

State of Arts

Pedagogical offer of available initiatives/tools on biodiversity in Estonia

Compiled by

Peipsi Center for Transboundary Cooperation

I Introduction

Present report is compiled by Peipsi Center for Transboundary Cooperation for the implementation Erasmus + project “Empowerment of European Citizens for Action through Education on Biodiversity”. The aim of this project is to develop a strategic partnership at European level in order to assess practices concerning the education of adults on biodiversity and to improve the quality and offer of such. The project aims to develop a set of innovative and successful pedagogical material on biodiversity and a specific guide to the attention of European CSOs and other stakeholders. The project will provide a tool kit for educators working on this topic, helping people to better understand the concept of biodiversity, the connection with daily life, and to increase the general level of consciousness on biodiversity. The materials developed will be available for broad public.

The present survey on the survey about the biodiversity study materials is a prework for the developing a tool kit for educators working on this topic. Aim of the study was to compile an overview of the present situation. It is not describing the full real situation as in Estonia there are about 140 organisations who are providing nature and environmental activities for different target groups. An overview of the available programmes (more than 900) is in the environmental educational portal keskkonnaharidus.ee.

Participants

The survey about the biodiversity study materials includes responses from 13 respondent. We thank for Ice Age Center, Tartu Nature House, Estonian University of Life Sciences Võrtsjärv Study Center (Lake Museum), State Forest Management Centre Kauksi Visitors Center, Environmental Board Iisaku Nature Center, Environmental Board Endla Nature Center, Alatskivi Nature Center, Estonian Green Movement, State Forest Management Centre Viimsi Visitors Center, State Forest Management Centre Oandu Visitors Center and Pernoova Educational Center.

The main task was to carry on the assessment of the training needs of citizens to figure out their understanding of the topic biodiversity, the assessment of the pedagogical offer of available initiatives/tools on biodiversity. Thus, we focused in our survey to the organisations who are carrying out study programmes, active learnings and etc to the young people and adults. Survey from the home pages showed that there are very many organisations and institutions who are providing biodiversity study materials for the kindergarten and the primary schools. To target group from teenagers to adults there are not so many and generally only 1-3 programmes per organisation.

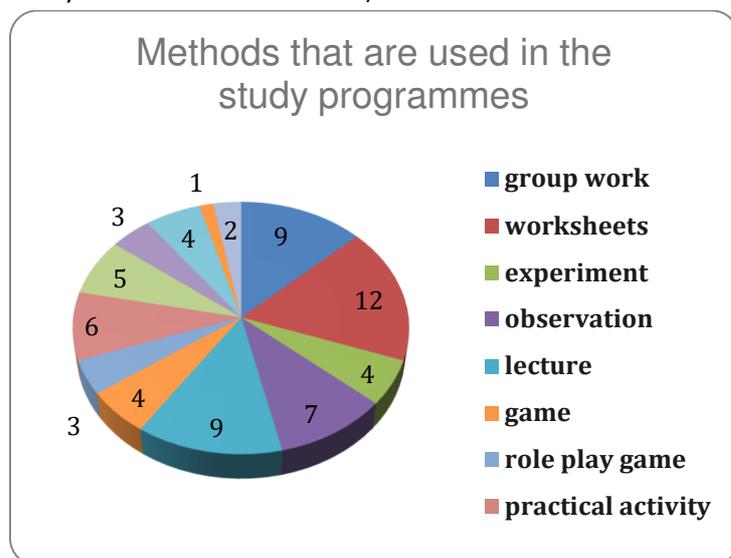
II Survey

Pedagogical offer of available initiatives/tools on biodiversity

From Estonia 6 NGOs, 5 public institutions and 2 educational institutions were presented in survey. All organisations described 1-2 interactive study programme that was combined with different methods. Quite typical is that one study programme includes lecture part, field work, active observation, game or some other task that includes active learning and participation. About all programmes and materials that are provided by the nature educational centres or by other nature education related organisations are including active learning.

Mostly were used worksheets, group works, observations (or practical survey), lecture, practical activities, study trips etc. The main target group of the study programmes that are presented in the survey are adults, young persons, professionals, schools and general public. The study compiled believes that these target groups are more difficult to engage to the education of biodiversity as there is need to provide more complex and well-designed programmes to keep their motivation and participation.

Figure 1. Methods that are used in the study programmes (the number of the chart is reflecting how many times it was mentioned).



Generally, all study programmes were about nature education, biodiversity, environment and ecology. Described study programmes combine different topics and are multiuse. Programmes are for example about ice age, the sun exposure to the earth, agriculture landscape, wetlands, fish, wild animals and plants, mineral resources, environmental justice.

Some examples of the study programmes

- **The state of the marshes forest** (State Forest Management Centre, Kauksi visitors Center) – The programme introduces swamps as a living environment, their development causes, importance and their protection. The program introduces various forest and bog plants, birds and animals that live in swamps and bogs. The food chain in the swamp, which begins and ends with the plant. Tools are discussions about the marshes and wetlands, observation and discussions about different inhabitants and plants, active worksheets and hike.
- **Agricultural landscapes and sustainable development** (Tartu Environmental Educational Centre) - The participants get to know: traditional and new agricultural crops grown in Estonia, the impact of agriculture on agricultural soils, theoretical information through experiments, sustainability in agriculture, peculiarities of organic farming. It includes lecture, games, active activity.
- **There is a power in the forest** (State Forest Management Centre, Viimsi visitors Center) – It is a permanent exhibition for different age groups. Exhibition includes 28 exhibits that includes also video clips, interactive games and study materials, ad special on spot solution to present biodiversity.
- **Forest pharmacy and food pantry** (State Forest Management Centre, Oandu visitors Centre) – Interactive study programme that includes lecture, exhibition about berries that are eatable and that not, group work, forest hike and s picnic.
- **Backbag programm** (Vellavere- Vitipalu Foundation) - The most important part of the backpack program is 20 hiking bags, which are equipped with the necessary tools and determinants for nature studies. Program participants receive resources for nature studies and study trail maps. The hiking routes are prepared as waypoints during the hike, where tasks must be solved.
- **Aquatic invertebrates** (The Estonian University of Life Sciences, Võrtsjärve Visitors Center) – In the course of the study program, an overview of large invertebrates and smaller vertebrates (frogs, aquatic) living in our water bodies is obtained. Students catch water and observe them under a binocular. The adaptations of aquatic invertebrates to life in the aquatic environment and the importance and place of aquatic invertebrates in the food chain are discussed. The study program includes study trip, lecture, worksheet and groupwork.

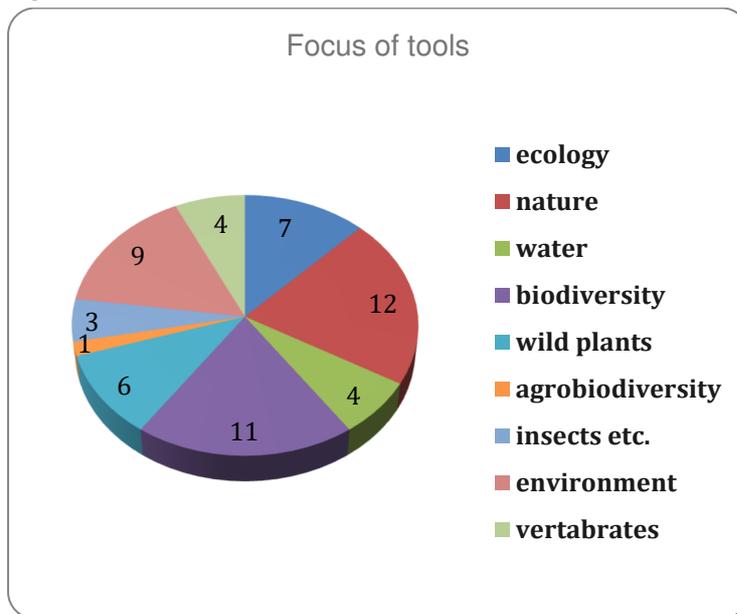
Main focus

Generally, the main focus of the programmes are nature, biodiversity, environment, ecology and plants and animals. But all programmes are combined with different topics. More specifically the focus was described in the study programmes as following:

- to discover the impact of the sun on life on Earth,

- examples of the importance of ecological balance based on experimental experience,
- enhance knowledge and understanding of Estonia's biodiversity and offers opportunities to create links with sustainable development and climate change in their studies,
- to make understanding that man is a part of nature and expresses care and respect for all living beings,
- to prevent excessive human interference in wildlife,
- get to know edible and poisonous plants, use of medicinal plants,
- to teach to read the map and to move in nature with the help of the map,
- to observe different signs of nature, to take measurements in nature, to use the determinants,
- wildlife diversity and connections with the environment,
- to introduce nature teaching methodology,
- to introduce values biodiversity and sustainable living,
- to introduce forest communities.

Figure 2. Main focus of the tools



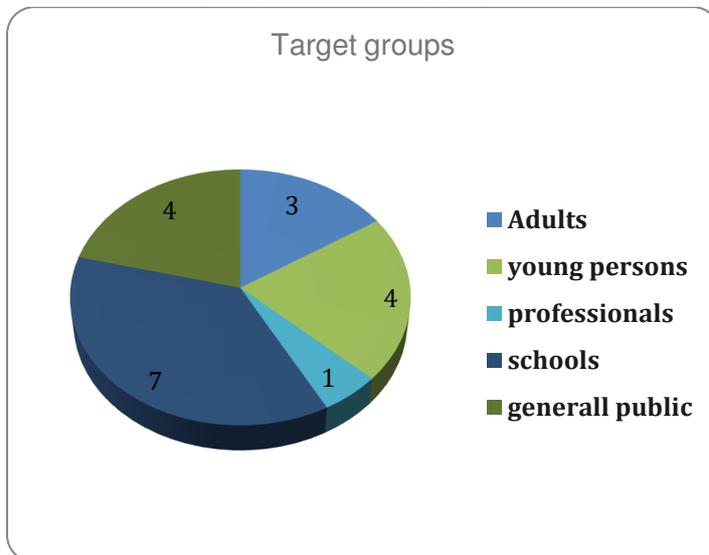
Target groups, seasonality and regionality

The study programmes that are providing different organisations are for wide interest groups. Many of them are for schools. But there is something also for specialist and adults. Quite many programmes are adjustable to children and also to adults. From the responses 15 study programmes were suitable for primary school and adjustable to older age groups.

About 11 programmes were suitable for gymnasiums or suitable to adjust these for them. And to the 8 programme it was added that these are suitable also for adults. But the everyday situation is that for the kindergarten and primary schools there are many different programmes. Probably it becomes the fact that it is easier to combine interactive study methods to their school curricula's.

Almost all study programmes are actively used also at the moment. There as mentioned that some of them need a small updates or adjustments to update programme.

Figure 2. Target groups of the study programmes.



Seasonality is influencing available programmes about 50%. There were 11 answers that study programmes are not influenced by the season and 9 that are influenced. Probably it depends on the programme focus. As many programmes are including active learning, study trip or some kind activity that are held on in nature in a certain place – near the water, in the forest etc. Most described active learning methods and tools are related with the real experience in the nature.

About that, study programme connection with the real experience from nature most of them are strongly related with some specific nature place or area. Almost all respondents said that the programme or activity is regional but they added that it is possible to adjust also to other regions in necessary.

Respondents agreed that all their methods and study programmes are useful and effective for teaching biodiversity. In Estonia many programmes are done also with project funding. There are programmes that are easy to fulfil and also these that depends on the location and materials and time. These ones which are not no easily repeated are also a bit more cost-benefit. In the surveu about half programmes were evaluated cost-benefit.

Suggestions

Generally pedagogical offer of available initiatives/tools on biodiversity is quite well presented in Estonia. Some suggestions how to increase the people's knowledge about biodiversity were:

- organise campaigns to schools to make notations of the species etc,
- develop different observations and special sheets for that, with small motivating presents,



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- to push people to act environmental consciously, to make some really good reasons. Coronavirus has been a good example to out the knowledge into practice.

Summary

To sum up the present short survey it can be said that the situation pedagogical offer of available initiatives/tools on biodiversity for schoolchildren is good. There are many interactive study programmes combined with other methods. The offer is worse in older age groups. Especially for adults. The most used method to reach them are exhibitions etc. Also, there is a lack of the digital study materials on biodiversity that could be used during the period when field trips and outdoor active learning is difficult. It is said that young people are too much in front of the screens but ad the world and the society is changing there is need to adopt with changes in all life areas.