TREE
Micro- and project-based learning programme for Teaching ciRcular Economy and Ecological awareness in VET

Funded by the European Union

NATIONAL report for Project TREE - Estonia

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Introduction

I. What is Education for Sustainable Development (ESD): Definition, applicability and use in Estonia

Education for sustainable development is a system of knowledge, skills, attitudes and values that makes it possible to become aware of the links between nature, the economic and socio-cultural environment and to follow the principles of sustainable development.
The principles of Estonia's sustainable development are set out in the national strategy for sustainable development "Sustainable Estonia 21". The bases of the strategy derive from the Sustainable Development Act, which was passed by the Riigikogu in 1995 and which provides the bases for the sustainable use of the natural environment and natural resources. The national strategy "Sustainable Estonia 21" was completed in 2005 under the coordination of the Ministry of the Environment. This is the strategy for the development of the Estonian state and society until 2030, the aim of which is to combine the success requirements arising from global competition with the preservation of the principles of sustainable development and Estonia's traditional values, proposing goals and directions that contribute to Estonia's sustainable development:

- Viability of the Estonian cultural space;
- increase in human well-being;
- a socially cohesive society;
- ecological balance.

Historically, compliance with the principles of sustainable development has begun with the development of the environment, guided by the goal of "ecological balance", which in turn is divided into three:

- the use of natural resources in a manner and to an extent that ensures ecological balance;
- reduction of pollution;
- conservation of biodiversity and natural areas.

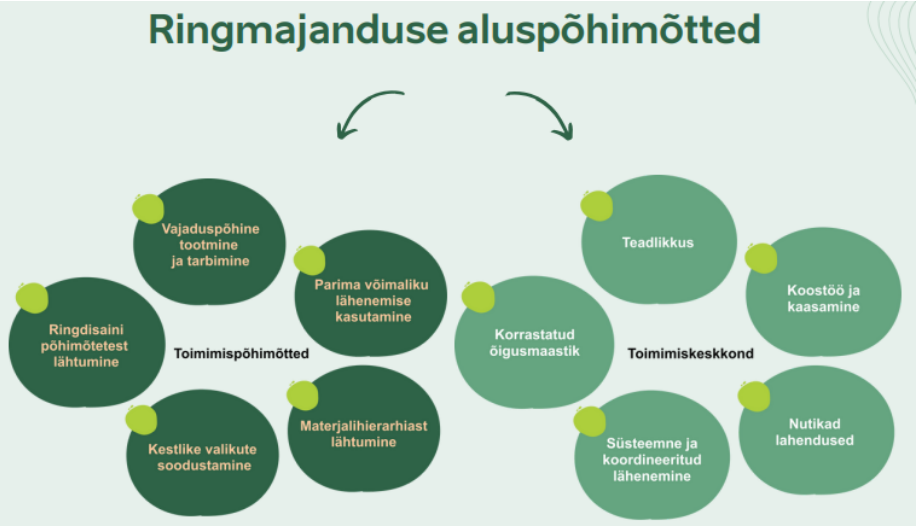
Teachers at all levels of education face specific challenges in addressing sustainable development, which requires them to be provided with appropriate training, the development of teaching materials and tools, and the opportunity to exchange experiences both face-to-face and online. In addition to the transfer of knowledge about sustainable

development, the teacher's personal example is crucial - especially in terms of attitudes and work and communication skills. [1]

II. Sustainability: Estonia's approach and priorities

a. Estonia's policies and Circular economy

The circular economy is a cross-sectoral principle, which is why cooperation between companies and international agreements are important, creating significant opportunities for the creation of new markets and partnerships. Successful cooperation between companies is well characterized by industrial symbiosis, the aim of which is to achieve a closed production cycle, where the waste, residual heat or other by-products of one company are used by another company.



source: [2]

b. State of the Art in Estonia

In Estonia, there are several examples of "state if the art" organisations related to ESD, Green skills and circular economy.

- **FIBENOL Fundamentally rethinking how we use wood.**

Fibenol's raw material is forestry and wood industry leftovers. They give new life to secondary-use wood with limited value in the industry and turn it into high-value biomaterials.

Sustainability and circularity

Global challenges are highly complex issues. There are no simple answers to solve the problems we face, but in Fibenol they believe that using natural renewable materials combined with circular and sustainable behavior are steps in the right direction.

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[1] https://sisu.ut.ee/keskkond/s%C3%A4%C3%A4stva-arengu-haridus-sah-s%C3%A4%C3%A4stva-arengu-m%C3%B5iste

[2] https://ringmajandus.envir.ee/et/ringmajandus

Fibenol contributes to circular bio-economy by providing sustainable renewable compounds that could replace high-impact non-renewable inputs for different applications, such as materials, cosmetics and biomedicals production.

Natural renewable materials and resource-efficient technologies help industries to produce entirely new products with low footprint.

To support Fibenol's customers to make conscious choices all their products are subject to evaluation of environmental performance also known as Life Cycle Assessment (LCA). LCA is a scientific methodology that takes into consideration water and land use, greenhouse gas emissions and energy consumption, by this helps to identify opportunities for improvement, compare products and promote a conscious decision-making process. [3]

- **ACENTO**
  A complete solution for sustainable events
  The full-service partner for events in planning and implementing the entire sustainability and waste area, ie Acento takes over the management of the entire area so that client can focus on its core business. Acento complete solution consists of the following services (or a selection of them):
  - developing a holistic vision and strategy for the sustainability of events,
  - waste reduction planning and the implementation of circular economy principles,
  - finding the necessary partners and coordinating cooperation with them,
  - planning and, if necessary, implementation of environmental communication
  - implementation and monitoring of environmental activities during events
  - training and coordination of volunteers
    creation of ex-post analyzes and reports
    https://acento.ee/ [4]

- **ROHETIIGER**
  Green Tiger is a multidisciplinary cooperation platform whose purpose is to create a balanced economic model for Estonia and the world. Green Tiger has partners across four strands: entrepreneurs, individuals, the public sector and the civic sector.

[3] https://fibenol.com/
[4] https://acento.ee/

We initiate and contribute to generating innovations inside companies and in society more broadly by:

- applying systematic and knowledge-based approaches to companies and organisations;
- representing and bringing together companies on environmental topics;
- mapping regulations that hinder companies, local governments and organisations from acting in an environmentally friendly way;
- offering input and creating proposals for policymaking;
- enriching our democracy by organising and implementing climate assemblies.

Green Tiger's Mission
To create and implement environmentally friendly practices in all sectors and develop a green economy
Green Tiger's Vision
A sustainable world that preserves social welfare while focusing on the conservation and restoration of nature
Green Tiger's Values
Competent, genuinely courageous, unifying, future-oriented
Representing companies on environmental topics and creating proposals for policymakers.
https://rohetiiger.ee/en/[5]

4. **Questionnaires and semi-structured interviews results** ("field research") - both quantitative and qualitative data to be presented as open text

During January to March 2022 was planned small research and was conducted low-scale interviews on circular economy and green skills topics for VET. Info and requests to answer the questions were replied by 8 teachers and by 4 enterprise representatives. Everybody answered the questionnaire in short time frame, in 5 days.

The goal of semi-structured interviews:

1. to raise awareness among VET institutions' teachers and staff, education experts, businesses, local, regional, national, and European institutions involved in education policies on Education for Sustainable Development (ESD) practices to foster "green skills" for the job market, as well as knowledge and competencies related to the Circular Economy (CE).
2. to analyze the experience of respondents
3. to discuss knowledge on innovative methodologies to infuse environmental awareness, "green skills" and other competencies related to the CE in VET students; to discuss "green skills" which are most important for the job market and which are the most important for their organization; Which characteristics are essential for a training course for young people

[5] https://rohetiiger.ee/en/

(15-19 years old) on CE and sustainability; Which sectors would benefit the most from training on CE and sustainability? (particularly among plastic, agri-food, and wood).

Participants from different organizations:

- VET school, teachers (8) (Valga County Vocational Training Centre)
- NGO's (0)
- Companies (4)

Respondents:

- Total 12 respondents
- 8 respondents VET teachers or administrative workers
- 4 respondents (one aquaculture, two project and whole sale; one IT development)

Invitations to participate:

- It is unknown how many emails were sent out to participate.

Collection of interviews:

- All questionnaires were filled using google forms (questionnaire).

Respondents:

- 3 women
- 9 men

Findings from all respondents:

- 50% answered that they consider themself with respect to the Circular Economy Informed to some extent. 16.6% had just heard about this concept.

5. **Review of VET schools- current status, educational priorities and Green skills.**

The aim of vocational training is to acquire knowledge, skills and attitudes, skills and social readiness for work, participation in society and lifelong learning. Vocational education is open to all, regardless of their previous educational background. [6]

Vocational training is organized by vocational education institutions and universities of applied sciences. 98% of all vocational training places are state funded, i.e., free of charge for students.

Vocational education can be acquired both in vocational education institutions and in applied higher education institutions. In the 2019/2020 academic year, 32 vocational education institutions and 6 institutions of professional higher education offer vocational education. Depending on the form of ownership of the school, vocational education institutions are divided into state, municipal and private vocational education institutions. In order to acquire various professions, schools create training places following the need of the labour market, the country's strategic and sectoral development plans, and the labour demand forecast prepared by the Ministry of Economic Affairs and Communications until 2026.

[6] https://www.hm.ee/et/eesmargid-tegevused/kutseharidus

And OSKA sector inquiries into labour and skills needs. [7]
The basis for the development of Estonian vocational education is the policy documents and development plans of the European Union and Estonia.

The Member States of the European Union have approved the European Skills Action Plan (01.07.2020), the Council of the European Union Recommendation on Vocational Education and Training for Sustainable Competitiveness, Social Justice and Coping (24.11.2020) and the Osnabrück Declaration (30.11.2020).
Based on the recommendation of the EU Council and on the basis of the Estonian Education Development Plan 2022–2035, the Estonian Vocational Education Action Plan 2022–2030 has been prepared.

Educational priorities

In the development of vocational education, the Ministry of Education and Research co-operates closely with central and professional employers 'organizations, employees' organizations, other ministries and vocational training institutions.
Vocational education is being developed in co-operation with the labor market and learning linkages, the digital revolution, teachers and educational leaders, learning and career guidance, adult education and the school network. [8]

6. Review of sectors included in the TREE Project in Estonia

a. Plastic sector

Rubber and plastics products are used in many fields, from the food industry (packaging) to the automotive and building materials industries. The Estonian rubber and plastics industry is made up of about 200 mainly small and medium-sized enterprises.
Larger companies are located in Tallinn and Harju County (almost half of the workforce), Saaremaa and Tartu County (about 15% of employees), but there are also quite a lot of employees in Ida-Viru County and Hiiumaa. The number of people employed in the rubber and plastics industry will decrease in the future. Production becomes more complex and more labor-intensive tasks are replaced by machine work. Mass production has already partially moved out of Estonia, and companies with a focus on smaller batches have better prospects. [9]

b. Agrifood sector

Estonia has the third highest share of organic farming in the European Union and is one of EIT-Food's RIS countries. Organic farming is a big opportunity for Estonian agriculture. Despite the demanding climate conditions connected to geographical location, Estonia possesses environmentally clean and fertile soil, which is reflected in local produce containing considerably less chemicals and growing popularity of organic farming. Specific

[7] http://www.kutseharidus.ee/oppimisvoimalused/koolid/
[8] https://www.hm.ee/et/eesmargid-tegevused/kutseharidus
[9] https://www.plast.ee/plast-eestis/statistika/

products are exported – e.g. cultivated and wild berries, mushrooms, ecologically pure produce, dairy products, meat, fish, and beverages.

The country is an attractive environment for research with top level infrastructure and a well-educated labour force. R&D activity is concentrated on top tier-research.

The country possesses environmentally clean and fertile soil, which is reflected in local produce containing considerably less chemicals and organic farming gaining popularity. Out of 957 510 ha of farmland of Estonia, ca 15.7% of it constitutes organic farming, which is the third highest share of any EU country (Eurostat, 2014). A strong emphasis is put on high nature value and agri-environmental issues, with 16.5% of the country defined under NATURA 2000 (including 55,000 ha of farmland). Room for improvement - Estonia is one of the leading countries in European Union in terms of the publication of articles on agri-food subjects, which implies a meaningful research potential that can be fostered through EIT education activities. [10]

c. Wood sector

Estonia is a country rich in forest – over a half (51.4%) of our mainland is covered with mostly semi-natural forests. The area and reserve of our forests has increased significantly during the last half-century. In Estonia, forest grows on approximately 2.3 mln hectares, of which approximately 75%, that is, 1.7 mln hectares is manageable forest. The total growing stock of stands is 480 million m3. Most common tree species are pine, birch and spruce.

Sustainable forestry – management of forests in a way that ensures currently their biological diversity, productivity, capability for regeneration, vitality and potential and enables performing all functions also in the future, without causing harm to other ecosystems; efficient forest management – the economic production and use of all forest-related benefits, both in the short and long-term perspective.
The importance of forests is manifested in four aspects:

- economic – forest as a source of revenue;
- social – forest as an ensurer of employment and provider of forest vocation;
- ecological – forest as a preserver of population diversity;
- cultural – forest as a part of Estonian culture.

The management of our forests has not been consistent due to historical reasons and that influences the state of the forests as well as the choices we have today.
The role of forestry in the economy and social life is extremely important: the sectors direct, indirect and induced contribution to the GDP is around 10%. Wood and wood-based products are an important part of our trade (balance). It is one of the most important sector in terms of export; furthermore, export includes predominantly products of higher value – for example wooden houses.

[10] https://www.eitfood.eu/in-your-area/estonia

It has been estimated that about 5-6% of the occupied workforce in Estonia is directly linked to the forestry sector. This number, however, excludes different indirect effects that the sector has e.g. to transportation, nature-based tourism etc. - which means that the overall impact is even higher. Also from a regional perspective even more so, as most of these jobs are situated in rural areas.
The State offers multiple recreational options in the forest, e.g. there are 3100 km nature trails passing through several recreational areas and next to forest cabins, camping areas, fireplaces. [11]

7. National good practices

1. Share your cupboard food recipe/ Jaga oma kapitoidu retsepti

Goals of the activity: Paying attention to food waste at homes. Creating and sharing recipes to reduce and stop food waste.
Recipe competition of delicious dishes from the fridge, such as special sandwich toppings or bake a plate cake with flying ingredients.

2. Organization of green workplace at vocational school NordPlus Junior 2021

As a result of this project, the goal is a summary of good practice examples and experience exchange on the topics “Green management”, “Electricity”, “Green environment”, “Recycling” and “Paperless and digitalisation”, guidance/recommendations on organization of green workplace, practical green solutions and project website as well.
Individual participants as teachers and students will improve their knowledge and skills in environmental issues. They will also develop their English skills, raise cultural awareness and grow as personalities. Teachers will acquire the newest tendencies in green issues in the Nordic-Baltic context.
By learning from each other and from the visited enterprises teachers will be able to develop guidance/ recommendations that are useful not only for the participating schools but also for other stakeholders.

3. Online Schooling Partnerships for Digital Education Readiness KA226-64AB62D0

The Covid-19 pandemic has served to accelerate a shift already well underway in some institutions and brings them a greater sense of urgency to demonstrate greater value. Schools now face new pressures to provide an educational experience that is engaging, motivating, and effective, regardless of how it is delivered. As schools may stay closed across many countries again, many students and teachers have to adapt to a new reality of remote learning.
Online teaching and learning, like the newest form of distance education today, will lead to new, different and more relevant outcomes. Teaching online requires specialized skill sets

11 https://envir.ee/en/water-forest-resources/forestry#:~:text=In%20Estonia%2C%20forest%20grows%20on,are%20pine%2C%20birch%20and%20spruce.

including the understanding of how to conduct classes in a virtual environment, knowing when and how to use video conferencing, share content, respond to students' submissions. Software and technology are also changing very rapidly, and our schools want to keep up with these developments. One of the key challenges in online teaching is how to assess students remotely, to prevent them from cheating, using other materials, or accessing the web on other devices during the test. Online assessments are a critical part of distance learning and should be undertaken with the same level of care and rigor that teachers put into creating their learning content. Therefore, we intend to focus on introducing effective pedagogical strategies for online teaching rather than the technology itself.

4. Electrical safety training for electric and hybrid drive technicians.

Project was a training program for employees of a motor vehicle maintenance and repair company. Skills / training needs identified in the OSKA COVID-19 special study in the field of motor vehicle repair and maintenance:

● Retraining of technical staff to improve and maintain skills and exit from the crisis and further development in the 10-year view of the green revolution table leveraging future growth in the repair and maintenance of hybrid, gas and electric vehicles. The OSKA report in the field of transport and logistics states:

● Due to global trends and developments in the field, the following field-specific skills are becoming increasingly important: the ability to work with different motor vehicles or technical systems; knowledge of diagnostics of motor vehicles and technical systems.

● In the field of motor vehicles, the growing share of electric and hybrid cars is affecting labor and skills needs.

● In the maintenance and repair of motor vehicles, new types of vehicles (electric, hybrid) will certainly affect the need for skills.

5. *Tartu 2024 project "Growing with Your Own Food"*

Project involves educational institutions and families from all over Estonia in the initiative to grow environmentally friendly food. It teaches children to value their food from seed to composting. In the project the seed will be sowed in fertile soil and it will grow. Estonian organic food and local food culture will become valuable in Europe. Our children know how to enjoy and grow clean food. Community gardens are becoming a popular activity in Tartu and small towns in Estonia. We eat our food and we are eco!

Creative Education Program - Purpose: Grow environmentally conscious and a young person for biodiversity generation who would prefer and value local organic food.
Community gardens network - Purpose: Raise awareness of clean and local organic food, from cultivation to consumption.
Audience program - Purpose: Appreciate the local food culture [12]

[12] https://www.tartu2024.ee/kasvadesomatoiduga

8. **Conclusion:**
   In Estonia in all educational sectors understanding of sustainability, the impact of our everyday actions and implementing the goals are well developed. The systems and instruments to support SDG implementation are being put into practice. In general the education has very well integrated the actions in curriculum - Estonia was one of the first countries to include sustainable development in the national curriculum. VET teachers have enough knowledge and have ongoing assistance and trainings of sustainable goals and lifestyles.

9. Annex (you can put as annex the questionnaires' results in excel format, i.e. the one directly downloaded from the Google Form, in your own language)