

Ten years of Education for Sustainable Development in Estonia

Imbi Henno, PhD

Chief Expert of Ministry of Education and Research of Estonia

Introduction

In December 2002, the United Nations General Assembly, through its Resolution 57/254, declared a Decade of Education for Sustainable Development (ESD) (2005–2014). In 2005, UNESCO launched the Decade of ESD, which reaffirmed the key role of education in shaping values that are supportive of sustainable development. The final report of the UN Decade of Education for Sustainable Development, *Shaping the Future We Want*, was launched at the UNESCO World Conference on Education for Sustainable Development, held in November 2014, Nagoya, Japan. The United Nations Economic Commission for Europe (UNECE or ECE) has recognized the importance of education as critical to influencing the knowledge, skills and values of citizens for supporting a more sustainable world and in 2005, the Vilnius High-level Meeting of Environment and Education Ministers adopted the 10-year UNECE Strategy for Education for Sustainable Development (2005–2015).

Estonia has moved forward with a wide range of initiatives that have contributed to the United Nations Decade of Education for Sustainable Development. Estonia is a country that has made considerable progress with ESD in a short period of time, considering that it emerged from a totalitarian regime to establish a democratic government in the beginning of nineties. Estonian activities and practices have promoted sustainable development through formal, non-formal and informal learning, supported the development of ESD school plans, equipped educators with the knowledge to include sustainable development in their everyday teaching, developed ESD tools and materials and encouraged ESD to be a part of teacher education.

An ESD project, Windmill (*Tuulik* in Estonian) was initiated as early as 2001. The project aimed to help Estonian schools implement ESD in the curriculum and in their schoolwork plan. According to the National Curricula, sustainable development was recognized at all school levels as a cross-curricular objective in 2002. In 2002, an Agenda 21 for Education in the Baltic Sea Region and ESD action programme for the education sector was adopted. National Coordinators for ESD for formal, higher and non-formal education have been nominated in Estonia.

In the decade from 2005 to 2014, key steps have been taken towards more systematic implementation of ESD in Estonia. Since the proclamation of the UN Decade, the Estonian Ministry of Education and Research, the Ministry of Environment and the Estonian Commission for UNESCO have made a contribution to ensuring the success of the ESD concept. In 2005 a common action memorandum was signed between the Estonian Minister of the Environment and the Minister of Education and Research. The Ministries agreed to develop environmental education and education for sustainable development.

The learning and teaching materials for ESD have been funded by the Ministry of Education and Research. Additional funding has also been provided for student projects, such as Windmill, the Baltic Sea Project and the student environmental program GLOBE.

The Ministry of the Environment has also provided funding for supporting a number of outdoor activities and projects. This funding came from the Environmental Investment Centre (EIC).

But indeed, even though ESD has been successfully implemented in the National Curricula and extra-curricular activities, there has been a lack of financial resources for implementing ESD. The development of ESD in Estonia has gained significant momentum with the support of EU Structural Funds. In the financial period from 2007–2013 two measures were supported: “Development of the infrastructure of environmental education” with 22.3 million euros by the European Regional Development Fund and “Development of Environmental Education” with 3.2 million euros by the European Union Social Fund.

Promoting sustainable development through formal, non-formal and informal learning and promotion of development of school curricula

Estonia has had governmental support for Education for Sustainable Development, and therefore the ESD concept was incorporated in the Estonian National Curriculum for Basic Schools and Upper-Secondary Schools in 2002. Cross-curricular topics are a means of integrating general and subject field competences, subjects and subject fields and are taken into account in developing the school environment. The emphasis has been put on the interrelationship between natural, social and cultural environments, and on developing responsible attitudes to sustainable development. This year ESD has become a part of teaching

and learning from form 1 through to form 12. Opportunities for teaching ESD concepts are presented in all subjects, including mathematics, physics, chemistry, local studies, geography and music.

All Estonian schools have to prepare the school curriculum on the basis of the National Curriculum. These school curricula must specify how to implement the sustainable development into everyday school life. The curriculum is flexible enough to cope with differences at the local level and in individual schools. At the school level ESD education may be implemented through the structure of the learning environment, subject study and collaboration with regional institutions and enterprises, other educational and cultural institutions and civic associations.

In 2010 the Estonian Ministry of the Environment adopted the Environmental Education Development Program. The program was implemented under the Developing Environmental Education measure by the Environmental Board. The program aimed to promote ESD and environmental education as the essential component of sustainable development, to raise student and public environmental awareness and awareness about sustainable development. Furthermore, the goal was to develop formal in-service training programs for teachers, university lecturers and specialists of environmental education to develop methodological materials and teacher toolkits.

ESD as a part of teacher education

Teacher development has been a top priority in Estonia. Initial teacher education is provided by universities and professional higher education institutions. Teachers of all levels are expected to obtain professional and didactical competency, the skills to create a safe study environment and to develop school curricula, to co-operate with other teachers and to implement the cross-curriculum environment and sustainable development topic.

Supplying educators with the competence to include sustainable development in their everyday teaching

The Estonian Environmental Board was responsible for managing and carrying out the activities of program the Development of Environmental Education program in 2011–2015 that was

supported by the European Social Fund. Among other activities, under the Development of Environmental Education program the public procurement “Preparation of in-service training curricula and training courses for teachers of formal education and universities and non-formal environmental education professionals” was launched in 2013. The objective of the program was to equip non-formal environmental education specialists, educators and teachers with the competences to implement active learning methods and integrate the cross-curriculum environment and sustainable development topic in their everyday teaching.

The two main state universities which provide initial teacher`s education prepared in-service programs and organised these ESD courses. A special in-service training curriculum for formal education teachers and non-formal education professionals was compiled. It should be emphasized that the representatives of the schools can attend the training courses only in teams (two or three teachers of different subjects and one school leader from one school) and at the end of the course they have to compile a school-wide ESD project.

The University of Tartu organised, in collaboration with the Environment Board, in-service training for kindergarten teachers and university teachers at Tallinn University for basic, upper secondary and vocational school teachers and environmental education specialists training. In the period from 2013 to 2015, more than 600 educators in total were trained. The training at Tallinn University was based on the UNESCO framework Learning: The Treasure Within, which states that the four pillars of learning are learning to live together, learning to know, learning to do and learning to be (UNESCO, 1996), and took into consideration the UNECE teachers` ESD competences (UNECE, 2012). In addition, the in-service training materials were published and made available on the web.

Investments in infrastructure. Environmental education centres

In the last five years, five modern buildings for environmental education centres were constructed and 18 were renovated under the measure “Development of the infrastructure of environmental education”. Twenty-nine centres were provided with new equipment and exhibitions.

Estonia has a fairly dense network of nature and environmental education (EE) centres. The centres support implementation of ESD as well as offer extra-curricular activities for students

and non-formal education opportunities and self-development activities for adults. These establishments are called by different names, mainly according to the scope of their services, and they include nature schools, environmental education centres, science centres (e.g. the AHHA and the Energy Discovery Centre), thematic centres (e.g. the Ice Age Centre) and museums, and even some enterprises. The centres differ in the opportunities they offer. Some have an exposition and classrooms with learning aids, while others provide educational EE and ESD programmes and nature outings. Some educators from centres visit schools and organise EE and ESD activities at schools and the schools' surroundings.

A new building was built for the **Environmental Education Centre of Pärnu County** in West Estonia. The Environmental Education Centre of Pärnu County was established as a cooperation project between different local authorities. Never before had so many local authorities and NGOs undertaken that kind of cooperation project. It set a precedent in Estonia. The centre offers innovative environmental education (60 different courses and programmes) and as also operates a visitor centre.



Source: http://www.teleskoop.ee/wp-content/uploads/2015/04/IMG_5963-539x359.jpg

The building is energy efficient. The technological construction of the building enables the cost of maintenance to be lowered, and environmentally friendly materials (glass, wood, clay plasters, etc.) have been used. There is gold-moss stoncrop growing on the roof, which is totally maintenance free and usually grows on sandy beaches. Those are the reasons why this building serves as a permanent exhibition for eco-technological and engineering solutions.

A new building was opened for **Tartu Environmental Education Centre** in the southern part of Estonia. The centre operates in a building called Tartu Nature House and acts as a centre of non-formal education for children and adults. The structure has also been designed and built following principles of sustainability and meets energy efficiency standards. The main materials that are used in the building and interior design are locally sourced from nature. Solar panels on the roof and rainwater collection containers support a sustainable lifestyle. All sustainable solutions of the Nature House are visualised in a hands-on exhibition. The origin of building materials, energy and water cycles, and waste management are explained in displays.



Source: <http://f4.pmo.ee/f/2013/09/18/2372848t6hc81f.jpg>

Sustainable development is a main topic in all Tartu Nature House's activities and curricula. It offers a study programs for schools about sustainable consumption and recycling as well as about nature protection, biodiversity, and ecosystems.

During the school year extra-curricular activities for children and lectures, seminars, workshops and courses for adults take place. In the summer time the Nature House is a visitor centre. Tartu Nature House is a public example of sustainable lifestyle.

The **Natural History Museum of the University of Tartu** is the oldest museum in Estonia and also underwent renovation of its classrooms and exhibitions. A new digital exposition opens the door for biodiversity studies.

Supported by the European Regional Development Fund (ERDF), the Environmental Education Centre of **Tallinn Zoo** has been completed and successfully put into operation in the northern part of Estonia. This state-of-the-art education complex in the capital of Estonia, inhabited by 1/3 of the population of the country, is not only a pleasant place for entertainment, but enhances public awareness of wildlife and sustainable development. It also contributes to the survival of biodiversity.



Source: <http://tallinnzoo.ee/wp-content/uploads/2014/09/DJI02616-loodusoppekeskus-1-1024x512.jpg>

Customers of different age groups and different interests are offered an opportunity to participate in education programs, lectures, seminars and hobby groups. In support of formal education, the centre has developed education programs, and students can take part in extra-curricular classes at the zoo (in Estonian and Russian).

The more life concentrates in cities, a return to nature seems a journey into one's self. The **Estonian Museum of Natural History** in Tallinn was also renovated. The museum invites visitors on this journey and tells stories about the wilderness of Estonia to help decode the secrets of nature. The museum arranges curriculum-based museum classes for schools and kindergartens, lectures, performances, family days, young scientists clubs, workshops and other exciting projects.

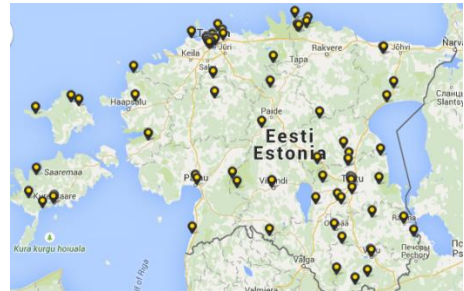
A new building was constructed for a **Võrtsjärv lake museum** in the centre of Estonia. The Lake Võrtsjärv Study and Experimental Centre of the Estonian University of Life Sciences is located on the shore of Lake Võrtsjärv – the largest inland waterbody in Estonia, making it possible to complete indoor studies with practical activities taking place in the natural environment. A variety of study programs on water biota is available for different age groups ranging from kindergarten to the gymnasium level. The centre also owns a barge that can take a study group on the lake for research and to observe waterfowl or fishermen in action. There is an option to involve researchers from the university in teaching and supervising the explorations of schoolchildren.

Särghaua Earth Sciences and Environmental Technology Learning Center of Tallinn University of Technology, located in the middle of Estonia, was renovated. The new centre offers unique opportunities in Estonia. The vision of the centre focuses on exploratory environmental education based on modern technological capability. Various earth science-related educational materials and collections of rocks (see <http://geoeducation.info>) for teachers have been developed. The study classes are equipped with stereoscopic microscopes and computers and allow the microscopic world to be studied. Different devices (environmental sensors, infrared cameras, detectors) support the teaching-learning process in the classroom as well as outdoors. Each participant can receive a “hands-on” experience.

Estonian culture is closely linked with nature. **Nature centres** are like small oases, which preserve and keep alive the bond between nature and human beings. Eleven nature centres (Aegviidu, Elistvere, Emajõe-Suursoo, Kabli, Kauksi, Kiidjärve, Nõva, Oandu, Pähni, Simisalu and Viimsi nature centres) of the State Forest Management Centre were renovated. These centres received modern rooms or exhibitions and have been equipped with educational resources. All the necessary information connected with these centres is available at the interactive website www.loodusegakoos.ee. Ten nature centres of the Environmental Board were also renovated. Sustainability was a valuable perspective in these investments and Estonia can be proud of all these state-of-the-art education centres.

Development of ESD tools and interactive materials. ESD events

Under the Developing Environmental Education measure, first the Environmental Education (EE) **interactive website** (www.keskkonnaharidus.ee), a quality provider of EE and ESD materials, was upgraded for teachers. The website mediates useful information on EE opportunities and environmental education centres in Estonia and provides teaching-learning materials and ESD resources for lesson planning, etc.



Source: www.keskkonnaharidus.ee

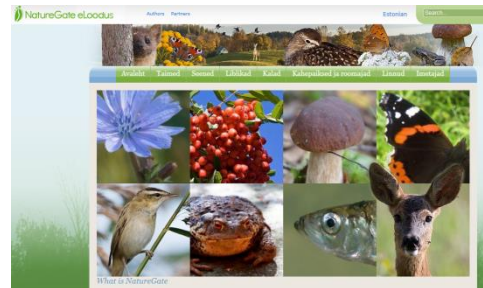
The EE centres page includes an interactive map of Estonia designed to inform the website user about the institutions involved with EE and ESD in Estonia. The map application displays all centres throughout Estonia or by individual counties.

Second, **Environmental Compass** was created for students and teachers. Environmental Compass invites the versatile values of Estonian nature to be discovered. Forests, waterbodies and wetland habitat pictures and video galleries are opening enjoyable "windows" onto this world. Environmental Compass supports cooperation with schools and nature centres. The toolkit puts together a digital learning environment for teaching in classrooms and an outdoors nature centre. The students can choose the role of scientist, nature guide or entrepreneur and prepare a presentation, sustainable business plan or guided tour. Environmental Compass allows a student to learn about species and biocenosis, prepare a visit to the Nature Center and plan practical work and variety of creative activities. All materials are available in Estonian and Russian.



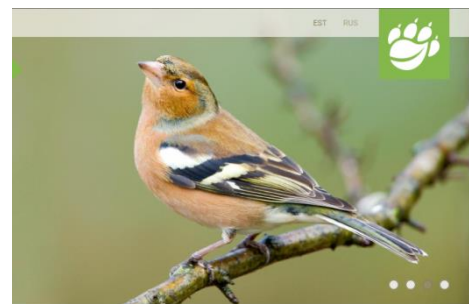
Source: <http://www.keskkonnakompass.ee/et>

Third, the **NatureGate portal** <http://e.loodus.ee/ET> was commissioned. The aim was to bring nature closer to computer-friendly people, especially kids, who are more familiar with screens than real nature. The portal enables [the user](#) to get acquainted with hundreds of common plant and animal species and identify them based on simple human-readable characteristics, photos and descriptions, and provides integrated data from various sources, like bird migration routes and a distribution atlas, etc. Knowing the plants and animals and being able to identify species as well as understand their differences, individual needs and relationship to environment are the first steps in the direction of a positive attitude towards the environment. Materials will be available in Estonian and English.



Source: <http://e.loodus.ee/EN>

Three years ago the Environmental Paw (Keskkonnakäpp) contest was launched for recognition of environmentally friendly actions in education. The aim was to, on the state level, recognise and highlight all initiatives which develop environmental awareness or contribute to sustainable development and promote environmental activities.



KESKKONNAKÄPP

Source: <http://keskkonnakäpp.ee/>

Additionally, the Environmental Board ordered many educational films and interactive games and acquired what it calls the Environmental Bus, which was specially built for carrying educational tools and offering educational programs on the sustainable use of energy and other resources.

Estonia is now able to look back on a successful implementation of the UN Decade of ESD. The culmination of all this committed work was without doubt the staging of the international “Pathways to the Future” conference on ESD in April 2015. The four sessions were based on the four major keywords of the conference: creativity in and for ESD, values in education and ethics of ESD, sustainable schools, and sustainable communities. Three hundred participants (practitioners, teachers, researchers, experts, students) from 24 different countries had an opportunity to share their ideas and experiences on ESD. Source: <http://www.esdconference2015.eu/en/>



Conclusions

The Global Action Programme (GAP) on Education for Sustainable Development is the follow up to the United Nations Decade of Education for Sustainable Development (2005-2014). The GAP was launched at the World Conference on ESD in November 2014 in Aichi-Nagoya, Japan. It seeks to generate and scale-up concrete actions in ESD and is intended to make a substantial contribution to the post-2015 agenda.

We have laid a foundation that can now be built upon to make sustainable development an integral part of education. But the crucial work of implementation ESD in everyday practice is still ahead of us. Estonia prepares to commit to a new phase of work, continues to implement ESD, transforming education into one of the most important tools to achieve a more environmentally, socially and economically sustainable world.

References:

- UNECE (2005). Strategy for Education for Sustainable Development, <http://www.unece.org/fileadmin/DAM/env/documents/2005/cep/ac.13/cep.ac.13.2005.3.rev.1.e.pdf>.
- UNECE (2012). Learning for the Future – Competences for Education for Sustainable Development. Geneva, UNECE Strategy for Education for Sustainable Development, http://www.unece.org/fileadmin/DAM/env/esd/ESD_Publications/Competences_Publication.pdf.
- UNESCO (1996). Report of the International Commission on Education for the Twenty First Century: Learning: The Treasure Within, http://www.unesco.org/education/pdf/15_62.pdf
- UNESCO (2013). The Global Action Programme (GAP) on ESD, <http://unesdoc.unesco.org/images/0022/002243/224368e.pdf>
- UNESCO (2014). Aichi-Nagoya Declaration on Education for Sustainable Development, <http://unesdoc.unesco.org/images/0023/002310/231074e.pdf>