Action Plan

"Higher education for environmentally sustainable industrial development"

CONTENT

BACKGROUND

Education for sustainable development (hereinafter referred to as ESD) is a concept dating back to the early '90s of the 20th century, based on the use of education as a tool to achieve sustainability. The process of interconnecting education and sustainable development started by questioning the method for implementing Agenda 21 - the global action plan for sustainable development adopted at the UN Conference on Environment and Development held in Rio de Janeiro in 1992. Chapter 36 of Agenda 21 addressing education, training and public awareness sets out four general objectives:

- *Promoting and improving the quality of education*: The purpose is to refocus the lifelong learning on acquisition of knowledge, skills and values indispensable to improve people's quality of life;

- *Refocusing curricula*: Education from the preschool to the university level should be reconsidered and reformed so as to become a tool for transmission of knowledge, welldefined patterns and values indispensable for creating a sustainable world;

- *Increasing public awareness of the ESD concept*: This will help develop an aware, active and responsible community at the local, national and international level;

- *Training workforce*: Continuous technical and vocational education of managers and workforce, especially those employed in trading and industry, will contribute to adoption of sustainable models of production and consumption.

The UNESCO document of 2000 entitled Dakar Framework for Action: Education for All – Meeting our Collective Commitments recognized education as a basis for sustainable development, peace, stability in/and between countries. ESD is designed and implemented with a view to developing all aspects of learning and encouraging changes in behaviour for a sustainable and more equitable society.

Education for sustainable development was further promoted by the UN resolution on the *Decade of Education for Sustainable Development 2005-2014,* which seeks to integrate principles, values and practices of sustainable development into all aspects of education with the aim to address social, economic, cultural and ecological issues of the 21st century and encourage changes in behaviour. At the World Summit on Sustainable Development held in Johannesburg in 2002 the UN were urged to adopt the Decade of Education for Sustainable Development 2005-2014, which was proclaimed at the 57th meeting of the UN General Assembly in December 2002. UNESCO was designated lead agency for the promotion of the Decade.

'Environment for Europe' Process

The 'Environment for Europe' process is a unique partnership of member States within the UNECE*,

United Nations Economic Commission for Europe is one of five regional UN commissions. It includes 56 states: the states of Europe, North America (USA and Canada), central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan) and west Asia, but other interested members of the UN may participate as well. Its operations include a number of international and non-governmental organizations. UNECE sphere of activities covers economic cooperation and integration, power, environment, housing and land management, population and statistics.

United Nations agencies in the region, other intergovernmental organizations, regional environmental centres, civil society organizations, the business sector and other social groups. The 'Environment for Europe' process and its environmental ministerial conferences as part of the process provide a high-level platform for stakeholders to discuss, decide on and join efforts in addressing environmental priorities across the 56 countries of the UNECE region, including Ukraine.

The *UNECE Regional Ministerial Meeting* held in September 2001 as a preparatory meeting for the Johannesburg World Summit on Sustainable Development highlighted the importance and need for education for sustainable development. It was agreed to enhance the education system and programmes in order to improve general understanding of how sustainable development is to be implemented and promoted in practice.

The meeting in Johannesburg emphasized the need to integrate sustainable development into the education system at all levels, from the preschool to high and non-formal education.

During preparations for the *Fifth Ministerial Meeting* in the context of the 'Environment for Europe' process held in Kiev in 2003, representatives of governments and civil society organizations expressed their interest in improving education for environmental protection and sustainable development. They recognized education as a fundamental tool for environmental protection and sustainable development and at the meeting in Kiev adopted the Statement on Education for Sustainable Development urging all countries to integrate sustainable development into their education systems and the UNECE to prepare an ESD strategy in collaboration with all relevant stakeholders.

Following this decision the *Strategy for ESD* was adopted in Vilnius in March 2005 as an instrument to promote sustainable development through education. At the same meeting the *Framework for Implementation of the Strategy for ESD* was also adopted and a group of experts entrusted with the task to develop indicators. It should be noted that various stakeholders, including international organizations, the business sector, civil society organizations (CSOs), research institutes etc. gave a valuable contribution to that meeting.

The *Sixth 'Environment for Europe' Ministerial Conference* held in Belgrade in 2007 has a particular importance. The participants agreed that improvement of education for sustainable development is an important goal for all governments striving to meet the commitments of the United Nations Decade of Education for Sustainable Development. The ministers of environment and education across the UNECE region reaffirmed their commitment to implementation of the Strategy on ESD. They reviewed the achievements, challenges in implementation of the Strategy and steps yet to be taken. They also stressed the role of ESD in building capacity for making informed decisions on sustainable development and participating in efforts to overcome social, economic and environmental challenges. The participants emphasized the need for a stronger partnership between government bodies and other stakeholders, including cooperation of authorities responsible for environment and education as an important precondition for implementation of the Strategy.

Attention was drawn to the need to strengthen competences of educators, who are frequently recognized as a bottleneck in improving education quality, and to the important role of nonformal and informal education in building capacity of decision-makers and other stakeholders, as another challenge. It was agreed that focus should be placed on strengthening competences and improving the quality of educational tools and materials.

Here, a shift should be made from education for environmental protection towards actual education for sustainable development (hereinafter referred to as SD). This process should be based on the needs and should respond to specific challenges of each individual country. Education for SD is to be promoted through strengthening capacities and presenting good practice examples. In doing this, the potential contribution of existing local knowledge must not be neglected.

UNECE Strategy for Education for Sustainable Development

This Strategy, adopted at the high-level meeting of ministers of environment and education in March 2005, promotes the introduction and promotion of education for sustainable development in the countries across the UNECE region with the aim to achieve a common vision:

The purpose of the Strategy is to incorporate the main issues of sustainable development (environmental protection, management of natural resources, eradication of poverty, ethics, human rights, social equality, economics, etc.) into all levels of the education system and into non-formal and informal education.

This Strategy represents a contribution to the Framework for Draft Implementation Plan for the UN Decade of Education for Sustainable Development.

EU Sustainable Development Strategy

In addition to seven challenges identified by areas (climate change and clean energy; sustainable transport; sustainable consumption and production; management of natural resources; public health; social inclusion, demography and migration; global poverty), the EU Strategy for Sustainable Development, revised in 2006, includes also four horizontal areas. Apart from research and public finance, it specifies the need for *education* and for communicating and monitoring the strategy. Education is a prerequisite for promoting changes in behaviour and ensuring the key competences for achieving sustainable development for all citizens.

Lifelong Learning for European Competitiveness

The role of lifelong learning in European educational policies after 2000 is determined by the Lisbon process. The goals of education include the development of individuals (a happy and meaningful life), the development of the society (minimization of differences and inequalities) and the development of economy (achieving a balance on the labour market).

Five challenges identified by this concept are:
- quality of education (quality of teaching, didactic materials, etc.)
- availability of learning to all social groups at all periods of life
- content (presence of new technologies, permanent redefinition of basic skills, the role of education in the transfer of social values)
- openness of institutions to local communities, European and other countries
- efficiency and detailed elaboration of education systems with the aim to use optimally human and financial resources.

Incheon Declaration and Framework for Action for the implementation of Sustainable Development Goal 4 (Education)

> UNESCO together with UNICEF, the World Bank, UNFPA, UNDP, UN Women and UNHCR organized the World Education Forum 2015 in Incheon, Republic of Korea, from 19 – 22 May 2015, hosted by the Republic of Korea. Over 1,600 participants from 160 countries, including over 120 Ministers, heads and members of delegations, heads of agencies and officials of multilateral and bilateral organizations, and representatives of civil society, the teaching profession, youth and the private sector, adopted the Incheon Declaration for Education 2030, which sets out a new vision for education till 2030.

The overarching 2030 Agenda for Sustainable Development education goal (SDG 4) commits to providing inclusive and equitable quality education at all levels and expresses the new key features of SDG4-Education 2030

The SDG4 targets:

4.1. By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes

4.2. By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education

4.3. By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university

4.4. By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship

4.5. By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations

4.6. By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy

4.7. By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development

4.a. Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all

4.b. By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries

4.c. By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States

ACTION PLAN FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT

The UN Decade of Education for Sustainable Development 2005-2014 and the UNECE Strategy for Education for Sustainable Development contributed to recognizing the role of education as an essential tool in efforts to achieve more sustainable economic and social development, besides concern for the environment.

General Objective

To achieve understanding and acceptance of the sustainable development concept by all stakeholders, through strengthening their capacities to contribute to sustainable development.

The achievement of this objective presupposes that measures and activities will be designed and implemented in line with the priorities and the focus placed on changes to support sustainable development. This requires communicating the concept for better understanding of principles and objectives of education for sustainable development; supporting the research work; interconnecting the existing initiatives, if possible, and designing the new ones; promoting the education of decision-makers at all levels – national, regional and local; intensifying cooperation and partnership between sectors in providing support to new opportunities and initiatives; monitoring and evaluating the achievements.

The achievement of the objective requires a shift in the existing educational paradigm – from transmission and learning of facts which suppresses awareness-raising and does not promote a creative social activity which leads to a change, to education which requires critical reflection, thinking and drawing conclusions about issues related to work and life - education that enables the freedom of reflection and understanding of reality and interrelationships between the environment, society and economic development, including impacts on that reality.

Principles and Role of Education for Sustainable Development

In view of the fact that SD actually represents a process of social change, the SD policies and the management process should aim at changing the attitudes, behaviour and practices of decision makers, the business sector and consumers. SD is primarily a question of attitudes. The significant role of attitudes is precisely the reason that education for SD is considered to be of vital importance for achieving a sustainable way of envisioning and implementing the development.

SD may only be successful if decision makers, civil society organizations, the business sector and other relevant stakeholders cooperate. The public sector alone cannot initiate sustainable development in accordance with the goals established. Citizens must learn how to fully participate in the negotiation process with understanding and which skills and methods are to be used. In this connection decision makers must be familiar with SD principles and motivated for defining the policies and behaviour practices in line with those principles.

ESD is a lifelong process developing as a broad, comprehensive concept encompassing interrelated environmental themes and those relating to economic and social rights. Education for SD should include knowledge, skills, understanding, attitudes and values.

When speaking of education for SD we speak of different types of education – formal, nonformal and informal. The approach to education for SD requires therefore a different approach to each level/area of education. There are also various different approaches within the formal education, if we talk about the primary and secondary school education as against the higher education, because institutions of higher education are free to determine their curricula. The freedom of defining the methods and content of educational programmes exists in non-formal education too.

Apart from themes that should be covered by the ESD as mentioned earlier there is an important ethical dimension that includes equality, solidarity, intergenerational solidarity and the relationship between humans and nature, the rich and the poor, etc. Responsibility is inherent in ethics and becomes thus a practical matter for ESD.

The key role is played by schools that prepare young people for inclusion in the society. Learners must be prepared to assume responsibility for a constructive development of the society and encouraged in their systemic, critical and creative thinking. A prerequisite condition for ESD is shifting the focus away from solely transmitting information towards interactive learning. In doing this, care should be taken that formal education is permeated by experience of life and work beyond the classroom. Educators involved in the ESD play an important role in directing this process and encouraging the dialogue between pupils and students on one hand and decision makers, business sector and civil society on the other.

In this regard the importance of non-formal and informal education for SD must not be neglected, as they have to be complementary to formal education. The need for cooperation between various stakeholders involved in all forms of ESD should be recognized and such cooperation supported. Given the important role of media, journalists and newspaper editors should also be involved in the process.

Planning the ESD activities and introducing SD into education does not mean the creation of a new discipline. Connecting with already developed and existing subjects/themes is a realistic option. By establishing a connection between existing educational areas and natural, ecological, cultural, technological, social (and political) meanings, the area may be said to address the SD. Hence the existing programmes may provide help in addressing the themes of SD. In practice, this frequently requires that such existing programmes are interconnected. We may therefore speak of SD-oriented education in which the content is placed within a wider context of sustainable development. At the same time this means that there is no need for each educational programme to be transformed.

The UNECE Strategy specifies that ESD should not be an additional assignment but rather a matter of using different methods and pathways within the already existing system. The main themes as defined by the UNECE Strategy underlying this Action Plan correspond basically to themes that appear in individual subjects, with one exception as mentioned in the overview of the current state – entrepreneurship and social responsibility.

However, what is missing is their interconnectedness, which means that interconnection between themes and the way in which educators connect those themes are vital to ESD. Since educators bear full responsibility for introducing SD into the teaching process, they are to be offered continuous education in SD and ESD. Education of educators plays a key role.

Education for SD is not an obligation of schools only, but of the society as a whole. This attitude complies with the provisions of the UNECE Strategy for ESD stating that education on nature and environment should be extended and become complementary with other educational programmes through an integrated approach.

Cooperation between formal education and other partners brings an added value by itself. Efforts and expertise should be concerted. There is a need to provide schools with more information on the offer, i.e. programmes offered by civil society organizations and other associations. The complexity of cooperation between different stakeholders requires additional effort and additional financial means. Some possibilities are described in the chapter on funding. In most of the cases, ESD projects may be prepared and submitted in partnership of stakeholders from various sectors.

Guiding principles of education for SD:

- Lifelong learning
- Learning through action and participatory methods
- Cooperation and partnership
- Encouraging critical thinking, defining problems and identification and application of solutions
- Integrating themes of SD into the education system of Ukraine
- Involvement of a wide range of actors

Key roles of education for SD:

- Education should stimulate the belief that everybody has a power and responsibility for affecting positive changes at the global level;
- Education is the primary agent of changes towards SD, by strengthening capacities of individuals to transform their visions of the society into reality;
- Education enhances values, behaviour and lifestyles needed for SD;
- Education for SD is a process of learning to take decisions that take into account a longterm future;
- Education helps develop capacities for future-oriented thinking.

PRIORITY AREAS

1. Formal education

Formal education means activities of training people to acquire knowledge, skills and competences through institutional and publicly certified educational programmes.

The Ukrainian educational system is organized into five levels: *preschool, primary, secondary, upper secondary* and *postgraduate education.*

Preschool education is intended for children before they start primary school.

Currently in Ukraine, school in its prime meaning is designated for children and teenagers who attend it between ages 6 through 17. There are several types of institutions of General Education. The institution is called Middle School of General Education or simply Middle School and usually combines primary and secondary levels of education. The system was first introduced in 1958 and included a 12-grade system, while in 1965 it was a 10-grade system. Most of the middle schools have all three level of accreditation for the General Education. Some remote schools may be of two levels which is a minimum requirement for all the middle school.

Primary and secondary education is divided into three levels of accreditation of general education: I - "younger", II - "middle", and III - "senior". I level of accreditation comprises grades 1 to 4. Grades 5-9 are usually considered a II level of accreditation or a base secondary education, while 10-12 are a III level. Despite the names, students usually study in the same school institution throughout their primary and secondary education. Primary schooling lasts 4 years and middle school 5. There are then 2 profile year

University level (Post-secondary education) Higher education is either state funded or private
There are two degrees conferred by Ukrainian universities: the bachelor's degree (4 years) and the master's degree (5–6th year). These degrees are introduced in accordance with Bologna process, in which Ukraine is taking part.

Postgraduate level Upon obtaining a master's degree, a student may enter a university or a scientific institute to pursue postgraduate education. The first level of postgraduate education is Ph.D. studies After that a student may continue postgraduate education. This takes from two to four years for Doctor of Sciences. Significant scientific results must be obtained and published, and a new thesis written.

2. Non-formal education

Non-formal education means organized learning processes focused on training and professional improvement for work, various social activities and personal development. Nonformal education satisfies supplementary, additional or alternative needs of learning and may, but need not be, linked with the formal education system. There is a distinction between nonformal education resulting in a public document (certificate, licence, etc.) , which is mostly undertaken by education institutions, various centres, public teaching institutions and companies, and uncertified non-formal education for which no public document is awarded and which is mostly provided by associations, trade unions, etc. In Ukraine civil society organizations (associations, trade unions and foundations) proved to be a powerful promoter of adult education

3. Informal education

Informal education or self-education is learning organized by an individual for himself/herself outside standard educational institutions. It implies different, mostly individual educational activities self-initiated by a person learning or spontaneously acquiring experience and knowledge

during his/her lifetime (from learning at home and by using electronic media and Internet, to acquisition of knowledge in contact with other people in the process of socialization).

The person accepts viewpoints and values, skills, knowledge and competences from everyday experience, the job performed and other influences and sources from the surroundings. The education result becomes the learner's property on the basis of which he/she fulfils specific roles in life and expands his/her knowledge and skills in the context of lifelong learning.

4. Policies, legislative and operational framework

The area related to the ESD framework at all levels of education, interdepartmental cooperation and multi-stakeholder cooperation, including the establishment of consultation mechanisms. The UNECE Strategy for ESD identifies the need for a strong political support at all levels of governance so as to include SD perspectives throughout education.

Effective implementation of the ESD requires this theme to be integrated into policies and planning, investment and management strategies of the national and local governments for all levels of education. The UNECE Strategy for ESD states further that the challenge will be to implement the reform of policy-making and operational framework of the education system on a basis of trust, inclusion and subsidiarity. It stresses the need for cooperation between the public sector and those providing formal, non-formal and informal education. The cooperation, shared responsibility and leadership of relevant Government body should be recognized as an important mechanism for good governance and be strengthened. There is a need for a coordination mechanism for implementing the ESD.

5. Research and innovative approaches to education for SD

This implies effective learning methods, evaluation tools, formation of attitudes and values, school/institutional development and implementation of information and communication technologies. Research on the ESD should provide a continuing basis for the development of ESD at the local, regional and global level and its recommendations should be incorporated into various parts of the education system.

6. Strengthening competences of educators and decision makers

Educators, leaders and decision makers at all levels of education are a key to changes and should therefore upgrade their knowledge about education for sustainable development so as to be able to design and implement good quality educational programmes and provide adequate recommendations and support. Efforts for strengthening capacities and competences are therefore necessary at all levels of both formal and non-formal education.

7. Educational materials

This refers to application of innovative teaching methods, instruments and materials for ESD at all levels, for general courses and specialist education and self-education, and their adaptation to local conditions and needs (in case of foreign literature or experiences). This also involves the use of electronic, audio, video and multimedia resources and visual aids for educational purposes and sharing information.

8. Public information and awareness-raising

It is necessary to include mass media which are a powerful force and have impact on guiding the choice and lifestyle of citizens, especially children and young people. An important role may be played by civil society organizations and Government body, institutes and other relevant organizations, including politicians. The challenge is to mobilize their knowledge, experience and distribution channels to pass reliable information and key messages on SD-related issues.

TABLES BY PRIORITY AREAS

1. Formal education

2. Non-formal education

3. Informal education

4. Policies, legislative and operational framework

5. Research and innovative approaches to education for SD

6. Strengthening competences of preschool teachers, primary and secondary school teachers, higher education lecturers and decision makers

7. Educational materials

1. FORMAL EDUCATION	
Objective: To promote and introduce themes of sustainable development into the system of formal education	
Measure 1.1.	Incorporate knowledge and skills, attitudes and values related to sustainable development (SD) into primary and secondary school subject curricula
Measure 1.2.	Promote participatory educational methods and improve educational materials as a support to educational process at all levels
Measure 1.3.	Integrate themes dealing with education of children for SD into preschool education programmes
Measure 1.4.	Encourage linking of different institutions of higher education in the area of natural and social sciences
Measure 1.5.	Link secondary schools and economy sector in the field of SD
2. NON-FORMAL EDUCATION	
Objective: To promote and undertake education for sustainable development through non-formal education	
Measure 2.1.	Enhance SD skills and knowledge of experts who participate in planning, managing and implementing development measures
Measure 2.2.	Build sustainable development capacities of stakeholders in local communities
Measure 2.3.	Increase SD skills and knowledge of the business sector
Measure 2.4.	Build educator capacities in the field of non-formal education for SD
Measure 2.5.	Facilitate acquisition of additional SD skills and knowledge of pupils and students outside formal education
Measure 2.6.	Increase knowledge and skills of media employees, primarily journalists and newspaper editors/managers
3. INFORMAL EDUCATION	
Objective: To promote and facilitate education for SD through informal education	
Measure 3.1	Provide the opportunity of informal education for various stakeholders

Measure 3.2	Provide the opportunity of informal in-service education of employees

4. POLICIES, LEGISLATIVE AND OPERATIONAL FRAMEWORKS

Objective: To ensure that political, regulatory and operational frameworks support the promotion of education for sustainable development

Measure 4.1.	Establish interdepartmental coordination for ESD at the national level

5. RESEARCH AND INNOVATIVE APPROACH TO EDUCATION FOR SD

Objective: To promote research and development of education for sustainable development and provide access to adequate tools and materials for ESD

Measure 5.1	Develop interdepartmental partnerships in ESD and networking at the national and international level
Measure 5.2	Promote innovative approaches to education for ESD

6. STRENGTHENING COMPETENCES OF PRESCHOOL TEACHERS, PRIMARY AND SECONDARY SCHOOL TEACHERS, HIGHER EDUCATION LECTURERS AND DECISION MAKERS

Objective: To build capacities of preschool teachers, primary and secondary school teachers and higher education lecturers for education for SD and decision makers for making quality decisions on development issues

Measure 6.1	Strengthen competences of employees in educational process
Measure 6.2	Enhance SD skills and knowledge of representatives of GBs and other relevant bodies
Measure 6.3	Enhance SD skills and knowledge of self-government representatives at local and regional level
Measure 6.4	Define ESD competences of preschool teachers, primary and secondary school teachers, higher education lecturers and decision makers

7. EDUCATIONAL MATERIALS

Objective: To provide conditions for quality education for SD through development and provision of adequate educational materials

Measure 7.1	Provide educational materials for ESD