

**The role of
Environment and School Initiatives (ENSI)
in a global environment**

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THE ROLE OF ENVIRONMENT AND SCHOOL INITIATIVES (ENSI) IN A GLOBAL ENVIRONMENT

A summary of its operations, effectiveness, relevance and performance since its inception in 1986

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INTRODUCTION

The Environment and School Initiatives (ENSI) group is an international organisation, which was formed in 1986 and since 1995 has been under the umbrella of the Organization for Economic and Cooperative Development-Centre for Educational Research and Innovation (OECD-CERI) . It is the only international environmental education organization that has its senior representatives appointed by national governments and still operates as a platform for exchange, cooperative international research and a reference for national initiatives. No other existing bodies including the EU, the Council of Europe, UNESCO or international Non-Government Organisations like IUCN could possibly replace this unique group of national governments supporting environmental education if ENSI were to terminate. ENSI is self-funded by its member countries and has its own web site and communication system. (www.ensi.org)

This paper examines the changing role of ENSI over its 18 year existence, summarises its influence on the teaching and learning of Environmental Education globally and notes its contributions to international research. In addition the paper examines the impact on and the contributions of ENSI to Environmental Education in each of its member countries. Finally, the paper examines what ENSI's main tasks are for the future and what its priorities are likely to be.

In essence the paper, in consultation with its member countries, has prepared a portfolio of its operations to determine its effectiveness, relevance and performance since its inception in 1986.

THE GENERAL AIMS OF ENSI

Before one examines the impacts and contributions of ENSI it is helpful to note the aims of ENSI as an international secretariat. These aims, developed through earlier work, still remain valid. They are:

- the promotion of environmental awareness and
- the promotion of dynamic qualities, such as initiative, autonomy and individual responsibility.

The environment offers a unique context for achieving a broader and more integrated development of human creativity, initiative and organisational skills and qualities that will be indispensable prerequisites for achieving a sustainable society.

As ENSI now moves into a new third phase of activity, the following points are offered as a framework of aims and principles of procedures for development and research to connect activities and promote dialogue in the identified priority areas of teacher education, eco-school movements, networking and quality criteria within environmental education.

Operational aims of ENSI

ENSI aims to:

- create stable learning networks, which link schools, families, community and workplaces
- generate local knowledge and meaningful discourses concerning sustainable development to

meet personal, social and economic needs within communities

- foster the democratic participation of students as active citizens in shaping the environmental conditions of their life and work.

Principles of procedure

ENSI has adopted a number of principles for procedure. In the teaching and learning area, ENSI endorses:

- students increasing their control in determining the nature and content of their learning experiences
- the shift from authority based to negotiated learning experiences
- the use of content (Knowledge or ideas) as resources for reflecting about personal experiences of the environment and for undertaking intelligent and responsible action towards it
- the shift from institutionally based monitoring/assessment of learning experiences to personal self-monitoring or assessment on reflection and feedback from the community.

In the area of school – community relations, ENSI supports the:

- shift away from the classroom as a learning site towards the community as a learning site
- use of the school as a learning resource for the community, and the community as a learning resource for the school
- development of a flexible and dynamic curriculum for all students which focuses on sustainable development in the local environment, and is responsive both to the need of students to make sense of their personal experience in the world outside school and to the social and economic needs being voiced within the local community.

Finally, in using research as an integral part of development, ENSI:

- treats development activities as experiments to be tested through gathering the perspectives of a range and variety of participants involved in the development process within the community (comprising students, teachers, parents, community representatives, employers)
- addresses research questions initiated by the parties involved in the development process
- involves the participants in constructing public accounts of their work at the local level
- constructs reflective accounts of the development process as it operates, metaphorically, in the swampy lowlands and which refrains from adopting a helicopter perspective
- participates in the production of comparative studies of the development process in different local and national contexts, as a means of stimulating public debate.

ENSI'S VISION

- In practical terms ENSI is a learning organization with a common identity and focus with agreed pedagogical principles and content. Its identity is based on a systematic reflection on practice and a well researched learning perspective. Its focus is on participation and change beyond behavioural change. It sees change as a condition of learning that goes beyond the key messages of sustainability but regards ESD as a cross cutting theme in research.
- ENSI captures and reflects on its members' experiences so that we can practise what we preach and develop a portfolio that showcases its work and is used for partnership purposes. ENSI also influences government agencies and continues to develop links between research groups, schools and authorities. In reality ENSI strengthens its impact beyond school development and professional development and therefore targets change in government agencies.
- ENSI now endorses a strategic direction which includes a 5 Year Plan that addresses issues related to extending its partners and having regional networks, creating a new generation of

researchers, increasing its income and activities and to increase its products and methods of dissemination.

- Finally ENSI sees schools as the centre for learning that ultimately influencing their communities. It focuses on schools as systems and intends to map the role of schools in creating sustainable communities.

WHAT DOES ENSI STAND FOR?

Since 1995, Environment and School Initiatives (ENSI) has been a decentralised network under the umbrella of the OECD CERI, with a decentralised international secretariat presently hosted by Germany, at the Hessian Institute for Pedagogy in Giessen. The Secretariat will be transferred to the Swiss Ministry in Solothurn, in October 2004.

ENSI brings together school initiatives, school authorities, teacher training and educational research institutions and other stakeholders in countries primarily across the OECD area (Europe, Asia-Pacific and North America).

ENSI has supported educational developments that promote environmental understanding, active approaches to teaching and learning, and citizenship education. It has done this mainly through research and the exchange of experiences internationally since 1986. It adopts a participatory approach involving schools, students, teachers, teacher trainers and administrators, with their main focus directed towards action research and development.

ENSI's main strengths are:

- it is an institution-based network, representing national education authorities at senior government level
- it is a research oriented network, involving research institutions sharing an active and participative vision of educational research in environmental education
- it is an action-oriented network, fostering school initiatives and projects aiming to develop the quality of schooling in the community and ensuring it is consistent with the ideas of sustainable development.

ENSI's main area of work, in the field of environmental school initiatives, include:

- initiating, coordinating and supporting research and school development activities
- promoting international exchange, understanding and cooperation, including cooperating with other international organizations and programs
- making policy recommendations and or statements as appropriate.

In the last 15 years the ENSI network has contributed to fostering a dialogue among countries and between different stakeholders in each country. Both of these may concern the impact and meaning of Environmental Education (EE) and Education for Sustainability (EfS) in each country. ENSI has also provided a platform for the systematic exchange of ideas, experiences and innovations in the member countries, which in turn, run their own ENSI national networks.

In the past five years, the focus of ENSI research was on the extensive use of action research as a tool for teacher training and for school development or on the development of schools as learning organizations with an emphasis on sustainability values. ENSI believes schools should use the contents and initiatives they deal with to be an active partner in the local social system and thus contribute to improving the quality of education in general and to reactivate societal values.

ENSI is strongly committed to supporting all international efforts considering education as a key issue for the whole international movement for sustainable development, and, therefore offers its experience and programs to all countries interested.

The main ENSI projects – Teacher Education, Learnsapes, Quality Criteria for Ecoschools - and the SEED (School Development through Environmental Education) European network - which was approved in 2002 by the European Commission as a COMENIUS 3 Network, are the major successes of the group.

In 2004 a survey was conducted in all ENSI member countries to gain their responses to a number of issues that had taken place over the 18 year history of ENSI. These included:

- details of their contributions to each of the different phases of ENSI's development,
- their opinions to what would happen if ENSI did not continue,
- the contributions of ENSI to the development of Environmental Education in each member country and the key concepts and issues that have been important to each country,
- details of research projects undertaken in each country due to the influence of ENSI,
- what was regarded as the essential benefits in being a member of ENSI,
- how each country has contributed to ENSI and
- a response to how each country regarded ENSI's role in supporting Education for Sustainability.
- Finally each country was asked to comment on ENSI's role in the future.

It is important to note that a number of country representatives from the past 18 years could not be contacted for this survey and the data reproduced in this paper is limited to those who could be contacted. Obviously there are many more achievements and contributions over the years which could not be included in this paper.

Table 1 overleaf summarises some of these responses while the remainder of the paper discusses these issues in greater detail.

Country	Years involved by each country: 3 phases			What would be missing if ENSI did not exist?	Most effective areas of ENSI in each country	ENSI's key concepts and issues identified by each country	Results of ENSI research in each country & outcomes evident	Benefit to each country by being a member of ENSI	How each country has contributed to ENSI	Role of ENSI in Education for Sustainability (EfS)
	'86-88	'89-94	'95-04							
Australia	1 yr involved 10 schools 1 teachers 4 teacher educators	6 yrs involved 4 schools 4 teachers 4 teacher educators	9 yrs involved 200 schools 25 teachers	Dissemination of international research results. International events. Publication of case studies to be used by schools and ministries	Dynamic qualities, action research, learnscapes. Stakeholders are brought together to generate change and innovations	New EE Policy in NSW based on learnings from ENSI. Eco Schools led to Sustainable Schools Program. Influenced by COMENIUS III project. Learnscapes expanded	Learnscapes, Sustainable Schools	Learning from European Developments by participating in joint programs such as Learnscapes and Eco Schools and Teacher Education	Not very much in EfS. Led the Learnscapes program	Still at an early stage.
Austria	3 yrs involved involved 9 schools 9 teacher teams + an officer in the Ministry	6 yrs involved 11 schools 11 teacher teams	10 yrs involved 11+22 Eco Pilot schools Eco comp. Schools 800 teachers 20 teacher educators	ENSI is the only network at the govt level in the field of EE and EfS. ENSI is international reference for national initiatives	Evaluating and reflecting the situation of EE through an in depth review process. Ecologisation program. Criteria for National Environmental Award for schools	Dynamic qualities Action research/ Evaluation projects Concept of school development through EE	Action research in field of EE & project teaching. Rauch: School themes. Networks as support structures for quality development in Education. Publications on school development	WHO network project healthy schools International OECD technical meeting. Evt schools and Citizens of the future and other conferences	International teacher inservice training seminars on EE oriented project teaching. Management of the ENSI Secretariat 1998-2001	Austria to set up continuation of SEED programs. EfS strategies to be collected from ENSI/SEED partners
Belgium	-	-	-	-	Green Schools project Nature & EE a cross-curricular theme.	2003 Depts of Education and Environment decide to cooperate with ENSI projects	-	-	-	Sustainable development needs to be defined.
Denmark	2 yrs involved -	6 yrs involved 2 schools 4 teachers 1 teacher educator	10 yrs involved 4-30 schools 8-170 teachers 0 teacher educators	Action Research sharing and initiating research and school development strategies international	MUVIN program in Nordic countries Research and mainstreaming	Env problems now seen as issues in society; teaching sequences should be interdisciplinary and problem based Focus on conflicting issues should be used.	-	Challenging combination of the attention of policy makers for concrete projects carried out at schools level. Researchers in	Lectures and conferences contributions. Linz (Austria) and Hadeland (Norway) See appendix for papers presented). Currently working	Uneven gap between formal requirements of the School Act and reality of EE/ESD or EfS in schools. EE should function as a vehicle for the integration of

				workshops would all disappear		Students to investigate community to see problems		between are trying to qualify the activities in both directions	with Italy on Quality Criteria for ECO Schools	challenges to avoid the fighting for room for curriculum and resources in schools
Germany	3 yrs involved 15 schools 30 teachers 5 teacher educators	6 yrs involved 10 schools 20 teachers 5 teacher educators	10 yrs involved 35 schools 100 teachers 5 teacher educators	Reduction of communication and coordination of govt based pedagogical institutions focusing on ESD. Drop in comparative studies in EE & ESD	Teacher Education Mainstreaming, EE, Developing Quality Criteria, Learnscapes, Awarding Eco Schools	Interdisciplinary knowledge. Participative learning. Innovative structures, German Tool Box	German Tool Box, German ES, Project BLK21, Guidelines for lessons in ESD, Development and creation of education standards	Access to international exchange of data,experiences Comparison of school systems. Contact to foreign researchers in EE & ESD publications	Conference with school headmasters. Hosting three ENSI AGM's. Hosting one thematic conference. German language ENSI brochure	Coordination. Comparison and dissemination of research outcomes in all member countries. Development of school curricula
Hungary	Non member	2 years involved 35-40 schools 50-60 teachers 15-20 experts	9 years involved 40 schools 1000 teachers 25 teacher educators	Loss of the innovative network. Exchange of experiences diminished. Quality of EFS would diminish	Eco Schools Teacher Education Projects based on action research	Quality criteria Eco Schools Action Research School development through EE. Complex approach to EE	Comparison of Eco Schools and non eco-schools. Environmental practice in Hungary Review of the legal/ political situation of EE	Being a member of an innovative and effective international network. EE cooperation articles published in journals	Developing teacher training in EE through action research Workshop held in Budapest (May 2001)	EE as a cross-curricular issue introduced into Hungary's National Core Curriculum. Quality criteria of EE adopted
Italy	3 yrs involved 15 schools 40 teachers 4 teacher educators	6 yrs involved 22 schools 50 teachers 5 teacher educators	10 yrs involved 10 schools 40 teachers 15 teacher educators	Loss of international network bringing together school initiatives, authorities, teacher training and educational research institutions	Research in field of quality criteria and mainstreaming ENSI major issues were integrated into major educational proposals	Complexity, dynamic qualities, action research, uncertainty, awareness of limits and risks. Reflection by schools on their practice to find examples and questions concerning complexity.	What changes can we promote to become an ecological oriented school? What can we be given and what can we give? Competencies for an EE Centre. National Survey of student competencies	A stimulating international discussion group. A starting point for the Italian participation to other European and International projects	Report at end of Phase 1 (See Publications List)	To collaborate in the construction of a national culture of sustainability and how we can view directions to explore through research. The only international network with a long experience in research connecting research with the educational authority and with school practice.
Netherlands	3 years involved 4 schools 20 teachers 5 teacher	All years involved 4 schools 20 teachers 5 teacher	All years involved 4 schools 20 teachers 5 teacher	New learning designs and school concepts; opportunities	Quality conferences, Eco Schools and EE	External & internal evaluation consistent with EE values, complex or systemic approach,	-	New thinking in interaction and communication between govt, private parties	Numerous papers and contributions in Phases 1 and 2	-

	educators	educators	educators	for interaction between schools		values in EE and EfS		and schools for unique program for school development		
Norway	3 yrs involved 7 schools 20 teachers 4 teacher educators	5 years involved 12 schools plus 500 teachers 10 teacher educators	9 years involved 1000 approx. schools 500 teachers 10 teacher educators	EfS discussions would cease. Partnerships would no longer be important	Learnsapes, Quality Criteria, Mainstreaming of EE	Students' dynamic quality, action research, systemic approach	OECD did review of Norwegian EE Networks, This influenced the national policy	Partners to have discussions with international workshop and several national resources produced (see appendix) Reports delivered	Contributed to international workshops; Exhibition showing systemic approach to EE, Hadeland Workshop 1999	Partnerships role.
Sweden	2 yrs involved 3 schools 1 teacher educator	5 yrs involved 4-6 schools 24 teachers 2 teacher educators	9 yrs involved 50 schools 2 teacher educators	Forum to share experiences. Network with access to key people	Eco Schools	Student's dynamic quality. Teachers/students action research external/internal evaluation, complex and or systemic approach	<i>Dare to Learn</i> – a study of teachers as learners in the context of EE – Harriet Axelsson	ENSI a network for professional development. Action research is a basis for PD ENSI helps to combine general & env issues	<i>Dare to Learn</i> – Axelsson	ENSI is well known at the national level in the Ministry and the National Agency for School Improvement but not so well known in schools and teacher training colleges. ENSI ideas are integrated in all activities to develop ESD.
Switzerland	2 yrs involved 2 schools 1 teacher education	6 yrs involved 26 schools 26 teachers 3 educators	10 yrs involved 35 schools 4 teacher educators	Action research would cease. Further development of EE concepts. Networks affected.	Action research with teachers and teacher educators. Internal evaluation, school development through EE	Conceptualising students, dynamic qualities, teachers, action research	Research led to book in German, Challenges in Teacher Edn (Lucerne 2000). Action research methods developed	Books and papers presented Paper development of National Report (2005)	Leading teacher edn program Report prepared for case study book	To make clear distinctions between EE and ESD. is needed urgently.

Table 1

MEMBERSHIP OF ENSI

Since 1986 ENSI has promoted international research and innovation on Environmental Education as well as active approaches to teaching and learning and sustainable development in schools and their communities. The following 25 countries have been involved in ENSI programs since 1986.

Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Japan, Luxembourg, Mexico, Netherlands, New Zealand, Northern Ireland, Norway, Portugal, Scotland, Slovenia, Spain, Sweden, Switzerland, and USA.

The majority of these countries are still members of ENSI, the remainder, either serving as contributors in an informal way, or as members of the EU COMENIUS III Network and the EU COMENIUS II projects both of which were inspired by ENSI. The COMENIUS III Network and COMENIUS II project are both funded by the European Union, the result of a special submission developed by ENSI.

In its 18-year history, ENSI has progressed through three phases:

- 1986 – 1988: Project teaching
- 1989 – 1994: Policy review, action research, evaluation, (e.g. Values in Scotland, Sustainable Development in The Netherlands)
- 1995 – 2004: Network phase, decentralisation.

Details of changes over these phases are summarised in Table 1.

It is interesting to note that over the three phases, member countries have increased their involvement and allocated a greater quantity of their resources to ENSI programs.

Austria, for example, had involved nine schools, nine teachers, no teacher educators at all and had allocated approximately €116,370 for a full-time coordinator in its Ministry during Phase 1. By the second phase, it had an eleven- teacher ENSI team plus another 700 teachers and 500 Eastern European teachers in the program. This allocation of funds had increased to €493,000 in the second phase. In the third phase, the Austrian programs had blown out to 11 schools, 22 Eco Pilot Schools, 102 Eco Competition schools and 88 Eco Network Schools.

Approximately 800 teachers were now involved as part of a four- teachers- per -school allocation comprising a number of school teams along with 20 teacher educators who had now joined the program.

Funding by this time had grown to €1,864,700 that covered administration costs, conferences and various associated projects.

In most countries, however, it is difficult to accurately measure the growth of ENSI over the three stages. As Norway stated in its survey:

All Norwegian schools can participate (in ENSI projects) and it is difficult to count the schools exactly. Some 1,000 Norwegian schools are enrolled in the EE Network.

and

... it (ENSI) is part of the school's regular work. Some 15 million Norwegian Kroner are used at the central level.

In countries, like Sweden and Australia, ENSI's influence is notable but indirect. Sweden acknowledges that ENSI is not well known in their schools but *at a national level ENSI plays a role (in) giving the opportunity to learn from other countries and share the experiences concerning Education for Sustainability.*

Sweden also acknowledges that while ENSI may not be well known in schools and teacher training colleges it has never been the intention of the Government to create ENSI schools specifically. The ENSI ideas are nevertheless integrated into all the activities that Sweden does to develop ESD but it is difficult to ascertain how much specific ENSI ideas have influenced their schools and colleges. On the other hand Sweden's Green Flag Program has certainly influenced other member countries such as Australia which has modified the Swedish model for its Sustainable Schools Program.

Again Australia has accepted the ENSI eco-schools model but has adapted it to each state's distinctive curriculum and renamed it the *Sustainable Schools Program.*

Similarly, other ENSI countries have accepted the Australian model of the *Learnsapes* program but adapted and modified it significantly to meet their individual climatic and cultural situations.

PERCEPTIONS OF COUNTRIES IF ENSI DID NOT EXIST IN THE FUTURE

ENSI is the only global organisation in which national governments come together on a regular basis to support Environmental Education programs. When member countries of ENSI were asked what gaps might exist if ENSI was disbanded, the following responses were noted:

- A forum to share experiences in the field of environmental education would disappear (Sweden).
- A network of key persons from authorities, teacher training colleges, researchers and schools across countries working in environmental education would be weakened severely (Sweden, Germany, Belgium, Hungary, Norway, Switzerland, Austria, Italy).
- Pioneering work in curriculum innovation in environmental education would cease (Australia, Hungary, Norway).
- Supporting the cutting edge of international thinking and practice in environmental education would cease, including comparative studies (Australia, Germany, Austria).
- There would be a diminution of influence on government policy (Germany, Austria)
- There would be a breakdown of government-based school development teacher education research and action research (Germany, Denmark, Switzerland, Italy).
- A loss of international workshops and conferences would occur (Denmark)
- A reduction in case studies, evaluations, reports and publications would result (Denmark, Italy).
- An organisational network that involves both school communities with teachers and pupils, ministries, educational institutions and research establishments, within the member countries and partner institutes, would disappear (Denmark, Norway, Switzerland).
- An experienced network has been created which can be used in the next decade of Education for Sustainability and there is a possibility for international exchange with people who share years of reflections on their own theoretical and practical image of what Environmental Education can be. This would be endangered or at least compromised if ENSI was to go (Italy).

The role of ENSI in serving as an effective network, sharing experiences and linking all stakeholders in research and innovative action, were seen as top priority areas. All member countries agreed that the dissolution of ENSI would weaken, and probably destroy, these valuable global benefits.

FIELDS IN WHICH ENSI HAS BEEN PARTICULARLY EFFECTIVE

When ENSI members were asked to comment on the most effective fields in which ENSI had made its mark, they generally agreed on the following points:

Austrian view:

- Promoting, establishing and mainstreaming project teaching, (i.e. general ministerial decrees, curriculum development, inservice training, funding by the Ministry of education etc.).
- Evaluating and reflecting on Environmental Education, through an in-depth review process
- Designing, developing, organising, advising, disseminating and evaluating the *Ecologisation* program and networks
- Influencing the criteria for the National Environmental Award for Schools through the *Ecologisation* Program.

- Influencing the *PILGRIM* project, which was focussed on an inter-religious discussion about values and methodology in Education for Sustainability (EfS).
- Developing the teacher training project *UMILE/ENITT* in three phases
- Exploring the activity field of *Learnsapes*
- Establishing a web site with approximately 30 reports from schools:
www.oekolog.at/learnsapes
- Printing diverse publications, e.g. *Learnsapes*.

Switzerland's view

Switzerland selected developing action research with teachers and teacher educators, especially in inter-disciplinary approaches, socio-ecological issues and dynamic qualities using the local environment as a sphere for learning and acting.

The Netherlands' view

Quality criteria, eco schools and environmental education.

Norway's view

Learnsapes. Quality criteria and mainstreaming of environmental education.

Hungary's view

Eco schools and teacher education.

Belgium's view

The influence of ENSI has led to such initiatives as:

- Logos to schools wishing to become Green Schools
- COMENIUS II
- Nature and environmental education themes in the 5-7 cross-curricular areas.

Denmark's view

- Research in Environmental Education
- Influencing the introduction of the *MUVIN* (Environmental Education in the Nordic countries) leading to a fruitful exchange of information and experience between ENSI program and the *MUVIN* program.

Germany's view

- Mainstreaming environmental education
- Developing quality criteria
- Learnsapes
- Eco Schools

Australia's view

- Initiating, coordinating and supporting research on school development strategies
- Disseminating results from international and national applied research
- Organising events and publishing case studies to share best practice.

- ENSI giving Australia access to internationally respected experts in the field, enabling Australia to learn from teacher, curriculum and school development experiences, which can then lead to more effective planning and enhanced outcomes for schools.
- Piloting *Learnsapes* overseas and learning from this
- The 1992 ENSI review in Australia led to a number of long-term curriculum initiatives in all States and Territories including the introduction of *Streamwatch* and other cooperative projects among a number of government departments.

Italy's view

- ENSI research was particularly effective in the field of Quality Criteria and Mainstreaming and is starting to influence the *Ecoschools* movement.
- The influence of these projects was not limited to the ENSI schools and their local networks. A kind of 'informal' network was built up where ideas and proposals for Environmental Education were debated. Here the influence was very strong on those, who in practice, were working with schools and teachers. Major issues identified by ENSI were integrated into their educational proposals and, as a result of this process, they were proposed to the Ministry of Education and the new born ministry of Environment as a bottom-up process.

The majority of countries saw Teacher Education, Learnsapes, Eco Schools, Quality Criteria and Mainstreaming as effective programs.

The real value of such programs, however, was the associated benefits that flowed on from these programs. The stimulus they provided to Belgium in its local programs is a case in point, while the review by ENSI in 1992 in Australia led to a number of long-term changes in how Environmental Education was to be taught in a number of States.

KEY CONCEPTS AND ISSUES IMPORTANT TO THE DEVELOPMENT OF ENVIRONMENTAL EDUCATION

Most countries saw the value of certain key concepts adopted by ENSI and in a variety of ways had adopted them to their own local situations. Major concepts listed were:

- students' dynamic quality
- teacher and students' action research
- external and internal evaluation consistent with Environmental Education values
- values in Environmental Education and EfS, and
- school development through Environmental Education.

Countries, like **Germany**, saw additional key concepts and issues, which no doubt, exist in other countries as well. Germany included interdisciplinary knowledge, participative learning, innovative structures and the *German toolbox*.

Nations, like **Denmark**, noted that the main concepts are linked closely to its *MUVIN* program and there is a clear link with such ideas as environmental problem solving being seen as issues in society and that "*teaching sequences should be interdisciplinary and problem based.*"

Belgium noted that ENSI concepts and issues had been used as a basis for developing attainment targets for both primary and secondary education, while **Hungary** claimed they contributed to many research projects in the field.

The degree to which ENSI's concepts and issues influenced Environmental Education varied from country to country ranging from **Austria**, which stated that *action research in the field of Environmental Education was mainly (if not entirely) carried out by ENSI...* to countries like **Belgium** and **Australia** which adapted the key concepts and issues to meet their own priorities and local conditions.

Examples of actions flowing from key concepts and issues, important to the development of environmental education, were provided in detail by **Austria**. *In Austria it was possible to introduce this term, dynamic quality into the official communication of the Ministry of Education, especially in relation to project teaching, Environmental Education, school development and school quality development.*

Italy in contrast mentioned that another characteristic of Italian ENSI research was the attention given to complexity and the importance of defining what complexity means in the practice of Environmental Education. Environmental Education in Italian schools is ruled at present by a ‘circular letter’ from the Ministry of Education, dated 1996 and still in use. The main ENSI issues were included in these guidelines from complexity to the importance of local knowledge, from the awareness of uncertainty to action research. Many Regions have prepared a document, a regional strategy for Environmental Education where many ENSI key words are included: e.g. dynamic qualities, complexity, action research, quality indicators, uncertainty and awareness of limits and risks.

ENSI NATIONAL AND INTERNATIONAL RESEARCH UNDERTAKEN IN VARIOUS COUNTRIES

ENSI’s major input is to encourage action research in a number of its member countries. These have included:

- Action research in the field of Environmental Education and project teaching.
- Work on networks, e.g., Rauch, F., Schnittersen, I: *Networks as Support Structure for Quality Development in Education*: Klagenfurt, 2003, ENSI Series Nr17).
- Publications on school development, quality development, school program development, e.g. Peter Posch.
- Lectures and speeches given at various venues.
- A research report reworked as a teacher resource book (Switzerland).
- In teacher education, a conference in Lucerne in 2000 leading to the publication *,Challenges in teacher education* (Switzerland)
- Respective academics having produced action research reports in Environmental Education (Kyburz-Graber and Robottom, 1999).
- Norway adjusting its national strategy to be based on ENSI research on policies and Hungary reviewing its legal and political situation in terms of Environmental Education.
- Cognitive research projects related to Environmental Education.
- The framing of curricula for schools in Germany leading to the establishment of guidelines for lessons in Environmental Education and Education for Sustainable Development.
- The development and creation of educational standards (Germany).

A variety of research programs, both across member countries, and within respective countries themselves, have been conducted over the last 15 years. Only a small proportion of research programs were unrelated to ENSI activities but, in nearly all cases, they bore a strong resemblance to ENSI values and had obvious links with ENSI priorities.

Specific examples, of national and international research programs conducted by ENSI in respective countries, include **Sweden’s** *Dare to Learn*: A study of teachers as learners in the context of their environmental education programs was developed by Harriet Axelsson. The research consisted of texts written by teachers participating in the Swedish ENSI project from 1990 – 1994. The results of the data analysis indicated that learning for sustainable development is a more appropriate concept than Environmental Education and that the empowerment of students and environmental knowledge are seen as equally important in learning.

Italy’s major contribution to ENSI has been undoubtedly in the area of research especially on the subject of teaching learning methodologies. Because of ENSI the National Institution was requested by the Ministry of the Environment to carry out a National Observatory on Environmental Education initiatives over a 3 year period. Some results and reflections are still on the *Invalsi* website (ORMEA Project)

THE ESSENTIAL BENEFITS OF BEING A MEMBER OF ENSI

When asked to comment on what benefits they saw in being a member of ENSI, most countries were uniform in their responses to the areas they identified. These points also correlate highly to the earlier survey question about what would be the fallout if ENSI were disbanded.

Essential benefits listed by member countries of being a member of ENSI

ENSI member countries listed a number of benefits in being a member of ENSI in much the same way as they noted the losses they would face if ENSI did not exist. However, the responses were listed under two categories; those that related to international advantages for all member countries and those that were of particular benefit to the individual country itself. Major responses are summarised in Table 2 below.

Benefits of being in the ENSI network:

- Access to an international exchange of data and experiences.
- Ability to compare school systems across countries
- Ability to gain access to foreign researchers in environmental education and EFS.
- Access to publications
- Access to network groups for professional development
- Ability to develop cooperative action research projects as a basis for professional development
- Ability to benefit from the design of the WHO network project *Healthy schools* (1991).
- Access to a range of country coordinator meetings and conferences
- Facility to combine the attention of policy-makers with the practical projects carried out at the school level.
- Facility to combine the work of participating researchers with teachers involved in innovative programs
- The use of an international body to help launch, manage and mainstream many environmental education developments
- Facility to support new ways of thinking, especially in the interaction and communication between government, private partners and schools in such areas as the interaction between school buildings, school environment and school administrative procedures
- With its support from OECD CERI the projects are politically well accepted in all countries.
- Possibility to develop national research on Environmental Education and to stimulate international discussion groups ranging from research to simply exchange of ideas

Some of the international workshops and conferences that countries have attended include:

- Linz Final Phase 1 Conference 1988
- Cromer Conference on Evaluation in 1991
- Perugia Conference on *Images of science, nature and schools* 1992
- Stirling Conference on Values 1993
- Germany. Final Phase Conference 1994
- Linz Conference 1998

- Hadeland Conference on Mainstreaming Environmental Education 1999
- Szeged Conference on Teacher Education 2003

At the same time useful resources have been a variety of ENSI publications (See Appendices), a yellow ruler promotion and a website (www.ensi.org)

INDIVIDUAL CONTRIBUTIONS BY COUNTRIES TO ENSI

Various countries have made significant contributions to the work of ENSI over the 18 years of its existence. While it is emphasised that most contributions are of a collaborative, cooperative nature and cannot be claimed as the entire work of one individual country in a leadership role, it is obvious that the nation taking on the Secretariat certainly plays a more significant role and, for a while, stands out as the major innovator and leader of projects and research. Scotland, for example, in 1996 when it was elected to the ENSI secretariat was the main force behind the design of the *Aims and Principles of ENSI*.

Similarly, **Austria**, during its time of holding the Secretariat from 1998 to 2001, had a wealth of achievements and initiatives to its credit. ENSI is, in fact, based on an Austrian initiative associated with CERI from 1986 – 1994 with Peter Posch playing a major part in the design of the project and the detailed brief for its operation. The lists of contributions from Austria go hand in hand with the developments in Environmental Education within the Austrian Ministry of Education, Science and Cultural Affairs. Examples include the organisation of various international conferences at Linz (1998), Braunschweig (1994), the organization of the country coordinators in Vienna in June 1995 with the outline for Phase III: *Topics, strategy with the secretary (Scotland)*. In 1998, Austria organised the joint ENSI and OECD/PEB in Linz IN 1998 while the following year, at the University of Klagenfurt, Austria again worked with the ENSI secretariat to organise an international workshop on Environmental Education in teacher training, based on the Austrian *UMILE/ENITT* project. This latter initiative set the scene for the ENSI teacher training project, with the international ENSI conference in Luzern in Switzerland, in 2000, and the international ENSI/SEED conference in Szeged in Hungary in 2003. Similarly, the Klagenfurt workshop was also the starting point for the development of an ENSI conference on *Mainstreaming* in Hadeland, Norway in December 1999. Austria was also active in organising the ENSI Learnscapes Conference at Reichenau in 2001, a joint effort of the Austrian Ministry and the NSW Department of Education and Training (Australia). The list goes on – the establishment of the ENSI web site, the planning and taking on of the initiative to prepare the preproposal and finalisation of the EU – COMENIUS III– SEED Application and, finally, the coordination of the EU – COMENIUS III – SEED network.

Switzerland has also made its mark on ENSI with its leading role in the teacher education program, including the Teacher Education Conference in Lucerne (September 2000), its contributions to Szeged (September 2003) and the publication of the Lucerne Report Book (2003). The publication of the Szeged book (case studies and action research) is still in preparation. In 1995 Switzerland, under the leadership of Kyburg-Graber, produced a resource for an international report entitled *Learning for the 21st Century*.

As mentioned previously Switzerland takes over the Secretariat of ENSI in October 2004.

Norway has contributed to international workshops, organised an exhibition demonstrating the systemic approach to Environmental Education and hosted the well-known Hadeland workshop in 1999 – *From the Pilot to the Mainstream, Generalisation of good practice in Environmental Education*.

Hungary organised the workshop on *Developing Teacher Training in Environmental Education through Action Research* in Budapest in May 2001 and led the subsequent conference in Szeged from 2-6 September 2003 on the topic of *Sustainable Community and School Development, Innovation in teacher education, the potential of action research and environmental education*.

Denmark and Italy are coordinating the program *Quality criteria for Eco School development – a research study*. The first stage of this research is to identify the implicit and explicit criteria to guide, support or award Eco Schools involved in incorporating principles and actions for sustainability in whole school plans. The second stage will be the proposal to establish a set of quality criteria for Eco Schools, derived from a comparative study involving Eco Schools in ENSI and in the SEED network, in an experimental validation.

Denmark has also contributed to a number of lectures delivered to numerous ENSI related conferences and workshops. The papers derived from these workshops were mainly developed by CU Christensen, Soren. Brieting and Finn. Mogensen.

Australia has led the Learnsapes Program and, in cooperation with the Austrian Ministry, organised the Reichenau conference in 2001. At the same time, 2 Austrian teachers visited Australia in 2001 to investigate the Learnsapes programs in five pilot schools and then assisted in the preparation of a comparative research project, developed by Johannes Tschapka who was employed at the Austrian Ministry at the time. Australia also summarised the outcomes of the Reichenau Conference to be placed on the ENSI web site. In 2003, Australia presented a paper and delivered a lecture on its Sustainable Schools Program, an adaptation of the Eco Schools Program with a strong community component and a set of draft accreditation criteria to accompany it. Australia has contributed to the executive of ENSI for four years, providing the services of treasurer and editorial functions.

Germany currently manages the ENSI Secretariat and has been responsible for this from 2002-2003. Germany's major input has been the organisation of a school headmasters' (principals') conference in 2001, hosting three Annual General Meetings, organising a thematic conference and developing a German language ENSI brochure.

Italy presented a national report at the end of the first and second ENSI phases. An Italian expert, Laura Conti contributed with an Italian case study that was published in the First Phase Report. Italy also contributed to the ENSI newsletter in the ENSI Second Phase and organised in 1992 an international conference in Perugia. Michaela Mayer, as international expert contributed to the Cromer workshop on evaluation with a paper on Quality Indicators and the Second Phase Final Report. The workshop produced a review of all countries' national reports noting the changes achieved in the quality of teaching-learning processes. Mayer also contributed to the diffusion of ENSI ideas and results through several papers published in books and international journals. (See bibliography). As already stated Italy has made a major contribution to research projects.

THE ROLE OF ENSI IN THE DEVELOPMENT OF EDUCATION FOR SUSTAINABILITY

There are two perspectives to ENSI's role in the development of Education for Sustainability (EfS) , both from a national level and from an international level.

As with many areas of ENSI, the organisation is playing a leading role in the global analysis of Education for Sustainability as opposed to Environmental Education in itself. Currently it is involved in the coordination and dissemination of research outcomes in all member countries and making contributions to major international conferences. In time it will take a more active role in influencing the curricula for environmental education and education for sustainability at departmental or individual government level.

Since ENSI still has a varied influence on member countries, nations like **Sweden** use the resources of ENSI to learn from other countries and share experiences internationally. The *Dare to Learn* study of teachers as learners (Harriet Axelsson) is related to the experiences of ENSI as an international group and those of students as seen by many Swedish teachers. The work of Tilbury in **Australia** as a leader in the field continues to provide valuable and further research to ENSI's work and particularly for the *Decade of Education for Sustainable Development (2005-2014)*.

Austria has indicated that it is in the final stages of developing a national databank on measures for Sustainable Development citing the *UMILE/ENITT* (Umweltbildung in der Lehrerbildung / Environmental Education in Teacher Education) and the EU – COMENIUS III – SEED Network projects as milestones in its progress to developing its own indicators and criteria. Within the contracts of *FIORUM Umweltbildung* (Agency on Environmental Education, financed by the Ministries of Education and Environment). ENSI has been integrated into the process of developing the **Austrian** strategy for sustainable development. In the summer of 2001, the ENSI teacher team had a seminar with Professor Minsch whose expertise was in sustainable development at the University of Agriculture. This was followed by the influence of the *ÖKOLOG* (Ecologisation of Schools, Austrian national programme for Ecoschools) program ,the work of Gottfried Main, who set up an Austrian ENSI teacher team and developed a training course for regional *LA21* community advisers. The course was organised in cooperation with the Environment Department of the Tyrolian Chamber of Commerce.

In 2003 Johannes Tschapka, from the **Austrian** Ministry, collected *Education for Sustainability* strategies from all ENSI/SEED partners as an international support and influence on the Austrian development discussion. A year later, Franz Rauch began to collect and compile Education for Sustainability indicators and criteria as an international support and to develop resources for a planned research initiative in this field.

There is a general consensus, however, that there is much more to be done in this field particularly when there is still a need for more visioning and a coherent strategy for EfS at the international level (Tilbury). There is also confusion between the terms, Environmental Education and Education for Sustainability and, often, they are so roughly used as synonyms for each other. To give extra confusion to the debate, the term, *ecological sustainable development*, is also used at the same time when EfS is meant to be the correct term. Both **Switzerland** and **Australia** have identified this problem.

Like many countries, **Denmark** has identified the uneven gap between the formal requirements of government legislation and the reality of what is really happening in Environmental Education, whether it be Ecological Sustainable Development or EfS in schools. There are, however, other challenges for schools; the competition between Environmental Education and all these other expectations is quite intense. While it seems crucial that Environmental Education should serve as a vehicle for the integration of these challenges, to avoid the battle for room in the curriculum and for Environmental Education resources in schools, it is much easier said than done. ENSI, therefore, plays a critical role in the development of Environmental Education at schoolroom level without losing its critical and democratic perspective in the new generation of Environmental Education. Some countries, like **Hungary**, claim that ENSI has played a crucial role in the process of integrating Environmental Education as a cross-curricular issue into their national core curriculum. **Norway**, in turn, appreciates the importance of participating in the EfS process.

Italy noted the role of ENSI in the past and how it had collaborated in constructing a national culture of sustainability and how this would facilitate new directions to explore through research. Obviously EfS will be included in these new directions. ENSI's place in the world as the only international network with a long experience in research and its ability to connect research with government authorities and school practice will place it in a key position to contribute to Education for Sustainability.

ENSI'S ROLE IN THE FUTURE

The clarification of the meaning and role of EfS are seen by most countries as areas for further investigation by ENSI in the future. **Austria**, in its bid to ensure ENSI maintains its function and role as a forum for exchange, recommends a process of exchange across all member countries and partner countries to discuss the different national approaches.

The continuation of the work of SEED is also seen as vital for the future of ENSI, especially in the light of the upcoming *UN – Decade of Education for Sustainable Development* and should be used as a starting point for a mid term program of work.

Switzerland acknowledges the growing importance of teacher education within ENSI. There is still work to be done in promoting the work of ENSI to teachers and for ENSI to become broader in its attempt to raise its profile. The mainstreaming of ENSI based knowledge, and the transfer of knowledge into teacher's daily work, should be a focus of its work.

Hungary has similar views proposing that ENSI should connect with the most innovative stakeholders in the field of EfS. ENSI should also serve to test new ideas on the basis of a strong and experienced professional network.

Belgium exemplifies the main priority for ENSI - to serve as an international organisation assessing a broad range of expertise that can play an important role in coordinating the process of clarifying the concept of EfS. **Denmark**, on the other hand, believes it is ESD that should require ENSI's main attention and the best forum is through the *UN Decade of Education for Sustainable Development 2005-2014*. Not only should ENSI contribute to the definition of this concept, but it also needs to identify key themes in ESD. In this way, the critical democratic and action-oriented perspective is not lost sight of. **Australia** believes ENSI needs to continue work on increasing its reputation as being well-organised, dependable and professional. It is important that ENSI works more on its website and ensures its promotional materials are up to date and distributed at key environmental education events. There is also a need for the ENSI executive to be more political throughout the year trying to encourage its members to

attend key UNESCO, OECD and other high profile meetings and events. In this way ENSI gains an international, as well as, a national profile. More time is also needed to invest in its president and vice-president providing resources so they have more time to lead the network.

Italy believes ENSI's future emphasis should be on research and to continue being a connective structure between educational authorities, teacher education institutes, schools and research groups and institutions. ENSI should enhance its research competencies on education for sustainability, adding to action research competencies more evaluation competencies that will focus mainly on national and international programs. Italy also believes that ENSI should enhance its networking competencies, adding more thematic research networks to those already existing and improving its IT instruments and competencies.

Other roles cited were:

- A need to expand the network.
- To develop strong cooperative links with other international organisations.
- To exert more influence on educational policies at a national level.
- To offer to serve as a consultant for Environmental Education and ESD at ministerial level.
- To implement best practice examples developed by countries with more efficient education systems.
- To provide networking between the teacher training, local stakeholders and schools to facilitate school development through EfS.

CONCLUSION

The survey conducted by ENSI confirms the success and influence of its international role in advancing Environmental Education both within and among nations. The information and data provides a clear and confident direction for the organisation's future and offers new priorities as we move towards the UN Decade of Education for Sustainable Development. In essence, ENSI's contribution in the future is now more vital than it has ever been and its recent history demonstrates that it is an able leader in a world requiring cooperation and collaboration for a sustainable future.

APPENDICES

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“Environmental Learning for the 21st Century”, OECD, Paris 1995

"Environmental Education on the Way to a Sustainable Future", Vienna, 1999

“Environment Schools and Active Learning”, OECD, Paris, 1991 (also available in German)

"Evaluating Innovation in Environmental Education", OECD, Paris 1994

“Innovations in Teacher Education through Environmental Education”, Vienna, 1999 (also available in German)

“From the Pilot to the Mainstream – Generalisation of good practise in Environmental Education”, Oslo, 2000

B. ENSI's MAIN PARTNERS

- Pilot schools with teachers and pupils
- Researchers and experts
- Teacher educators and their students
- Governments improving their national Environmental Education policy.

C. ENSI'S MAIN ACTIVITIES

- Fostering action research and external evaluation of projects
- Sharing research and school development strategies and tools
- Disseminating approved results from research and implementation
- Organising international workshops, seminars and conferences
- Distributing case studies, evaluation reports and publications.

ENSI'S MAIN PROJECTS

Eco Schools

Aims to develop, test and publish methods of teaching and learning which define good practices of environmental education by setting up international school partnerships and aims to conduct comparative studies in such areas as “Quality criteria for Eco School development

Learnsapes

Aims to promote the redesign of school grounds to permit school communities to interact with their environment and link their curriculum with their use of school grounds

Teacher Education

Aims to integrate innovative approaches to teacher education programs through environmental education

Mainstreaming Environmental Education in National Education Systems

In an effort to answer the request for a generalised approach to good environmental education practice ENSI aims to conduct comparative studies about official national strategies which ensure a widespread introduction to environmental education into the schools curricula and in teacher training.

Quality riteria for Eco School Development

A comparative study of the contribution to school development offered by environmental education and education for sustainability.