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**THE UNECE STRATEGY
FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT¹**

(Draft)

¹ Transmitted by the Ministry of Education and Science and Ministry of the Environment of Sweden

Foreword²

The objective of this document is to lay the foundation for achieving a sustainable society in the region. By introducing sustainable development as one of the main goals of the education system, knowledge and awareness in the region can be strengthened.

Considering the widely varying situations not only between countries, but also within countries of the region, the strategy needs to be kept at an aggregate overall level. All countries are invited to follow the strategy as overall guidance. National/state use of the strategy requires further elaboration and transformation into national/state level. It also calls for regional as well as sub-regional cooperation, at national/state level between different stakeholders, educational institutions and others.

The document is directed towards at least two different addressees. However, *the Summary* is directed principally to policy makers at all levels, especially Ministers responsible for education. *Chapters 1 and 2* address a broad spectrum of recipients covering civil servants at different levels, headmasters and other leaders of educational institutions, designers of curricula and syllabi, educators at all levels, NGOs, IGOs and also financial institutes. This part contains a more detailed and fuller description of the subject SD with regard to education and its impact on the education system including objectives. It also covers implementation, responsibility and time frames, as well as considerations connected to financial matters. *Chapter 3* presents an outline of five areas within which concrete actions should be developed. In the appendices, further elaboration on some backgrounds can be found and also clarification notes.

Abbreviations used in the document

Some of the most commonly used abbreviations in the document are:

<i>UNECE</i>	United Nations Economic Commission for Europe
<i>Educators</i>	Teachers, lecturers, trainers and voluntary education leaders
<i>EE</i>	environmental education
<i>ESD</i>	education for sustainable development
<i>IGOs</i>	intergovernmental organisations
<i>IHEs</i>	Institutions of Higher Education including teacher training institutions
<i>Learners</i>	pupils, students and participants
<i>NGOs</i>	non-governmental organisations
<i>Schools</i>	formal education/training (pre-school to upper secondary education, including initial vocational training, and formal adult education)
<i>SD</i>	sustainable development

Some clarification notes can be found in Appendix 2.

² This document was not officially edited

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Summary of the UNECE Strategy for Education for sustainable development

Introduction

1. Based on the important achievement in environmental education and taking up the commitment from the World Summit on Sustainable Development (2002), the concept of ESD will be developed into the UNECE strategy. The aim of the Strategy for Education for sustainable development (ESD) in UNECE is to strengthen knowledge and awareness in the region as a solid foundation for the common long-term transition to sustainable development in the UNECE. The focus should be on giving strong political signals on the need for ESD, as well as support to educational institutions at all levels of policymaking bodies and non-formal education. The aim is to achieve genuine integrative learning with regard to natural sciences, social sciences, economics and culture, based on a democratic approach and using integrative, process-oriented and participatory learning methods. The aim should be to get ESD integrated into the entire learning process, making it action-oriented and also creating good preconditions for projects that may, for instance, involve twinning demonstration schools. Sustainable development is a responsibility for all, including responsible actors and stakeholders. Education is an important instrument needed in order to reach the targets of sustainable development.

Overall Goal for Education for sustainable development

2. All individuals should have competence to contribute to sustainable development that meets the needs of the present without compromising on the ability of future generations to meet their needs. Education for sustainable development should be based on an integrated approach to economic, societal and environmental development. Information must be seen as complementary to education.

This will require:

- a) all levels of education are given a legal framework (incl. curricula) where sustainability aspects are clearly incorporated;
- b) educators have relevant competence to include SD in their teaching;
- c) learners are given the opportunity to influence and take responsibility for their own learning;
- d) all members of society have access to education where SD aspects are in the mainstream.

Impact on the education system

3. Education for sustainable development must be implemented at all levels of education and at all levels in educational institutions. Implementing and achieving sustainable development in the region will require basic understanding, competence and skills that have to be developed in society for the general public, the schools, vocational training, universities and through continuing education at workplaces.

4. Realization of a sustainable society needs a holistic approach for policy areas covering the environment, economy and society where education is critical. This must be a concern for all policy makers and NGOs, including those working on policy for commerce,

industry, environment, health, development and social issues. Changing towards sustainability depends on a change in understanding. The outcomes from the World Summit on sustainable development (2002) reiterate the need to develop, implement, monitor and review action plans and programmes that reflect the Dakar Framework for Action.

5. Attaining education for sustainable development requires a shift from traditional education as a whole towards a more ecological, integrative, and sustainable model through gradual steps, and setting up research and monitoring frameworks that can help facilitate this process. This must involve initial teacher education and calls for extensive in-service training for teachers. The real need is to change from transmissive education towards transformative learning. Effective education for sustainable development depends upon a combination of factors i.e. legitimacy through the curriculum, new ways of learning, competence of staff, institutional development, partnerships and finances. Awareness of ESD within the educational community should be emphasised as an initial step.

6. Political demand for and support at national/state, regional and local levels are decisive for success in the pursuit of sustainable development. A good learning environment that includes a positive social climate and learners' motivation should not be underestimated. The democratic process underpinning sustainable development needs to be further strengthened. Politicians at all levels should be encouraged to give strong and clear support to the importance of education for sustainable development with reference to the following:

a) a shift in educational policy is needed and this should be decided by those responsible for the education system and by means of an inter-governmental approach taking all interests into account,

b) necessary steps to form a system covering ESD should be taken by each country between 2003 and 2006 (a transition period). These should also take into account the UNECE context and cooperation at national/state or regional level. A participatory and holistic approach should be taken when developing ESD.

c) relevant actors (decision makers, educators, scientists, private sectors, NGOs) in each country should take necessary steps regarding continuing education with the aim of bringing about considerable improvement by December 2006. By the end of 2006, ESD perspectives should be included in all teacher education and in-service training for teachers, as well as for other professionals. Relevant actors should be responsible for doing this.

d) relevant actors in their respective countries should aim at improving teaching materials and research with regard to ESD, as well as taking into account the need for raising public awareness on SD.

Objectives, content, methodology and responsible actors

7. The objective of the UNECE Strategy for Education for sustainable development is to lay the foundation for achieving a sustainable society. This will require active participation by people in society and should be included in regional as well as sub-regional co-operation. The challenge is to reform policy-making and administration of education on the basis of trust, inclusively and subsidiarity, and evaluation on the basis of shared and supported self-evaluation. Learning for responsibility requires educational systems, institutions and educators to acquire "response-ability" - the ability to meet the challenge and opportunity that sustainability presents. This means putting heart, soul and spirit back into our thinking and promoting behaviour that is flexible and person-oriented. Education is not about attaining production targets in the first instance, but realizing potential, not building competitive league tables, but building human and social capacity.

8. The creation of knowledge of and awareness for achieving sustainable development must be seen as a lifelong process and should address all people of all ages. It must cover all levels of education, formal as well as non-formal, and informal, from pre-school to higher education and adult education, as well as awareness-raising measures through actions by non-governmental organisations and informal modes of teaching and learning e.g. through the media. ESD should also be regarded as an important tool for achieving sustainable consumption and production patterns, as well as for necessary changes in lifestyles.

9. ESD should be included in all curricula or equivalent instruments appropriate to the level of education and rest on broad interdisciplinary knowledge, and be integrated both into the mainstream of existing disciplines and also developed as a special competence. It should be based on an integrated approach to economic, environmental and societal development, and should complement and build on existing initiatives in environmental education. ESD encompasses a broad range of shared values such as democracy, equity, health and human rights. It demands an educational culture directed towards a more integrative, participatory, process-oriented and dynamic mode emphasising the importance of critical thinking, reflection and action, as well as social learning and the democratic process. The role of the arts as well as the natural and social sciences in this broad approach should be recognised. The role of learners should be transformed into active participation. Modern information and communication technologies should be used in the learning process.

10. Both competence development and continuing education for professionals (incl. officials) need to be part of sustainable development for the education sector. There is much knowledge, both general and technically detailed on SD which until now has not been a part of the education/training for these professions. Close co-operation between educational institutions and all sectors of the economy will make it possible for learners to be trained in an appropriate environment. Learners will thus become acquainted with current working conditions. Close co-operation with surrounding society will also contribute to the learning process.

11. Educators have a key role in education for sustainable development. ESD undoubtedly requires that the role of educator be further transformed into that of a facilitator and active co-learner. Training programmes for educators and teachers should be based on the concept of sustainable development and promote suitable learning methods and further research in the area. Further research on education for sustainable development should be encouraged.

12. All educational institutions have an important role in further implementation of the strategy and should aim at being linked to internationally or nationally recognised development strategies or the equivalent; they should have fully trained staff who are competent in education for sustainable development; and provide all students with relevant opportunities and methods for learning about sustainable development. Intergovernmental (IGOs) and non-governmental organisations (NGOs) as well as the media have an important role in the process of education and in raising public awareness for sustainable development.

13. Good practices in existing networks of educational institutions and citizens' organisations are important and could serve as sources of inspiration, innovation and knowledge. Encouragement in maintaining and building new networks should thus be an important part of the action programme. This also requires a knowledge system and knowledge management that makes transfer of good practice, stimulation and inspiration possible.

Implementation of the UNECE Strategy for education for sustainable development

National/state level

14. The organisational structure for education differs not only between UNECE countries but also within countries. Those responsible for regular education in each nation or state should take the lead in intergovernmental co-operation with other ministers for national development and implementation of the UNECE strategy for ESD. To attain this, it is recommended that each country translates the Strategy into its respective native language, distribute it to relevant bodies, designates a responsible focal point, identifies national/state priorities, draws up and decides on an implementation plan. Prior to the development of the implementation plan, a review of the current situation with regard to ESD should be carried out. Governments should play a proactive role in their respective countries as regards promoting and facilitating the work of implementation. To that end all ministries and other relevant actors and stakeholders, including IGOs and NGOs, should be invited to participate. Reporting regularly on progress in implementing the plan for ESD will further promote the process.

UNECE regional level

15. ESD is an issue for co-operation and existing structures should be the basis for the work of creating a sustainable region. Regional as well as sub-regional alliances, associations, networks among educational and training institutions and professional bodies as well as existing regional mechanisms and programmes should be strengthened and a system for exchange of best practices, innovations and information should be established. It is recommended that ESD issues be included in bi- and multi-lateral

agreements. UNECE should be entrusted with the responsibility for closely monitoring progress and facilitating implementation of the UNECE strategy.

Indicators and monitoring

16. Efforts on developing indicators for the quality of education are under way in many different national bodies and international organizations such as OECD, EU and UNESCO.

ESD should be part of such indicators. Introducing SD aspects into all level of education and taking necessary actions closely connected with this will take time. The outcome can only be measured over a long-time perspective. As regards the social aspects of sustainable development, already existing indicators such as health and employment rates, and population density could be of some relevance.

Time frame

Achieved	Activity
During a transition period between 2003-2006	Decisions should have been taken by each country to change their education policy into ESD
By the end of 2004	A review of the legal framework, financial mechanisms, educational activities as well as identification of obstacles and gaps with the regard to ESD
By the end of 2004	Decision on the national implementation plan
By the end of 2004	A system of monitoring with relevant indicators should have been developed
By the end of 2006	ESD perspectives should be included in all teacher education and in-service training for teachers and other professionals as well as in continuing education for other professions
Within a <i>five</i> year period from 2003	Implementation should have started and be well under way
Within a <i>ten</i> year period from 2003	Considerable improvement with regard to ESD in all countries the UNECE region should be achieved. National/state evaluation performed by 2014 and a redrafted implementation plan in action by 2015

Financing

17. To properly judge the significance of costs and revenues for carrying out the actions that are necessary to achieve the goals of the strategy, it is necessary to understand the value of education in introducing sustainable strategies into society. Education should be seen as an investment that will subsequently be paid back in terms of better returns. Governments should, however, recognize the need for and develop economic instruments to support ESD at national level.

18. In general, financing the implementation of the UNECE Strategy for ESD should rest with each respectively country. Governments should thus monitor that appropriate resources are available. However, in order to promote and be able to disseminate such work, bilateral and multilateral donors could be addressed to assist countries.

I. Introduction

1.1 The international importance of Education for Sustainable Development²

1. “Environmental education” and “Education for sustainable development” have a long international history starting with the Belgrade Charter and culminating in more recent developments such as Agenda 21, Baltic 21E³, the Thessaloniki Declaration, the Sixth Environmental Action Programme of EU and many others.

2. The Regional Ministerial Meeting for the WSSD (24-25 September 2001, Geneva) also gave consideration to the subject and called for initiatives in the field of education. Specifically, the Ministers “agreed to improve education systems and the design of learning programmes on sustainable development to increase general understanding of how to implement and promote sustainable development in practice.”

3. During the preparations for the Kiev Conference, considerable interest has been shown, both by Governments and non-governmental organizations, in improving environmental education (EE) and education for sustainable development (ESD). Education is a fundamental tool for changing patterns of consumption and production; for providing the foundation for research and development in technologies that may improve the environment; as well as for integrating environment issues into the thinking of people, starting at a young age.

4. The outcome from the World Summit on Sustainable Development in Johannesburg (2002) underpins the need to integrate SD into education systems at all levels of education in order to promote education as a key agent for change. The Summit also recommends the UN General Assembly adopt a decade of education for sustainable development, starting in 2005.

1.2 The role of education in achieving sustainable development – Force for the Future

5. Education, Training and Research are recognised as important horizontal tools for attaining sustainable development and for the integration of sustainability aspects in all sectors. This will require broad participation of all society, and sub-regional as well as regional co-operation. The challenge will be to reform policy-making and administration of education on a basis of trust, inclusivity and subsidiarity, and evaluation on a basis of shared and supported self-evaluation. Equipping citizens with relevant education, training and other tools and thereby enhancing public awareness, can promote the development of an economically, socially and environmentally sustainable society. This will make it possible for each and everyone to take responsibility for choices as critical and conscious consumers, professionals, decision-makers, employees, students, parents and voters, maintaining and increasing the quality of life for their own generation, as well as for

² For more detailed information, see Appendix 1

³ An Agenda 21 for Education for sustainable development in the Baltic Sea Region

generations to come. Education is very important to all sectors. Firstly, since new knowledge and skills need to be developed in order to meet the challenges of sustainable development (SD) in society, and secondly, as a means of raising public awareness and providing preconditions for informed decision making, responsible behaviour and consumer choice.

6. Education in all its forms at all levels and for all sectors of society is essential for sustainable development. In many respects basic education is an important prerequisite for the public to be able to counteract degradation of the environment, to improve nutrition and also for combating the problems of poverty. Improved basic education and access to education in general, and particularly, for girls and women, also has a considerable impact on different aspects of health. Education is another important factor in fostering social cohesion, responsibility and democratic government. Learning for responsibility requires educational systems, institutions and educators to acquire "response-ability" - the ability to meet the challenge and opportunity that sustainability presents. This means putting heart, soul and spirit back into our thinking and promoting behaviour that is flexible and person-oriented. Education is not about attaining production targets in the first instance, but realizing potential, not building competitive league tables, but building human and social capacity.

7. Education not only provide the scientific and technical skills required, it also provides the motivation, justification, and social support for pursuing and applying them. Furthermore, it increases the capacities of people to act responsibly in a global context, to transform their visions of society and environment into operational realities. This makes education the primary agent for transformation towards sustainable development. Education and training, which inculcates facts, skills, understanding and familiarity are essential for improving people's ability and will to solve environmental and development problems. This must therefore be seen as part of a lifelong learning process taking into account the ecological conditions associated with economic, social and cultural development.

8. Scientific education can widen our capacities, not least in areas such as eco-technology and development of renewable energy sources, and it can ensure the availability of scientific information, which in its turn is increasingly necessary for informed ethical decision-making. In a world increasingly shaped by science and technology, education in these areas is most important in order to understand complex principles and the basics of science and technology in order to make informed decisions, successfully compete in society and contribute to its sustainable development.

9. Progress depends to a large extent upon the products of educated minds: upon research, invention, innovation and adaptation. Naturally, educated minds and instincts are needed not only in e.g. research institutes, but also in every aspect of life. In its broadest sense education must be a vital part of all efforts in envisioning and creating new relations among people and to foster greater respect for the needs of the environment.

10. The goal of education is to make people more knowledgeable, better informed, ethical, responsible, critical and capable of continuing to learn as well as willing to learn throughout

life.. Education also serves society by providing critical reflection on the world, its shortcomings and injustices, and by promoting greater consciousness and awareness, enables new visions and concepts to be explored, and new techniques and tools to be developed. It is also a means for disseminating knowledge and developing skills, for bringing about desired changes in behaviours and actions, values and lifestyles, and for promoting public support for the continuing and fundamental changes that will be required.

11. Hence, education and the creation of know-how for sustainable development must be aimed at people of all ages, from pre-school to adults and elderly people as well. In this respect, children are of particular importance because they act as "ambassadors of sustainable development", influencing the attitudes of their parents and other adult relatives and also because they must adopt a more responsible lifestyle as adults. Modern research has shown that the lifestyle people establish early in their lives is later retained. Accordingly, education is not merely a question of transferring knowledge; it must give an impetus to changing patterns of behaviour and attitudes, and develop motivation and the ability to act in the interests of sustainable development. Thus, education must stimulate active participation in order to achieve its objectives.

12. Thus the creation of knowledge on and awareness of sustainable development must cover all levels of education, formal as well as informal and non-formal. Due to the interrelationship between the three dimensions of sustainable development, ESD demands an educational culture directed towards a more integrative, process-oriented and dynamic mode emphasising the importance of critical thinking and of social learning and a democratic process.

13. Education for sustainable development must take account of local, regional and national circumstances and may therefore place varying degrees of emphasis on the three aspects of sustainability - economic, social and environmental – depending on country and field of education. Accordingly, education needs to be incorporated into the strategies of the policy areas currently involved, as a means of achieving the strategic objectives of the UNECE process.

1.3 Principles, content of and approaches to Education for Sustainable Development

14. ESD should rest on broad scientific knowledge and be both integrated into existing disciplines and developed as a special competence. It demands an educational culture directed towards a more integrative process-oriented and dynamic mode emphasising the importance of critical thinking, social learning and a participatory process.

15. Based on the above considerations, in this document it is proposed that sustainable development becomes one of the main goals of the education system as a whole, both for formal and non-formal education, from pre-school to higher education and adult education, as well as for awareness-raising measures. As such it should be included in all curricula or equivalent instruments corresponding to the level of education, and be seen as part of lifelong and lifewide learning. As lifestyles and attitudes will be established in early ages, it is important to start in pre-school (early childhood education) to awaken and

improve children's respect for nature, understanding of interconnections between man and nature, interest and knowledge in SD. A progressive perspective in these matters in later school years is of great importance. SD should be seen as a necessary tool in every day life for all people and thus be integrated into all subjects and in existing disciplines. It should also, especially in higher education be developed as a special competence. The interrelationship between natural sciences and social sciences through the development of an interdisciplinary approach should be strengthened.

16. Within the context of ESD, environmental problems and issues are linked closely to social and economic dimensions. Consequently, ESD has to empower target groups to work in an open dialogue to identify and resolve conflicts of interests between groups in our societies. Therefore, it is necessary that learners are encouraged to use critical thinking for developing their vision of future sustainable development as a prerequisite for shared concrete action taking.

17. Learning to live together - the need for multicultural coexistence at all levels of society is today more evident than ever. The common problems of our earth - threats against the environment, human beings, violence, inequality - must be resolved taking into account cultural diversity. However, obstacles are numerous and can only be overcome by encouraging the practise of learning to live together for the common good. The difficult task for education is to put knowledge into a context that affects and is related to our own time and contemporary moral and ethical perspectives.

18. ESD in UNECE should be seen as part of the programme on Education for all, as agreed on in the World Education Forum in Dakar, Senegal (April 2000). There is thus a need to ensure that education reaches everyone and embraces a deep concern for the fundamental goals and purposes of education, for the relevance of learning contents and processes, and for modes of learning that reinforce human values.

19. Vocational education/training, for these reasons, also needs to support improvement of knowledge and skills in sustainability strategies in their respective fields, each specific to the learners' future possible professions and to contribute to a sustainable society. Education/training must include evaluating different alternatives e.g. efficiency in the use of material and energy, in recycling material and in reducing emissions from polluting substances, taking into account at the same time social, economic and ecological factors. Learners should also in their training practise their skills in these areas.

20. There is also a need for new knowledge, understanding and skills in many professions of key importance for the development of our societies. There is much knowledge, both general and technically detailed, on SD that until now has not been a part of the education/training for these professions. Both competence development and continuing education for professionals needs to be part of sustainable development for the education sector.

21. Society requires high quality education and a high level of knowledge. Lifelong learning in the form of revitalising skills has become increasingly important. Rapid technological evolution as well as working conditions per se requires educational

institutions open up to close co-operation with industry, which would make it possible for learners to be trained in an appropriate environment. Learning activities in close cooperation with surrounding society will also contribute to the learning process. Flexible and varied learning methods tailored to the individual learner must be used to meet learners' needs for additional skills and new knowledge. Similarly there is a need for increased co-operation and partnerships between different actors in the field of education, as well as with stakeholders in the processes.

22. Modern information and communication technologies (ICTs)⁴ are important for effective ESD and have to be applied both in and outside school using thematic, active and problem-oriented teaching methods as well as experimental learning methods that enable learners to gain a better overall view of environmental, social and economic aspects and thereby develop a deeper understanding of ways of achieving sustainable development.

23. Teacher education, sharing of experiences and new teaching methods are extremely important in the context of ESD. Traditional teacher training and studies should be revised and developed to include aspects of SD and consequently training in using new methods in teaching.

24. The leading role of Ministries of Education and other relevant governmental bodies should be strengthened. They should initiate, stimulate and coordinate further integration of SD principles into educational programs, standards and curricula at all levels, and to carry out control measures and monitoring of implementation.

25. Higher levels of education and continuous learning, when accessible to all, make an important contribution to reducing inequalities and preventing marginalisation. All actors should be invited to work in partnership to promote the action programme for ESD in the UNECE. The efforts made by the Association of European Universities (CRE/AEU) as set out in the Magna Charter⁵ of European Universities and subsequent university declarations should be endorsed. In the Magna Charter universities are increasingly called upon to play a leading role in developing multidisciplinary and ethically-oriented form of education in order to devise solutions for the problems linked to sustainable development. By following the principles of the Copernicus Charter universities can contribute to a more sustainable and knowledge-based society in Europe.

1.4 Education for sustainable development needs to address several key areas

26. In the field of environment, education should provide an insight into questions about global, regional and local survival, and address patterns of production and consumption, covering the extraction of raw materials to final disposal of products. Consumption and production of products should be explained by means of a life cycle approach, focusing not only on environmental impact, but also on the social and ethical dimension of consumption. Recycling and new technologies are an important concern. A

⁴ For further information see Appendix 2

⁵ For further information see Appendix 2.

good overall picture must be given of the real implications of the main environmental problems.

27. The growing tendency for people to move across national borders also places great demands on their ability to live with and understand the values inherent in cultural diversity and is also a concern for sustainable development. Respecting diversity and regional cultural heritage is part of ESD and democracy. This implies showing tolerance to and respecting different ethnic and minority groups as well as religious groups. The knowledge of indigenous people must be taken into account in the process of developing educational programmes.

28. Addressing the ethical dimension is central to understanding sustainable development, as emphasised in several international documents. Thus questions refer both to equity between generations – as underlined in the most common definitions of sustainable development – and equity in the present generation, in particular gender equality, as well as relationships between man and nature taking into account in particular respect for biological diversity. Responsibility is inherent in ethics and becomes a practical matter in issues concerning the responsibilities of consumers and producers.

29. The employability and adaptability of citizens is a vital part of the economic aspect of SD. A knowledge-based society, along with wider economic and societal trends such as globalisation, changes in family structures, demographic change, and the impact of information technologies, present many potential benefits as well as challenges. Today there is a greater need than ever for citizens to acquire the knowledge and competences necessary to be able to benefit from and meet the challenges of the knowledge-based society.

30. The result of the work within the EU presented in the document ‘Making a European Area of Lifelong Learning a Reality’ should be recognized. It also promotes goals and ambitions for people to become more inclusive, tolerant and democratic. Thus lifelong learning is not the same as recurrent education within the formal education system. It has implications not only for education systems, but also for many different sectors of society. This emphasises the importance of adequate levels of open and flexible education and training provision at all levels for bringing organizers of learning and (potential) learners together.

31. There is a need to consider the evolving nature of SD, which makes lifelong learning and lifewide learning of great importance. The development of a sustainable society must be seen as a process where the right answers and solutions are constantly changing as our experience increases.

1.5 Impact for educators and learners

32. Education is not a "pre-packaged" product ready for final distribution; it involves learning processes. People need both factual information and confidence if they are to understand the consequences of various alternatives they face and be able to examine facts critically and take part in discussions.

33. Issues of democracy and ecological awareness must be taught and learnt through practice and by taking concrete action. Sustainable development is, as mentioned, a fundamental part of vital democracy and active citizenship. Real democracy is based on people respecting each other, talking to each other, exchanging information, talking about their experiences, listening to each other and comparing their respective views, before making their own choices and decisions.

34. The role of participatory democracy is underlined in Agenda 21 and from many years of practical experience. Democracy is part of the content of sustainable development, in particular as a means of managing conflicts in society and achieving justice. Involving learners in the decision-making process in school/IHE provides important training for democracy. This could be on an individual basis in a specific educational situation or on a collective basis in student council work.

35. Education must also equip learners to act in order to achieve sustainable development e.g. providing them with incentives for changing their patterns of consumption and helping them to draw conclusions so that natural resources may be protected or used in a sustainable fashion. This may be practised in schools and IHEs by implementing the principles of sustainability in daily life.

36. Teaching must also be closely linked to the latest research findings and use of new technology. All this means not only that educators in the natural sciences should be involved, but also those in the social sciences, humanities and other subjects.

37. Learning and teaching sustainable development at all levels will require access to resources. These include basic texts as well as cases studies, good examples of all kinds such as the Baltic Sea Project⁶ and Baltic University Programme⁶, media, web-resources etc. The quality of an educational program for sustainability will be critically dependent on the quality of the material.

38. Financial resources and technical support must be dedicated to ESD at all levels. It is necessary to understand the value of education in introducing sustainable strategies in society. Education should be seen as an investment that will subsequently be paid back in terms of better returns.

1.6 ESD need to address issues in all sectors

39. Thus national/state strategies for sustainable development in the ECE Region should embrace the entire educational sector. Education for sustainable development must include all aspects of citizens' work for sustainable development. The perspective of SD must therefore be brought up in all subjects, courses and programmes as well as non-formal education. This requires considerations in formal education as well as in non-formal education.

⁶ For further information see Appendix 2.

40. Clear and solid goals for sustainable development will bring about significant economic improvement. Technical innovations and investments that create growth and employment in the business and public sectors will contribute to the development of new environmentally friendly technology. A precondition for this, however, is greater expertise and education that is directed to appropriate target groups. Eliminating threats to the health of citizens through, for example, safe food, considerable reductions in the use of chemicals, and measures to prevent infectious diseases can only be achieved when there is high level of knowledge among citizens.

41. Social security, good health and the ability to financially manage daily life for the individual as well as for raising a family are all of vital importance for a sustainable society. Investments in education, in health care and social protection, as well as efforts to facilitate women's labour participation are crucial to social and economic progress. Such investments and actions are not a burden for development, but an engine for growth.

42. Economic, social and environmental measures must be integrated and mutually reinforcing. The underlying motives for SD should be part of all educational programs and training for all ages. How the effects of measures in these fields interact is often unclear and in most cases needs to be clarified. Thus it is important that vocational training and specialist education of key importance must deal with these aspects.

43. Experience tells us that introduction of sustainable regimes will require wide participation of citizens in a society. This is clear when it comes to practicalities, such as managing resource flows, but it also has implications for the foundations of democracy through people's participation in the development of society. This may concern housing areas, a neighbourhood or a city. Democracy in practice concerns how we take common responsibility for our home, our city our society and our world. It is an important task for education to promote the learning of the skills needed and a basic understanding of how all these aspects of society are functioning.

2. UNECE Strategy for Education for Sustainable Development

2.1 Introduction

1. Emphasising that education is a powerful instrument needed in order to reach sustainable development.
2. Recognising that Education for Sustainable Development is taking up the important achievements of Environmental Education.
3. Welcoming the provisions of the UNECE Ministerial Statement for the World Summit on Sustainable Development, particularly the chapter “Education, science and technology for decision-making” and recognising the major role UNECE can play in regional efforts to achieve sustainable development.
4. Undertaking the commitments for effective implementation of the Rio principles, Agenda 21, the Millennium Development Goals and the Johannesburg Plan of Implementation.
5. Reaffirming the necessity of commitment to the goals contained in the declaration of the World Education Forum in Dakar (2000).
6. Welcoming the outcome of cooperation within the Baltic Sea Region regarding an Agenda 21 for the Baltic Sea Region – Baltic 21 and an Agenda for Education for Sustainable Development in the Baltic Sea Region, Baltic 21E.
7. Reaffirming that education, training and public awareness are critical for promoting sustainable development and increasing the capacity to address economic, environmental and social issues, and that the further implementation of Chapter 36 of Agenda 21 will influence progress in implementing all other chapters of Agenda 21.
8. Recognising that economic, environmental and social issues are included in the concept of sustainable development and also recognising the importance of cultural and ethical issues as reflected in decisions taken by the UN Commission on sustainable development.
9. Also recognising that education and training for sustainable development (ESD) is about the learning needed to maintain and improve our quality of life and the quality of life for generations to come.
10. Emphasizing that good governance within each country and that the regional and international level is essential for sustainable development. At the domestic level, sound environmental, social and economic policies, democratic institutions responsive to the needs of the people, the rule of law, anti-corruption measures, gender equality and an enabling environment for investments form the basis for sustainable development.

11. Recalling that peace, security, stability, respect for life and rights of present and coming generations, cultural diversity and tolerance are essential for achieving sustainable development and ensuring that sustainable development benefits all.

12. Recognising the need for broad co-operation at the international, regional, sub-regional and national/state level and the involvement of important players in the field such as decision-makers, educational community, business and industry, international organisations, non-governmental organisations and mass media as well as other major groups.

13. Taking up all the above-mentioned principles and provisions we accordingly developed the UNECE Strategy for Education for Sustainable Development.

2.2 Overall goal for Education for sustainable development

14. All individuals should have competence to contribute to sustainable development that meets the needs of the present without compromising on the ability of future generations to meet their needs. Education for sustainable development should be based on an integrated approach to economic, societal and environmental development. Information must be seen as complementary to education.

This will require:

1. All levels of education are given a legal framework (incl. curricula) where sustainability aspects are clearly incorporated.
2. Educators have relevant competence to include SD in their teaching.
3. Learners are given the opportunity to influence and take responsibility for their own learning.
4. All members of society have access to education where SD aspects are in the mainstream.

2.3 Impact on the education system

15. Implementing education for sustainable development focuses on enabling learning experiences that engender a sense of meaning and on fostering sustainable behaviour in educational institutions, families and communities. This involves a shift in the approach taken by education – away from providing knowledge in systematic ways and towards dealing with problems and developing possible solutions. In addition, education must retain its traditional focus on individual subjects and open the door to the multi-disciplinary examination of complex, real-life situations. Teaching that is geared simply to passing on knowledge must be recast into an approach in which teachers and students work together to acquire knowledge and play a role in shaping the environment of their respective educational institutions. Furthermore, rather than having communication follow a top-down pattern, it should be replaced by allowing students to participate in decisions on how they are to learn. This means making greater use of classroom projects and experimental learning methods, focusing on the broad spectrum of themes that are part of sustainable development and drawing on new venues for learning.

16. Implementing education for sustainable development involves initiatives for developing and cultivating a culture of communication and decision-making and a social climate that is imbued by mutual respect. Focus must be shifted away from educators being the transmitter and learners as recipients toward team structures and social continuity. Further, the practice of prescribing organizational rules from above should be re-considered. Instead, ways to negotiate binding rules with students and assign responsibility to them should be found. Education must also overcome its isolation vis-à-vis society and, in exchange, take action to shape its relations with the outside world with the aim of opening up educational facilities to society.

17. In technical and economic aspects, education for sustainable development focuses on the ecologically tenable and economically efficient use of resources. This includes energy conservation initiatives and measures and the avoidance of pollution caused by e.g. emissions, waste and traffic, both inside and outside educational facilities.

18. Political demand for and support at national/state and local level are decisive for success in the pursuit of sustainable development. The democratic process that underpins sustainable development needs to be further strengthened. Politicians at all levels should be encouraged to give strong and clear expressions of the importance of education for sustainable development with reference to the following:

Objective 1: Those responsible for regular education in each nation/state should take the lead in intergovernmental co-operation with other ministers for the national development and implementation of the UNECE strategy for ESD.

Governing documents

19. All levels of education need an enhanced legal framework where sustainability aspects are clearly incorporated e.g. education laws, ordinances, educational programmes, curricula/standards, and syllabuses.

Objective 2: Necessary steps to form a system covering ESD should be taken by each country during the year 2003 and be finalized by the end of December 2006 (a transition period).

Approaches

20. Strengthening the connection between the natural, economic and social sciences is important both in interdisciplinary and in specialised studies. In these studies interdisciplinary approaches and specialization must be properly balanced.

21. Further initiatives must be taken in school (incl. pre-school) and IHE development regarding content and methods. Learners should be given greater opportunity to influence and take responsibility for their own learning. It is important that the role of learners should be changed into active participation and that the role of the educator be further transformed into that of a facilitator and active co-learner. Other important approaches are critical reflection and discussion.

22. Practical cooperation in different forms and in democratic decision-making should be part of the curriculum and implemented in practice. Such participation should also be

seen as an opportunity for learners to influence work in the school/IHE covering study contents and methods.

Objective 3: An active, participatory, co-operative and holistic approach should be taken when developing ESD

Continuing education

23. Continuing education and training should be offered to all professionals with the aim of building knowledge, understanding and improving skills on sustainable development, capacity building, raising awareness. Education and training should be organised for those professional groups, including decision-makers, who have both an important impact on environment and who work on improving the environment.

Objective 4: Relevant actors in each country should take necessary steps with the aim of bringing about considerable improvement in continuing education by December 2006.

Teacher education and in-service training

24. Aspects of sustainability should be incorporated in teacher education and training programmes while considering the evolving nature of ESD. Increasing efforts should be made for in-service training with regard to sustainability. Such in-service training programmes/courses are important and should be promoted to educators at all levels of education including teacher trainers at IHEs. Provision of in-service training and consultancy – including training programmes should be offered for non-formal educators with regard to SD. As sharing and exchanging experience among educators is very important, encouragement should be given to participation/organizing conferences, workshops within countries as well as at regional and international levels.

25. IHEs should be encouraged and supported to provide opportunities for academic staff to enhance their knowledge in sustainable development concepts and appropriate teaching methods and to incorporate SD in as many courses and programmes as possible.

26. Universities should be encouraged to collaborate on developing masters, postgraduate and Ph.D. courses in ESD. These courses should involve collaboration between universities within and between countries in UNECE.

Objective 5: By the end of 2006 ESD perspectives should be included in all teacher education and in-service training for teachers, as well as for other professionals. Relevant actors should be responsible for doing this.

Teaching materials and research with regard to ESD

27. Attention and support should be given to preparation, publication and dissemination of textbooks, learning and teaching materials. Encouragement should be given to research regarding content and methods in education for sustainable development, in particular development of active methods of learning and simulation games, as well as for the integration of sustainability aspects in different academic disciplines.

Objectives 6: Relevant actors in the respective country should aim at improving teaching materials and research with regard to ESD

Awareness raising

28. Support should be given to the media in their important role in providing new knowledge on sustainability to all sectors of society.

29. Increased efforts should be made to raise public awareness of SD leading to necessary changes in lifestyle e.g. more sustainable consumption patterns by i.a. supporting non-formal modes of learning.

Objectives 7: Relevant actors in respective countries should promote awareness raising.

Co-operation

30. Strengthening co-operation with different actors (e.g. municipalities) and disseminating examples of good practice (projects for twinning cities).

31. Local adaptation and co-operation between the local community and schools is a tool that should be used for municipal work on ESD in schools.

32. Strengthening co-operation within the UNECE-region with regard to ESD

Objectives 8: The important role of NGOs, mass media, parents and the private sector in all kinds of ESD should be emphasized at all levels. Possible actions with involvement of different sectors should be included in National Plans.

33. Including ESD in the National/State Councils on SD, which should be set up according to WSSD plan of implementation.

2.4 Implementation

2.4.1 Objectives

34. Short-term objectives (5 year):

- Decisions should have been taken by each country to shift their education policy into ESD.
- Implementation should have started and be well under way.

35. Long-term objectives (10 year)

- Considerable improvement with regard to ESD in all countries in the region should be achieved. To that end a continuous follow up should be organized within the nation/state and evaluation be performed by the end of 2014.
- Based on this evaluation redrafting of the implementation and action plan should be ready and decided by the end of 2015 and put into practice.

2.4.2 National/State level

36. Each respective country is responsible for implementing the strategy. To that end it is recommended that each country translate the Strategy into its respective native

languages, distribute it to relevant bodies, designate a responsible focal point, identify national/state priorities, draws up and decides on an implementation plan. Governments should play a proactive role in their respective countries as regards promoting and facilitating the work of implementation. The legal, economic and communicative instruments to be used must be in accordance with national circumstances. Multilateral agreements addressing educational aspects should be taken into consideration in the national/state strategy. Successful implementation also requires co-operation between governmental and NGO programmes.

37. Ministers of Education in each country should be responsible for drafting the national implementation plan. Prior to the development of the implementation plan, a review of the legal framework, financial mechanisms, educational activities as well as identification of obstacles and gaps with regard to education for sustainable development should be achieved by December 2004. The national implementation plan should be decided by the end of December 2004.

38. All ministries and other relevant actors and stakeholders, including IGOs and NGOs, should be invited to participate in the implementation of the UNECE Strategy for ESD.

39. The ***national implementation plan*** should include elements covering

- An action programme for education as a part of achieving sustainable development, including targets, actors, actions, time frames, financial mechanisms, budget and monitoring methods.
- A reporting mechanism and schedule (within the country, and to international bodies).
- How legislation and guiding decisions are improved in accordance with national circumstances.
- How economic instruments and budgets are used for ESD.
- How communication on ESD can be improved.

2.4.3 UNECE regional level

40. Co-operation on ESD can contribute to mutual understanding, strengthen trust between nations, share cultural values, develop friendly relations and tolerance between nations and contribute to peace and security.

41. Regional alliances, associations, networks among educational and training institutions and professional bodies, and existing regional mechanisms and programmes should be strengthened and a system for exchange of best practices, innovations and information be established. It is recommended that ESD issues be incorporated into bi- and multi-lateral agreements.

42. Existing structures should provide the basis for the work on a sustainable region. UNECE should therefore be entrusted with the responsibility to closely follow the progress of and to facilitate implementing the UNECE strategy:

- UNECE should every second year receive a report on progress in national implementation.

- Regular environmental performance reviews should include an assessment as regards ESD.
- UNECE should encourage the implementation at national level e.g. through facilitating sub-regional cooperation.

43. There is a need for sub-regional co-operation and alliances in order to attain best results.

2.4.4 Time frame

- The national/state implementation plan should be decided by the end of December 2004.
- A set of best practises should be presented and disseminated by the end of December 2003 and should be continuously updated.
- A monitoring system with relevant indicators should be developed by the end of December 2003.
- The possibility of organising Joint meetings of senior officials from both Ministries of Education and Ministries of Environment after the Kiev conference should be explored.

2.4.5 Financing

44. To properly judge the significance of costs and revenues for carrying out the actions that are necessary to achieve the goals of the strategy, it is necessary to understand the value of education in introducing sustainable strategies in society. Education should be seen as an investment that will subsequently be paid back in terms of better returns.

45. In general, financing of the implementation of the UNECE Strategy for ESD should lie with each respective country. Governments should thus monitor that appropriate resources are available. The use of budgets and economic instruments to support ESD at national/state levels should be explored, and bilateral and multilateral donors be addressed.

2.4.6 Indicators and monitoring

46. Efforts to develop indicators for the quality of education are under way in many different national bodies and international organizations such as OECD, EU and UNESCO. ESD should be part of such indicators. Introducing SD aspects into all levels of education and necessary actions closely connected to this will take time. The outcome can only be measured over a long-time perspective. Indicators for ESD should during the implementation phase be formulated in the following areas:

- Sustainability be included in all policy documents for education at different levels (laws, ordinances, state/federal curricula or equivalent documents, core curricula and syllabi)
- Learners and educators possess action competence in SD
- SD aspects be included in initial teacher training and in-service training for educators
- Research and development activities on ESD be carried out
- Schools/IHE/associations interact with society.

47. As for the social aspects of sustainable development, indicators such as health, employment rate, and population density could be of some relevance.

3. Elements for a joint action programme

1. The emphasis of this programme is on strengthening the capacity of knowledge building in the region as a solid foundation for the common long-term transition to sustainable development in the UNECE. The education sector consists of a broad field of actors with different regulatory management systems in different countries. They are also geared to people of different ages and in different positions in life. For this reason the UNECE Action Programme is divided into a framework of action areas, which are common to the whole sector. Within these areas joint action headings have been created. Each part, that is schools, higher education and non-formal education fields has then to create specific projects (sub-actions) in accordance with their role in the education system.

2. Effective implementation of the Action Programme will require that its priorities be integrated into the planning processes used by the co-operating countries, regional governments as well as by local governments, schools, institutions of higher education and associations. They should also be made a key element of the investment and management strategies of the actors involved in education and awareness activities. The diversity contained in the Action programme implies that project financing will need to be addressed on a case-by-case basis.

Joint action areas:

3.1 Policies and strategies

3. The creation of knowledge about and awareness of sustainable development should be seen as a lifelong process for individuals and thus cover all levels of education from pre-school to higher education and adult education, awareness-raising measures through actions by non-governmental organizations as well as through continuing education. It is necessary to have strong and clear political signals at all levels in the country in order to achieve broad implementation of the ideas underlying sustainable development in education. All managerial documents, whether they are laws, ordinances, national curricula or equivalent documents, core curricula or syllabuses must cover basic elements of ESD and are prerequisites for the realization of ESD. There is also a need to invite politicians and civil servants to become actively involved in the development of local supportive structures for teaching in schools. Efforts to incorporate ESD into regular school activities should be encouraged.

4. The support of school management, educators' knowledge of their subject and the ability to use an interdisciplinary approach and motivate learners' participation in the process are considered to be essential to the quality of education for sustainable development. IHEs should be encouraged to include sustainable development issues in programmes for undergraduates and postgraduates, as well as for professional education and learners in continuing education. Non-governmental organisations have an important role to play in broadening their activities to embrace environmental, economic, social and cultural aspects in an integrated approach.

Actions:

- a) Adoption of a national framework for ESD in schools and higher education
- b) Development of national guidelines regarding ESD in the field of non-formal education.
- c) Stimulate the development of co-operation, especially international co-operation, for curricula, program and course development at all levels of education.

3.2 Competence development within the education sector

5. The potential for education in the development of a sustainable UNECE region is high. Already a number of good initiatives have been taken. However in order to exert a significant impact more competence-building efforts are necessary at all levels in the education system, in the formal as well as the non-formal sectors. To begin with, leaders and decision-makers at all levels of education need to increase their knowledge about education for sustainable development in order to provide appropriate guidance and support in development work ahead. Introducing management systems for SD at educational institutions has great potential for improving such knowledge. Similarly, providing opportunities for educators to enhance their awareness and knowledge of sustainable development, of sustainability aspects in their subject areas and appropriate teaching methods is a necessary prerequisite for change. With this increased competence, educators can better work with and support learners to take responsibility for their own learning and their acquisition of knowledge, values and skills regarding sustainable development. When learners leave education settings, the aim should be that they have acquired knowledge and tools to act for sustainable development in their personal as well as their professional life. In this context lifelong learning plays an important role.

Actions

- a) Stimulate competence development for personnel in the educational system, including actions to increase the awareness of SD issues among officials, headmasters/principals, teachers and other staff.
- b) Support co-operation in UNECE between educators, researchers and practitioners to promote knowledge in SD and skills in ESD, exchange of experience, good practices, learning and teaching methods.
- c) Introduce and develop management systems for SD in educational institutions, including schools, and IHEs, as well as non-formal education actors.

3.3 Continuing education

6. The development of new knowledge and the need for introducing new skills in order to give more specific substance to the concept of SD will remain a constant need for years to come, as many areas of expertise are constantly developing. Continuing education has a very important role to play in this development. It has two main activity areas: upgrading knowledge and skills, and the provision of new competencies needed in different professions. It is thus essential that continuing education also involves knowledge-building with the aim of inter alia attaining better understanding of relevant sustainability issues, improved skills on sustainable strategies and a sharing of new research and techniques and that this is introduced into all professions, especially those with a role in planning and management. Sectors such as industry, transport, commerce,

mass media, public administrations, and agriculture are all relevant. Enhancement of professionally related skills and knowledge of sustainable development should preferably take place on a continuing basis and consequently should be part of the lifelong learning of individuals. Continuing education is one of the areas, which would benefit from cooperation between the education sector, stakeholders (including learners, employers, professional organizations) and the community. The actions below include furthering initial vocational training, continuing education/training at all levels where appropriate.

Actions

- a) Promote continuing education for professionals, which should cover sustainability related knowledge and skills.
- b) Introduce sustainability related knowledge and skills in the fields of planning and management in all parts of society.
- c) Promote international co-operation to improve and support the implementation of sustainability related professional knowledge and skills in the entire region.

3.4 Teaching and learning resources

7. Learning and teaching sustainable development at all levels will require access to resources. These include basic texts as well as cases studies, good examples of all kinds such as the Baltic Sea Project and Baltic University Programme, media or web-resources. The quality of an educational program for sustainability will be critically dependent on the quality of the material. Such material is, however, not available in many fields and considerable efforts should be devoted to their development. The actions include joint actions such as the development of a website providing access to information and resources on sustainability, production of school books, films and other teaching materials. Material for IHEs both for general courses and specialist education in professions of key importance as well as teaching material and material for self-studies in non-formal education are needed.

Actions:

- a) Stimulate the production of printed materials, internet-based material and other ESD material for schools
- b) Stimulate the production of printed materials, films, internet-based material for ESD for higher education and training, as well as methodological, pedagogic and didactic material to support ESD
- c) Create an internet portal to give easy access to information and resources on sustainability, production of schoolbooks, films and other teaching materials for educators, learners and researchers
- d) Promote opportunities for media in all countries to inform about and debate issues for SD to reach the general public.

3.5 Research on and development of education for sustainable development

8 Realisation of the goal of a sustainable UINECE region requires more research and development activities in such areas as e.g. effective learning and teaching approaches for ESD with regard to different levels of education, suitable self-evaluation instruments, formation of attitudes and values, school/institutional development and implementation of ICT to support ESD and the development of a sustainable society.

9. For education to become a part of an agenda of change towards a more sustainable society, education itself must be subject to change. ESD approaches should, like all good learning processes, construct meaning through involvement in participative learning processes and encourage curiosity, creativity and a wish to take responsibility for one's own learning throughout life. ESD approaches must be focused, in an integrated way, on social development, human and natural ecology, equity and practical skills for sustainable living. This covers development of approaches to teaching sustainability aspects as an integral part of academic disciplines as well as efforts to increase inter-disciplinarity in higher and school education. Support for school/institutional development is needed to improve learning and teaching approaches in ESD.

10. Similarly there is a need for increased co-operation and partnerships between stakeholders in the processes involving these research and development activities, ranging from identifying issues to working with and making new knowledge known and used in the sector. Naturally, the results of research and development efforts should be shared with actors locally, regionally and globally, and be incorporated into different parts of the education system.

11. Of equal importance is experience-based development and development initiated out of a desire for change or improvement in education e.g. introducing systems of working such as ECO schools and the Green School Award. This should naturally be done in co-operation with stakeholders and the results should be disseminated to those concerned.

12. In addition, more examples of best practise in ESD, as well as education efforts involving the general public need to be identified and analysed to support development.

Actions:

- a) Initiate and promote research and development on contents and methods for ESD, as well as stimulate the dissemination of results of research on issues concerning SD with priority for research that brings together the different dimensions of SD, as well as focuses on issues of local development
- b) Stimulate international co-operation regarding research and development of ESD, and support and initiate networks for experience-sharing and joint activities at all levels
- c) Stimulate and support different approaches in education covering an interdisciplinary approach, ways of including aspects of SD in different subjects, involving education in a local context, as well as collecting and disseminating examples of good practice
- d) Stimulate the development of management systems for SD in educational institutions, including schools, and institutions of higher education, as well as non-formal education institutions.

Background

1. Agenda 21, the strategy of sustainable development, was adopted at the UN Conference on Environment and Development, Rio de Janeiro in 1992. In Chapter 36 it is emphasised that “Education, including formal education, public awareness and training should be recognised as a process by which human beings and societies can reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues.” At all United Nations conferences thereafter, regardless of the subject under consideration (environment, population, social development, human rights and democracy, women and habitation), sustainable development has been a common concern and there has also been a consensus that education is a driving force for the change needed. It has been pointed out that peace, development, health and democracy are mutually reinforcing prerequisites for sustainable development.

Following a recommendation made in Agenda 21, the United Nations established the Commission on Sustainable Development (CSD) in 1993 to ensure that Agenda 21 is effectively implemented. The Commission is a functional commission of the UN Economic and Social Council (ECOSOC). The CSD systematically deals with individual Agenda 21 topics at annual conferences. The CSD adopted wide-ranging resolutions on education and communication at its sixth session in 1998. It also approved an extensive work program that calls upon governments to incorporate sustainable development objectives into curricula at all levels of education and supports their resolve in this connection.

2. In 1990 at the World conference on Education for All (Jomtien, Thailand), the definition of basic learning needs was stated as: “These needs comprise both essential learning tools (such as literacy, oral expression, numeracy, and problem solving) and basic learning content (such as knowledge, skills, values, and attitudes) required by human beings to be able to survive, to develop their full capacities, to live and work in dignity, to participate fully in development, to improve the quality of their lives, to make informed decisions, and to continue learning” (World Declaration on Education for all, Art. 1, para. 1). This is fully underlined in the Dakar Framework for Action (from The World Education Forum in Dakar, Senegal, April 2000): “Education is a fundamental human right. It is the key to sustainable development and peace for effective participation in the societies and economies of the 21st century, which are affected by rapid globalisation.”

3. In the International Conference on Environmental and Development Education and Communication, ECO-ED 1992, Toronto, development is viewed from a growth perspective, where nature is capital to be managed by reducing, in particular, the impact of levying activities on the environment. In this context sustainable development is viewed as a compromise, where too great a turnabout of the predominant order of things can be avoided. Education must meet the needs of sustainable development by training human resources to optimise productivity by encouraging technical progress and by promoting cultural conditions conducive to social and economic change. The objective is to make the use of all forms of capital (including human capital) to achieve rapid, more equitable economic growth while reducing impact on the environment.

4. In the report “Learning: the treasure within” addressed to UNESCO by the International Commission on Education for the Twenty-first Century (1996), the need for education for a

democratic and sustained future is underpinned. It sets out four pillars as the foundation for education: learning to live together, learning to know, learning to do and learning to be.

5. The international UNESCO conference *Educating for a Sustainable Future* (Thessaloniki, in Greece 1997), stated that a curriculum reoriented towards sustainability would place the notion of citizenship among its primary objectives. The traditional primacy of nature study needs to be balanced by the study of social sciences and humanities. Learning about the interactions of ecological processes would then be associated with market forces, cultural values, equitable decision-making, government action and the environmental impact of human activities in a holistic interdependent manner. Students need to learn how to reflect critically on their place in the world and to consider what sustainability means to them and their communities. They need to practice envisioning alternative ways of development and living, evaluating alternative visions, learning how to negotiate and justify choices between visions, and making plans for achieving these, as well as participating in community life to bring such visions into effect. These are the skills and abilities, which underlie good citizenship, and make education for sustainability part of a process of building an informed, concerned and active population. The conference concluded that in this way education for sustainability contributes to education for democracy and peace.

6. The Ministers for Education from the countries of the Baltic Sea Region, that is Denmark, Estonia, Finland, Germany, Iceland, Latvia, Lithuania, Norway, Poland, Russia and Sweden, met at Haga Palace in Stockholm on January 2002 for their second meeting. At their meeting they examined the results of the work done by the Baltic 21 Education Sector network and its three working groups in accordance with the task given at the first ministerial meeting at Haga Palace in March 2000. The Ministers finally adopted Agenda 21 for Education for sustainable development in the BSR, Baltic 21E (<http://www.ee/baltic21>) and its action programme, which is now under implementation.

7. The Interstate Environmental Council of NIS, through its Working Group on Environmental Education has also contributed to implementation of environmental education.

8. Key Lessons (Education for Sustainability From Rio to Johannesburg: Lessons learnt from a decade of commitment, UNESCO 1991); “Some of the key lessons that have been learnt about education for sustainable development over this decade are: ESD is an emerging but dynamic concept that encompasses a new vision of education that seeks to empower people of all ages to assume responsibility for creating a sustainable future. Basic education provides the foundation for all future education and is a contribution to SD in its own right. There is a need to refocus many existing education policies, programmes and practices so that they build the concepts, skills, motivation and commitment needed for SD. Education is the key to rural transformation and is essential to ensuring the economic, cultural and ecological vitality of rural areas and communities, Lifelong learning, including adult and community education, appropriate technical and vocational education, higher education and teacher education are all vital ingredients of capacity building for sustainable future.”

9. The Aarhus Convention opens up a new dimension for environmental education. Citizens should gain a better understanding of linkages between environmental, social, economic, safety and security concerns. They should learn how to integrate environmental concerns into consumer choices and individual behaviour, and how to implement in practice their rights of access to information and justice, and of participation in decision-making. Active involvement of major groups, including environmental civil society organizations, consumer groups and youth, is widely considered to be indispensable for making environmental policies more effective and legitimate. Although many international meetings have been organized on the inclusion of

environmental and sustainable development issues in school and university curricula, results at national level are still uneven and inadequate.

10. The Regional Ministerial Meeting for the WSSD (24-25 September 2001, Geneva) also gave consideration to the subject and called for initiatives in the field of education. Specifically, the Ministers “agreed to improve education systems and the design of learning programmes on sustainable development to increase the general understanding of how to implement and promote sustainable development in practise.”

11. The results of relevant activities by the United Nations Environment Programme (UNEP), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the European Union, professional organizations and environmental NGOs serve as a major input to further considerations on environmental education and education for sustainable development. As does work in environmental conventions such as Biodiversity, RAMSAR, Climate and Desertification.

12. During the preparations for the Kiev Conference, considerable interest has been shown, both by Governments and non-governmental organizations, in improving environmental education (EE) and education for sustainable development. Education is a fundamental tool for changing patterns of consumption and production; for providing the foundation for research and development in technologies that may improve the environment; and for integrating environment issues into the thinking of people, starting from a young age.

13. The outcomes of the World Summit on Sustainable Development in Johannesburg (2002) underpins the need to integrate SD into education systems at all levels of education in order to promote education as a key agent for change. The need to develop, implement, monitor and review education action plans and programmes at the national, sub-national and local levels, as appropriate is addressed, to develop, implement, monitor and review education action plans and programmes as appropriate, that reflect the Dakar Framework for Action as well as the need to address the impact of HIV/AIDS on the educational system. The Summit also recommends the UN General Assembly adopt a decade of education for sustainable development, starting in 2005.

Appendix 2

Clarification of some of the terms and approaches used in this document

Information is something that is a necessary but not a sufficient prerequisite for deeper insight.

Education is derived from the Latin *edu-care* meaning to rear or foster, and from *educere*, which means to draw out or develop. While this developmental and transformative meaning retains currency, it has largely been overshadowed by transmissive ideas relating to instruction and teaching. Education (as a verb) is commonly used to describe a process, and also (as a noun) shorthand for the 'education system', which involves policies, institutions, curricula, actors etc. (Sterling, 2001)

Training in this context means the same as education but includes practical application.

Continuing education/training covers activities aimed at updating, refreshing or extending knowledge and skills gained during basic education/training and at the same level as the latter covers knowledge and skills which are nowadays included in basic education/training.

Categories of learning or education

The following are taken from the EU, Memorandum on Lifelong learning 2000. Not all the categories may be coherent – informal learning can, for example, also take place in classrooms; but the categories reflect the understanding that learning takes place not only in classrooms.

* *Formal learning* takes place in education and training institutions, leading to recognised diplomas and qualifications.

* *Non-formal learning* takes place outside and sometimes parallel with mainstream systems of education and training and does not typically lead to formal certificates. Non-formal learning may be provided at the workplace and through the activities of civil society, organizations and groups (such as youth organizations, trade unions and political parties). It can also be provided through organisations or services that have been set up to complement formal systems (such as arts, music and sport classes or private tutoring to prepare for examinations).

* *Informal learning* is a natural accompaniment to everyday life. Unlike formal and non-formal learning, informal learning is not necessarily intentional learning, and as such may not even be recognised by individuals themselves as contributing to their knowledge and skills.

By *Learning* is meant the process through which knowledge, values and skills are developed.

Lifelong learning is learning throughout life, either continuously or periodically. Lifelong learning stimulates and empowers individuals to acquire all the knowledge, values, skills and understanding they require throughout their lifetime and to apply them with confidence, creativity and enjoyment in all roles, circumstances and environments.

Lifewide learning enriches the concept of lifelong learning by drawing attention to the breadth of learning, which can take place across the full span of our lives at any one stage in our lives. The lifewide dimension brings the complementarity of formal, non-formal and informal learning into sharper focus. It reminds us that useful and enjoyable learning can and does take place in the family, in leisure, in community life and in daily working life. Lifewide learning also makes us realise that teaching and learning are activities that can be changed and exchanged in different times and places and through different roles.

Social learning

The development of knowledge and understanding has both personal and shared elements to. The term social learning often refers to an understanding emphasising that learning is always a social process, because it always takes place in a social setting or context. And the practices that learners take part in, the means and technology they learn to use, the skills or insights they develop have a social context. Furthermore co-operation or being part of a certain division of labour is often the situation for learners.

Social interaction allows one to relate or mirror one's ideas, insights, experiences and feelings to those of others. In this process of "relating to" or "mirroring" these personal ideas, insights, experiences and feelings are likely to change as a result. This mirroring may lead the learner to rethink his or her ideas in the light of alternative, possibly contesting, viewpoints or ways of thinking and feeling. At the same time (learning) experiences, which are shared with others, are likely to gain importance. (Wals&Bawden 2000)

However, the term social learning is sometimes also used to characterise certain educational settings or processes, whereby a group, organisation or whole society is collectively engaged in competence development. In this sense social learning is used to broaden the meaning of learning in relation to the normally very individualistic meaning of the word learning. It includes learning by individuals, but recognises that groups as a whole can learn. Arguably, progress towards sustainability is dependent on such learning. (Sterling 2001 correspondence)

Sustainable society is one that persists over generations, one that is far-seeing enough, flexible, and wise enough not to undermine either its physical or social systems of support.
Meadows, D.H., Meadows, D.L., and Randers, J (1992) *Beyond the Limits: Global Collapse or a Sustainable Future*, Earthscan, London

Connection between Environmental Education and Education for Sustainable Development

1 Environmental education (EE) and education for sustainable development (ESD) are considered by many to be equivalent. In practice, however, there are often clear differences. EE typically focuses on the environmental impact on society - of pollution, wastewater, emissions from cars, factories etc, their causes, effects and how to reduce them, as well as concern for nature and nature protection. ESD more often focuses on the use of natural resources and the importance of their renewability (sustainable). Different methods of mapping resources such as ecological footprints or material flows are pedagogical tools in ESD especially at university level. Negative environmental impact is in the first instance seen as a consequence of unsustainable use of resources. It is also recognized that a good environmental situation will not develop unless people have a decent social and economic situation, and that a good environment is a prerequisite for a healthy economy in the long-term. Thus environmental, social and economic aspects are interwoven together in ESD. Ethics and justice, as expressed in democratic government and social and global responsibility, become important components in the larger context of ESD.

2 The view of environmental issues in the educational system has gradually changed from being a knowledge problem into being seen as a conflict between man and nature, and today also as a conflict between different human interests (ESD). This has implications for the approaches to be used. In education in early EE, the transmission of scientific facts was the most common method used. This approach was later further developed and combined with active student involvement and problem-solving approaches. Today the conflict-oriented perspective of ESD, based on society as a whole, implies a focus on the democratic process. An important approach is thus a discussion among students in which different views are aired and debated. The purpose is to ensure that students actively and critically evaluate alternatives and develop skills in forming arguments based on knowledge and related ethical issues.

Approaches

Action-oriented teaching and learning

Action-oriented learning and teaching approaches emphasise that ESD has the overall aim of contributing to sustainable changes in society and the environment. It is thus recommended that ESD involve concrete environmental actions taken by students and other target groups as integrated parts of teaching and learning processes. An action is targeted at change: a change in one's own life style, in the local society or in the global society. And an action is intentional. The action-oriented approach has two main goals: to contribute to the development of students' own competences to take action and to facilitate sustainable changes in the short and the long-run (Jensen and Schnack, 1997).

Critical thinking

Critical in this context means that ESD should be ideologically aware and socially critical. Thereby recognising that no educational values are politically neutral. (Huckle&Sterling 1997 and Sterling 2001 correspondence)

In general, critical thinking can be defined as how individuals consciously adapt information into their own understanding within their existing values, interests and knowledge. This general definition applies to critical thinking in learning processes, but it is important to emphasise willingness to take open-mind-approaches by both learners and teachers, particularly in various cultural, economic, ecological, political and social issues. At best, critical thinking could lead to socio-cultural and intellectual flexibility with an understanding that, in addition to human capabilities, all information is principally related to place and time.

Democratic process

“It is imperative that youth from all parts of the world participate actively in all relevant levels of decision-making processes because it affects their lives today and has implications for their futures. In addition to their intellectual contribution and their ability to mobilise support, they bring unique perspectives that need to be taken into account” (Agenda 21; Chapter 25, Children and Youth in sustainable development). Furthermore it is stated that municipalities should undertake “ a consultative process with their populations and achieve a consensus for the community” (Agenda 21, Chapter 28).

Democracy has traditionally been understood as equal rights and opportunities for all people to participate in decision-making in the institutions and issues that concern them. This well-established tradition also stresses the strong role of sovereignty particularly among nations. Rapid economic and environmental globalisation during recent decades has provided a challenge to achieving sustainable development for all people in their everyday life, although possibly not visible it nevertheless exists.

Dynamic qualities

Dynamic qualities in the learning process means an emphasis in such qualities in educational activities that engage learners in active and participative positions and assign teacher and learner more reciprocal roles, that respect the existing knowledge and ability of the learner. Dynamic qualities can be seen as opposed to *static qualities*, which are more mechanistic whereby teaching and learning is seen as little more than a transfer of information and the learner is seen as a passive recipient. (Sterling 2001 correspondence)

Holistic

Holism - the belief that anything natural is in some way connected to everything else and that each thing, is apart of the whole which is more important than the parts that make it up (Cambridge International Dictionary of English). The term holistic in this context refers to an understanding

where learners and learning processes is seen in a holistic or coherent view. Learners and their needs/motivation as "whole persons" (including spiritual and emotional), and learning processes as both professional, personal, disciplinary, socially and so on. (Sterling 2001 correspondence)

Integrative

Integration needs to be seen as the opposite end of the spectrum from fragmentation/segregation/disintegration. Integrative in this context is understood as integration between subjects, departments, educational institutions and their communities, and also between what has been called the five dimensions of an educational institution - its ethos, its curriculum (if there is any), its pedagogy, its organisation and management and its community. Integrative efforts aim at systemic change across all areas and dimensions reflecting sustainability, rather than just 'piecemeal' change in one area.

Integrative also means more emphasis in educational activities on interdisciplinary and trans-disciplinary enquiry, reflecting that no subjects, factors or issues exist in isolation. Inter- and trans-disciplinary inquiry has the potential of breaking free of disciplinary perceptions and traditions to create new meaning, understandings, and ways of working. Simply putting disciplines together, by contrast is often no more than the sum of the parts. (Huckle & Sterling 1997 and Sterling 2001 correspondence)

Interdisciplinary approach

The emphasis is on the interconnections between different perspectives. Interdisciplinary approach - courses studied at college or university involving two or more different subjects; co-operation within a common framework shared by the disciplines involved.

Multidisciplinary approach

Refers to looking at an issue from many knowledge or practical disciplinary perspectives but not integrating them. Multi-disciplinary approach involves different subjects of study in one activity, without changes in disciplinary and theoretical structures.

Modern ICT

Refers to access and use of knowledge, information, data and best practices across all sectors and disciplines, textbooks and learning materials.

Problem-oriented learning

Problem-oriented learning means that instead of organizing the teaching around topics from one of the usual disciplines, the subject has to do with an issue or a problem. (Unesco 1991)

Process-oriented

Process-oriented in this context means widening the scope in planning, pedagogy, didactics etc. on educational activities from narrow content-focusing to an awareness of learning and education as processes, thereby highlighting the activities, the dynamics, the actors, the phases and the relation between areas more than decontextualised contents of information (Sterling 2001 correspondence)

Problem based learning (PBL)

PBL is characterised by learning via contextualised problem setting and situations. The content of the course of study is introduced in the context of real-world problems. Problems or cases from the real world are used as a means to motivate and initiate students' learning processes, i.e. acquiring a predetermined content and at the same time develop transferable personal competencies (interpersonal skills, critical thinking etc). The distinctions between problem-based

learning and other forms of cooperative or active learning are often blurred because they share certain common features.

Project work

Project work is characterised by problem orientation, product orientation, inter-disciplinarity, coherence between theory and practice and joint planning (teachers and students). The issue or problem in focus has to be found in the surrounding world (authenticity) and the relevant knowledge from subjects and disciplines has to be chosen according to the problem in focus. Project work is an individual and collective learning process based on scientific principles (action research) aiming at finding possible solutions/proposals for change (the product) – the answers are not given in advance.

Networks

The University Charter

The University Charter for Sustainable Development, drawn up in 1993 by the Copernicus-Programme of CRE is the main instrument European Universities have to help society meet the challenge of sustainable development. The focus of Copernicus has been centred on lifelong learning through interdisciplinary teaching and action at institutional level where the capacity to foster change in attitudes and procedures is highest.

The Baltic Sea Project

The *Baltic Sea Project* (BSP) was initiated in 1989 and the acute environmental problems of the Baltic Sea were the starting point. Schools in all countries around the Baltic Sea take part. The educational approach is to achieve a balance between a holistic view and individual subjects, to change the role of students into active constructors and the role of educators into a guide in learning processes, as well as using networks and international co-operation. To implement the pedagogical ideas developed in BSP methodological books, Learners' Guides are published. Four have been published so far. In each country there is a national coordinator and one country is responsible as international coordinator.

The Baltic University programme

The Baltic University Programme covers all 14 countries of the drainage basin of the Baltic Sea, and links together more than 170 IHEs in research and education for a regional SD. The programme is coordinated by Uppsala University, and there are programme centres in all participating countries. The courses are produced with the involvement of expertise from IHEs in the whole region. The Programme connects participating IHEs through common study material, and via different distance education technologies, as well as common seminars and conferences. In the year 2000 more than 6600 students participated in five courses.

References

- * Huckle J. and Sterling S. (ed) (1997). Education for Sustainability. Earthscan Publication LTD
- * "Environmental Education for our Common Future", A handbook for teachers in Europe. Unesco 1991. Norwegian University Press.
- * Sterling, S. (2001) Sustainable education, Green Books, Dartington, UK
- * Wals, A. and Bawden R. (2000) Integrating Sustainability into Agricultural Education, Interuniversity Conference for Agricultural and Related Sciences in Europe
- * Sterling, S. (2001) correspondence
- * Jensen, B.B. & Schnack, K. (1997): The Action Competence Approach in Environmental Education, Environmental Education Research, Vol. 3, No. 2, pp. 163-78.