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DRAFT STATEMENT BY THE MINISTERS OF THE ENVIRONMENT FROM THE UNECE REGION ON EDUCATION FOR SUSTAINABLE DEVELOPMENT

Addendum

**Theoretical basis
(basic elements for the UNECE Strategy for Education for Sustainable Development; part one)**

Abbreviations used in the document

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

UNECE   United Nations Economic Commission for Europe

Educators Teachers, lecturers, trainers and voluntary education leaders

EE   environmental education

ESD   education for sustainable development

IGOs   intergovernmental organisations

IHEs   Institutions of Higher Education including teacher training institutions

Learners   pupils, students and participants

NGOs   non-governmental organisations

Schools   formal education/training (pre-school to upper secondary education, including
             initial vocational training, and formal adult education)
SD   sustainable development

Some clarification notes can be found in the Annex.

Abstract

The objective of the documents "Theoretical basis" and "Draft proposal for implementation" is to lay the foundation for achieving sustainable development 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.

Environmental education (EE) for sustainability mainly emphasizes the protection of, and care for, the environment. Focus must be on all human activities affecting the environment and the use of natural resources. Education for sustainable development (ESD) is a broader concept encompassing economic, social and environmental dimensions. Matters of sustainability must become a natural part of everybody's life and thus be included in the formal education of all children and youth as a compulsory part of their schooling and also in training activities and as a part of a life-long learning process.

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 use the elements as overall guidance when preparing relevant legislation and decisions. National/state use of the elements requires further elaboration and transformation at the 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.

This contribution tries to do two things. First the role of education in achieving sustainable development is defined. Sustainability has many meanings and uses, which are not value free and often promote different ideologies. It's value lies in what people do with it and on the amount of space they can have in making it meaningful for themselves in their own context. Education, in its most genuine sense, can help people in this process of self-determination and competence building. The second point this contribution tries to make is that taking on the challenge of sustainability, while fully recognizing that it is a stepping stone in the development of environmental thought and education, can add a new dimension to environmental education and improve the quality of learning.

Chapter "Education as a means for sustainable development" and Chapter "a UNECE Strategy for Education for Sustainable Development" 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 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 "Elements for a joint action programme"* presents an outline of five areas within which concrete actions should be developed.

These documents are intended to serve as the basis for further developments that may take place after the Fifth Ministerial Conference "Environment for Europe".

I. 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.

2.   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.

3.   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, par.. 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 globalization."

4.   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 optimize 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.

5.   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.

6.   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.

7.   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.baltic21.org) and its action programme, which is now under implementation.

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

9.   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."

10.   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.

11.   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 practice."

12.   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.

13.   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.

14.   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.

II.   Education as a means for sustainable development

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

15.   Education, Training and Research are recognized 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 cooperation. 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 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.

16.   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.

17.   Education not only provides 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.

18.   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.

19.   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.

20.   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.

21.   Hence, education and the creation of know-how for sustainable development must cover all levels of education, formal as well as informal and non-formal and 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. 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.

22.   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.

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

23.   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. 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.

24.   Within the context of ESD, environmental problems and issues are linked closely to social end 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.

25.   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 practice 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.

26.   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.

27.   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.

28.   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.

29.   Society requires high quality education and a high level of knowledge. Lifelong learning in the form of revitalizing skills has become increasingly important. Rapid technological evolvement 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.

30.   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.

31.   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.

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[2] For further information see the Annex.

32. 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.

33. Higher levels of education and continuous learning, when accessible to all, make an important contribution to reducing inequalities and preventing marginalization. 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 Charter[5] 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.

2.3 Education for sustainable development needs to address several key areas

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

35. 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.

36. Addressing the ethical dimension is central to understanding sustainable development, as emphasized 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.

37. 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 globalization, 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.

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[3] For further information see the Annex.

38.   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.

39.   There is a need to consider the evolving nature of SD, which makes lifelong learning and life-wide 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.

2.4   Impact for educators and learners

40.   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.

41.   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.

42.   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.

43.   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 practiced in schools and IHEs by implementing the principles of sustainability in daily life.

44.   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.

45.   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[6] and Baltic University Programme[4], media, web-resources etc. The quality

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[4] For further information see the Annex.

of an educational program for sustainability will be critically dependent on the quality of the material.

46.   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.

2.5   ESD need to address issues in all sectors

47.   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.

48.   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 deceases can only be achieved when there is high level of knowledge among citizens.

49. 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.

50. 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.

51. 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.

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)

Connection between Environmental Education and Education for Sustainable Development
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.

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 2001correspondence)

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.