborated internet materials;
- realising School Environmental Education projects.

Part 3: Educational innovations

The project **Air Explorers Network** is the first ICT based environmental education project in Latvia however the idea to create and launch a web based EE project was born few years earlier, but the overall technical situation in schools at that time did not allow it to come true thus postponing it to the time when LEIS created the necessary background in Latvian school system.

Environmental Education Project - Air Explorers Network

Brief history of the project. The biggest environmental education project in Latvia „Air Pollution Project Latvia” started in 1992 and was initiated and internationally co-ordinated by Norwegian Nature Conservation Society with national co-ordination centres in 13 European countries. In Latvia it was co-ordinated by University of Latvia Ecological Centre. Over the period of 5 years by the year 1997 the number of participating schools in Latvia succeeded 2000. Since 1992 Project became very popular among both teachers and school students and certain project traditions were created. In 1998 during the first Project week organised by Latvian Ministry of Education many schools continued to work on this project. Since 1998/99 project was run as a national internet-based environmental education project.

The project Air Explorers Network (www.liis.lv/gpt/, 1998-2001), is an ICT environmental education school project, established by University of Latvia Ecological Centre and the Faculty of Biology with the financial support of the Soros Foundation Latvia and under the framework of the Latvian Education Informatisation System Project (LEIS) mentioned above. Its work is based on monitoring and processing air quality data obtained from investigations carried out by Latvian school students in different parts of the country. Besides it also provides links to about 100 other web based EE resources worldwide.

The aim of the Air Explorers Network is to raise environmental awareness among school students through inquiry based environmental education project using modern information technologies, web based resources as tools for transition from teaching to learning and networking. The network provides feedback on project activities to students and their teachers and actively involves students in sharing acquired information and project experiences.

As the project title implies, it provides the space for inquiry based environmental education and networking among participants sharing a common focus on the issue. This network project initially involved 25 schools from different parts of Latvia. Currently the project has been expanded to more than 50 schools. The network is targeted mainly at lower secondary school students and their teachers, but some upper secondary students are also involved. The project involves subjects like chemistry, biology, geography, and computer science as well as provides some ideas for bringing environmental issues into literature, foreign languages and fine arts lessons.

The involvement of computer science teachers in playing a crucial role in the project, including assistance to school students in processing of acquired data and transmission it to the project co-ordination centre at the University of Latvia should be mentioned as a novel feature of the project, thus providing the important part of the project's feedback from and to participants. Teachers of natural sciences are responsible for conveying the cognitive and psychomotor teaching goals of the project to students by providing scientific background as well as skills, both - scientific and ICT ones to students, providing the project overall goals are met. Acquired data interpretation is intended to lead to greater awareness of Environmental issues - the affective component is attained here.

Part 3: Educational innovations



To support learners and provide the project overall framework the co-ordination centre at the University of Latvia is responsible for the organization of the entire project, including maintaining the Internet site and construction of interactive data map located on the web site. This map provides a space for a major feedback source for participating schools and allows them to continue expanded inquiry process using both - their own results and those registered by other network members.

The Air Explorers Network project's overall success depends on the activity of each member. This means making sure activities are carried out according to the Project Activity Calendar set for all members. This is to ensure that not only the project overall goal, but also the development of a visual project - the map of measured pH values in different parts of Latvia over the chosen period, can be attained. Aside from this focus participants have considerable autonomy: their work at the school level is planned and carried out according to local plan set by students and their teachers. However, for various reasons, some classes may fail in following the project Activity Calendar. In this case mentioned classes can still be a part of the project and use the results acquired by other participants. Since the data recording system on the Project website has been changed to an automatic one, the responsibility and the autonomy of each participant has increased.

As Air Explorers Network project is an Internet based one, the use of internet technologies is an important element here. The number of schools, provided with the access to Internet and email connections is growing rapidly in Latvia, so the project helps both learners and their teachers to master the new technologies, while directing their activities to the projects environmental education and monitoring goals. However Internet access is not a limiting factor for participation. Schools without Internet access can send in their measurements by regular mail and can visit the website to check for the feedback whenever they get the access to Internet. However, this makes project narrower as omits the ICT part.

Establishing of closer contacts and networking with students in other countries who are involved in related projects is seen as a further development potential of the project, facilitating international co-operation and initiatives in the school sector under the conditions of European integration and broader globalization.

Development of ICT tools in the Project

The Air Explorer's Network Project combines two main subprojects, which aim to monitor air quality in various localities using different study methods. The two subprojects are the Precipitation project (which uses chemical test methods) and the Lichen project (which uses lichens as bio-indicators of air quality).

Initially in the first year participants from 25 schools in Latvia made their observations, collected data and sent them via e-mail to the co-ordination centre, where the data were processed and posted as a feedback on the Project home page. The project's home page also provides a supporting theoretical and methodological information for teachers and students.

The typical steps in the data collection and submission process at the initial stage were as follows:

1. Students find the location of their school on the map and define the corresponding coordinates (for example, the school (for example, Vainode secondary school or Liepaja 5. secondary school - E2 or E1, shown on the map on the project's home page).

Part 3: Educational innovations

- Students and teachers make records of temperature, wind direction, precipitation pH value, and date and time. Then these are sent to the project co-ordination centre for processing and are entered in the table on the Internet home page.
- Results are published in the Internet using a table (Figure 1) and a map with the selected schools' co-ordinates. Each area is coloured according to the measured pH values: pH 1.0 - 5.5 - red, pH 5.6 - 5.9 - yellow, pH 6.0 - 14.0 - blue.
- Data are analysed and conclusions drawn and evaluations made.

Figure 1. Data of observation in a form of the table

School	School co-ordinates	Time	Air temp. °C	Wind direction	pH		Kind of precipitation	Particles
					value	colour		
Vainod secondary school	E2	8.00	0	SW	5,0	Red	Rain	No
		16.00	+6	SW	5,0	Red	Rain	No
		19.00	+4	SW	5,0	Red	Rain	No
Liepaja 5. secondary school	E1	8.00	+7	W	6,0	Blue	Rain	No
		16.00	-10	NE	5,6	Yellow	Rain	Yes

Interactive Lichen indicator

Similar observations are made also under the Lichen project framework. In this program pupils determine species of lichens occurring in their school area and divide them into four groups: growing in clean, slightly polluted, moderately polluted and heavily polluted environments. The results of the Lichen project are also reported on the Internet home page. Once again, students and teachers are provided with data and information allowing further discussions and attempts to arrive at certain conclusions.

As a result of the last project update a completely new interactive Key for the Lichens indicators was developed and posted on the website <http://www.liis.lv/kjerpji/>, - consisting of theoretical background in lichen bioindication, a detailed description of each lichen species and quality colour photo and Key for the Lichens scheme developed by professor A. Piterans of the Faculty of Biology of the University of Latvia. Using this scheme students can click on the selected picture or species description section and finally define the lichen species. This Key for the Lichens bioindicators was developed to meet particularly the project goals and was kept easy-to-use in determining the air quality in the surrounding area, therefore the number of indicating species is limited to 40 out of a couple of thousands available in Latvia.

Contents of Key for the Lichens

- Lichen bioindication basis
- Description of lichen species
- Lichens of heavily polluted environments
- Lichens of moderately polluted environments
- Lichens of slightly polluted environments
- Lichens of clean environments

Part 3: Educational innovations



As project developed further, the number of participating schools increased up to 68 in the school year 2000/2001, issuing signals about the need to update and improve the ICT within the project. In cooperation with LEIS project a special programme/application was developed bringing considerable improvements in data processing and immediate visualisation of the attained results, thus contributing to building a meaningful knowledge and skills.

ICT Application aims and functions

To meet the needs of the project, a special application was elaborated (<http://rex.liis.lv/gp>). It provides the following functions:

- inserting data,
- storing,
- browsing,
- editing,
- deleting,
- graphical picturing on the map.

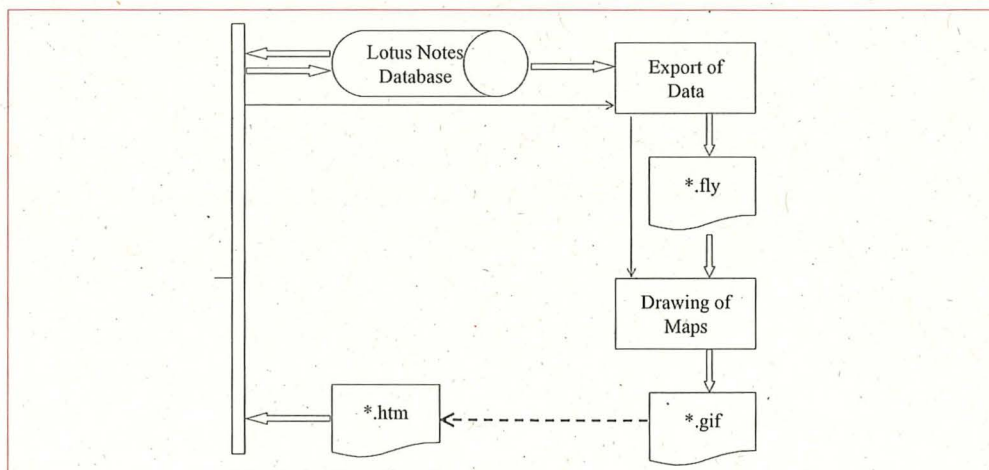
Architecture and data processing

Application is based on Lotus Notes data base and can be used both in Notes environment and Internet, using popular browsing programmes.

Initially it was planned to use map server programmes, but this appeared to be too expensive for the LEIS project. For instance, ESRI product ARC/IMS academic licence costs \$ 2250. Nearly the same priced offer of VieconPublisher was got from Bentley. Reassessing the necessary data processing it was concluded that project demands might be met by already existing Lotus Notes data base control system. But it was still important to find the way to establish the automatic registration of the inserted data. The problem was solved by applying a small programme called fly (<http://martin-gleeson.com/fly/>) which fully met the needs of the project.

Data processing scheme is showed in the Figure 2 and this application functions as follows. User creates a new document by entering data and saves it. After document is saved, Lotus Notes agent exports data to special text file in special format (files *.fly) and launches special map drawing programme fly and saves the results in map GIF format. Maps are created using data for the selected dates as well as average results for the selected weeks. To make maps available for browsing, GIF files are included in the HTML files and might be available using the browsing programmes.

Figure 2. Data processing steps



Part 3: Educational innovations

This scheme is flexible enough to allow each user to adapt it to his/her specific needs replacing Lotus Notes by any other electronic table like Quattro, Excel etc. Some tables are already provided by the map drawing functions, however only standard maps are available in these cases. These options do not fit scales of Latvia therefore it is necessary to create a particular map as a rastre picture. Maps might be further developed as it is showed in Figure 2.

Using application in the Internet

Opening of the application

Application can be found in the internet at the address: <http://rex.liis.lv/gp>.

Microsoft Internet Explorer shows the page with two frames. In the above frame four menu buttons can be seen:

- "Noverojumi" - observations - offers to choose school and create a document;
- "Kartes" - maps - shows internet page and offers the choice of the map;
- "Sakumlapa" - front page - offers to return to the start of application;
- "Paligs" - help - provides help.

After clicking on the menu button the inquired information appears in the window below.

Creating a new document

Click on "Noverojumi" button to create a new document. Internet page appears in the window below, offering to select a school and create a document:

By clicking a button "Jauns dokuments" (new document), a window appears requiring to enter the User Name and the Password. Information in the application is protected:

- creating, editing and deleting of documents is permitted to registered users only,
- created document might be edited only by the author of the system administrator,
- reading of documents and maps is permitted to all users.

If the User name and the Password were valid, a new document form appears.

The title of the school should be selected in this form and data filled in: date when the record takes place, (for example 2000.12.30), time (for example 15:18), air temperature, wind direction, pH value of the precipitation, kind of precipitation (rain, snow etc), particles (Yes or No). There are four tables according to the selected monitoring period - one table for each week.

Each school creates only one document. After data are filled they are saved by pressing "Saglabat" (Save) button. When the document is saved on the server, the following announcement appears.

Now results are available on the map.

Results on the map

To download the map showing the registered results, the button "Kartes" should be clicked. Programme shows the webpage and offers the choice of maps with registered pH values in particular dates as well as maps showing weekly average values.



Part 3: Educational innovations

Conclusions

There are some more successful and also less successful aspects in the work of this project and they can be mentioned as follows:

Pluses

1. Project diversifies the learning process - students acquire new ICT skills, project contributes to transition from conventional teaching methods to collaborative learning in a group where responsibilities are shared by students themselves. Besides particularly using of ICT attracts more boys to this project comparing to other environmental education projects mostly run by girls in Latvia.
2. Visualisation of results on the map and networking possibilities with other students of the same age and interests involved in the project contribute to the motivation for studies.
3. Launching the new data register programme has considerably improved the efficiency of the project, graphic results are much better presented enabling students to use them more diversely.
4. Using ICT provides student-friendly learning setting, offering students independent and student oriented learning. Since new technologies offer interactive learning, it is easy to create learning environment where students can learn by doing, receive the feedback and gradually build up their competence.
5. Teachers role mainly changes to the consultants one requiring change in the teaching styles and methods.
6. Web based materials are cheaper and wider available to all students and teachers at all times than printed ones.

Minuses

1. Internet is not available in all schools, especially small rural schools, therefore these schools are often excluded from the ICT process.
2. Internet operation speed is often very low and this should be taken into account when designing webpages and making sure they are kept simple and functional.
3. Internet connection in rural schools in Latvia is expensive and often this is a limiting factor for wider use of ICT based projects in schools.

References

Zogla, I. (2001)

Didaktikas teoretiskie pamati,
RaKa, Riga

The Latvian Education Informatisation System

www.liis.lv

The project Air Explorers Network

www.liis.lv/gpt

Lichen indicator website

<http://www.liis.lv/kjerpji/>

Application for project

<http://rex.liis.lv/gp/>

Part 3: Educational innovations

3.3. Environmental ethics and mass-media in Romania

Carmen Bucovala

NGO Mare Nostrum

Constanta, Romania

mare-nostrum@cier.ro

Some philosophers have called for a new ethic for the environment. Others, for the integration of the environment in the current moral consideration. And still others want to find a middle ground that does more than extend current moral consideration and suggests a new perspective so that humans are no longer considered as the items of greatest moral consideration.

What ? (the contents)

An ethic indicates appropriate and inappropriate behavior and whom it is applicable. In other words, is a differentiation of social from anti-social conduct. If the ethic includes both a sense of community and guiding moral principles, then a proper environmental ethics implies not only a redefinition of treatment of the environment, but also suggests and inclusion of the environment in the wider moral community. As that inclusion involves practical as well as theoretical changes in human treatment of the environment, the principles for doing this are both theoretical and practical.

Politics and economy are advanced "symbiosis" in which the original free-for-all has been replaced, in part, by cooperative mechanisms with an ethical content. An ethic may be regarded as a mode of guidance for meeting ecological situations so new or intricate, or involving such deferred reactions, that the path of social expediency is not discernible to the average individual.

In Romania, the level of environmental awareness is generally low. There is not much experience of, and a little confidence in the democratic process. Legal institutions are weak and there is little confidence that what the law prescribe will be correct apply in practice. The market system is in its infancy and a large number of people are unhappy with it for various, but especially ethical reasons.

The set of ethical norms became to be own by the young people when it is internalized in a personal or individual ethics. Sometimes, the trigger can be external, material factors: community rules, habitudes, norms, laws. This are working like a heteronomous ethics, less effective that the autonomous one, even that the reason for them to act in this way will vary .

The role of the environmental ethics is to guide the young people in order to reach a better and higher understanding of the surrounding nature. It must be a form of altruism in confront with the other natural elements and living creatures, presents and futures. The mechanism that guide us toward a specific ethical objective is assumed to be started or delivered by several moral authorities. Why mass-media can't be one of these?

In the Romanian media environment we have seen a lot of changes during these last years. A more committed generation of journalists is trying to impose a improvement of the access of the general public to the environmental information.



Part 3: Educational innovations

Why ? (objectives)

1. Because we need to:
 - explore the autonomous vs heteronomous ethics at high-school students (16 to 19 years old)
 - identify teachers opinion on eco-ethics matter
 - provide a model (meaning methods, data base, support materials) for developing environmental education/sustainable development workshop
2. And because the students need to answer the following questions:
 - What images and understanding of environment are being promoted?
 - What linguistic and other device of reasoning are being deployed in support of these images and understandings?
 - What underlying assumptions, values and/or interests are reflected in these images and understandings?
 - What relationship exist between media sources (ex.: pressures groups, businesses, politicians, academics), media actors (ex.: journalists, editors) and media audience (the general public)?

How ? (the methods)

1. By questioning the students (16 - 22 years old) about the main environmental issues in Romania/at the Romanian Black sea shore
2. By monitoring (with the help of the students or of the NGO Mare Nostrum volunteers) the reflection in the written and audio-video mass media of the above mentioned topics.
 - Students need to gain experience in constructing a indicative selection (not a sample) of current mass media output, focusing on material of direct or indirect environmental relevance, in critically appraising mass media representations - particularly for the images and understandings of environment/nature that are being promoted; for underlying assumptions, values and interests; and for other aspects of their social and environmental significance; working independently in a group, and making a audio-visual presentation;
 - Selecting items from a broadcast (ex.: news, natural issues/public health issues documentary and magazines program, life style and consumers affaires material, advertising, children broadcasting, films, etc) or a print medium (ex.: news reporting, extended investigative coverage of environmental or public health issues, editorial comments or news events, campaigning journalism, entertainment, arts and media "review", etc).
 - Answering questions on: what proportion of the medium as a whole is devoted to issues of an explicitly environmental nature?, what are the explicitly environmental items about, and what are the messages (ex.: priorities, policy, values judgment), it is representing the environment negatively, especially as a threat to humans, or positively, in terms of intrinsic and extrinsic value; to what extend are they consistent one another?; comment, with examples of the reasoning (ex.: use of science, language, rhetoric, images and symbols etc. used to communicate 'arguments' of an explicitly or implicitly environmental nature, including juxtapositions of (for example) text, pictures/graphics and/or music; and camera angles/perspectives; for news, which are the sources (groups, politicians, scientists) whose views are cited - and whether those views are endorsed, discredited or reported neutrally; To what extent does the

Part 3: Educational innovations

medium as a whole appear to adopt a coherent position on the environment - either explicitly or implicitly? Is it broadly technocentric or ecocentric?

3. By researching (through Delphi technique) the knowledge, skills and willingness of the teachers to approach the eco-ethics in the wider frame of environmental education and sustainable development
4. By spreading the results in non-formal environmental education - sustainable development workshops for students
 - The development of modern environmentalism has been accompanied by the emergence of a new field within the discipline of philosophy: environmental ethics. Working within this field, philosophers and others seek to explore the nature of the moral relationships that might be said to exist between humans and non-humans, asking questions such as:
 - what kinds of ethical obligation do humans have towards non-humans?
 - do these obligations vary between different kinds of non-human entity (eg living and non-living things; individual organisms and species)?
 - do these obligations vary according to context (eg between urban and wilderness areas)?
 - what is the precise nature of these obligations? Responses to these questions reveal that the field of environmental ethics encompasses a highly diverse range of approaches, which differ greatly in their potential implications for environmental decision making. The study of environmental ethics, provides students with an opportunity for developing more informed judgments about their own personal practice, and about the environmental prescriptions, decisions and practice of others.
 - To introduce students to a variety of approaches that have been advocated in the field of environmental ethics, and to provide them with an opportunity to compare and contrast those approaches in terms of their underlying principles and their implications for environmental decision making. The students should:
 - be aware that a diversity of approaches has been developed within the field of environmental ethics, and have some familiarity with at least some of those approaches;
 - be aware that these approaches differ significantly in terms of their underlying principles and implications for environmental decision making;
 - begin to be able to assess environmental texts in terms of their environmental ethical content.

When ? (time frame)

- Since 1996 till 2002 for the press monitoring and in the period 2001- 2002 for the audio-video mass media
- In 2000 - 2001 and 2001 - 2002 school years for the questionnaire filled by the students
- In 2002 for the research with teachers and for the workshop

Where ? (institutions involved)

- In two Constanta high-schools

Part 3: Educational innovations



- At Mare Nostrum NGO. Mare Nostrum is an organization comprised of citizens concerned about the severe degradation of the Romanian Coastal Environment, whose mission is to promote the transformation from the current unsustainable practices and attitudes towards more sustainable and environmentally conscious

Whom ? (target group)

- high-school and university students (see below the distribution of the student by years of activity)

Year	Number of students that have monitored the written mass media	Number of students that have monitored the audio-video mass media
1996	3*	-
1996	3*	-
1998	7*	-
1999	10*	-
2000	15*	-
2001	15**	60**
2002	30**	120**
Total	113	180

* - Mare Nostrum NGO volunteers

** - "Ovidius" high-school students (15 - 19 years old)

teachers from the pre-university field

With ? (materials)

Questionnaires (see below the questionnaire subjects and the target group distribution)

Questionnaire answered by the students	Students			
	14 - 16 years old*	17 - 18 years old*	19 - 22 years old**	Total
Environmental issues awareness level	125	87	39	251
The impact of the alimentary additives on the human health	50	61	12	123
The influence of the electro-magnetic fields on the living organisms	45	30	10	85
Total	220	178	61	459
%	47,93	37,77	13,28	100

*high-school students

**university students

Part 3: Educational innovations

- Mass media monitoring (see below the observation sheets used and the media that have been surveyed)

For broadcast medium items					
Date of broadcasting	Starting time of broadcasting	Length of broadcasting	Type of program (news show, advert, documentary)	Title and description of the broadcast	The impact of the viewers
For print medium items					
Date of publication	Page number - section (editorial page, magazine)	Status of item (lead story, advert, editorial, comment column)	Length of item (text and non-text material)	The impact on the readers	

Press monitoring	Number of local mass media surveyed	Number of central mass media surveyed	Number of foreign-mass media	Total
Written mass media	5 ("Observator", "Independenul", "Cuget Liber", "Telegraf", "Jurnalul de Constanta")	11 ("Adevarul", "Romania Libera", "Cronica Romana", "Libertatea", "Jurnalul national", "Cotidianul", "Evenimentul Zilei", "National", "Ziua", "Capital")	1 ("Le Monde")	17
Audio-video mass media	3 ("Soti TV", Canal 57", "MTC")	7 (PRO TV, Antena 1, Prima TV, TVR1, TVR2, B1 TV, OTV)	7 (RAI 1, RAI 2, RAI 3, TV 5, Animal planet, Discovery Channel, CNN)	17
Total	8	18	8	34
%	23,51	52,94	23,51	100

The check list for the students that work on this assignment:

- Meet the deadlines
- Presentation of the conclusions after the survey (written and multimedia)
- Tabulated list of articles/shows
- Collection/data base of articles/broadcasts

Part 3: Educational innovations



Results

1. from the media monitoring

- Statistical analysis of media items themes (annex 1)
- Statistical analysis of the explicitly/ implicitly value of media items themes

Written and audio-video media items		Number of items	%
Explicitly related with the environmental issues	Loss of the biodiversity	276	10.06
	Pollution	766	27.92
	Deforestations/desertification	223	8.13
	Ozone layer hole	279	10.17
	Urbanizations	139	5.06
	Global warming	341	12.43
Implicitly related with the environmental issues	Loss of jobs due to the environmental degradation	91	3.31
	Diseases generated by the air, soil, water pollution	189	6.89
	Low life quality	78	2.84
	Recreational role of the nature	69	2.51
	Recycling/reusing	46	1.67
	Impact on the economy of the environmental issues	246	8.96
Total		2743	100

- statistical analysis of the values of the nature reflected by the media items

Written and audio-video media items			Number of items	%
Personal use value	Direct use value (output that can be consumed directly)	Food/biomass/ recreation	789	28.76
	Indirect use value (functional benefits)	Ecological functions/ flood control	156	5.68
	Option value (future direct and indirect use values)	Biodiversity/ conserved habitats	1203	43.85
Non use value	Bequest value (value of leaving use and non use values for offspring)	Habitats/ irreversible changes	508	18.53
	Existence value (value from knowledge of continued existence)	Habitats/ endangered species	87	3.17
Total			2743	100

2. from the questionnaires answered by the students

The goal of evaluating the young people awareness level in confront with the environmental issues is orienteering those who are involved in organizing environmental activities or public awareness, and have the initial questionnaire test. The results we are expecting after the application of the questionnaire are the followings:

Part 3: Educational innovations

- Quantifying the level of reaching some objectives of environmental education: to get knowledge, values, attitudes, environmentalist behaviors, through showing the qualitative aspects of the quantitative aspects of the mass phenomenon;
- Comparison of the above mentioned parameters for several target groups (age, psychological development, school profile, etc);
- The analysis of the degree in which the individual values can be found in the average we quantified;
- Verification of the hypothesis who are at the base of the elaboration of an environmental education program;
- The evaluation of the concrete results, objectives that can be reached through the methodical improvement of the environmental education programs.

The questions are referring to reaching some environmental education objectives like, as following:

- a) knowledge about the environment and its issues (identifying the relationship between the economic/ social/ political/ ecological level of the conflict points, describing the structural and functional characteristics of the natural environment, showing the dependence of the human society in confront with the natural resources and the economic importance of the natural environment, comparing the local and the regional situation, developing the capacity of observing natural phenomenon and identifying cause-effect relationship at the natural systems level;
- b) emotional capacity and skills: the progress of developing steps of a new own personal ethic, the capacity of exceed the moral dilemma at the personal or social level;
- c) reflexive capacity and skills: evaluating the pozitiv or negative impact at the personal, group or social action on the enviroment, producing sensible values judgment for organizing an inner value system and a life philosophy, a behavior code that should show the respect to the nature; defining their own attitude and beliefs to the nature;
- d) creative capacity and skills: producing hypotesys and conclusions about solving the environmental issues by strating from the registred and analized data; prove the role of the human ethical values in starting or solve a nature problem; making predictions about the results of alternative solutions suggest;
- e) social interaction capacity and skills: developing the team spirit, the cooperation and the goup integration in order to stimulate the investigative approach and the initiative in the group;
- f) comunication capacity and skills: identification, selection and valorizing of new information sources for the investigation, evaluation and solving the environmental issues, the critical analysis of the information;
- g) practical capacity and issues: practicing the field work and producing a ainner motivation for that.

We can also classifying the question in the following types: about facts; classification of the students; opinions which are in general emotional, labile, some times accidentals; opinion intensity classification; attitude, which are less profound opinions, generated more by the ration and which are more consequent. About the order of the questions we choose to organize its in chapter with unique, multiples and ierahyze answers.

Part 3: Educational innovations



We identify several possible errors sources:

- Length of the questionnaire: the questions could create a boring state and the answer could be alterate at the especially at the last ones;
- Structure of the questions: especially for those personify who can generate errors because the order of sentences they have to choose;
- Content of the questions: those who ask for the previous knowledge of the students;
- Wording of the questions: some specific words, or the too specific terms;
- The place of submitted the questionnaire;
- The operator who is applying the test (the teacher): can influence indirectly in a positive way (the increasing of the answer who can pleased the teacher) or in a negative way (a reduce number of answer that can pleased the teacher). In order to reduce this kind of errors the students can be announce that the test will be analyzed by someone else that the class teacher.

Most of the students (58%) declare that they are discussing "sometimes" about the environmental issues with their family and friends, and only 14% discus "often" about its. We consider that an important role in producing this kind of results is the mass media contribution (especially the dissemination of different ecological disaster, which took place in the last time). Even that, 75 % of the students who answer the questions declare that they have medium knowledge about the environment and the natural processes and 6% doesn't know it at all. The cause it is obvious here also: the lack of the curricular approach, which should aloud a thoroughgoing study, thing that became aware for the students also.

Related with that, another question show that 87 % of the students wish to receive more information about the environment during the school lessons and the same percent agreed with the introduction of some compulsory environmental education classes. 36 % believed that this informational contribution would be more effective at the primary school and only 2% at the university.

Questions two and three refer to the level of knowledge of some objectives /institutions that can be a source of information and a possibility to develop positives attitudes, responsible towards the environment. From this analysis we can see that the most visitors preferred the Aquarium - 49 % and the Dolphinarium 32 % - none of them know the reserve from the Natural Science Museum from Constanta and only 3 % visited the Sea Museum. The majority declares that they visited these units many years ago, probably guided by their teachers/parents. This show that a good way to introduce formal environmental education aspects is to bring the young people close to the objectives mentioned before.

Another way of increasing the sensitiveness in confront with the environment in to spent some time in the nature, preferably in a company who should favored not only the ludic/recreation of this activity and also the possibility to start positives behavior towards the environment. Like that 79% are going in filed trips only during the vacation and their friends accompany most of them.

The term of "Sustainable development" it is know by 57% from the students, 6% are even trying to formulate at heir own definition. The question numbers nine it is related with some emotional skills and capacity. The majority preferred to adopt some pasive attitudes like signing petitions, that being part of environmentalist organization/associations or to participate at active environmental protection program

Part 3: Educational innovations

The open answer questions refer to the knowledge about the institutions with attribution in the field of environmental protection, about knowing the protected areas and the endangered species from the Romanian coastal zone. From the environmentalist organization the most known are Oceanic Club and Mare Nostrum by almost half of the sample. From the protected areas the student have heard about 2 Mai - Vama Veche (26%), Hagieni and Techirghiol Lake (11%) and Agigea (14%). The sea horse and the dolphins are know like being endangered species by 29% from the students, others species known are the monk seal, the sea star, the Black Sea shark and sturgeon. Here we can find some errors of the students that consider like endangered species the seagulls and the anchovy.

Most of the students doesn't know the local institution with attribution in the field of environmental protection (only 6% have heard about the Environmental Protection Inspectorate and only 44% know that the Ministry of Water, Woods and Environmental protection is the central responsible authority. Half of them know about the celebration of the Earth Day on 22 April and about the Black Sea Action Day and the more important environmental issues are the chemical pollution of the water, soil and atmosphere - 44%.

The last question wish to show in order of importance the environmental issues at the Black Sea shore through giving some marks between 14 - the most important and 1 - the less important issues. The worst - according to the student's opinion - is the pollution brings by the rivers (over 900 points). After that is the pesticides pollution and the waste waters spills from the urban areas, solid waste deposits and the lack of people interest (over 800 points). The last import problem, with only 295 points, it is the presence of too many tourists at the Romanian shore.

It is evident that to put order in the environmental issues of the Black Sea it is very difficult, even for a specialist, that way we watch less the evaluation of the degree of knowledge of this aspects and more the individual reflection of the Black Sea ecosystems degradation. The "first place" gave to the pollution cause by the rivers show that the students know about the Danube influence to the chemical and physical characteristics of the local ecosystems. The influence of pesticides because of the continental waters, in the second position it is quite surprising because generally this kind of pollution is associated with the agricultural practice and not with the seashore. So the students are aware of the danger represent by the pesticides on the human health. The waste waters spills is a very common phenomenon at the Romanian shore where you can it is very interesting find at "each step" a pipe on the beach. The situation is very similar for the solid waste. It is very interesting to see that the lack of interest from the local people or from the tourist it is identified likes one of the more important issues at our coastal zone. The oil pollution it is obvious for the most students, especially because the last pollution accidents in the port area, phenomenon that you can see with some regularity.

A major percent from those who answer the questions consider that the introduction of compulsory environmental education elements would be a good method to improve the behavior in confront with the nature; this "injection" of information is better to be organize in the primary school. Only 5% of the students are members of the environmentalism NGO. Even most of them consider that are discussing quite often about the environmental issues with they family and friends they haven't visited since many years some museum objectives like Aquarium and Dolphinarium. The term of "Sustainable development" it is know by 57% from the students, 6% are even trying to formulate at heir own definition. The students have big difficulties in identifying the local and central institution with attribution in the environmental protection. The "first

Part 3: Educational innovations



place" gave to the pollution cause by the river show that the students know about the Danube influence to the chemical and physical characteristics of the local ecosystems. These results can help in orienteering those who are involved in organizing environmental education activities or public awareness.

3. From the research made on teacher opinion about eco-ethics through Delphi techniques

Using the Delphi method in order to identify the interest of the teachers/students in promoting the eco-ethics concept was developed by using the following steps:

- a group with 15 university students and 15 middle-and high-school students have been asked to answer 6 questions about the environmental ethics concept
- the questions have been repeated three times with the redistribution of the information already gathered from the previous rounds
- the conclusion extracted have a important role in identify that involved values judgments, prioritization of the educational objectives. In this way can be approach persons that wouldn't participate usually in a environmental education workshop/survey/monitoring program. By growing the specificity of the question can be done a semi-quantitative evaluation of the answers.

Some curricular themes have been collected after applying this technique. The teachers agreed that the main themes should be:

- The presentation of the larger frame of the environmental education (sustainable development education, education for the biodiversity, eco-ethics)
- Basics of the eco-ethics
- Basics of environmental science
- The main environmental issues at local, national, regional and global level
- Interdisciplinary approach of the eco-ethics issues
- Religion and science relation
- Case study at the local level

The questions asked in the first round have been:

Questions	Teachers' comments on the place of eco-ethics in the school curricula:
1. What is eco-ethics?	"harmonic relation between the human population and the environment" "improving the quality of the human life" "avoiding the conflicts between economy and ecology"
2. How can you approach this field with your student?	"a contentious topic" "the students can express an opinion" "useful to get students speaking and discussing" "a tutorial environment" "deals with a important aspect of the environment" "help the understanding of the instrumental/ intrinsic value of the nature" "understanding relation in the environment."
3. What should be the goal of the eco-ethic teaching approach?	"encourages students to think about environmental issues" "systematic method" "how these is relate to their lives."

Part 3: Educational innovations

Questions	Teachers' comments on the place of eco-ethics in the school curricula:
4. How this subject can be implemented in the school curricula?	"provide a base for discussion" "encourages active participation" "keep students interested."
5. What methods should be used for a efficient teaching of the eco-ethics?	"combines a variety of activities" "allowed (survey, monitoring, personal reflection, group work, debate)."
6. Which is the place of eco-ethics in the wider frame of the environmental education?	"dynamic subject." "good ice-breaker for discussion and student centered participation."
7. Which obstacles can be identify in the implementation approach of eco-ethics in environmental education fields?	"knowledge of ethical theory" "knowledge of philosophical currents" "time management"

Conclusions

Changes of the natural environment as a consequence of the human activity increase at both local and global level. Only by raising people's awareness and making them understand the functioning of the life support systems and the relationship between the quality of the environment and the necessity of the resources exploitation a decrease of the man made impact can be achieved. The key of solving these problems is the environmental education, a relevant and necessary field for all ages and for all socio-economic levels. Environmental education includes the formal education (schools, training institutions) and nonformal (clubs, associations, foundations, mass media, adult education institutions, etc).

It is more and more necessary the creation of new kind of relationing between individuals, society and nature phenomenology in order to find a new alliance who should stop the more and more probable eventuality of irreversible damage at the natural population level. Such methods are useful new knowledge forms who can enable the individuals and the social groups, and also the responsible of the social life at all levels (economic, political, productive, cultural, administrative, etc) in the situation of stop ignoring the consequences of the human action on the environment.

From this perspective it becomes obvious the place of the educators and of the new generation' trainers but also for the adults in order to accustom the students to faced in a more responsible way the different dimensions of the reality without being overwhelmed by these but, on the contrary, sustained in diminishing the effects of the negative human behaviour upon the nature. From this point of view the environmental education is a kind of civic activity which goal is to develop the knowledge and action of the people so they could observe, analyze and make the difference between the various aspects of the nature and the social situation in which they are living, in order to understand the profound features of that.

Part 3: Educational innovations



Our environmental context, the urban structures, the totality of places which we are exploring and who are generating new emotional, social, cultural relationship that are influencing the development of our own identity, put us in contact with the multi-dimensional phenomenon of the micro- and macro-universe. The educators should know, in the first place, that can make the students to exceed the simplified, confuse, conflict perspective about the environment process, to accustom them to decode and to analyze these complexes events and their dynamic development who characterizes the living and nonliving environment.

From the questionnaires results that most of the students (especially the youngest have not enough information on the local and regional environmental issues, that is why a good way to make them aware in confront with this problems is to check more closely the local and central mass media, but with the write choice of the media items and trying the developing the critical thinking of the youngster.

By analyzing the written articles on Romanian and Black Sea environmental issues we can see that the main space is dedicated to the continuous chemical pollution (13.47% of articles) generated by industrial and domestic waste waters spills from Constanta and other towns nearby the cost line. The big pollution accident are caused mainly by oil spill from Constanta or Mangalia harbors/shipyards.

Others problems that are by the locals through the decreasing of the marine fish species found in Constanta markets - 10.18%; landscape degradation (illegal building, write in the vicinity of the beaches or in the protected areas), that sometimes lead to the soil or coal erosion). The measures that could limit/make disappear the problems faced by the local communities are presented by the mass media through public campaigns (12.08%), the local environmentalist NGO's activity (10.88%), through subjects on environmental laws and conservation agreements (7.42%), or regional/international NGO's activity (2.07%). The TV - radio shows on environmental issues have been mainly focused on the biodiversity loss and the pollution in news shows, documentaries, advertising, films, consumers life style magazines, etc.

Another analysis of the written and audio-video media items have been done by the explicitly (eg.: loss of the biodiversity, pollution, deforestations/desertification, ozone layer hole, urbanizations, global warming, etc) or implicitly (loss of jobs due to the environmental degradation, diseases generated by the air, soil, water pollution, low life quality, recreational role of the nature, , impact on the economy of the environmental issue) feature related with the environment. The most obvious is still the pollution and the least is the recycling/reusing activity, with a very slow raising awareness rate in our area. The personal use of the nature (direct, indirect, option) have been recognize in more than 77% of the media items. The non-use/potential value it is less evident and can be found in only 23% of the items.

In spite of the extreme deterioration of the environment in large areas and cities of Romania, environmental awareness has been and remains low. One reason for this is the general scarcity of information circulating in these countries. in addition to information scarcity, delay and distortion, one should consider that, if assuming the same kind of information, the perception of acceptability of pollution varies, between individuals and groups, depending on the degree of acceptability of other existential conditions. The weakness of the legal system, and the negligence in implementing the law has been notorious, and it still is. With the "change" some things have changed but not all.

Part 3: Educational innovations

In Romania, reform of the public school curriculum only a few years ago allowed for "ecology" during optional hours. Outside of these optional hours, there is very little flexibility in the curriculum, or rather most Romanian teachers have not learned to see the flexibility in the curriculum nor the interest to their students education for introducing integrated activities that characterized environmental education.

This is one of the few inroads for NGO's to use when trying to design environmental education programs or materials for public school teachers. Obviously, extracurricular activities are possible, but these become increasingly difficult, as the students get older. Student time is co-opted for academic Olympics or studying for the final exams. So, to date the only environmental education in Romania is primarily being organized by non-governmental organizations and only sometimes in collaboration with school teachers. A few universities have created "ecology" degrees, but the job market has yet to respond to the need for environment related jobs.

A number of challenges present themselves to those interested in doing environmental education in Romania. Funding for materials, salaries, activity spaces, lesson plans and other resources is perhaps the most obvious. Further, most models for environmental education within or outside of the public schools come from Western Europe or the United States. That means that available teaching materials are shaped by the culture, economic standard and worldview of the countries for which have been created. Currently there are very few resources available in Romania to teachers/volunteers interested in environmental education. There is an abundance of resources to be found in English, but these require adaptation to the cultural and economic situation here in addition to translation.

Some of the cultural beliefs and societal attitudes that impede environmental education in Romania include - a general apathy that things are not going to improve and that an individual cannot make a difference; an externalization of the responsibility, that is the idea that someone else is at fault; and a rejection of things associated with communism such as recycling and reusing and a love of consumption. These are only some of the differences that need to be understood in order to design new activities and to adapt existing ones so they are effective in Romania. Then there is the overall difference in economic conditions. In the developed countries it is often argued that we can "afford" to be environmentalist; that environmental friendly behaviors are expensive and therefore not accessible to poorer countries.

Environmental education in Romania can be improved and enhanced from two different fronts. First, people and NGO's currently doing environmental education in Romania need to work together to make their efforts and resources known and available to each other and to other teachers and individuals interested in environmental education. Not only should resources be shared and talked about, but efforts at teacher training need to increase. Currently, the number of people with the understanding and experience to teach environmental education in Romania is very small.

Second, the government needs to make efforts from top to bottom. Thus far, almost no movement occurred from this end. On one hand, general laws affecting NGO's and donations need to change so that the local communities and companies are encouraged to support environmental education efforts. Outside support for these efforts is quickly drying up and if the void is not filled then the grass root momentum will be lost. On the other hand, the Ministry of Waters, Forests, and Environmental Protection needs to get its act together and start incorporating environmental education into its activities and protection efforts.

Part 3: Educational innovations



References:

Bondolfi, R. (1996)

Man in front of nature and its sustainable development: some aspects of ethical-ecological thought in Europe, The New Europe: Transformation and Environmental Issues, Third International Conference on Ethics and Environmental Policies, p 22 - 41.

Kozeltsev, M. (1996)

Transition to sustainability of the Central and Eastern European Countries, The New Europe: Transformation and Environmental Issues, Third International Conference on Ethics and Environmental Policies, p 45-76.

Pavan, M. (1996)

Etique et environnement dans l'Europe qui change, The New Europe: Transformation and Environmental Issues, Third International Conference on Ethics and Environmental Policies, p 77-98.

Scimemi, G. (1996)

Environmental and the Role of Ethics in Modern European Societies, The New Europe: Transformation and Environmental Issues, Third International Conference on Ethics and Environmental Policies, p 1-8.

Smizansky, P. (1996)

Environmental Ethics and Policy, The New Europe: Transformation and Environmental Issues, Third International Conference on Ethics and Environmental Policies, p 9-21.

Sylvan, R. & Bennett, D. (1994)

The greening of ethics, Cambridge, UK, 63 p.

Annex 1: Statistical analysis of media items themes

Part 3: Educational innovations

Statistical analysis of media items themes

Themes of written articles on Romanian and Black Sea environmental issues	News
Continuous chemical pollution	51
Public Campaign	11
Local environmentalist NGO's activity	24
Biodiversity loss - overexploitation of the natural resources - wild life conservation	40
Deforestations	19
Environmental law - international conservation agreement	15
Pollution accidents	30
Protected areas	7
Landscape degradation	15
Sustainable development - intergrates environment management	13
Soil/shore erosion	8
Environmental education	7
Alimentary additives issues	9
Regional/international NGO's activity	4
Environmental issues negative impact on the human health	4
Volunteers for the environment	4
Electro-magnetic pollution	3
Total	264

TV - radio shows on environmental issues (2001 - 2002)	News
Biodiversity loss	191
Pollution	203
Landscape degradation	178
Veterinary medicine	43
Landscapes/travels	34
Natural calamities	56
Total	705

Part 3: Educational innovations



Campaigns	Editorials	Letters to the editor	Media review	Arts review	Entertainment	Advertising	Number of articles monitored	%
3	5	1	5	-	-	2	78	13,47
36	6	3	2	-	-	5	70	12,08
25	2	2	1	-	-	3	63	10,88
3	-	-	1	2	2	3	59	10,18
2	3	2	1	-	-	2	45	7,77
5	7	1	4	-	-	1	43	7,42
2	1	-	-	-	-	-	39	6,73
5	5	1	-	1	5	3	37	6,39
2	1	-	-	-	-	-	29	5,00
2	1	-	-	-	-	-	27	4,66
2	2	6	-	-	-	-	26	4,49
-	-	-	-	2	-	-	19	3,28
3	-	-	-	-	-	-	15	3,59
1	2	-	-	-	-	-	12	2,07
1	2	-	-	-	-	-	9	1,55
-	-	-	-	-	-	-	4	0,69
1	-	-	-	-	-	-	4	0,69
93	37	16	14	5	7	19	579	100

Series	Magazines	Advertisings	Films	Consumers life/ style	Transmissions for children	Number of monitored shows	Percent
	76	85	12	19	6	691	31,93%
	36	43	12	6	-	411	18,99%
	45	83	7	8	1	398	19,39%
	17	16	4	6	12	287	13,26%
	69	45	6	7	-	239	11,04%
	45	10	19	-	-	138	6,37%
	288	282	50	46	19	2164	100%

Part 4: Good practices

4.1. Environmental learning through student's participation in ecological research

Vladimir Galushin

Dept. of Zoology and Ecology
Moscow Pedagogical University

Nataly Zakharova

Dept. of Biology
Moscow City Pedagogical University

Ekaterina Statkevich

Dept. of English, Russian International Academy of Tourism, Moscow, Russia
c/o Russian Bird Conservation Union, Shosse Enthuziastov, 60, 111123 Moscow, Russia; e-mail: v-galushin@yandex.ru

Personal participation in scientific research and nature conservation is the most reliable way to both learn and respect environment. Students have to be prepared to participate in these activities effectively through training in environmental subjects. Thus a traditional approach to environmental education in Russia is based on proper combination of learning, research and conservation actions. Generally speaking it is unity of so called formal and informal environmental education.

Environmental education in Russia is based on Federal Law "Of Environmental Conservation" (10 January 2002). Its Article 72 declares in particular that fundamentals of environmental knowledge are taught at all levels of the educational system including both pre-school, school and University levels.

In Russia formal environmental education (which is traditionally called "ecological education" in Russian language) stretches over all students on both school and university levels. Teacher training curricular includes a variety of environmental disciplines as compulsory components throughout the entire country. This general approach is based on clear understanding that in fact teachers are the most numerous agents to raise public environmental awareness.

To be well prepared to such activity they have to be well trained in environmental education. In addition to learning of curricular materials students in Biology, Chemistry, and Geography participate in field ecological or environmental studies. Working in the field these students are actually involved into day to day practice of particular public environmental awareness. Therefore three aspects of student activity in this area can be outlined. They are:

1. *pre-service teacher training in environmental education;*
2. *participation in field ecological research;*
3. *raising of public environmental awareness.*

Part 4: Good practices



Pre-service environmental teacher training

All 80 teacher training institutions in Russia including three Moscow Pedagogical Universities provide broad and various environmental curricular to students. It includes: traditional courses with large environmental topics (like Botany, Zoology, Geography, Chemistry, Human Physiology, etc.) as well as some particular environmental courses like General Ecology, Social Ecology, Human Ecology, Regional Ecology, Conservation of Natural Resources, Protection of Rare Animals and Plants, Environmental Protection (Chemical Ecology), Conservation of Nature. All of them are either compulsory or optional and accompanied by laboratory work, credits and exams as well as by field practice (for example the latter in Zoology and Ecology lasts for four-six weeks in various Faculties). At present a federal component of teacher training curricular includes at least two compulsory disciplines namely General Ecology and Social Ecology with Conservation of Natural Resources. It is worth to mention in this respect that the course on Conservation of Nature was included into University curricular over 35 years back while the new course on Social Ecology was developed only in the middle of 1990s. At present Pedagogical Universities in the country combine both federal and regional components of environmental curricular. For example, Tomsk Pedagogical University in the "oil region" of Western Siberia developed the particular course "Chemistry and Ecology" while Kursk Pedagogical University in agricultural regions of European Russia includes courses like "Ecology and Agriculture", "Soil Conservation", etc.

Case study 1. Biological and environmental education in Moscow Pedagogical State University

For over 130 years this oldest in Russia institution has trained teachers in various disciplines. Environmental courses are included into curricular of its Faculties for Biology and Chemistry, Geography, Primary School Education, Pre-school Education, Musical Education, Social Education and others. An example of it (Table 1) shows that various disciplines on biodiversity and environment extend through all five years of teaching. University graduates obtain Diploma for teaching of basic school disciplines like Biology, Chemistry, Geography as well as additional regional discipline "Ecology" (Environmental Sciences) in case particular schools in some regions include it into their curricular.

**Table 1. Excerpts from curricular of Biology-Chemistry Department,
Moscow Pedagogical State University**

Subject	No of teaching hours	Semester(s)
Botany		
lectures	128 (64 weeks)	1st - 4th
laboratory work	128 (64 weeks)	1st - 4th
field practice	144 (4 weeks)	2nd, 4th
Zoology		
lectures	128 (64 weeks)	1st - 4th
laboratory work	128 (64 weeks)	1st - 4th
field practice	144 (4 weeks)	2nd, 4th
General Ecology		
lectures	64 (32 weeks)	7th - 8th
laboratory work	64 (32 weeks)	7th - 8th
field practice	72 (2 weeks)	8th

Part 4: Good practices

Subject	No of teaching hours	Semester(s)
Social Ecology		
lectures	36 (18 weeks)	9th
seminars	36 (18 weeks)	9th
Environmental Education		
lectures	24 (12 weeks)	8th - 9th
Regional Ecology		
lectures	32 (32 weeks)	7th - 8th
seminars	32 (32 weeks)	7th - 8th
field practice	36 (1 week)	8th
Protection of Rare Animals and Plants		
seminars	28 (14 weeks)	10th
Conservation of Nature		
lectures	28 (14 weeks)	10th
seminars	14 (14 weeks)	10th
Human Ecology		
lectures	28 (14 weeks)	10th
seminars	28 (14 weeks)	10th
Environmental Protection (Chemical Ecology)		
lectures	36 (18 weeks)	8th - 9th
laboratory work	36 (18 weeks)	8th - 9th

At the end of the first and second years one month field practice is arranged either in the Biological Station or by travel of student groups to various biogeography zones mostly within European Russia.

Yearly up to 50-60 graduates (out of 120 ones) prepare and defend Diploma on Botany, Zoology, Ecology and Environmental Sciences.

Case study 2. Moscow City Pedagogical University

The youngest Pedagogical University which exists five years only also includes environmental subjects into curricula of its Faculties of Geography, Chemistry and Biology, Mathematics, Physical Culture and others. Most of them are "General Biology and Fundamentals of Ecology", "Social Ecology", "Environmental Protection", "Chemical Ecology" and like that.

Some schools, lyceums and gymnasia have agreements with the University for particular consulting of school teachers by the University staff as well as for joint teaching of both basic and additional subjects including Environmental Sciences, Ecology and Biology. Clubs of young researchers in Biology, Ecology, Geography and Environmental Sciences are set up both in the University and supervised schools.

Field environmental practice concludes of teaching of Biological and Environmental Sciences. For that students go to a camp among mixed forests along the Istra river west of Moscow or to various sites of the Moscow region including the Prioksko-Terrasnyi Zapovednik (Nature Reserve) near the Oka river south of Moscow. During that practice students study plants, animals, soils and various types of landscape. Special attention is paid to anthropogenic pressure on biodiversity and landscapes as well as to practical measures to soften such influence.

Part 4: Good practices



Students also participate in implementation of scientific programs developed by various Departments. Their work jointly with University teachers is resulting in scientific reports which are presented at student's scientific conferences. In case students continue their field studies for two-four years they prepare Diploma in selected subjects. The best students can continue their education as post-graduates for preparation of PhD theses in various fields including Environmental Sciences.

Case study 3. *Russian International Academy of Tourism, Moscow*

Teaching of practical ecology in the private Academy of Tourism is valuable because it provides rules of environmentally reasonable behavior when hiking or boating, raises of awareness to biodiversity and landscape, gives knowledge of plants and animals. These things are important even for the people whose professions are not directly connected with environment. Therefore ecological tourism is taught in the Academy including sport and scientific tourism as its branches. Generally speaking Russian International Academy of Tourism founded in 1981 both train specialists for the great variety of travel agencies and tour operators and support of development and advance of various kinds of ecological tourism in Russia. Its curricular includes management of tourism and traveling, short time excursion guidance, and environmental management as well. The postgraduate courses prepare highly qualified specialists namely PhDs in various scientific fields connected with tourism like Language, Geography, Ecology and Environmental Sciences.

Academy has some branches within Moscow province. One of them namely Institute of Tourism Technology (ITT) is situated in Pushkino town north-east of Moscow. Its curricular was adopted in 2000. Since then ITT has been working jointly with different kinds of schools and colleges in Pushkino and its district. School and ITT students with their teachers took part in various hikes, tours and excursions round town and through the district. They always include study of local landscape and biodiversity as well as history and economy. Such tours and their proper discussions help students to improve their knowledge and practical skills in the field of ecological tourism. In result majority of ITT graduates get job in tourism service within their district. For example two tourism agencies namely "Pushkino-Tour" and "Seecourse" founded and ruled by the ITT graduates. Their ecological and historic tours and excursion routes are very popular among both citizens of Pushkino and Muscovites as well. The next year the ITT students will get the opportunity to choose a specialty of manager for ecological tourism. Many students prepare their Diploma on ecological tourism while some of them chose Ecology and Environmental Sciences. Students can participate in development of ITT dendropark as well as in ecological researches in the district. Disabled children also have some advantages in getting education in ITT. Winners of various contests among the students for the most talented ones are granted free of charge education in ITT. The best ITT graduates can continue their professional education. At present 11 ITT graduates entered the postgraduate courses in the Academy of Tourism and 5 more are going to take this course next year. So the scientific work is an integral part of the Academy activities. ITT also participates in various international projects. Pushkino town has close working connection with German town Werst. They negotiate in particular of establishment of joint Faculty of German Tourism including ecological, cultural, educative, business and scientific kinds of tourism.

Part 4: Good practices

One of important educational programs of ITT is teaching foreign languages as means of communication between nations. The plan is to enrich the program of teaching English with a special textbook in English on ecological tourism in various countries and continents. It will help much future tour operators to communicate with their colleagues from other countries. ITT established Internet access and students got all necessary skills to work with it. So knowledge of English and other foreign languages will be also useful. To improve practical skills students study in details how to establish travel agencies, to develop their own ecological tours, to explain ecological and historic values of selected sites. Then they choose countries to study particular characteristics of foreign models of ecological tourism from a wide list including Australia, Austria, Belgium, Cyprus, Egypt, Germany, Greece, Great Britain, India, Italy, Hungary, Malaysia, Maldives, Malta, Spain, Sri Lanka, Sweden, UAE, USA and others. After that the student has to collect all necessary information and photos from newspapers and magazines about the selected country including description of its flora and fauna, climate and landscapes as well as tourist attractions. The result of this research is summarized in the projects written in English which demonstrate student's knowledge of foreign language as well as Geography, Ecology and Environment of the selected country and organization of ecological tourism there. Authors of the best projects are often offered jobs in travel agencies to deal with the tourism in the selected countries.

At present Ecology, Environmental Sciences and Ecological Tourism are learned by students of the second and third years. It is planned to develop special courses on the above subjects also in English. To keep them up to date materials will be taken from the Final Report of World Ecotourism Summit (Quebec City, Canada, 19-22 May, 2002) as well as from Internet and other fresh sources of information. ITT also is planning to establish in the nearest future the new Faculties "Management of German tourism" and "Management of ecological tourism", to set up some new branches and connected enterprises in the town and district, to issue its own newspaper, to upgrade further student's knowledge of English and other foreign languages, to develop the particular branch of ecological tourism - scientific tourism.

So, Russian International Academy of Tourism is an important educational agency in the field of ecological education.

Field environmental research

Both school and University students are involved into various kinds of field ecological and environmental research all over country. In classical Universities like Moscow State University they are compulsory for every student of Biological and Geographic Faculties. In Pedagogical (Teacher Training) Universities field research are voluntary (therefore they are not financially supported by their administrations) however many students try their best to go to expeditions. For this activity various grants from national, foreign and international organizations are vitally important.

According to recent review "Development of Ecological Education in Russian Federation in 1992-2002" there are over 2 thousand NGOs through the country which deal with environmental education. 12 of them act at the Federal level, about 320 NGOs introduce environmental education at regional levels while majority of them work locally. For the last 10 years NGOs implemented over 5 thousand projects on environmental education. Most of them initiate and manage voluntary participation of school children and University students in various kinds of field activities including ecological and environmental research.

Part 4: Good practices



For example All-Russian Society for Nature Conservation organizes participation of school students in various field research and conservation actions like "Forests on ravine slopes" (Belgorod province), "Oak groves" (Nizsny-Novgorod province), "Greening of towns and villages" (Lipetsk), "City birds" (Murmansk), "Forests in Russia" (Saratov province), "Small rivers" (Syzran) and many others. The Society restores field camps for young naturalists which widely covered all the Soviet Union but were abandoned or sold to commercial structures in 1990s. The Society granted to young researchers 348 summer camps in 1998 and 703 (including 21 international ones) in 2001. Eurasian Association "Ecosystem" published over 40 simplified guides for geographical, botanical, zoological, ecological and environmental research by school students. This Association also arranged an international field camp for annual research by 25-30 students and teachers from Russia and US. Green Cross Russia jointly with Green Cross Switzerland implements the special Program "Socially-medical care and education" to which children and their parents are involved. An important component of the Program is field monitoring of human population and environmental health executed by medical doctors, educators, students and school children as well. Center of Wildlife Protection, the Taldom branch of Russian Bird Conservation Union together with local administration initiate establishment of a well known sanctuary (Zakaznik) north of Moscow namely "Crane Homeland" and support its activity. Teachers, professional zoologists and students do annual monitoring of birds and other animals, raise public awareness and implement special measures to protect and support sustainability of rare cranes, raptors, owls and other species there. One of the most impressive action of the Program is construction of artificial nest platforms for large raptors like Spotted Eagles and White-tailed Sea-Eagles as well as nest boxes for Kestrels. In spring 2001 9 out of 12 boxes were occupied by Kestrels, in 2002 birds were very scarce there while in 2003 they again were abundant and begin nesting in over 20 out of 30 boxes. This case clearly demonstrated the great deficit of made ready nests for small falcons in the Moscow province. Russian Bird Conservation Union plans to expand the Taldom experiment to other regions in European Russia. Certainly students will be also involved into implementation of this project and monitoring of its results. Each May Russian Bird Conservation Union together with the Department of Natural Resources and Environmental Protection of the Moscow Government with the help of students and graduates of Moscow State University and Pedagogical Universities arrange wide participation of Muscovites in study of population status and particular distribution of singing Nightingales through the city. It results in mapping 600-700 males annually.

Such kind of projects implemented also through field ecological and environmental research by students and school children widely occur all over Russia.

Case study 4. *Participation of school and University students in ornithological research in Dagestan*

Educators in the South region including Northern Caucasus are active in implementation of particular projects in environmental science and education. For example in Republic Dagestan a special Program "Berkut" (Golden Eagle) was developed and implemented by Eugeny Vilkov and his team. The Program is designed for high secondary school students of Classes 8-10. Its major aim is to introduce knowledge on birds and practical skills of their identification in natural environment as well as to study bird ecology in the field. To this purpose regular excursions to the field are planned through all seasons. After initial acquaintance with local birds and their environment each student or small group selected particular bird species for deeper observation and research. In result they prepare scientific reports and presentations to

Part 4: Good practices

be discussed and valued at workshops and conferences. The Program is practically implemented by the Republican Ecological Center of Students in Makhachkala city for last 7 years. Study groups consist of 7 students each with various levels of bird knowledge in order to exchange experience also inside the groups. There are different versions of the Program for one, two or fore year courses. Each group has meetings twice a week and makes regular field excursions. This out of class activity helps much school children to assimilate both compulsory and additional curricular. In its turn participants of the Program have much better knowledge of Biology and, so, easier enter Universities. The most favorite objects of the Program participants are both nesting, migrate and wintering birds of lagoons along the Caspian Sea coast which have not been particularly studied before. Therefore such school student research resulted also in new scientific findings. For example, they actually participated in discovery and description of some new Important Bird Areas approved later as IBAs of national and international significance. Some reports have been published and presented at scientific conferences. Russian Bird Conservation Union supports the "Berkut" Program and recommends its implementation in regional branches of the Union.

Case study 5. Student's environmental research in Moscow Pedagogical Universities

Annually over 100 students of Moscow Pedagogical State University and Moscow City Pedagogical Universities participate in field ecological studies in Zoology, Botany, Ecology and Environmental Sciences. On their results they prepare referates and finally Diploma presentations. A similar number of students do environmental studies in Chemistry, Geography, Genetics, Human Physiology, Methods of Teaching, etc. Under directions of experienced researchers students study ecology of plants and animals, environmental pollution, human influence on ecosystems, transformation of natural landscapes, etc. These researches are implemented mostly thanks to grants from various national, foreign, and international foundations like Russian Foundation for Fundamental Research, MacArthurs Foundation, BirdLife International through Russian Bird Conservation Union, foreign grants as well as minor occasional supports by the Universities themselves or Russian Academy of Science. Every year students visit dozens of various places including some remote regions. For example, younger co-authors of this abstracts (NZ and ES) during their under graduate and post graduate student's years took part in zoological expeditions to the Upper Don river, the Lower and Upper Volga river, the Upper Oka river, the Voronezh and Moscow provinces. Population ecology of raptors and other birds (mostly in connection with human impact to them and their environment) as well as frogs have been studied during those expeditions.

Raising of public environmental awareness.

Participation of students in field research is at the same time a very effective way for them to be involved into practice of actual public environmental awareness. Informal talks with local people enable them, first of all, to better understand a value of and, hence, to raise awareness on local wildlife, to identify and protect local rare species. In particular many of our neighbors during ecological studies in the Moscow, Upper Don and Lower Volga regions thanks to our advocacy evolved from enemies to good friends of local raptors and other birds as well as frogs.

Part 4: Good practices



Case study 6. Saving of frog eggs from drying water pools

In the Moscow province frogs are getting more and more rare mostly due to pollution of water pools. Therefore frogs often select for breeding more clean but temporary water pools where their tadpoles have not enough time to finish their transformation into adults. Under such circumstances help by people is vitally important. In a small town school north of Moscow a young Biology teacher who is a co-author of this paper (ES) explained grave danger for frogs to school children who readily agreed to save frog eggs from tiny drying water pools. In spring 2001 they brought over 30 buckets with frog eggs into safe clean ponds and with the great interest observed further development of eggs to tadpoles and adults. That experience was adopted by some other teachers and school students in the Moscow province. That case demonstrates both care for wildlife and better understanding by young generations of actual problems of environmental conservation. It was also noticed that after ordinary school lessons about frog's usefulness not so many students began to respect those poor animals while all participants of the above saving actions never killed frogs and protected them from other boys. So, this action hold much positive educational and environmental importance.

Case study 7. Paradox of over-protection

Paradoxically enough we (VG and NZ) also raised particular awareness concerning over-protection of martens in southern Russia. Their predation there significantly affected populations of raptors, magpies, woodpigeons and other birds within small forest fragments which were highly populated with raptors. However a total density of 8 raptor species during 10 seasons (1992-2001) within Plushchan forest and neighboring forest micro-fragments along the Upper Don river decreased from 7.2 (1994) till 4.1 (2000) pairs/sq.km (Table 2).

Table 2. Number of nesting pairs of raptors in the forest micro-fragments Plushchan (totally 3.2 sq.km) along the western bank of the Upper Don river (1992-2001)

Species	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Black Kite	4	4	4	3	4	4	3	3	2	3
Honey Buzzard	-	-	-	-	-	-	-	-	1	+
Goshawk	1	1	2	2	2	1	1	1	1	2
Sparrowhawk	1	2	2	1	1	1	1	1	+	
Buzzard	5	6	5	5	5	6	7	7	5	6
Booted Eagle	1	+	2	1	+	-	+	+	+	+
Montagu's Harrier	2	3	4	3	3	2	2	3	4	3
Hobby	2	2	2	1	-	-	-	-	-	-
Kestrel	1	2	2	-	1	-	1	-	-	-
Total	17	20	23	16	16	14	15	15	13	14
Average (pairs/sq.km)	5,3	6,3	7,2	5,0	5,0	4,4	4,7	4,7	4,1	4,3

Part 4: Good practices

Even within protected forests a number of some birds of prey (kestrels, red-footed falcons, and others) were decreasing. Both decline and ousting of raptors are often result of direct (of raptor nests) and indirect (of magpie, raven and crow nests used by small falcons and owls) predation by martens which are "magnetized" to small protected forests among open landscape. Martens are not hunted in the south therefore they destroy over 40 per cent of nests of kestrels, long-eared owls, large woodpeckers, rollers, wood pigeons and some other birds. Thus due to protection and weakening of hunting pressure on martens they move further south and occupy one by one small forest spots in the Steppe zone. It results in unexpected danger to forest-steppe raptors and some other middle sized birds in southern European Russia. Those findings were published and the problem was raised at some conferences. There is hope that reasonable solution of the new problem would be found.

Case study 8. *Protection of the Montagu's Harrier nests amidst cultivated fields*

Montagu's Harriers adaptations to totally transformed steppe and forest steppe habitats into agricultural lands were studied in two places: between Don and Volga rivers as well as along the Upper Oka river. Some causes which could trouble harriers to occupy new habitats have been revealed. Pairs which nested on cultivated fields with corn or grass sometimes had no enough time to raise their young to be capable to fly. In such cases students explained the value of those vulnerable nests to local farmers and asked them successfully to leave untouched small spots of grass or corn around Montagu's Harrier nests with unfledged young. As for the harriers nested close to small villages local people were also explained of an actual value of those raptors as nice and relatively rare species which are also predators on mice and voles but not upon domestic chickens. It was of help both to harriers to raise their young and also to students to gain experience to awake local people awareness concerning rare local birds. It could be also mentioned that such activity never touched problems of financial compensations for farmers (except trivial presents) because study groups had no money for that. Therefore it was entire "art of verbal advocacy".

Case study 9. *Spring bird days*

Long tradition in Russia to raise public awareness to birds in cities and villages is effected by greeting of migrate birds coming back home from wintering grounds. These mass actions called "Spring bird days" are usually performed during the first week-end of April. Thousands of school children, students, teachers and other bird lovers participate in these performances. They were initiated in the Soviet Union in 1920s by ornithologists and school teachers under supervision of All-Russian Society for Nature Conservation and became very popular in 1950-s - 1970s. Then they were forgotten after the USSR disappearance and restored again at the end of 1990s by Russian Bird Conservation Union. Spring bird days are widely used for ornithological education as well as for promotion of particular protection measures. Construction and placing of nest boxes for starlings, tits and other hole nesting birds is traditionally a central action of bird days. They also are accompanied by various competitions among children and public at large for better nest boxes, drawing, poems and dances devoted to birds. Many booklets and other instructional materials on nest box construction and disposition are published mostly by Russian Bird Conservation Union. Recent characteristics of Spring bird days are their strong support by state agencies and authorities. The best example of that was demonstrated by Major of Moscow Mr. Yuri M. Luzhkov who actively participated in the Spring bird day on 5th April 2003 in Uzkoe park (Moscow). He personally knocked up a nest box and put it into the tree. His speech on bird significance and protection was very impressive. Such positive attitude of VIPs to bird protection is notably promising.

Part 4: Good practices



Finally it could be concluded that actual public-at-large awareness and understanding of sustainable development consists of two equally important parts: (1) compulsory environmental education within formal curricular at school and teacher training levels, and (2) involvement of young people into particular ecological research and conservation actions through informal environmental education. The first is carried out from primary to basic and high secondary school both as environmental topics within existing school subjects as well as thanks to new ones like "Fundamentals of Ecology" for Classes 10-11 which is being introduced in tens of thousands schools. The major advantage both for teachers and students is a variety of teaching materials. For example, at least ten alternative text-books in environmental education have been published during last five years including one prepared by a senior co-author (VG) of this paper. The above case studies are examples of the second component of the effective environmental education in Russia.

In short participation of students in field ecological or environmental studies provide unique opportunities for them both to increase their knowledge of environment and practice of public awareness.

Part 4: Good practices

4.2. Communication and strategic planning of landscape education in East Flanders (Belgium)

Tom Gorré

Regionaal Landschap Meetjesland
Boelare 131
9900 Eeklo, Belgium

Mark Alderweireldt

Province East Flanders
Directorate Environment
Oude Scheldestraat 16
9630 Meilegem (Zwalm), Belgium

Introduction

The Regional Park Meetjesland (RPM), situated to the north-west of Ghent in the eastern part of Flanders (Belgium) is a non-governmental organisation who's trying to support the policy concerning nature and landscape by mobilising people around this theme. One of the main objectives in this mission is environmental education. The park was created in 1998. It was until 2000 that the park helped set out the regional policy in EE under supervision of the Department of EE East-Flanders. In 2000 the RPM initialised research on EE in the region. By launching a strategic action plan which investigated questions like : What was the supply of EE ? Which programs where lacking ? Which aspects could use improvement ? Which overlaps could be deleted ? ...

The Department of EE East Flanders joined the initial team. A start was made for the first ever strategic action plan concerning EE in Flanders.

This article will help you understand how the process was started. How the partners where involved. Which difficulties we met.

The current situation

The region has a rich supply of EE activities. A lot of projects concerning EE are developed in the region by different organisations. Six professional organisations and twenty or more organisations working with volunteers make sure that this supply stays this rich.

- 23 ngo's offer a wide range of activities going from forest walks over slideshows to nature work camps.
- 6 professional centres develop programs for groups and individuals.
- A lot of organisations have programs running all over Flanders. These programs are mostly very well communicated. They create an audience in the region for these activities and thus have an impact on EE in the region.

Although the richness of the supply, there were a few uncertainties about quality, target groups, overlaps in theme's, ... Most of the time organisations are working each separately, on their own islands not knowing what the other organisations have to offer. This lack becomes very obvious between two partners in different sectors like agriculture and nature.

Part 4: Good practices



The need

Different organisations work on different educational themes concerning forest, agriculture, sustainable development, nature, environment, countryside, ... They all are doing good and valuable work, but there is no mutual discussion on what difficulties they encounter, what actions are successful, ... A lot of energy is wasted, opportunities stay untouched, synergies are fading,

There is however a little informal network of organisations, private persons and governments but the communication in this network is poor and there is no mutual planning.

Due to fast evolutions in EE, strategic planning on this matter is urgent. This strategic plan wants to set a direction, giving people and organisations a way to put to use there resources more efficient and more target orientated.

The strategic plan has the following aims :

- **organising intentional and well orientated mutual policies on education concerning landscape in the region Meetjesland**

By means of this planning process we wanted to explore the direction EE had to be developed the next 5 years. It was essential that all the organisations in the area dealing with EE set out this direction, taking into account the tendencies and evolutions in a wider perspective (East-Flanders, Flanders, Europe, ...) In this process we expect the involved public and private actors to each individually make clear what their role in EE is and that they explore possibilities to make their input concrete.

- **network-creation and network-development**

This popular phrase is very much applicable here. Bringing different actors together in a structured way (in meetings, workshops, events, ...) is in fact meant as a networking process itself.

Such a planning process - where we do active networking within the planning - is a role model for area specific network development processes in Flanders and Europe.

This network, initially created within the planning process, has to continue during the implementation of the actions. Then the efficiency of the actions in development will increase. It consists of tuning the demand and product side, bringing strengths from different sectors, industries, ... together, looking for finances, ...

- **combining targets of different educational institutions in a program called landscape - education**

Essential here is to preserve and if possible strengthen the singularity of each organisation in chosen themes and target groups. In fact its all about dealing with each others targets ! Who's best placed to do this ? Which product are we going to change, or even stop producing ? Were can we work together ? By working together we can make the impact of EE a lot bigger.

- **opening doors to other sectors like tourism, industry, etc.**

Just adjusting targets and tuning them is not enough ! There should be a constant search for similarities in other sectors like tourism, industry, regional development, cultural, ... Managing to combine the strengths of these sectors means that EE can be implemented in a much larger target group.

Part 4: Good practices

The process

Step 0 : starting up the planning process

This step took a lot of time. A lot of organisations are too busy doing the “every day” job to realize that they should stop racing one moment and think about where they are going. I remember a phrase from a book called “mission : possible.”

We have to look at the region and all the organisations in it as a single organisation who's developing EE. An organisation has three possible ways to react to changing conditions as illustrated in the following example.

On a beach there are three groups. The first group is building a sandcastle. Knowing that it's low tide and that the sea will soon destroy their castle they enforce the building with canals and walls. The force of the waves slowly hits the sand and the castle disappears in the water. This group is devastated. They rebuild the sandcastle and make it stronger, higher, ...

The second group thinks about it for a while and then decides to build the sandcastle on the beach above the high tide level. This castle survives the normal coming and going of the waves, but when its spring tide the castle is also destroyed.

The last group is standing on the dike and looking over the sea. They aren't building anything. They are thinking about other ways of building a castle (a home). Maybe something that will be floatable.

Most organisations are like the first group. They are conscious of immediate threats. A healthy organisation needs a bit of these three groups : Immediate action, thinking how to improve the present and designing the future at the same time. This is a hard job, but it's what should be done to “survive” modern times.

The fact that we were just busy building beautiful sandcastles in the region but with fading impact and problems reaching the target groups, made us think about how to overcome this. Strategic planning was one way of (1) investigating what was really the problem, then (2) setting out what had to be done and finally also (3) realize this.

Step 1 : Where are we ? What is the situation upon today ?

During this phase an inventory of what the region and its organisations have to offer to EE was made. This was done by 'in-depth-interviews'. These interviews led to an analyse of strengths, weaknesses, opportunities and threats (SWOT-analysis).

In the meantime we tried to assemble partners in the field of EE. We divided them in two groups. One was the pilot group, the other were “privileged witnesses”. The privileged witnesses initially gave us basic information about the “products of EE” in the region, their vision upon strengths, weaknesses, opportunities and threats (SWOT). And they suggested possible solutions. We completed this group by adding external experts on EE.

The pilot group was put together with people from different backgrounds. It's main objectives were to have an analytic, in depth view on the documents prepared by the secretary. A second objective was to be a support for political decisions that had to be made later on in the process. People in this group were chosen for their competence in different fields relating to EE.

Part 4: Good practices



To bring together information on strengths, weaknesses, opportunities and threats the privileged witnesses were individually interviewed. A few things soon became clear :

	Strength	Weakness
Supply	› strongly developed and diverse supply in the region › as regards the content most of the programs are well developed signs of informal contacts and exchange of knowledge between organisations with the same themes	› no overview of the supply in the region › strong regarding the content, but insufficient didactical and methodical
Demand	› growing demand towards EE activities and programs	
Organisation structure	› good tuning of supply, calendar, policy, ... between departments of the same organisation › volunteers show great enthusiasm	› lack of cooperation and consultation between organisations handling different themes › organisations are not always reachable › no regional observance of initiatives brought to the region by higher authorities › limited support from governments towards organisations working with volunteers
Marketing policy	› mostly the professional organisations are reachable and organise good communication towards their target groups › most of the people interviewed feel the need to communicate together, as one organisation	› lack of financial means and knowledge in organisations working with volunteers › no target group policy
Product development policy	› activities are well funded with didactical materials › some signs of renewal in product development	› didactical materials are not always available in large amounts and close to the person or organisation who needs it › the present supply is not always taken into account and certainly not used as a starting point for developing new materials › no knowledge of the actual demand of different target groups
Finances	› a lot of money and knowledge present in the professional organisations	› unevenly divided funds and non-structural support for ngo's (European funds, temporal funds,...) › limited structural budget or a budget that is strongly depending on external factors like politics, economics,...

Part 4: Good practices

Opportunities	Threats
› landscape and EE are on the political agenda › searching for new target groups : companies, local authorities, tourism offices, ... › developing a market strategy : example : addressing target groups when they are the most sensitive for the theme › using new communication technologies › working on recognition of volunteers working in ngo's › paying more attention to educational techniques in EE. › using regional information points to bring together supply and demand › guidance for newly build educational centre › people tend to a regional feeling of unity. This feeling should be used to bring people together in projects	› demanding too much of volunteers and EE workers › co-operation depends on the goodwill of persons. Personal relationships are sensitive to conflicts. › implementation of big and expensive projects without guidance and support from local workers › lack of knowledge of the demand towards EE programs

We summarised this and analysed it. Afterwards it was brought back to the initial group of actors in a workshop. It was the first occasion where the individual actors met others from other sectors. We made sure that they had to learn about each other's products. And that they were able to actually feel the strengths and weaknesses.

An example:

In the region it is very difficult to reach the organisations working with volunteers. The professional centra are not reachable during weekends. And it's difficult to find EE for large groups (lets say about 60 people)

What we did is :

We gave the actors a telephone and asked them to find somebody who could and would be there EE instructor on a two hour walk through a part the region. Their group consisted of 60 people of different ages. Families with children, elder people, ... They had to make the call and actually make a reservation.

Knowing that they were all people who worked in EE they weren't able to find someone because they didn't know the name of some good guides or if they did they couldn't reach him/her. Or the guide wasn't interested because of the amount of people who would attend the guided tour.

A lot of problems that they never encountered before because they hadn't placed themselves in the position of "client".

In fact the results of the SWOT analysis were rather obvious, but they had never been so clear. Knowing our strengths and weaknesses we voted on which ones were the most urgent.

Part 4: Good practices



Step 2 : Where do we want to go to ? What is the target ?

Realising what the priority is in looking for strengthening strengths and solving weaknesses, we started the second step in the process.

First we started to look at the values. What are values in EE that we certainly want to see translated in our products?

At first we had to convince the local actors of the importance of values. Like car developers have strong products because the values they stand for are visible in the product, we had to come to strong products by searching the values.

A Volvo is a safe, big, family car.

A Lamborghini is a fast, sporty car.

It's very obvious in this branch. But also in other sectors it's the values who set the direction for the product.

Sparta bikes are bikes for relaxing, family trips.

Giant bikes are sporty bikes for the rough terrain.

The values we think of as important within EE are:

- accessibility (physically and social)
- partnership
- quality
- positive thinking (dealing with theme's, communication, ...)
- stimulation of the personal learning process
- respect for landscape and the components and their relationships in it
- sustainability (aiming for a structural change in mentality on the long term)
- the candor
- high participation possibilities in EE projects

After defining the values for the EE in the region, we had to define a collective mission statement for all the organisations involved with EE in the region. Once this had been done we started to write out actions in step 3.

Step 3 : How do we reach the target ?

In this phase actions were written out and will be carried out in co-operation with the different actors in the field.

Strategies as an instrument of policy

product development

A product should be developed on *three levels* :

1. low level : information sessions, slide shows, leisure activities, ...
 - target group : people who are taking their first steps in this area
 - theme : one issue, simple
 - value : positive ! letting people feel that we start from the good things that are still visible.
2. middle level : educational walks in forests, natural reserves, ...
 - target group : schools, people who are interested in this subject
 - theme : have to be adjusted to different age levels.
 - value : emphasis on practical exercise and positive messages.

Part 4: Good practices

3. expert level : EE about specific themes to the interest of a specific target group.

- target group : very specific
- theme : can be more negative ! But we prefer a positive message.
- approach : teaching is a possibility in function of fast knowledge transfer

commercialisation

To develop a good product is one thing, selling it is another. We should look at each product individually and study and consider the price, quality, quantity, target group, communication, ...

Products have to be matched with the demand.

organisation

The virtual organisation should consist of a secretariat available during working hours. This secretariat should get instructions from a board of responsables from the regional EE organisations.

sources of finance and knowledge

Many expensive projects are realized by European funds. Once the big visitors centre is installed it misses soul. A lot of little organisations have great ideas but they don't have the money to realise those ideas.

This strategic plan wants to put the emphasis on this problem. Authorities on higher levels have the assignment to support initiatives coming from the bottom up. We plea for a waterfall system where financial sources go top down and local knowledge goes bottom up.

Implementation

Development of actions.

While brainstorming a lot of actions were brought forward. We analysed them and selected those actions who would solve the basic problems in a structural way.

We made a selection of 10 actions :

1. setting up a board
2. setting up a secretariat
3. bringing together information concerning EE activities in the Region
4. organising a course concerning didactics and methods of EE
5. investigate the needs of the reached target group of today
6. setting out a target group policy
7. bringing EE material to their target groups
8. creating a fund that has income from activities and that uses the money to develop EE projects
9. making sure that organisations are reachable
10. making sure that financial means are structural and sufficient

Once these actions completed, evaluated, ... The board and secretariat have to keep this project going and evaluate the process, the actions, ... then start new ones. This process will never finish. The most important thing is to keep it going. On the long term local organisations should be capable of taking over the board and secretariat.

Part 4: Good practices



The handling of change

Throughout the process of strategic planning, there's one thing that has become really clear. Education on any topic, but EE in particular, should not teach people things. It should create the possibility for people to learn things themselves, helping them becoming critical (to themselves and the world), ... That's the only way in which people will be able to deal with their environment, the changes in it, ...

Once people will have the tools (skills, knowledge and insight) and the energy to deal with change, EE is no longer necessary.

People will know how to handle change !

We are a long way from that.

Part 4: Good practices

4.3. Environmental care systems in schools in Flanders (Belgium): methodologies and strategies

Mike Stoens & Mark Alderweireldt

Province East Flanders

Directorate Environment

Oude Scheldestraat 16

9630 Meilegem (Zwalm), Belgium

Introduction

Since 2001, the environmental care programme in schools was initiated in Flanders (Belgium). The general aim of the programme is to implement environmental care



systems in primary and secondary formal education systems with full participation of children and young people and all other compartments of the school "business". The project is a collaboration between the Ministry of the Flemish Community, the five Flemish provincial governments and the Brussels Capital government. The department of formal education of the Flemish community is a continuous and indispensable partner in the project.

Schools that successfully participate in the project can claim a special logo and certificate that can be used in the general public relations. This paper aims at clarifying the general concept and strategy of the project and tries to show some results through concrete cases realised in the province of East Flanders.

Why environmental care systems in schools?

Starting from the Rio 1992 philosophy, half way the nineties, an initiative was started from out the Flemish government to develop an environmental care system methodology for schools. The Free university of Brussels was asked to develop a coherent methodology and framework for environmental care systems in school environments. A school can indeed be seen as a production plant or factory that produces, like others, its specific streams of waste and consumes energy. A school gains thus profit from a clear-cut environmental care system that can inventories the particular situation and provide tools to reduce its environmental impact.

The aim is to realise an "environmental profit". In this way, schools don't differ from other economic activities. However, schools contain an aspect that is unique: the citizens and decision makers of tomorrow are in the classrooms ! For this reason, the environmental care systems in Flanders try to use as much as possible the opportunities for environmental education within the school walls. Pupils that have learned what the environmental consequences are of their own behaviour, can contribute later to a more sustainable and environmentally friendly future. As a consequence, beside "environmental profit", the project aims also at realising a considerable "educational" or "pedagogical profit".

Part 4: Good practices



The concept

Because of large differences between what is called in Flanders (pre-) primary (4-12 years old children) and secondary education (12-18 years old youngsters), the approach of the project differs considerable also between both levels of the formal education system. Secondary, and also higher education, for instance includes two extra themes in the project that are not available in primary schools. The approach towards technical secondary schools is also quite different considering of course the scope of their quite particular educational activities.

In general however, the project is characterised by four main axes: planning, thematic approach, networking and follow-up of the implementation process. Primary and pre-primary schools work around the themes water, traffic, waste prevention, energy and nature. Secondary schools focus on greening of the school, waste prevention, water, kitchen and canteen, traffic, energy and materials.

The planning in different steps

Tools are provided for a school to make a desent planning easier. This is of course vital to have a good chance of success in the implementation of an environmental care system. The project in Flanders aims mainly at a change of behaviour on the medium to long term. A school cannot achieve the aim through the organisation of isolated and scattered actions. To succeed, a careful timing and planning is absolutely necessary. The project provides different tools to help schools in developing this.

Every school defines a timing for itself, thus being autonomous in the speed in which the environmental care system will be implemented. The creative input of the project is also provided by the school itself. The project tries to be very flexible, allowing considerable degrees of freedom for the school. In this way, specific local characteristics can be taken into account: school structure, number of pupils, situation of the school, ... This implies that the implementation of the care system and the process around, can differ considerable from school to school.

Hereafter, we will try to describe the different steps that make up the planning.

Step 1: signing of a environmental care declaration

Before starting to implement the project in a school, the school has to try to find a broad interest in the different compartments that are active within the school walls. Usually some enthusiastic initiators take the lead. A first crucial step of course is the full support of the direction of the school. To certify this, we ask the director to sign a engagement in the form of a simple environmental care declaration. It proves that the school engages itself to try to work on the implementation of an environmental care system in all its aspects.

From this moment onwards, the school is considered officially as a participant in the project. This means that the provincial co-ordinator is informed and that the school, from now on, can count on the active support from the provincial co-ordination. In East Flanders, these provincial co-ordinators belong to the Provincial Department of Environmental Education of the Environmental Directorate.

Part 4: Good practices

Step 2: the establishment of a steering committee

This committee has to become the central force in driving the whole environmental care system and all the activities around in the school. The committee gathers all necessary information, develops a clear action plan and keeps environmental issues continuously on the school agenda. For this, the committee needs a heterogeneous composition comprising representatives of all the school compartments: direction, teachers, pupils, administrative personnel, technical personnel, parents, ...).

The erection of the steering committee gives opportunities for a second sensitisation event in the school: for instance publication in the school newsletter, creation of posters, ... Parents can be informed about the initiative. The project in Flanders gives large attention to the participation of pupils themselves in the process. In this way, actions and activities that are developed, can fit well within the "reality" of school children or youngsters.

Step 3: the environmental inquiry

Before starting with a care system, the school should gain insight in its environmental situation. Our project developed a tool to do so. This tool includes an inquiry on school level and an inquiry on class level. The inquiry deals with all the different environmental themes that are taken into consideration. The results of the inquiries are to be used by the steering committee of the project. Of course to base their action plan upon but also to sensitise people around in order to motivate them in a stronger way to participate in the project.

Step 4: choosing a theme

The results of the inquiries are also of importance for choosing a good first theme on which the attention for at least one school year will be focussed. Here, participation of pupils is again important. In this way, pupils are considered co responsible and are allowed to have an opinion on this. Of course the choice of a theme is again a unique opportunity to communicate about the project.

After having chosen a theme, schools can contact the provincial co-ordinator to obtain all necessary documentation and backgrounds that will help them and guide them.

Step 5: development of an action plan

Once the theme is chosen and the priorities are defined, the steering committee develops a clear action plan. It contains an overview of all the actions and activities that will be developed during the whole school year. It is important that this should be done on both school, class and outdoor level. It clearly also defines priorities and the way the school approaches the problematic. Each action can contain information concerning the aims that the schools want to achieve (environmental and pedagogical profit), the participants (internal and external), how the communication will take place and so on.

Our project provides the necessary tools to make such a planning successful.

Step 6: the self evaluation

It is useful that during and at the end of the year, every school looks at the obtained results and critically evaluates the process and its achievements. Again, our project provides a tool to do so. Secondary schools use the well-known SWOT-methodology (strengths, weaknesses, opportunities, threats). The self-evaluation helps the steering committee to adopt the project where necessary and to develop new strategies if required.

Part 4: Good practices



The thematic approach

A smooth linking of an environmental care system and educational activities, requires adopted and high quality tools and materials. To help teachers in finding the right materials for their purpose, the project co-ordination has developed five thematic publications for primary education dealing with waste prevention, water, traffic, energy and nature in school environments. Each publication contains a lot of background information concerning the specific theme. This information is ready for use in the classroom. The steering committee can also use this information to distillate an article for the school newsletter or for use in other communication about the project.

In a second part, these thematic publications provide an inventory of potential actions and initiatives that can be undertaken. In order to support the actions with concrete educational materials, our project co-ordination has selected existing packages throughout the different degrees of the educational system. These packages of course take the attainment targets into account that are incorporated in the official school curricula at all levels in Flanders. Every package is scanned and summarised, providing information for the teachers or the steering committees concerning used methodology, timing, necessary materials, attainment targets and so on.

Networking

An important aim of the whole project is to generate local networking that can adjust existing initiatives in the frame of environmental care systems in school systems. The network exchanges information and experiences between schools and other partners. In this way, schools for instance are stimulated to collaborate with local authorities such as municipalities. The network is kept alive also through communication means such as the extensive website, the project newsletter (called MOSTERD) and different study days and information meetings.

Besides exchanging information, the network also provides possibilities for formation.

The follow-up of the process

Throughout the project, the planning, organisation and realisation phases, schools can count on a considerable support by the provincial co-ordinators. In each of the five Flemish provinces, three co-ordinators are stand-by to help school through all the aspects of the environmental care system. Usually this support takes place in the school itself in order to have a good idea of the local situation, requirements, aims and bottlenecks.

The participation logo

As a quality label showing that the environmental care system is implemented according to the predefined aims and criteria, schools can obtain a project logo. The logo is build up in three parts that can be achieved the fastest only in three years. However usually schools take more time in order to obtain the three logos and there is nothing wrong with that, on the contrary. They have the freedom and autonomy to define their own speed.

Important to obtain a specific first, second or third logo are of course the criteria by means of which the activities of a certain school are evaluated by a multidisciplinary jury. The criteria are simpler and more flexible for primary compared to secondary education.

Part 4: Good practices

For primary education the criteria can be summarised as:

- participation of the pupils,
- creation of a broad support for the project,
- integration of environmental care in the school culture.

In secondary schools and schools of higher education, the criteria are stronger, stricter if you want. Without going into details, it is based for instance on the system of log-books that need careful updating and measuring. However, here also, participation of especially the students is vital. The schools also have to prove clearly the achieved environmental and pedagogical/educational profit.

The environmental care project in East Flanders

Although the project runs over the whole territory of Flanders, each province has the autonomy to implement it according to its own insights and wisdom. In this way cultural differences between provinces are taken into account.

Some statistics for East Flanders are (dated 1 October 2004):

- total number of schools
 - o primary = 881
 - o secondary = 314
- number of schools that have officially signed the environmental care declaration and thus started the project
 - o primary = 296
 - o secondary = 156
- number of schools having attained
 - o logo 1 primary = 51
 - o logo 2 primary = 39
 - o logo 1 secondary = 35
 - o logo 2 secondary = 19
 - o logo 3 secondary = 11

A very good result after a short period of time !!

Part 4: Good practices



4.4. Waste Action Project

Wayne Talbot

Wayne Talbot Associates
10 Green Drift, Royston
GB-Hertfordshire SG8 5DB

Introduction

Local Authorities and Councils across the United Kingdom are actively trying to develop links and meaningful dialogue with their constituents. Many have environmental statements, focussed around Agenda 21, that make commitments to involving young people. This project reflects this commitment by Bedfordshire County and District Councils to develop such a dialogue.

The department at Bedfordshire County Council responsible for environmental matters and Agenda 21 were keen to consult with young people to develop a Waste Strategy for Bedfordshire. This project was set up in 2001 to explore how best to involve them and has now been running for two school years. The original intention was to provide young people with the same access and voice on strategy and implementation that adults have as part of the Agenda 21 process, developing the input of young people into the County Council's Waste Strategy. As with all of these projects, the approach has since evolved to suit different policy and departmental structures within the County Council. In developing the project the design of the educational support for schools and young people has been split into these key areas:

1. **A schools initiative** often developed through school councils and environment clubs although lower schools have more often used it within curriculum-related groups.
2. **Special needs education** providing information to groups not normally associated with this exercise within the county.
3. **Young people outside of school**, often within care structures or supported through the county's Children's Rights Unit.
4. **Preschool groups** supplementary project, providing information from the community perspective of recycling and waste disposal.

In developing the methodology, the main role of the county council was to provide information and keep it up to date, to ensure that the project worker could include current developments within lesson time. The use of a project worker outside of the normal decision-making structures and dedicated to the project appears to have facilitated this approach as this person was perceived as neutral by the schools and other groups.

The cross-departmental briefings used to inform the project worker's activity planning were supported by visits from council staff to observe activity sessions, so that they could comment on and help with the development of information provided and see how the participants then used the information to develop their own action plans to encourage recycling. The action plans were developed after a series of activities to identify young peoples' perceptions of the problems and the main issues that needed to be addressed locally.

Part 4: Good practices

One of the key perceptions that needed to be addressed was the view of adults and young people taking part that the Council is simply one organisation rather than two. The participants seemed to expect all members of the local decision-making organisation to know about all areas of activity. A worker outside of the normal departmental structures was used to facilitate this communication and act as a neutral participant.

Method and outcomes

A programme of three activity sessions was developed for use over a six-week period. The first session introduced the issues and the implications of the waste strategy. The groups then identified local issues relevant to their community or school. The groups then undertook research into these issues before the second session to review the results and formulate an action plan that was tested before the third session. This final session included the groups reviewing their work and presenting to the project worker in a format that could be used as a presentation to a conference attended by councillors and staff from district and county levels.

The first year's project and conference culminated with a number of presentations from young people who had been researching the knowledge about and the impact of recycling schemes with their peers. The striking feature of their presentations was the discrepancies between some of their results and those of official bodies. This difference appeared to be due to the fact that a different group of people were being interviewed and responding to recycling questions.

The development of research programmes by participating groups provided access to people who would not normally complete questionnaires or respond to council enquiries for information. When questioned it was obvious that recycling was not done by these young people and their parents, as it was perceived as a 'waste of time' for several reasons: principally, the method of collection using two coloured bags. Orange sacks are used for recycling materials and black for other waste. The collection of the bags at the same time prior to sorting when the collection trucks unloaded led to the belief in local communities that the recycling bag was being dumped with the black bags.

There was also a clear desire for schools to have a recycling scheme. The development of school recycling and the time taken to change from one waste collection contract to another was introduced to schools who then proceeded to develop and test their own ideas that were presented to councillors and staff. Again significant information was given that has influenced council policy. This has included the changing of perceptions amongst some professionals of the abilities of young children to develop and run recycling schemes within schools. There were also clear and consistent messages given to the council employees concerning problems and potential for schools to develop recycling. This has subsequently been used in discussion to define tenders for new collection contracts.

This approach can be contrasted with the youth project, where more community-orientated information was discussed after the first year where young people were asked to take part with schools. This division helped in concentrating on relevant information, and helped deal with increased demand. The clear distinction between the two approaches reflects the desire by some to have mirror youth parliaments and committees to comment on council policy. This has an obvious impact although there are fewer links to those making strategy and policy within the council. The focus of commenting on specific issues appears to be an effective way to ensure comments are included. The youth project is due for completion in October 2003 but results to date indicate that there is a benefit to this approach as it bridges existing structures within youth and sustainability series.

Part 4: Good practices



The development of the special needs element of the programme allowed for wider social inclusion and provided some new perspectives to developing waste strategies. The young people with moderate learning difficulties presented at the final conference and indicated that the correct support through schools and the project worker allowed them to create and have a better input.

Educational objectives

The remainder of this article outlines the educational objectives and benefits of the materials in achieving the following objectives to:

1. Encourage young people to develop community-based waste minimisation strategies.
2. Identify the main barriers for young people working in partnership with adults.
3. Create an ongoing dialogue between young people and decision-makers at a local level.
4. Explore how to involve groups of young people who do not normally participate.
5. Identify a mutually beneficial way to harness the school network and decision-making network
6. Provide children with real input into the county waste strategy.

Results of the Pilot Programme

Before the development of the programmes outlined above a small pilot programme was undertaken with ten schools and a youth group. The pilot project was set up that addressed the following points:

- Avoiding token involvement through direct links with County Councillors and council workers by providing direct access to council staff and councillors at a conference. Schools were also able to gain information via the project workers from relevant councils. This approach overcame one of the significant problems of the project in that participants did not differentiate between different council responsibilities. Although this changed during the life of the project most groups still tended to group responsibilities and functions under one heading.
- Hosting a conference using Council chambers, and limiting the representation from schools so that the participating groups had to decide who would represent them, and how. This had a very practical outcome, as groups were able to experience some of the challenges of gaining adequate representation.
- The provision of a competitive grant scheme with the participating groups bidding for a finite budget and viewing for the production of the best recycling scheme.
- The provision of materials that were reviewed and tested by teachers in a variety of circumstances enabling them to deliver different parts of the curriculum. The introduction of citizenship into the National Curriculum provided the project with particular relevance for schools. All of the materials were developed after meetings and interviews with teachers so that the situation presented created a real situation that teachers felt their pupils were capable of grasping.

The significant outcome from the pilot programme was the ability for participants and staff to increase involvement by young people in local decision-making. This issue-based methodology allowed even children of seven or eight years of age an opportunity to voice their concerns. The continuation of the pilot programme also allowed the project worker to develop an ongoing dialogue between the different parties and stakeholders. A neutral person could explain and develop educational activities to illustrate how different systems are working towards the same outcome. This interaction allows council workers to understand the specifics of community and school group concerns.

Part 4: Good practices

Follow on from the pilot programme

After this pilot programme was completed the demand for meaningful issue-based consultation within schools and the interests expressed by youth groups, special needs and preschool teachers lead to further funding of the schools programme and the establishment of two further projects as pilots:

1. Schools with all targets on the current project being exceeded this year including special needs education.
2. Preschool groups where indications are that families and local communities can learn from the involvement of younger age children.
3. Young people through youth parliaments, colleges and Connexions (the government youth organisation).

The methodology used in the delivery of these projects generated interest from other local authorities as well as from education networks across Europe. What seems to be of particular appeal is that the project provides a process that allows schools to use existing materials, adapt to curriculum requirements, and still provide a worthwhile input into local issues. This approach and success offers organisations an example of how to involve young people of all ages meaningfully in sustainability issues.

Project summaries

These projects will be addressed in ascending age order these were: preschool, school, and post-16 years (through Connexions the youth service organisations and the Bedford Youth parliament). Each of these projects have shown that meaningful consultation can be made, however their continuation is reliant upon more systematic development to include the implementation of school recycling with a feedback loop that includes education about the system and the development of ideas by young people. The following summaries identify elements that made these projects successful:

Pre School Project

A total of six pre-schools took part in this pilot project. They were interested in programmes that highlighted environmental information and supported their work through government guidelines, which can be viewed at << insert web site>>. In addition to the relevance to government guidelines preschools consistently referred to the support for and development of new ideas, which included the development of a series of simple tasks for the children, aged 3-5 to take part in. Initially they were given a chest of rubbish to sort and role or places down different rubbish chutes into the categories of magnetic, non-magnetic cans, paper and compost (using plastic food for health and safety reasons).

After sorting the waste, the children were given hard hats and yellow jackets before going on to drive the sorted waste to the recycling centres. Here they had to place the materials in the correct plastic skips (or tubs). Play workers would complete ether cycle although some groups 'shopped' for the recycled goods before these were returned to the rubbish pile to be sorted.

The creation of a focus for extension work based upon this introduction, four of the groups developed further work based upon project activity ideas. This in turn created dialogue with parents. In all cases the project worker was told how the children had gone home and insisted on recycling and sorting waste. This dialogue led to further discussion and questions concerning recycling and how it is done within Bedfordshire. These comments were fed back to the council.

Part 4: Good practices



The opportunity to involve parents and others in the community provided a positive outcome to the pilot programme although issues concerning the participation and its success were raised:

1. Testing and trial of materials with staff was done before the full programme began. The outcome after this testing was predetermined and assumed that segregating waste and recycling is the best thing for these young people to learn.
2. Involving parents in activities and activity planning was more limited than intended. Although parents and grandparents were part of discussions with the children this was not systematically monitored for impact on understanding. It is possible that only those already involved in recycling responded to children's feedback.
3. The provision of adult-orientated information explaining the materials was not followed through. The simple method of providing information leaflets when requested to clarify waste collection stems suggests that despite information provision many people either do not read or understand the information provided. The development of young children's materials provides a vehicle for information provision for whole families, but this requires further study.
4. Follow up activities and ideas written to the circumstances preschools operate in were critical to the project's success. It is evident that materials sent into preschools is limited in the United Kingdom and often not supported by staff where the preschool leaders do not perhaps understand the issues concerned. The issue of materials without a member of staff or environmental professional to work with them needs further thought.
5. Clear access and feedback to both the project worker and council information as required is essential through electronic and other means.
6. The provision of support for preschools provides simple and effective methods to include groups and communities in dialogue where there may not have occurred in the past the provision of activities that can support both generations in a family.

Schools Project

A total of 45 schools expressed an interest in involvement in the project for the second year. Spread across lower, middle and upper levels, these schools all explored the practical implication of school recycling. This provided practical inputs such as the total amount of waste recyclables produced. There was also interesting finding for the tender writing as the pupils identified 'niche' recyclables such as the size and types of school most likely to use vending machines and require can recycling. There were also indications from pupils of all ages concerning the clarity of instructions from councils explaining how community recycling is supposed to work. The relatively high take up by schools was attributed to:

1. The ability to bid for funds to initiate their own action plans. Schools all stated that the realistic element of the programme with their School councils or team groups having to devise programmes and bid for funds acted as both a motivator and real life example of how schools and other organisations have to budget.
2. The opportunity to talk directly with local decision makers. This provided a direct interface between employees and pupils with the project worker acting as arbiter and training the pupils in how to devise and develop their questions and issues. This is best summarised as getting the pupils to not simply state a problem but also prove it.
3. Bringing together schools for a conference that had a direct impact on Council strategy. The chance to present and work with other schools had the predictable beneficial effects of pupils exchanging ideas and thoughts. However, the impact of consistent messages being given by a variety of age groups on one issue did have impact.

Part 4: Good practices

4. Relevance to the curriculum. This allowed schools to allocate resources and staff time. The move from environmental consultation to a single issue provided schools with a simple focus. The plan currently is to expand the technique to other environmental issues that allow young people to comment of council strategy development and implementation.
5. Providing a 'real life' example for children to participate in. A 'real' outcome for the citizenship part of the curriculum - clearly defined for young people.

Youth Project

The pilot project involved children and young people in various forms of council care, in a group co-ordinated through the Children's Rights Unit. The impact of this group on the project was significant as they represented and provided access to groups that are not normally involved in such consultation. In so doing the group identified how sectors of the community are not aware or involved in environmental recycling which is no surprise. What is significant is the disparity between the council's attempts and evaluations of attempts to communicate with these groups and those of the group itself.

At present there is no single reason identified for this disparity as the project has concentrated on how to faceplate the communication. To enable a manageable project the consultation and group development has concentrated on young people front the Connexions organisation with a workshop with youth parliament representatives and a follow up session with the original group. The factors encouraging participation are consistently identified as:

1. The opportunity to take part in a consultation in the same way those adults does.
2. Learning how to put a bid together, and the problems of bidding for limited funds and resources.
3. The conference allowing them to have a direct says.
4. Follow up which told them what changes were happening and the time they would take.
5. The prize money.
6. The opportunity to tell the council what to do.
7. Being asked - and then taken through the process.

When further developed through group discussion with both staff and young people these points to define elements for both staff and young people to successful elements to encourage participation in youth groups as:

1. The provision of a project worker helping the young people develop their own materials for their peers, with their Welfare Project officers providing support between activity sessions. This encouraged responses from young people who do not normally take part in such consultations.
2. Incentive of cash for the travel to sessions. The key issue for many young people is the simple one of bus fare.
3. Dialogue with the council on a real issue.
4. The potential for ongoing involvement.
5. The ability to show young peoples how to develop arguments and research their point of view.
6. Exposing young people to the problems of making your voice heard in local government.
7. Provision of funding through Landfill Tax scheme from Shanks First.

Part 4: Good practices



Issues to be addressed

During the course of the project's development, several issues have been raised that need to be considered when developing any future strategy, so that the positive elements are retained whilst the negative issues (as perceived by the participating groups), can be overcome.

The key issues that need to be addressed are:

1. The perception that the Council simply 'drops' projects when schools have them in their calendar.
2. The need to create variety, to maintain schools interest as they work on a two-year cycle.
3. How to maintain project worker support to ensure schools do not feel their workload is being increased, or that they do not have the correct background knowledge.
4. Integrating the project into Council initiatives for schools awareness and recycling.
5. Creating opportunities for preschools to develop their understanding of environmental work which recognises their role - which they feel the Council is not appreciating.
6. Potential longer term funding (time scale three years).
7. Maintaining interest and support from the District Councils.
8. Identifying funding that will maintain the project and act as a key to release further funding.

In considering these issues we can identify three distinct levels of activity that are discussed below. However in considering these issues a clear set of priorities can be identified:

1. Locally maintaining and developing the project to ensure school and youth groups considered participation. This requires more structured evaluation work and integration in to other Council Activities. Research and Evaluation appear to be a priority.
2. Regionally and nationally providing a platform for Bedfordshire County Council to showcase its success and exchange information and ideas with similar projects in other places.

Conclusion: outcomes of the pilot schemes

The project allowed access by groups not normally involved in such projects; the results include many people saying they were surprised to find that they could actually contribute. The involvement of different groups and the research undertaken by young people in association with 'professionals' indicated that current environmental monitoring might not give a true picture of what people actually know of environmental issues. Common issues were found in all communities irrespective of the affluence of the area, such as the practicalities of attending youth group meetings or the fact that the majority of people do not understand some instructions. It is also clear that youth involvement provides a perspective that is not usually included in policy development.

Part 4: Good practices

The project worker acting as a facilitator enabling young people to develop skills encouraged participation. The children participated in same way as adults bidding for a finite resource and were surprised to discover that teachers and even workers in councils had the same problems. This real life situation was easily assimilated into the curriculum with the added advantage of not expecting to widen a knowledge base or involvement as an environmental project or consultation can sometimes imply or require.

Currently the projects are progressing to the timetable, despite earlier delays in the youth project due to the lack of easy access youth groups, designed to protect the welfare of the young people concerned. The main problem is the need to develop the activity over a longer time scale. There is positive feedback from both projects and calls for a continuation for the same reason as the schools project, namely:

1. The continuation so that youth and play workers can integrate the programmes more fully.
2. Development of links with the Children's Rights and play services to actively encourage participation of new groups.
3. The involvement of the project worker in helping the young people develop their own materials for their peers, providing support between training and review sessions, has proved very successful in eliciting responses from people who do not normally take part in such consultations.
4. Creation of an ongoing project contact that could work with the schools from their perspective. This was seen as better than simply using the materials on their own; having access to advice and back up services was a positive element.
5. Development of a real goal such as ideas for the strategy that could extend into other issues.
6. Possibility of dialogue with the council - although the electronic access was not used this time.
7. The potential for further involvement - playgroups want to see these as a regular activity that can be widened to include families in recycling initiatives and possible involvement of council collection projects.
8. Youth groups respond to the possibility of presenting their ideas and views to the council - although a conference may not be the best method. Smaller groups meeting individuals appears to create a better response as the prospect is less daunting.
9. The ability to show young people how to develop arguments and research their point of view and facilitate them to show them how to make a difference and expose them to the problems of making your voice heard in a local government setting.

The development of these three projects has also included an international dimension and interest in the evaluation as the project appears unique in Education for Sustainable Development terms. This has raised the possibility of further development of evaluation into effectiveness with Bedfordshire County Council and Cambridge University. Interest from other local authorities in the method also raises the possibility of extending this work and research work across the region. The evaluation programme will also offer support to other counties, if funded, as they will be offered the same programme through training of project workers in tried and tested evaluation tools.

Part 4: Good practices



The development of a full research and evaluation with schools to determine the ongoing and continuing effectiveness of the projects could be beneficial in aiding the extension of the ideas across the region and into other environmental areas and issues. This can involve the testing of methods within schools.

We are proposing the following developments of the project:

1. An initial development of evaluation tools starting during the Autumn term 2003 providing additional project worker time.
2. The funding of a research programme focussing on the effectiveness of the programme and how its affecting behaviours and perceptions of recycling to start after this initial trial period.
3. The creation of an integrated education programme as part of trial from pre-school through lower to middle and upper schools.
4. The involvement and comparison of the methods by those in other situations and cultures.

Part 4: Good practices

4.5. Networking EE in East Flanders, Belgium: a brief sketch

Mark Alderweireldt

Province East Flanders

Directorate Environment

Oude Scheldestraat 16

9630 Meilegem (Zwalm), Belgium

Introduction

Belgium is a federal state, with Flanders covering the northern part of the country. Due to the complex federal structure of Belgium (3 communities, 4 regions, 10 provinces...), many governmental levels are involved in environmental management and education. Besides this, plenty of private initiatives thrive within the educational landscape. Hereafter, I will give a short state of the art of EE in Flanders and then try to focus on regional network development in the province of East Flanders.

Belgium was only recently divided in four different regions. The reform of the state was (and is) realised into different phases, three of the major ones finalised in 1980, 1988 and 1993. This is in political and historical terms very recent. Beside the national level (=federal level), all regions have certain competences in the field of environmental policy. This disperse situation and the recent reform of the state have clearly hampered the development of a consistent and integrated environmental policy in the recent past. Mostly on higher political levels, this implied that environmental education was never a priority on political agendas.

Flanders itself, as a region and a government, has large competences in the environmental sector. Until recently, EE retained very little attention on this governmental level because priority was given to the development of a consistent frame of new environmental legislation especially in the fields of environmental planning and permits. Few time and money remained for EE. The need for a thorough EE policy was filled by the efforts made by the different Flemish provinces, larger cities and private organisations. Some provinces started serious investments in EE already more than 20 years ago.

Several scientific reports and publications supply information on the situation of EE in Flanders in general and in East Flanders in particular. Part of them was consulted in this frame: ALDERWEIRELDT (1994), CNME (1996), CÖRVERS (1991), GHAF00R GHAZNAWI (1989), HUITZING (1978), JANS (1998), KUIJKEN et al. (2001), NELISSEN 1 KOK (1991), RAAD VOOR MILIEUBEHEER (1995), SORTE (1995), STRYCKERS (1990, 1992), SYS (1994), VERHEYE (1995a, 1995b).

Answering questions

The province of East Flanders erected its EE department at the end of 1993. Logically, before developing a descent EE policy plan and starting any implementation, several important initial questions were asked. Although the EE sector in the province was and still is characterised by a large amount of initiators and a significant offer of EE products, no insight existed in who was doing what, where and how. Questions also arose concerning the geographical spreading of EE efforts in the province, concerning the strengths and weaknesses of the sector, the global financial input and the investment in personnel. Moreover, being historically originated from out volunteer movements, the degree of professionalism of the EE sector was putted into cause. To summarise, the provincial government tried to find out where what kind of assistance or support was required.

Part 4: Good practices



Setting up a thorough inventory was of course the first reply to these questions. Different methodologies were used to get a detailed overview of the EE landscape in East Flanders: the organisations involved and their nature as well as the whole range of EE activities, products and processes that they develop.

Data collection, data analysis and the educational index

For each EE-initiative developed in East Flanders, information was gathered concerning the following items:

- geographical situation.
- organisation co-ordinates and characteristics.
- type of initiative and classification (e.g. publication, article, book, course material, excursion, lecture, film or slide presentation, local visitors centre, educational centre, exhibition, environmental telephone, garden, information infrastructure, ... just to mention a few of the possibilities).
- target group (e.g. general public, teachers secondary schools, teacher trainers, pupils primary school 11-12 years old, agriculture, public services, industry, households, etc.).
- method: description of the methodologies that are integrated in the initiative.

These EE data are not mathematical as such but an effort was made to standardise the incoming data in order to realise at least minimal comparability. To achieve this, a simple environmental educational index was created based on the nature of each initiative and the general methodologies applied.

The different methods were then grouped into three main categories:

1. informative methodology: initiatives where information concerning nature or environment is produced without additional comments and often without well defined target groups. Example: the distribution of an informative brochure concerning a new nature reserve in the community to all inhabitants. Neither participation nor response of the target group is expected.
2. instructive methodology: initiatives where information is communicated with additional comments and with possibilities for dialogue. Example: course on plants or insects (expert model). The target group is usually better defined and response of the target group is expected. However, active participation of the target group is not expected and no 'conditio sine qua non'.
3. participative methodology: initiatives where a very active participation of a clearly defined target group is required and even vital to the success of the initiative. Example: educational field research with materials.

It should be stressed that classification of certain actions or initiatives within these three classes is not always clear-cut. We therefore intend to refine the index in the future. However, for the questions asked before, an acceptable level of standardisation can be achieved by generating an educational index as follows:

$$I_e = \sum_{i=1}^n W_{inf} + (1,5 \times \sum_{i=1}^n W_{ins}) + (2 \times \sum_{i=1}^n W_{par})$$

Part 4: Good practices

Where

le = educational index

Winf = weights of actions with informative methodology

Wins = weights of actions with instructive methodology

Wpar = weights of actions with participative methodology

As can be seen from the formula, actions with instructive methodology are upweighted 1.5 times whereas actions with participative methodology are upweighted 2 times as compared to informative initiatives. Indeed, they are assumed to have more 'educational impact' than the latter.

Some general conclusions of the analysis

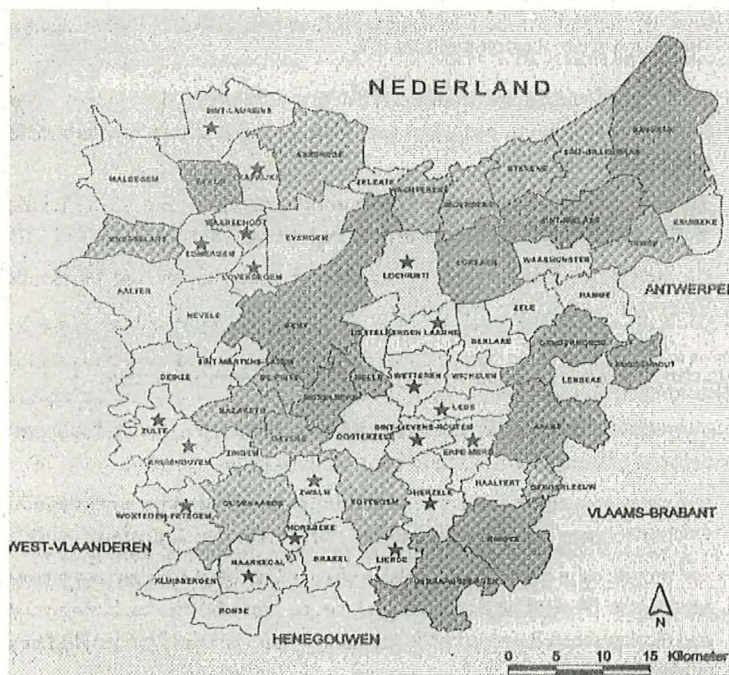
Due to the standardisation, the educational index generates general comparisons in order to answer questions such as:

- how is the effort in environmental education spread geographically throughout the province?
- what is the relative proportion of informative, instructive and participative efforts in a geographical context?
- What is the proportion of efforts of public services compared to private organisations?

Several combinations can be made between these variables but some general conclusions are that:

- the EE effort is highly concentrated in larger cities and the effort is low in rural areas (Fig. 1).
- in 30% of the municipalities, EE is very underdeveloped.
- in more than 50% of the municipalities, educational efforts organised by public services are very poorly developed.
- public services concentrate especially on informative actions while initiatives of an instructive or participative nature are far less numerous.

Fig. 1. Geographical spread per municipality of EE effort in East Flanders based on the EE index le (see text). * le = 0, white le = 1-30, light grey le = 31-50, dark grey le > 50.



Part 4: Good practices



The use of such a, partly subjective but useful educational index is one of the approaches that have been made to get a better understanding of the situation of EE in Flanders in general and in East Flanders in particular. In what follows we will summarise the strengths and the weaknesses that were observed.

Strengths and weaknesses of EE in East Flanders

The analysis of the state of the art revealed several strengths and weaknesses of EE:

Strengths:

- Large amount of initiators and initiatives.
- Many different target groups.
- Increasing interest of different governmental levels and public services.
- Large proportion of very active volunteer workers.

Weaknesses

- Lack of consultation between initiators.
- Lack of purposeful planning.
- Lack of manpower and financial means.
- Lack of feed-back and scientific evaluation (ecological, pedagogical, ...).
- Lack of professionalism.
- Lack of indicators of quality.
- Highly informative character, too little oriented towards a consistent change of attitude.

In order to cope with some of the problems and weaknesses the provincial government decided to invest in network development.

Network development: magic word or misleading façade?

In order to ameliorate the situation and strengthen the EE sector in East Flanders, an EE-network is being developed. This is not the place here to detail the wide discussion about networks, their characteristics and their problems or successes. No network, whatever its construction, does magic but much of the discussion about this can be found in the extensive literature, some of which is mentioned above.

Nevertheless, the EE department of the province East Flanders had the following aims in mind:

- Developing an integrated and systematic policy with standardised terminology.
- Improving collaboration between different actors.
- Increasing professionalism and co-ordination.
- Prospecting the needs with a better tuning of supply and demand.
- Including the development of information networks (computerised and other).
- Good quality control and thorough evaluation of actions, including development of good indicators of quality.
- Improving the quantity of initiatives.
- Improving the scope of target groups.
- Improving the geographical spread of initiatives.
- Creating multiplication effects.
- Developing an adopted expense-covering system for volunteer work.
- Improving the promotion and imaging of EE in the province.
- Improving the connection and integration with national and international networks.
- Integration in the global environmental policy plan of the province (interaction with other types of environmental policy).

Part 4: Good practices

The network is subdivided into six sub networks and stays in continuous interaction with possible networks developed at the national and the local (municipality) level. The main structure is summarised in Fig. 2:

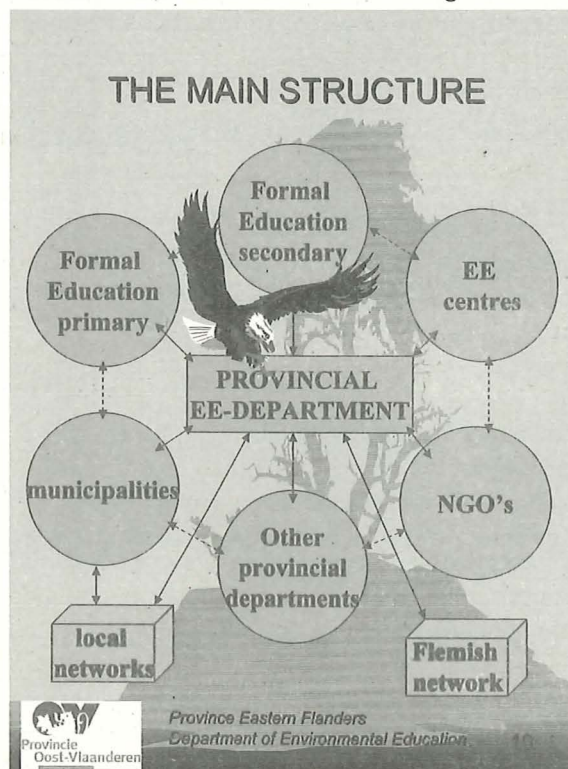


Fig. 2. EE Network structure in East Flanders.

Several objectives concerning the structure and functioning of the network were also put forward:

1. participation to the network is on a voluntary basis
2. the structure is a horizontal one with no predefined hierarchy
3. partners in the network have a mutual dependence in trying to achieve a common goal
4. respect for the autonomy of partners
5. network partners are as complementary as possible using the possibilities to valorise each partner
6. the network management should be an interactive one
7. the evaluation of the process is continuous

The spider's glue

The fundamental basis for the EE networking in East Flanders is in fact the inventory called Spin-WEP, referring of course to the spider's web, but here WEP stands for 'Wegwijs Educatie Provincie Oost-Vlaanderen' which can be translated more or less by 'Guide to EE in East Flanders'.

The database contains detailed information on 23 visitor centres, 137 organisations and 65 municipalities that are active in EE in its broad sense within the borders of East Flanders. Given the surface of the province (2.982 km²), this is a quite large number. The spider's silk is here also symbolic for a two-way communication means.

Part 4: Good practices



Besides, the efficiency and effectiveness of the network is strengthened by an open provincial environmental magazine, by project related newsletters, by putting the database at everybody's disposal, through regular inquiries amongst the participants and through process evaluation.

Conclusions

However, several constraints can be encountered when networking is not seriously thought over and considered in advance. You don't just conjure a network out of your hat! Partnerships need also trust to be build up slowly. Moreover, it became clear that networking in the way described above is very work intensive so regular cost/benefit analyses are necessary. In our experience, great results were obtained by result-oriented working via concrete projects in advance of more structured network partnerships.

I state here also that network approaches should not per definition be integral but on the contrary integrated and that in the end, people make networks, not their organisations. However, sometimes problems of decision-making can occur when you have to work with strictly hierarchically structured organisations.

Also relevant in this frame is the discussion about the advantages and disadvantages of networks that are being run by public services. It is beyond the scope of this paper however to get into more detail on this issue here. In relation to that, it should be continuously realised that volunteer work is often the core of EE initiatives, which increases the necessity of a non-economic approach.

And finally there is sometimes blind trust in information technology as a basis for network development. Research effectuated by our EE department shows that access to computers, not even to mention internet, is not always so widespread in the EE-sector as generally thought. So the one-sided use of IT tools holds the risk of excluding certain actors.

References

Alderweireldt, M. (1994)

Inspraak en sensibilisatie. Provinciale milieubeleidsnota 1994, Provinciebestuur Oost-Vlaanderen: 212-257.

Alderweireldt, M. (ed.) (2002)

Learning for a sustainable future: the role of communication, ethics and social learning in environmental education. Abstract Volume Province East Flanders, Gent, 172 pp.

CNME (1996)

Educatie of communicatie: mensen veranderen of machines? Consulentenschap Natuur- en Milieu-educatie Zeeland, 33 pp.

Cörvers, R.J.M. (1991)

Milieuvoorlichting en -educatie. Cursus Open Universiteit, Heerlen.

Ghafoor Ghaznawi, A. (1989)

An overview of environmental education: integration of environmental education into general university teaching in Europe. UNESCO-UNEP, Brussel: 17-38.

Part 4: Good practices

Flapp, F. & Sichenze, S. (eds.) (2000)

Networking Environmental Education Networks: the role, trends, communication and integration of networks involved in education for the environment and sustainability within local, national and European policies.

Regione Autonoma Friuli-Venezia-Giulià, LaRea, 237 pp.

Huitzing, D. (1978)

Gids voor natuur- en milieu-educatie.

Kosmos, Amsterdam, 206 pp.

Jans, M. (1998)

Natuur- en milieu-educatie: van overtuigen naar overleggen.

Koning Boudewijnstichting, 72 pp.

Kuijken, E., Boeye, D., De Bruyn, L., De Roo, K., Dumortier, M., Peymen, J., Schneiders, A., Van Straaten, D. & Weyembergh, G. (eds.) (2001)

Natuurrapport 2001: toestand van de natuur in Vlaanderen, cijfers voor het beleid.

Mededeling van het Instituut voor Natuurbehoud, 18: 1-366.

Raad voor Milieubeheer (1995)

Draagvlak voor het milieubeleid.

Rapport 95.05, 62 pp.

Sorte, G. (1995)

The value of nature and green spaces to the urban resident.

Groenkontakt 95 (4): 38-43.

Stryckers, P. (1990)

Natuur- en milieu-educatie.

Universiteit Antwerpen, opleiding Milieukunde.

Stryckers, P. (1992)

Mina-raad voor Vlaanderen: advies natuur- en milieu-educatie.

CVN-jaarbulletin 1992: 2-4.

Sys, M. (1994)

Milieu-educatie en -informatie.

In: Verbruggen, A (ed) *Leren om te keren: milieu- en natuurrapport Vlaanderen.*

Vlaamse Milieumaatschappij en Garant, Leuven/Apeldoorn, 1994: 751-761.

Verheye, P. (1995a)

Milieu-educatie: op het spoor van duurzame ontwikkeling.

Leefmilieu 95 (2): 45-47.

Verheye, P. (1995b)

Natuur- en milieu-educatie in het onderwijs.

Leefmilieu 95 (3): 97-100.

Wikström, R. (ed.) (1997)

Implementation of environmental education in the community.

Mid Sweden University, 320 pp.

Part 4: Good practices



4.6. Development of Environmental Programs through co-operation and exchange of experience, ideas and knowledge between partner organizations from different countries

Stanimir Georgiev

National Operator of the Learning about Forest Program
Bulgarian Blue Flag Movement
Bulgaria

Let us learn and take advantage of the treasures of Nature, and those created by Man-traditions and cultural-historic inheritance, as a precondition for sustainable way of life.

The promotion, establishment and development of an environmental education program is impossible and insufficient if we do not turn it into a large-scale international project and cover the lack of environmental information and activities through close contacts and partnership between different organizations and countries.

Creating an international network is a successful way to share and exchange experience, to monitor and evaluate the start-up phase of the initiative and to set the main objectives. All the participants in a global project benefit from the broadening of its influence and the growth of its importance. Their environmental work is enriched with new ideas, activities and practices.

This exchange of knowledge, and experience between the partners is always fruitful. The closer acquainting with each country's methodology for conducting the project is an advantage when sharing experience, knowledge and materials.

Many different ideas and initiatives exist and act in the different countries, sometimes with completely equal goals, target groups and tasks. Uniting them into a common international umbrella program is a serious and ambitious undertaking, which is usually leading to success. Besides attracting the interested parties, it is extremely important to provoke citizens' participation in environmental education and decision-making.

Contacts can be maintained successfully using the advantages of Internet and exchange visits between the partners for the sake of the project work, for easier communication between the participants. The exchange visits stimulate the future co-operation and the exchange of knowledge between the partners and challenge them to communicate further. That process may continue with the exchange of e-mails between the participants, which may vary from common greetings in the beginning, to serious exchange of knowledge later. This will already be an indication that we are on the right road - towards the establishment of a real cross-boundary partnership. We rely on the teachers to form the motivation of the students to communicate on different environmental issues from cultural, pedagogical and methodological point of view.

Part 4: Good practices

The exchange visits of participants with useful programs enrich their practical experience and cultural impression of the foreign country. Exchange visits to different countries usually turn into an exchange of environmental knowledge as well as intercultural understanding and educational experience. Teachers have the chance to get acquainted with the foreign school system, the environmental education and new techniques in that direction and share their ideas and achievements. The exchange visits greatly enhance the project activities and reinforce the global dimension and importance of the education for sustainable development.

A global project can succeed in:

- Helping the process of reaching teachers and pupils to learn and appreciate the environment as a part of the modern society;
- Increasing people's knowledge and inspiring the perception of nature from a cultural, social, economical and environmental point of view;
- Creating greater understanding for the fact that environmental factors do not respect national boundaries;
- Inspiring and helping students and teachers to use the environment as an outdoor learning and recreation facility;
- Helping partner-organizations benefit from each other's experience and materials;
- Building an understanding of the variations between the eco-systems in the different countries;
- Provoking students' and teachers' enthusiasm and will to get involved and really engaged in project life and activities;
- Increasing the possibilities of the pupils to meet with nature through activities, concerning biodiversity, outdoor life and cultural environment;
- Developing an international project at a global level across the boundaries of each country;
- Building a confidence that every participating country is a part of the world through current contacts of different cultures and traditions in the field of environmental education and society as a whole;
- Fostering relationships and improving language skills through global communication;
- Drawing the attention of future partner organizations;
- The exchange of visits gives the opportunity to understand our partners' way of life, culture, education system, environmental problems and work out plans and actions to improve the situation together;
- Pupils exchange information and compare attitudes and values towards the environment with pupils having different cultural background;

So the organizations in a global project are usually united by the same goals and motivation as partners and active participants in a common network.

A global project gives new opportunities to broaden the present connection possibilities - via telephone, fax, Internet and to make possible the direct and personal contacts between partner organisations through exchange visits of teachers, students and the people responsible for the development and the successful promotion of the initiative.

Part 4: Good practices



Beneficiaries

Not only the direct participants in a global exchange will gain benefit from it - all their colleagues they work with and the young people with whom they will share their new impressions and ideas, all the teachers and specialists, engaged in the project will be enriched by their participation. But the greatest beneficiary of all would be the Environment itself - no matter local or global. The activities of the organizations and schools will be extended with new practices. The teachers who might take part in such an exchange would be very helpful for the organization of new initiatives and for the accomplishment of similar exchanges even with different countries. They would act as ambassadors of their schools, local communities and countries in the international field and might initiate contacts with similar authorities.

The towns, which host the exchanges would become famous abroad and their historic and cultural advantages would be popularized in a natural and effective way.

The fulfillment of a global project will enable the evaluation of its efficiency and its importance for the environment. Such evaluation and feedback from the users are invaluable, when financial support for the project is sought.

We take into consideration that the different countries' projects address local needs in a multitude of ways. The main goal of a global project is to learn and respect those needs and facilitate the acquaintance with each other's variety of ways and methods to cover them. Thus partners, working in different countries would be considered as integral parts of the same project - working towards the same goal.

Part 5: European developments

5.1. Towards a new alliance for environmental education in Europe.

Chris Maas Geesteranus

IUCN & ECLNV
The Netherlands

John Smyth

IUCN and EC
UK

Mark Alderweireldt

Province East Flanders
Directorate Environment
Oude Scheldestraat 16
9630 Meilegem (Zwalm), Belgium

Towards a new alliance for education and sustainability in Europe

During the conference a number of side-discussions had been held in order to speak about the possibility of establishing a European Association for Education and Sustainable Development. Mark Alderweireldt and the chairman presented the ideas that had emerged. The overall impression was that participants who joined those discussion were 'positively-critical' towards this idea. It appeared that there was felt a need for an organisation that will be the European professional platform in issues of education and sustainability. To that end many aspects of such an organisation had been discussed and agreed upon. A summary of what had been dealt with concerning the principles of this organisation can be found in appendix ... It had become obvious that a whole lot of issues will have to be taken up in order to make this organisation come off the ground. Market-research around Europe, communication, contacts with the European Union, preparation of the forthcoming conference in 2004, a working-plan for 2003-2004 and finally the development of a provisional board or working group are elements of work to be done in the near future.

The participants agreed that this approach might be a good one and appointed a Working Group with a mandate to work out such issues and report back during the next conference.

In order to get the development process of the association off the ground, a declaration authorising this Working Group was signed by Georges De Langhe (deputy of the province of East Flanders), Chris Maas Geesteranus and Mark Alderweireldt. It was approved by the conference participants (see appendix).

The European Association for Education and Sustainability

International developments in education and sustainability

This paper is about networking internationally and regionally, at the level of advocacy, policy making and support for education consistent with outcomes of the World Summit in Johannesburg, 2002. During the past thirty years what we variously refer to as Environmental Education, Education for Sustainable Development, or Education for Sustainability has grown and developed significantly.

Part 5: European developments



The large professional organisations in the field are mostly national. The contribution of IUCN which virtually created environmental education, reformed it with the World Conservation Strategy (1980) and widened it with its follow-up, Caring for the Earth. It has done much over the years to broaden the base of the education from which it started, but, rightly or wrongly, it is still seen by people outside it - and by some people inside it as well - to prioritise one aspect of the environment and one major supporting lobby, to the neglect of others. Sustainable development is, however, what governments have signed up to and education with that label now has to be seen to cover the whole spectrum from the deep greens to the technological cornucopians - development education, health education, peace education and more.

Europe is beginning to show that it has its own views about the place of education, fully able to stand up to the well publicised ideas of others.

A rationale for strengthening education and sustainability in Europe

The growth of education programmes - formal, informal and non-formal - in accordance with the abovementioned principles of sustainability has been impressive. There exists now a body of educators and programmes around Europe - and elsewhere - capable of addressing these issues. But, apart from the international-political scene, why does mainstream education still pay so little attention to Agenda 21 and its implications?

Environmental educators in Europe are not well enough organised to have a great impact on global (or even EU) policies. Most of the supranational organisations are working professionally as highly qualified 'craftsmen in environmental education' - which indeed deserve full respect for what they achieve on that professional level. But few of these bodies are desiring or attempting to cooperate in governmental policy-making - nationally, let alone on a European scale. We as environmental educators in Europe have not yet sufficient power to present our case, to those politically responsible, as being an important contribution to sustainable societies. Until we organise ourselves much more strongly on the level of professional representation - and thus make ourselves heard with a clear, united voice.

A European Association for Education and Sustainable Development

Such a model is interesting for Europe, because uniting existing organisations will open up the door to a joint educational follow-up of the WSSD in Johannesburg, on a European scale. Such a follow-up will consist of a view on world affairs from a 'European' perspective. It may lead to a number of functions for the organisation. They are:

1. **Platform:**
Exchange of views, expertise, through professional meetings and other channels
2. **Expertise:**
Knowledgeable in issues of education and sustainability
3. **Market-place:**
Where supply and demand in the field of education meet
4. **Translation:**
Educational research in one situation will be adapted to others
5. **Agenda-setting:**
Keeping governments in Europe (including the European Union) alert to the need for education in relation to sustainability issues.

Part 5: European developments

In fact the organisation will have a strong 'internal' element of contributing to the quality of the educational work through increased professionalism (1-4), which forms the basis for the 'external' element (5), the lobbying circuit. It is, however, not the idea that this Association will try to become a sort of umbrella-organisation with a far-reaching authority towards individual governments or supranational bodies. The members of the Association (if such an organisational model will be adopted) will remain fully autonomous in any respect. Therefore, the core function of the Association can be described as 'facilitating, supportive'.

Some organisational principles

The organisational model for an Association as proposed here is not given though a more decentralised form than a foundation might be desirable. It will give those committed to this operation, a feeling of direct involvement instead of being a 'customer'. This is the reason why an Association might have formal members, for example:

- ordinary, active members may be those institutions which have non-commercial goals
- associated members may be those institutions which have commercial goals
- associated members may be those individuals who are interested in the work of the Association

Part 5: European developments



Appendices



We, as participants in the Conference of Environmental Education in Europe (CEEE 2002), with the title Learning for a Sustainable Future, meeting in Gent (Belgium), believe that over many years European educators have made a strong contribution to the promotion of education consistent with objectives for a sustainable future.

To be fully effective in current international debates we consider that it is time for a European Association representative of the professional education community, formal and non-formal, to be set up. It would then take its place alongside those of North America, Southern Africa, Asia, Australasia and other parts of the world.

Such a professional association would address questions of definition, strategy, communication, access to information, and the quality of professional standards. It would also address questions related to critical support and advice to the European Union, national governments, non-governmental organisations and international bodies.

Many questions remain unanswered regarding objectives, structure, membership and funding and to that end we have appointed an interim Working Group to carry forward our proposals. We append the names of those appointed to act in a personal capacity.

On behalf of the conference,

Georges De Langhe

Märk Alderweireldt

Chris Maas Geesteranus

Deputy of province East Flanders

Conference president

Conference vice-president

Gent, 13 September 2002

Members of the Working Group

Sergei Baranovsky

Chris Maas Geesteranus

Paul Pace

Michal Skapa

John Smyth

Wayne Talbot

Athena Veneti

