TREE

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

Funded by the European Union

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

TREE TRANSNATIONAL REPORT

May 2022

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Project's main information

Title: "*Micro- and project-based learning programme for Teaching ciRcular Economy and Ecological awareness in VET*", from now on called "TREE project".

Ref. No. 2021-1-LT01-KA220-VET-000034724

Duration: December 2021 – November 2023

Funded under: the Erasmus+ programme – KA220 Cooperation partnership in vocational education and training.

Project partners:

- Public institution "eMundus" (project coordinator), *Lithuania*
- Kedainiai Vocational Educational Training Centre, *Lithuania*
- S.A.F.E. projects, *the Netherlands*
- Valga County Vocational Training Centre, *Estonia*
- Zinev Art Technologies Ltd., *Bulgaria*
- Vocational School "Prof. Dr. Asen Zlatarov", *Bulgaria*

Transnational report author

Zinev Art Technologies, Bulgaria

Based on the National Reports developed by

S.A.F.E. Projects, Netherlands

VšĮ „eMundus", Lithuania

Kėdainių profesinio rengimo centras , Lithuania

Profesionalna gimnazia " Prof. Dr. Asen Zlatarov", Bulgaria

Zinev Art Technologies, Bulgaria

Website: https://treeproject.eu/
Instagram: www.instagram.com/tree_euproject/?hl=en
LinkedIn: www.linkedin.com/showcase/tree-project
Facebook: www.facebook.com/TREE.project.for.teaching.circular.economy

Completed in May 2022

TRANSNATIONAL REPORT

I. Introduction

Micro and Project-based learning for Teaching ciRcular Economy and Ecological awareness in VET schools, hereinafter referred to as project TREE, aims at increasing the employability of VET students through the creation of an innovative course on Education for Sustainable Development (ESD) and to promote the Circular Economy (CE) through the infusion of "green skills".

In particular, the project aims to:

- Integrate the teaching of CE and sustainability into VET schools' curricula and subjects taught;
- Create a closer link between VET institutions and businesses that adopt sustainable practices;
- Increase the attractiveness of VET schools by increasing the employability of VET students;
- Promote the adoption of eco-friendly practices in students' daily life;
- Support and encourage the transition from a linear economy to a circular economy.

In order to achieve these goals, the partner consortium, as a starting point, conducted extensive research on national policies, status, needs and good practices related to the aforementioned themes. The findings of that research have been compiled and included in this report, with the objective of establishing an overview and baseline, which is to underpin the development of the results of the project.

II. What is Education for Sustainable Development (ESD): definition, applicability and use in partner countries

The United Nations promotes ESD as a global educational goal. The organisation's definition is perhaps the one that has been used and integrated the most. It states that *"Education for Sustainable Development (ESD) empowers people to change the way they think and work towards a sustainable future."* UNESCO has adopted ESD as the response for education to "the urgent and dramatic challenges the planet faces. To contain global warming before it reaches catastrophic levels means addressing environmental, social and economic issues in a holistic way. (UNESCO, ESD)

It can be stated that all partner countries adopt the official definition in their governing practice. In terms of applicability and use however, there are some differences.

To start with, the Netherlands started implementing the SDGS in 2016, which was followed by the establishment of the National plan on Education for Sustainable Development (ESD) in which formal, non-formal and informal learning is supported, titled 'DuurzaamDoor' (ESD, DuurzaamDoor). This plan is based on multi-stakeholder participation, co-creation, social innovation and transformative learning as underlying concepts. 'DuurzaamDoor' is an initiative of the Dutch government, e.g. the Ministry of Agriculture, Nature and Food Quality and is executed by the Netherlands Enterprise Agency. The focus in 'DuurzaamDoor' is on 5 thematic areas: Biodiversity, Foodsystem, Circular economy, Energy & Climate, and Water. And there are 3 crosscutting areas: Curriculum & Whole School Approach, Integral decision-making for SD ('Omgevingswet') and Regional Cooperations for ESD ('Regionale duurzaamheidsnetwerken'), thus supporting bottom-up energy in society. For the crosscutting area Curriculum & Whole School Approach the Cooperation Learning for Tomorrow ('Leren voor Morgen') is in the lead. This Cooperation was initiated by 'DuurzaamDoor'. It is a platform in which several networks for formal education are gathered to work on the implementation of ESD in Curricula,

Quality education, Whole School/Institution Approach, Teacher competences, School Housing. The Cooperation communicates good practices, from Kindergarten to Universities. 'DuurzaamDoor' also acts as 'National Focal Point ESD (Education for Sustainable Development) for UNESCO (ESD for 2030) and UNECE (Strategy for ESD). Furthermore, the business and VET school are in close cooperation and the curriculum and exams are traditionally made in cooperation between representatives of the educational and the business sector. Learning and working in an integrated program is an important and relevant part of TVET.

In Lithuania, the Government's commitment to incorporate the global principles of ESD into national educational programmes through different strategies has been ratified. What is important to note, is that in March 2005, Lithuania approved the "UNECE (United Nations Economic Commission for Europe) Strategy for ESD" and the "Vilnius Framework for Implementation", setting up a Steering Committee, an ad hoc group of experts, to "*develop indicators to measure the effectiveness of the implementation of the Strategy* (UNUCE, 2005). Later, in 2007, the government approved the pronouncement "On the Approval of the National Education Program for Sustainable Development 2007-2015" (No. 1062).The objectives of the program are to develop education provisions for sustainable development, to improve the professional competence of teachers and educators and to carry out the necessary assessments of changes in educational activities, to provide the public with knowledge and skills, to prepare educational material for sustainable development, to provide access to it, to carry out research and to ensure inter-institutional cooperation. It has been reported however, that while teachers were interested in increasing environmental education in schools, they were still hampered by structural barriers. The most common limitations were time, financial and technical limitations, lack of knowledge to make connections between social, environmental and cultural aspects; lack of material for practical exercises and to explain environmental issues, and of teachers training on ESD. (Budvytytė, 2011). Research conducted recently analyses the ecological attitudes among schoolchildren. According to the research conducted, it can be deduced that in recent years there has been a gradual movement towards greater awareness of environmental issues, and more sustainable attitudes of people of all ages. The feeling of responsibility and the environmental consequences of the actions of all are slowly maturing. The pedagogical tools available for teaching ESD appear to be still too limited, and to speed up the transition to a more sustainable society, more educational tools, activities and programs should be introduced and applied in the country in this direction.

When considering Bulgaria, one of the main focal points has been the European Parliament's resolution of 11 February 2021 on the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions European Skills Agenda for sustainable competitiveness, social fairness and resilience (2020/2818(RSP)). The acknowledgement of the need for green skills, training for teachers and a focus on VET training is clear, and as a member state, Bulgaria has initiated steps in this direction, thus starting to look into educational for sustainable development. In fact, a Strategic Framework for the Development of Education, Training and Learning in the Republic of Bulgaria until 2030 was adopted with Minutes №13 of a meeting of the Council of Ministers, held on 24.02.2021. The adopted strategic framework is in line with the development guidelines set out in the adopted strategic documents at European and national level, which form a vision for high-quality, inclusive, value-oriented and lifelong learning, training and learning. (ECVET) The Framework is aligned with the objectives of the policies of Priority 1 "Education and Skills" of the National Development Program Bulgaria 2030 in the part for pre-school and school education, vocational education and training and lifelong learning and has 9 priority areas identified. These are:

- early childhood development: competencies and talents;
- motivated and creative teachers;
- cohesive school communities and systematic work with parents;
- effective inclusion, sustainable inclusion and educational integration;
- educational innovation,
- digital transformation and sustainable development
- realization in the professions of the present and the future;
- lifelong learning;
- efficient management and participation in networks.

Within the Operational Program "Environment" 2014-2020, opportunities are created for additional temporary and permanent employment in a number of fields, most of which require green skills. A report states that the “green economic development must be seen in the context of the overall development of the national economy, based on a drastic increase in energy efficiency and the transition to production based on knowledge and innovation”. (Miteva, 2017) According to the Panel on Education for Sustainable Development, “education for sustainable development is the type of education that teaches young people, communities, businesses and governments today and in the future how to lead a sustainable lifestyle, giving them an understanding of economic, social and environmental issues.” Hence, only through ESD, implemented in a structured, intentional and well developed manner, can Bulgaria truly fulfil the goals set out in this programme.

Currently, according to the Law on Public Education in force as of 31.08.2012 (Art. 15 and Art. 16), the State Educational Requirements (SER) determine the level of the necessary general education and vocational training, the curriculum, the content of textbooks and extracurricular and extracurricular activities. SERs are developed by the Ministry of Education, Youth and Science. Twice a year textbooks available are being reviewed and designated and the topics that are to be studied are determined by the State. When considering ESD, there are already themes integrated within high-school subjects. However, no clear curricula, set of lessons or a programme is currently available and approved on the State level for the target age group of the TREE project. This has not stopped VET institutions however and other organisations to work on courses and start integrating ESD in different forms in their work, largely underpinned by the market needs and the interest of the students.

III. Sustainability: partner countries approach and priorities

a. Partner country’s policies and Circular economy

According to the national report, the Netherlands has a leading position in the field of circular economy and sustainable procurement by the government itself. Progress is also being made in other environmental themes, but there is also room for improvement. That is the conclusion of the European Union in its biennial Implementation of EU Environmental Policy 2019. The EU calls the Netherlands "an example for public-private cooperation" in the circular economy. The Netherlands national government (Rijksoverheid) supports sustainable economic growth with various subsidy schemes for entrepreneurs. The subsidies for sustainable business can be found on the website of the Netherlands Enterprise Agency (Rvo.nl). According to reports, the number of green public procurement contracts is already higher than the Commission's recommendation. As far as water and air quality and nature conservation are concerned, Europe sees "some progress" in the Netherlands but also "room for improvement". The country’s aim is to create a truly ‘circular economy’ over the next 30 years, with the stress on using products and materials that can be re-used, recycled and

ultimately disposed of in an environmentally sound way. To this end the government submitted the policy paper 'Netherlands Circular in 2050' to the House of Representatives in 2016. In the follow-up of this policy ambition, the National Agreement on the Circular Economy (Country report on the three priority area's of the UNECE strategy for Education for Sustainable Development.) has been signed by more than 300 businesses and social partners like NGO's. At the beginning of 2019 the Dutch Cabinet presented the implementation program for the circular economy. This implementation program presents concrete actions and projects for the period 2019-2023 for the sectors: biomass and food, plastics, manufacturing industry, construction and consumer goods. Based on Fifth Dutch National (Fifth Dutch National SDG Report, 2021) in the Netherlands The government prepared document action to promote the long-term development of Dutch industry in the light of developments (Fifth Dutch National SDG Report, 2021) such as sustainability and digitalization. Furthermore, the local and provincial authorities are working on the circular economy (SDG 12) through the Circular Economy Implementation Programme.

The Netherlands government (Government on Circular Economy) has set out three goals aimed at making the Dutch economy circular as quickly as possible:

1. Ensure production processes use raw materials more efficiently, so that fewer are needed.
2. When new raw materials are needed, use sustainably produced renewable (inexhaustible) and widely available raw materials, like biomass – raw material made of plants, trees and food waste. This will make the Netherlands less dependent on fossil fuel resources, and it is better for the environment.
3. Develop new production methods and design new products to be circular.

When considering Lithuania, since its entrance into the EU, the government followed and integrated European acts and policies on sustainability in its internal legislation. The more relevant documents that in Lithuania integrated measures of circular economy are several, starting from naming the Lithuanian Law on Waste Management, in 1998 ("the main law regulating waste management, including recycling") and the Lithuanian Law on Packaging Management (2001), "which contains information on the use of packaging and the responsibilities of waste treatment organisations'' (Grigoryan, Borodavkina, 2017). In 2014 the National Waste Management Plan for 2014-2020 was introduced, "which emphasises the need to increase the efficiency of waste use" (Grigoryan, Borodavkina, 2017). Following the timeline, in 2015, Lithuania adopted a new development strategy that includes using alternative fuels to increase energy efficiency, revising recycling policy and making production cycles sustainable (Grigoryan, Borodavkina, 2017). In 2016, the government ratified the "National Environmental Protection strategy", that sets out a range of principles and objectives until 2030 about four main axes: sustainable use of natural resources and waste management, improvement of environmental quality, maintenance of ecosystem stability, and climate change mitigation and adaptation (OECD, 2021).

In addition, Lithuania has undertaken two important initiatives on sustainability and the EC:

1) the inclusion of Green Public Procurement (GPP) as a criterion of horizontal sustainability (CircPro interreg Europe, 2020) in the National Progress Programme (NPP). The NPP is the main document that plans the strategic goals to be achieved by 2030, in which it is stated: "we must combine efforts to successfully address the issues of sustainable development, environmental protection, energy, transport, the economy and the building of democracy" (Council for State Progress, 2012). Based on the recommendations of the European Commission, Lithuania seeks to achieve 55% of GPP from all public procurement by 2030.

2) the project "Roadmap for Lithuania's Industrial Transition to a Circular Economy", an action plan for industrial transformation towards a circular model, implemented by the Ministry of Economy and Innovation in 2019 (CircPro interreg Europe, 2020).

In 2019, the government adopted the National Air Pollution Reduction Plan and presented its long-term National Climate Change Management strategy, setting a net-zero carbon emission target by 2050. This initiative was followed by the 2020 fiscal incentive package, which also contains some investment programmes with environmental goals, improving energy efficiency, promoting renewable energy and improving the competitiveness of the energy sector. Among the programmes there are the Climate Action Programme and the Multi-Apartment Building Renovation Programme (OECD,2021).

As an EU member state, Bulgaria has an approach to sustainability aligned both with Sustainable Development Goals and the relevant EU policies. However, the country is reportedly falling behind in terms of reaching some of the goals set forth.

During the international forum "Green Transition - Solutions and Challenges for Bulgaria", organized by Dir.bg and 3eNews (Stefanov, 2021), the Deputy Minister of Economy Ivelina Peneva stated FLAG Fund is preparing a mechanism for new BGN 200 million for investment projects of the municipalities. According to her, this is underpinned "by the fact that Bulgaria is among the countries most affected by the transition to climate neutrality due to its dependence on fossil fuels and carbon-intensive processes. A complete restructuring of the currently dominant linear economic model is needed, and the introduction of circular economy practices is an extremely necessary and important element in this process. (Tzvetanska, M.,2020). This calls for a fast, but sustainable change.

The National Strategy for Transition to Circular Economy (2020) defines it as a model aimed at extending the life cycle of products. In practice, this means sharing, borrowing, reusing, repairing and recycling existing materials and products for as long as possible. When a product reaches the end of its life, the materials of which it is composed continue to be used in a different way. This minimizes waste generation. The Strategy was prepared in implementation of measure 589 "Preparation of a National Strategy in connection with the circular economy package of the Government Management Program of the Republic of Bulgaria for the period 2017 – 2021 and is aligned with the targets set forth by the European Commission. Furthermore, it is a part of a package of measures of the Government of the Republic of Bulgaria for the transition to a circular economy at the national level and has a implementation period of 2021-2027.

Bulgaria's approach to circular economy is long-term. The National Development Program: Bulgaria 2030 prioritizes the "circular and low-carbon economy". Currently, the eco-inovation index of Bulgaria is low compared to other EU states. This is why the Strategy puts a focus on Small and medium-sized enterprises (SMEs). In addition, the government has developed The National Strategy for SMEs, which sets out six priorities, one of which is the Environment. With regard to the circular economy measure, the aim of the SME Strategy is to better integrate SMEs into the circular economy, to improve recycling practices in the largest waste-generating SMEs; more efficient schemes for extended producer responsibility, covering more waste streams, wider use of secondary materials by Bulgarian SMEs, including through industrial symbiosis.

b. State of the Art in partners' countries

When we are considering State of the art, all 3 countries have provided examples. In the Netherlands, reportedly there is at least one organisation in each sector, that relates to sustainability in one way or another. For instance:

- Dutch Cosmetics Association provides answers to frequently asked questions about (micro) plastic in cosmetics
- Nederland Schoon provides information about trash
- Plastic Soup Foundation14 organizes campaigns against litter, such as World Cleanup Day.
- The North Sea Foundation organizes the Beach Cleanup Tour every year.
- Wageningen University conducts research into plastic in the sea and the influence on animals.
- The Ocean Cleanup is designing and developing clean-up systems to clean up what is already polluting our oceans and to intercept plastic on its way to the ocean via rivers.

In Lithuania, over the past nine years, along with business investment in non-technological innovation, Lithuania's openness to eco-innovation has begun to grow. Since 2010 Lithuania has moved from 23rd to 16th place in the eco-innovation index published by the European Commission, and today it is ahead of its neighbours Latvia and Poland. It is important to note, that the development of the circular economy in the country would also be stimulated by a specialized knowledge dissemination center - a cooperation platform where various stakeholders would have the opportunity to implement joint initiatives, develop inclusive innovations or apply good circular economy practices in their activities.

In Bulgaria, there are currently a couple of examples of *"state of the art"* projects and organisations related to circular economy, green skills and ESD.

- One of them is the Institute for Circular Economy (ICE), which is a Bulgarian NGO active at the intersection of circular economy, biomimicry and regenerative development. As an organisation, the ICE strive to provide brilliant consulting service, design excellence and innovation to create products and business models that enrich people's lives and help partners succeed.
- TIME Ecoprojects Foundation Project. As a result of this TIME Ecoprojects Foundation activity, a report was prepared on the views and motivations of young people on development, as well as initial ideas for the content of the educational packages under the project (P2PChallengePacks). (P2PChallengePacks, information about which can be found here: http://www.poverty2prosperity.eu/bg/pages/).
- Most important however is the **Innovation and Competitiveness programme 2021-2027** part of the National Strategy. The program was developed in response to the European Green Deal. Among the three main priorities of the Program is the Circular Economy.

c. Questionnaires and semi-structured interviews results

Questionnaires were distributed within all partner countries, and semi-structured interviews were conducted both with companies and VET teachers. The results have been presented in detail within the National reports. In this section, the summary of results for each of the countries is included.

In the Netherlands, this part of the research was conducted in the period January-March 2022. 8 teachers from local VET schools, four NGO's and four companies participated, with a total of 16 respondents.

Findings from all respondents:

- familiar with SDG
- organizations implement sustainability principles and use circular economy principles
- they have to think and find a way how to think, work in a more sustainable way
- organizations have sustainability implementation strategy
- mentioned that they are not using the term "green skills" for the job market, but they are all familiar with green skills and competencies related to the CE.
- All respondents agreed on the importance of green skills, but added these to the list: ✓ Re-using skills ✓ Visibility ✓ Communication ✓ Cooperation ✓ Sharing ✓ Openness for changes ✓ Innovativeness ✓ Cooperation skills ✓ Volunteering skills

In Lithuania, 34 teachers from 5 Lithuanian vocational schools, 18 respondents from companies that apply the principles of sustainability and 4 respondents from NGOs operating in the fields of environmental protection, innovation, CE and others participated in the TREE project survey conducted by Kėdainiai Vocational Educational Training Center on CE and sustainability.

Below, some of the results can be seen:

1. 44.1% of VET teachers and 54.5% of respondents from companies and NGOs are informed about the circular economy. 9.1% of institutions' representatives are very well informed about the CE. The rest have no knowledge at all or have only heard of this concept.
2. 94.1% of respondents believe that VET institutions can benefit from including a training course on sustainability and the CE in their curricula. According to them, students support the "circular" lifestyle, but do not have established habits to save raw materials and energy, sort waste, and give up consumerism.
3. Respondents (72.7%) from the NGOs indicate that they seek not only to spread the idea of responsible activity, to show and to follow examples, when implementing the principles of social responsibility in Lithuanian business, but also to form the criteria for responsible activities.
4. The most important green skills for the labour market are waste management, pollution prevention and smart thinking.
5. Vocational school graduates are only partially aware of sustainability, the CE and the green skills they need. Science skills and ecosystem management skills are the most lacking ones.
6. Learning about the circular economy and sustainability benefits students in a number of ways: in terms of assessing and changing knowledge, attitudes, skills, personal habits, and in terms of sharing useful information with peers.
7. Training in the circular economy and sustainability should be available through a variety of means (digital, video, paper, etc.) and should be flexible and attractive. They should be carried out through practical activities and the use of digital tools.
8. The plastics and wood sectors are most strongly associated with smart thinking, pollution prevention and waste management skills.

9. 4.5% of surveyed institutions expressed a desire to participate in the TREE project by helping to define green skills and at the same time to run a training course on the circular economy and sustainability.

Four NGOs and 1 company, as well as 10 teachers took part in the survey in Bulgaria. Based on the results, it can be concluded that all respondents note the topic of sustainability and the circular economy as very important and relevant today, and green knowledge and skills as essential for future staff in the market labour. Differences are observed in the attitude of business and teachers to the degree of importance of knowledge, business attaches greater importance to knowledge of sustainability and the circular economy, while teachers believe that they are not needed to such a high degree. This makes the project even more important in order to equalize and synchronize the requirements of the business to the staff for knowledge and skills in this new field, the curricula and the requirements of the teachers to the importance of the topics of sustainability and circular economy.

An interview was also conducted with one of the partner organizations. The main path to be taken in the education of students must meet the needs of today's society in the direction of environmental behaviour and sustainability. The respondent identifies the following important guidelines:

- For understanding the concept of circular economy, it is of key importance to develop knowledge, values, attitudes, leading to positive actions aiming at transition to zero waste.

- Possession of skills for eco-friendly employment opportunities is gaining importance in our times. Therefore, it is necessary that we pay attention to covering the requirements for various positions included in the green economy strategies, because the transition towards such an economy leads to structural changes in the labour markets. The transition mostly affects the already existing professions. The practice shows that vocational profiles in the different sectors change substantially under the pressure of pandemics, digitalization and globalization, which requires new different skills.

- At present, different programs are providing training opportunities for young people. It is of major importance for the training courses provided to young people, seeking job opportunities, to cover skills and qualifications, which are important for the labour market, including skills, which are relevant to the "green" economy, which are gaining positions in relevance and necessity. Since the probability of young people with low qualifications to be unemployed is greater compared to those who are qualified, the training courses should be focused on providing vocational skills, which can lead to sustainable employment.

- The transition to circular economy will lower pollution, with ameliorate the supply of raw materials issue, will intensify the innovations and competitiveness. Such a change has a potential to at least 1% to the GDP of the EU and to create new jobs in Europe. The users will gain access to more sustainable and economic products, which is of great importance.

IV. Review of VET schools

When it comes to VET schools, there is a substantial difference among the partner countries in terms of status, alignment with the SDGs and integration of ESD.

It can be stated, based on the research conducted, that the Netherlands is ahead in comparison to the other partner countries. In May 2020, the Secondary Vocational Education (MBO) Council signed Nederland's SDG Charter on behalf of its member schools, underscoring the importance of the 17 SDGs and encouraging the schools to make an active contribution to them. A growing number of schools are individually endorsing SDG Nederland's vision and conditions. The SDGs increasingly form an important framework for MBO schools in their capacity as both educators and organisations. The Council is also incorporating the SDGs in its multiyear outlook for vocational education. MBO schools prepare students for the world of work, further training and good citizenship, and thus for a future role in society. The private sector works with the education sector to set the requirements for MBO qualifications. It is important to note, that the circular economy, the energy transition and climate adaptation have been standard components of the occupational profiles of every MBO course since 2019. Aspects of sustainable development and the SDGs therefore play an increasingly important part in MBO courses.

According to the research, some schools explicitly discuss the SDGs in their communications, on their websites, or include the SDGs in their mission statements. At other schools, the link with the SDGs is less explicit, but they devote attention to them in various projects and courses. Furthermore, the vocational research platforms ('practoraten') also work with the SDGs. The vocational research platform on sustainable thinking and sustainable action ('Duurzaam Denken Duurzaam Doen') integrates the 17 SDGs into MBO courses. Other vocational research platforms focus on specific clusters of SDGs, such as the Circular Agribusiness platform.

In Lithuania, the importance and the future role of Circular Economy is acknowledged. Several examples of this were presented within their National report, however no comprehensive ESD curriculum was reported to be in place. For instance:

- Panevėžys Labour Market Training Centre plans to integrate the topics of the CE into the curriculum and provide students with information on the topic, to teach how to organize activities during practical training in order to generate as little waste as possible and how to use the remaining raw materials and waste. During the mobility activities of the transnational project, students will share good practices, gain new knowledge and experience and be able to apply their knowledge in practice.
- Kėdainiai Vocational Educational Training Centre's community puts efforts for the sustainable use of energy and natural resources: it saves electricity, reduces the use of paper, and sorts waste. Together with a science teacher, students conduct physics research to promote energy saving and participation in Nationwide conferences.
- Students of Kaunas Vocational School of Household Services and Business participated in the project "Ecology and Me". Pupils learned how to use already used objects and their parts, acquired new skills by performing practical tasks.
- In 2019-2021, Šiauliai Vocational Educational Training Centre participated in the Erasmus + project "Let's Save Our Seas" in order to contribute to solving ecological problems through its practical activities.

In Bulgaria, according to the latest national statics for education, currently on the territory of Bulgaria there are 350 VET schools and 21 professional colleges, and all provide a wide range of educational priorities, courses and specialisations.

ECVET, which is the European Credit system for Vocational Education and Training, a tool that supports lifelong learning and flexibility in learning pathways, including EU Mobility(http://eu-mobility.eu/what-is-ecvet/) has been greatly influential in terms of VET schools in Bulgaria. In 2014, the Vocational Education and Training Act (VETA) marked the beginning of regulations governing the accumulation and credit transfer in VET. In the same year, the section "Validation of professional knowledge, skills and competencies" was introduced in the Act. (Tsvetanska, Dimitrova, Mihailova, Vocational education Volume 20). The application of the ECVET principles in the development of National Educational Standards for the Acquisition of Professional Qualifications makes it possible to ensure transparency and comparability of professional qualifications at both national and European level. Since 2014, this process of implementation and integration has been carried out through cooperation between the Ministry of Education and Science, NAVET and HRDC. A national team of ECVET experts was also formed with the aim to promote the credit transfer policy in VET.

However, according to the research, there is a clear need for the development of new skills, in accordance with the needs of the market and the sustainable future, in order to ensure employability of VET graduates. It has to be noted that there are a number VET schools that engage in sustainable projects and teachings. The Ministry of Environment, already in 2012 conducted an "Environmental Education"Roundtable where the integration of education for sustainable development and environmental protection in schools to be horizontal by being integrated into the curricula of various subjects(MOEW). In addition to that a Memorandum of Cooperation on Environmental Protection between the Ministry of Education and Science and the Ministry of Environment and Water was signed in January 2004. Since then, what has been observed is the emergence of active NGOs, 3 DIUU, which provide courses on various aspects of the environment, as well as opportunities for obtaining a professional qualification degree; integrations of ESD topics and an increase in the number of extracurricular activites related to sustainability.
A review of the Programme for education for Sustainable Development in Bulgaria suggests that there is still no fully implemented model for ESD in VET schools, as well as that there is insufficient training of pedagogical staff regarding the limited use of the interdisciplinary approach and the methods for developing attitudes and skills in the teaching process.

Even though ESD is currently not fully integrated and it is not the main priority of VET schools in Bulgaria, there have been positive developments. Namely, the establishment of an Advisory Board by order of the Minister of Education and Science to support ESD in Bulgaria; support for ESD initiatives by the Ministry of Environment and Water and the Ministry of Education and Science; and the growing interest from both students and teachers to receive training in ESD and green skills.

V. Review of sectors included in the TREE Project within partner country

a. Plastic sector

The plastic sector, out of the three included in the project, the one that has seen the most regulations in place and the most attention in terms of sustainability.

The Netherlands government emphasize that with regard to plastic products and packaging and other major material flows (Netherlands Enterprise Agency), efforts are focused on improved design, reuse and recycling. Various collaborations are emerging between waste processors, recycling companies and chemical companies with a view to investing in the chemical recycling of plastics. Large-scale demonstration projects for the conversion of plastic waste into new raw material for the chemicals industry will be carried out over the next few years, with support from the Ministry of Economic Affairs and Climate Policy. In 2020 the Ministry of Infrastructure and Water Management supported chemical recycling through the DEI+ scheme for circular economy and the 'Versnellingshuis', which advises companies wishing to become circular. Furthermore, reportedly biobased feedstock is already being used on a commercial scale in the production of biofuels. Demonstration projects for new technologies like pyrolysis and gasification of biomass for fuels and chemicals will be set up over the next few years.

In Lithuania, in 2016, the plastic waste production in Lithuania amounted to 88.74 thousand tonnes and to 68.74 thousand tonnes in 2017. According to a study carried out in Kaunas in 2021, plastic is the second most used material (after paper and cardboard) in packaging due to its properties, such as low density and thermal conductivity, chemical resistance, transparency, economical production process, etc. (Mickevičiūtė et al., 2021). If it is difficult for companies to replace and find an alternative material to plastic due to its characteristics and costs, it is even more difficult for citizens, who struggle to reduce the purchase of plastic products. Reportedly, in recent years, Lithuanian citizens' awareness of the damage caused by plastics has increased: "in the 2017 Special Eurobarometer 468 on EU citizens' attitudes towards the environment, 88% of Lithuanians said they were concerned about the effects of plastic products on the environment (EU-28 average 87%)" (European Commission, 2019). In 2016, the Lithuanian government introduced one of the most important regulations contributing to plastic recycling: the National Deposit Return System (DRS) for single-use plastic and glass bottles and metal cans. Large and also small shops have to host "reverse vending machines" (there are more than 1,000 throughout the country), which accept used beverage containers and return the deposit paid in the shop in return (0.10 euro per deposit). The packaging collected from the vending machines is sent to recycling centers where the plastic is processed and made into new products (Green News, 2018). The scheme has been a success, with Lithuania having one of the first positions in the EU in terms of recycling.
An interesting initiative implemented to eliminate plastic use is biodegradable plastic, that a group of scientists at Kaunas University of Technology (KTU) has created. The packaging created by the researchers is fully compostable for food products, and it disintegrates with the help of microorganisms.

In Bulgaria, according to the National STRATEGY FOR TRANSITION TO CIRCULAR ECONOMY 2021-2027, the production of plastics in primary form in Bulgaria in 2019 amounted to 175 thousand tons, while the production of plastic products is significantly higher and exceeds 500 thousand tons. The significant production of plastic products in the country provides an opportunity for recycled plastics. Bulgaria has made significant investments in recycling plastic, and has continued to exceed its capacity for that. A number of companies have emerged within the private sector that deal specifically with

that and are growing. It is fair to say however, that additional efforts are required. Recently, in 2021, the government adopted an Ordinance on reducing the impact of certain plastic products on the environment, which introduces requirements of European legislation. Reportedly, measures are being introduced to reduce the consumption of disposable plastic cups and food cans, as well as new requirements for the design and production of certain products in order to reduce their waste and encourage recycling. (Darik News). In addition to that, local companies are obliged to invest 30% of recycled raw materials in beverage containers. Both the pressure from and the information to the consumers has been increasing in the last several years. National information campaigns, collection campaigns with a charitable profile and additional requirements for the expansion of existing systems for collection of packaging waste have really pushed the green agenda.
Restaurants and take-aways have a cap on the use of plastic resources and consumers more and more use reusable bags, separate their waste and focus on products and stores that provide a sustainable alternative.

b. Agrifood sector

In terms of the Agrifood sector, the three partner countries pertain that it is of great importance for their respective economies, and also acknowledge its complexity in view of sustainability.

In the Netherlands, the valueof agricultural exports in 2021 (AgroFood Portal) was estimated at 104.7 billion euros, a record. Wageningen University & Research (WUR) and *Statistics Netherlands* (CBS) report this on the basis of joint research commissioned by the Ministry of Agriculture, Nature and Food Quality (LNV). The growth of agricultural exports is due to both an increase in prices and a growth in export volume. Based on CBS report (*The Sustainable Development Goals: the situation for the Netherlands*) agricultural productivity, the Netherlands, together with Denmark, has been in a leading position in Europe for a considerable time. Since the turn of the century, production volume per unit of labour has risen by more than 41 percent in the Netherlands.

Agriculture is an important area in the Lithuanian economy as it generates 3.6% of the country's GDP, while the entire agri-food sector generates 7.1% of the GDP (Eitfood,2022). Nowadays there is a lot of talk on the importance of sustainable development in the agriculture sector. What fostered the development of sustainable agriculture were: Lithuania's accession to the European Union (with the introduction of the European agro-environmental rules); documents such as the SAPARD program (Special Accession Programme for Agriculture and Rural Development), training of farmers, Rural Development Plan (2000-2006) and Rural Development Programs (2007-2013, 2014-2020). The main objectives of the Rural Development Program included the modernisation and improvement of the economic performance of small and medium-sized enterprises (with 13 000 farms supported), protection of biodiversity (11 % of agricultural land), improved soil management (8 % of agricultural land), promotion organic farming, the creation of new jobs (more than 2 000) and the development of rural areas. It also provided training for 149 000 people (farmers, owners, managers, food business operators, foresters and rural SMEs staff) to improve their skills. A series of studies revealed that farmers' understanding and attitudes toward sustainable agriculture improved during the period 2010-2018, but also that they participate in programs on sustainability agricultural practices when supported by higher payments (Mierauskas, 2020).

However, there are still many challenges in the development of sustainable agriculture and several problems such as distrust in the quality of work, low incomes and lack of collaboration between

agribusiness actors need to be more carefully considered. The lack of recognition of the economic benefits of obtaining services and practices on machinery sharing, adequate information on portals and platforms, are crucial points for the achievement of sustainability goals (Ramanauskas et al., 2021). Hence, the main objective of the Lithuanian government is to digitise the entire food value chain at all levels and exploit the potential of agri-food technology innovators based on sustainable agriculture, digital traceability, circular food systems and targeted nutrition (Eitfood, 2022.).

The challenges faced by Lithuanian SMEs in the agri-food sector are numerous: the above-mentioned low level of digitisation (the rural areas where they are located have limited access to the Internet), the low incomes of rural farmers, the high cost of ICT infrastructure and the insufficient number of staff to manage it. ICT companies, often located in urban areas, are unfamiliar with the technological needs of the agri-food sector, while the agricultural sector could benefit from ICT to solve multiple problems in various areas, such as irrigation, pesticide and fertiliser application, and crop, soil and livestock monitoring (Bičkauskė et al., 2020).

In Bulgaria, the Ministry of Agriculture is the governing institution of the sector. It has implemented The Common Agricultural Policy (CAP), which is an integral part of the agreements that established the European Community (EC). The CAP is based on three fundamental principles: free trade within the Community based on common prices, preference for Community produce in Community markets, and joint financial responsibility.

The Vision of the Republic of Bulgaria for CAP after 2020 concludes with the following goals:

- to maintain its character as a common EU policy, including in its financial dimension;
- to ensure food security and the health of citizens;
- to ensure the sustainability and competitiveness of agriculture;
- to ensure a level playing field for all farmers in the single market;
- to promote the socio-economic cohesion of rural areas;
- to support the development of small and medium-sized agricultural holdings;
- be simple and understandable for beneficiaries and European citizens;
- be environmentally friendly, promote the efficient use of natural resources and measures to combat climate change

The last goal is of particular importance not only for the TREE project, but for the sector as a whole. Currently, based on the results of research on the environmental sustainability of Bulgarian agriculture through a wide range of criteria, the sector is at a good level (Mitova, D. 2021).

According to a recent report, Bulgarian farmers forecast weaker yields, with lower quality, and hence lower incomes, as a result of the new green policies of the EU. At the heart of their concerns is the significant reduction in the use of pesticides and fertilizers by 2030, writes EURACTIV Bulgaria. The Bulgarian Ministry of Agriculture told at the end of 2020 that it received recommendations for the reduction of pesticide use from the EC. The analysis of the economic effects has not yet been shared and there is insignificant information in terms of measures that would be implemented.

Another aspect of agrifood and its relations to sustainability is food waste. In Bulgaria, reportedly the total amount of food waste generated is significant - about 500 thousand tons. Bulgaria is now in the process of preparing a National Program for Prevention and Reduction of Food Loss, which will cover all stages of the food chain: primary production; processing and production; retail and other distribution; restaurants and catering services; and households.

A key aspect is biomass energy production. Currently, in the country, its production exceeds 1 million tons, which represents over 10% of the total energy consumption in the country. Households consume

70% of the energy produced from biomass. However, according to the National Strategy for transition to circular economy, there is a very large untapped potential in the recovery of solid agricultural waste from corn stalks for grain, sunflower and others, which is estimated at over 2 million tons per year. ("ENVIRONMENT 2014 - 2020" STRATEGY FOR TRANSITION TO CIRCULAR ECONOMY 2021-2027: Project 2020). This shows the potential for development and the integration of a sustainable and profitable practice within the sector.

c. Wood sector

Approximately half the forest area in The Netherlands has been certified for sustainable forest management (System Transition Wood Construction NL, 2020). In recent years, the amount of timber in the woodlands has increased steadily, due to reduced harvesting activities.
Wood is an important renewable resource, which is neutral in terms of carbon dioxide emissions, however, in the policy paper "Nature for people, people for nature" in which the Dutch nature conservation policy is described in detail, and in which the forestry policy is included, wood production and timber harvesting are not mentioned explicitly. (Dutch Timber Platform Ministry of Agriculture)

By applying a systemic whole supply chain transition approach, the Netherlands hopes to achieve a 30% increase in the use of wood in housing and office buildings in the Netherlands within ten years. In an attempt to make this a reality, the project mobilizes up to 100 different partners from governments, companies, advisories, and NGOs to achieve an annual carbon saving of a minimum of 5% of the Netherlands' yearly carbon footprint. No fewer than 23 parties are joining forces with the Covenant on 'Promoting sustainable forest management' to make wood from sustainably managed forests commonplace in the Netherlands. In addition to the Ministries of Foreign Affairs, 13 branches in the timber, construction, furniture and retail chain, FNV, CNV and 7 civil society organizations have signed the Covenant.

Forests are essential for the ecological stability of Lithuania for their role in ensuring a high air, water and soil quality. Currently, the land devoted to forests occupies 33.7% of the area of the country and generally the condition of the habitats of the rarest species is poor. In Lithuania over 60% of forested land belongs to the State, while 40% is owned by private individuals and companies.

The Lithuanian Forestry Law stipulates that the general volume of all annual forest cuts cannot exceed the gross annual increment of trees. The volume of main annual forest cuts in State's forests is kept under control by the government, while this volume becomes higher in private forests that are more price-sensitive (USDA, 2017).

Statistical information on the wood production sector does not present a complete picture of the timber market in Lithuania, and the freely accessible published data are outdated. This is because the wood products industry "*is adverse to sharing information or promoting its potential and business opportunities"*. The fastest growing segments of this sector are the furniture and paper industries. The Lithuanian Statistical Office shows that *"the furniture industry is one of the most important manufacturing industries in Lithuania, after food and beverage production"* (USDA,2017). In fact, over 30% of the jobs available throughout the Lithuanian manufacturing industry are provided by the furniture and wood processing industries.

Foreign investments have also contributed greatly to the development of the sector: Scandinavian companies,(especially IKEA), are the main players in the Lithuanian furniture market. Statistics show

an increase in furniture sales linked by exports, with a good foreign trade network, but also furniture imports are significant (USDA, 2017).

Lithuania has transferred its district heating (the district heating system generates heat in a centralised location and distributes it amongst multiple different buildings), which accounts for 40% of the country's energy consumption, to 70% of energy from biomass. Lithuania actually is one of the leading consumers of renewable energy in Europe, with 34% of all energy consumption from renewable sources (Zachary, 2021). In this context, wood chips have become the most important commercial product for energy production, and their quality has become a subject of study. (Pedišius et al., 2021).

The wood sector in Bulgaria is marked with challenges. According to the results of a project conducted in 2018, the forest territories of Bulgaria occupiy 4,148,114 ha or 37.4% of the country's territory. The state ownership over the forest territories prevails - 74.5% of their total area. (Chobanova, R, Kotzarev, L., 2018). According to the same report, as well as numerous news articles and other official reporting, illegal logging and poaching are one of the most important problems related to the protection of Bulgarian forests. For the period 2005-2010 the average annual growth increased from 14.1 to 14.4 million cubic meters of wood. (Chobanova, R, Kotzarev, L., 2018) This is due to issues of "grey economy', insufficient funding and control measures. Companies are not held liable, and numerous individual also tap into this resource without adhering to the set out regulations.

Another issue related to the wood sector reportedly is the fact that due to forests' locations, landscape and problems with infrastructure that does not allow the movement of timber, there is an "excessive use of wood" in certain areas with a disregard to the effects on the environment.

According to the National Strategy for Development of the Forest Sector in Bulgaria, 2013, some of the main challenges to the development and sustainability of the sector are:

• low labor productivity;
• difficult access to funding; Chapter One. Trends in the forest sector - global and regional challenges
• lack of opportunities to use funds from the EU structural funds to invest in the renewal of equipment in logging, machinery, production lines and transport of forest products;
• insufficient participation (support) by banks in investment projects;
• low share of certified forest areas and certified forest entrepreneurs

Although the sector provides opportunities and can be developed in a sustainable and profitable manner, the required actions have not been taken. The sector is directly related to the construction sector, which is quite prominent in Bulgaria, as well as to the energy sector.

It is clear that there is both a need and interest in moving the sector to a more "green" exploitation.

VI. Relevance of the TREE project in relation to partner countries

Based on the research conducted, some key take-aways can be extracted.

- ESD is widely accepted and there is acknowledgement of its importance for the future workforce
- Circular economy and green skills are becoming focal points in the economic development and the needs of the business
- Governments are taking steps in boosting sustainability, integrating related measures
- ESD has not become an integral part of VET schools' curricula, but there is a definite interest in that both from the schools and from the companies
- All three sectors, selected in this project are of crucial importance to the countries' economy and all require further measures in terms of sustainability
- There is a clear need in all partner countries for ESD, green skills and green jobs

VII. Good practices from partner countries: examples

1	**Title**	"CIRCular Economy through Integrated LEarning in VET: CIRCLE"
2	**Country**	Lithuania, Spain, UK, Italy, Turkey
3	**How is/was it promoted?**	Within the framework of ERASMUS + Strategic Partnerships for vocational education and training
4	**Context of implementation**	X large city ☐small city ☐village
5	**Goals of the activity**	The "CIRCular economy though integrated LEarning in VET", has been developed to support trainers in vocational training, introduce the concepts of the circular economy to students in the toursim, transport and agricultural sectors.
6	Description	a. The activity was relevant to the topic of X circular economy (CE), ☐ education for sustainable development (ESD), or ☐ both CE and ESD b. Main Steps The project (N°: 2019-1-LT01-KA202-060517) involved 5 qualified partners from different fields and coming from 5 countries (LT, TK, IT, ES, UK). The coverage of the project is extensive: it outlines a circle path that crosses Europe reflecting its diversity: starting from Lithuania (VET provider), passing through Turkey (Chamber of Commerce), Italy (social communication and training research SME) and Spain (language training SME) it arrives to UK (Higher Education Institute). The key words of the CE: share, repair, recycle, reuse and remanufacturing should become familiar to all of us and reshape our way of thinking. In this context education plays a crucial role: by the VET system and by the medium of the

		professionals operating within the system, it is possible to contribute to mainstream the principles of the CE and help people to reshape their way of living and working. Within this framework, the project aims to create a **series of tool kits for teachers, trainers, mentors and other professionals** operating within the VET system to support them in promoting the CE knowledge among learners, spreading the CE principles from bottom to top and from top to bottom. The project goal is to approach the topic breaking down the traditional barriers between disciplines, integrating the topic of CE into existing VET curricula (the project will target the following sectors: **tourism related services and other economic activities, agriculture and transport**) and making it a mainstreaming element widely testing the strategy in five countries in Europe.
7	**Implementation choices**	a. Project direct target group: VET teachers, trainers, VET students. b. Stakeholders: business sector. c. Project duration: 01-10-2019 - 31-05-2022. d. Number of sessions/activities: prepared 37 interactive online learning units. e. Teaching methodology: online learning units can be used for self-directed learning and also as the material can be used by VET teachers with students. f. Type of assessment and tools used to identify benefits: google forms was used to create evaluation questionnaire of learning material, it is available in the project website Training section. The evaluation involves: quality of the material content, usability of material for student and for organization, interactivity of the exercises, gained knowledge, skills and attitudes applicability within the workplace, usability of the website. The learning units materials provided in project website include (a) a presentation in powerpoint suitable for downloading and adapting to training needs, (b) an interactive version of the power point (H5P tool), (c) an interactive question

		exercise made with H5P tool and (d) a learning plan for use with vocational students (pdf) Readiness tool is a quiz to test your knowledge (H5P tool). H5P tool was used to create interactive quizzes, that engages learners more into learning process. Generic Training section online recourses has units: Unit 1A. Intense Use of Resources Unit 1B. Linear versus Circular Economy Models Unit 2A. Business Case for Resource Efficiency Unit 2B. EU and Circular Economy Unit 3A. Business Models for Circular Economy Unit 3B. Implementation, Barriers and Overcoming Challenges Agriculture and the Circular Economy section online recourses has units: Unit 11A. Closing the Nutrient Loop Unit 11B. Precise and Rational Use of Herbicides and Pesticides Unit 12A. Avoiding Food Waste from the Origin Unit 12B. Handling Food Waste from the Origin Unit 13A. Non-natural Waste Management in Agriculture Unit 13B. Adding Value to Organic Waste Unit 14A. Reduction of Agricultural Carbon Footprint Unit 14B. Carbon Capture and Sequestration in Agriculture Tourism Training section online recourses has units:

		Unit 4A. Tourism Accommodation and Food Unit 4B. Tourism Accommodation and Food Unit 5A. Tourism Transport Unit 5B. Tourism Transport Unit 6A. Sustainable Event Management Unit 6B. Sustainable Event Management Unit 7A. Sustainable Places of Interest Unit 7B. Sustainable Places of Interest Transport Training section online recourses has units: Unit 8A. Circular Economy in Logistics Unit 8B. IT Applications in the logistics Unit 8C. Urban & Integrated Freight Unit 9A. Transport – Movement of People Unit 9B. Transport – Movement of People Unit 10A. CE Innovations in Vehicle Components Unit 10B. Electric Vehicles and Hydrogen Vehicles Construction Training section online recourses has units: Unit 4A. Tourism Accommodation and Food Unit 4B. Tourism Accommodation and Food Unit 5A. Tourism Transport Unit 5B. Tourism Transport Unit 6A. Sustainable Event Management Unit 6B. Sustainable Event Management Unit 7A. Sustainable Places of Interest Unit 7B. Sustainable Places of Interest

8	**Green skills targeted by the good practice**	*A) theoretically* *B) practically* ☐ Creative problem-solving A ☐ B ☐ ☐ Forward-thinking A X B ☐ ☐ Monitoring skills A X B ☐ ☐ Analytical skills A ☐ B ☐ ☐ Management skills A X B ☐ ☐ Impact quantification skills A X B ☐ ☐ Life-cycle management skills A X B ☐ ☐ Lean production skills A X B ☐ ☐ Maintenance and repair skills A ☐ B ☐ ☐ Science skills A ☐ B ☐ ☐ Waste management skills (agriculture) A X B ☐ ☐ Environmental auditing skills A ☐ B ☐ ☐ Ecosystem management skills A ☐ B ☐ ☐ Pollution prevention skills A X B ☐ ☐ Eco-Design skills A ☐ B ☐ X Other, please, specify: Resource efficiency A X B ☐ ☐ Sustainable event management A X ☐ Tourism transport A X ☐ Adding value to organic waste A X ☐ Reverse logistics system A X ☐ Reduction of agriculture carbon footprint A X
9	**Materials/equipment**	Computer, internet connection, project website, learning units.
10	***Who runs the activity***	Xa person X an organisation /institution ☐a VET school ☐a company/enterprise ☐an NGO Xother *VET teachers, trainers*
11	***Benefits and results***	

		a. The project aims at providing VET teachers and trainers, VET students with online ready-made materials to be used for transmitting contents related to circular economy, the CIRCLE website provides learning resources specific to tourism, transport, agriculture and construction. Learning units can be used for self-directed learning and also used by VET teachers in learning sessions with students. Results: readiness tool, 37 interactive online learning units, evaluation tool. Note: the project is not over, not all the material are placed on the website, for example – analysis, case studies, etc.
12	**Relevance for the TREE Project**	Projects are complementary, given the fact that the TREE project is concentrated on plastic, agrifood and wood sectors, while CIRCLE addressed topics: general CE, tourism, agriculture, transport, construction. Circle project goals reached could represent a starting point for the TREE project, that addressed in a more specific way the theme of Circular Economy and sustainable development education. The TREE project can benefit from the example of online training resources technical implementation while creating a TREE training program: "Micro-learning" lessons of information, that can be taught by teachers and assimilated by students at any time.
13	**Website** **E-mail** **Other contact info** **References**	https://circlelearning.eu/

1	**Title**	*School for green future*
2	**Country**	*Bulgaria*
3	**How is/was it promoted?**	- within the framework of a European project
4	**Context of implementation**	*The context where the best practice was developed* ☐ large city X small city X village
5	**Goals of the activity**	*This project aims at increasing the awareness of students aged 10 to 17 as well as the teachers from 9 different schools in Bulgaria on the topics of resource management, waste recycling and circular economy.*
6	**Description**	*A detailed description of the practice (500 words), describing:* a. The activity was relevant to the topic of X circular economy (CE), ☐ education for sustainable development (ESD), or ☐ both CE and ESD b. **Main Steps** (*what was the preparation, what activities the participants went through, what were the results*) The project is going through: - a research among the students' attitudes and the level of their awareness as far as the topics of waste as a resources, separate waste disposal, recycling and others are concerned. The results from the research are to be presented in a report, including also suggestions for certain topics. These topics are to be introduced in an interactive training. - good practices for developing skills among the adolescents are also collected on the topics of separate waste disposal in school and at home and for adopting extracurricular activities for developing the creative abilities of children, through which the latter can get involved in the circular economy. - the guide with good practices also includes a training programme for interactive training on topics related to environmental protection, which go beyond the curriculum. - exhibitions, campaigns for waste gathering and recycling. - purchasing and installing attractive containers for separate waste disposal. c. **Any specific theories,** which the practice was based on
7	**Implementation choices**	*Write a brief presentation of the best practice (max: 500 words) by referencing to:* a. Target groups – students aged 10 to 17 and their teachers b. Other participants in the activity, besides the promoter and the target groups (*Bulgarian association for individual alternative - Sofia*) c. Duration – 18 months

		d. Number of sessions/activities – regular activities, organized with children and teachers e. Teaching methodology, if applicable – not described f. Type of assessment and tools used to identify the benefits – not described *The activity started in late 2021 when students were already back to the physical environment. Still, it includes an interactive training programme that is using also the opportunities of distance learning.*
8	**Green skills targeted by the good practice**	*The green skills (see detailed explanations for each green skill after the end of this form), which the practice contributed to* *A) theoretically* *B) practically* ☐ Creative problem-solving A ☐ B ☐ ☒ **Forward-thinking** A ☒ B ☒ ☐ Monitoring skills A ☐ B ☐ ☒ **Analytical skills** A ☒ B ☒ ☐ **Management skills** A ☐ B ☐ ☐ Impact quantification skills A ☐ B ☐ ☒ Life-cycle management skills A ☒ B ☒ ☐ **Lean production** skills A ☐ B ☐ ☐ **Maintenance and repair skills** A ☐ B ☐ ☐ **Science skills** A ☐ B ☐ ☒ **Waste management** skills A ☒ B ☒ ☐ **Environmental auditing** skills A ☐ B ☐ ☐ **Ecosystem management** skills A ☐ B ☐ ☒ **Pollution prevention** skills A ☒ B ☒ ☐ **Eco-Design** skills A ☐ B ☐ ☐ Other, please, specify: _____
9	**Materials/equipment**	*The materials/equipment required for carrying out the activities of the good practice* Materials for art work for the students to enable them to express their thoughts and feelings in an artistic way. Exhibition stands.

		Gear for the teams implementing the campaigns. Attractive containers for waste, if this is interesting for the schools.
10	***Who runs the activity***	☐a person ☐an organization/institution X a VET school ☐a company/enterprise X an NGO x other *a network of primary and secondary schools*
11	***Benefits and results***	*(max: 500 words)* a. The benefits of this best practice for the target groups Improved awareness among the students, gained via both theoretical and practical hands-on experiences on the importance of waste management, recycling, reusing waste and transitioning to circular economy. The teachers also raise their awareness and obtain tools for transferring the impact also to the next groups of students they are about to work with during the following years. Both groups will have their habits affected, which will spill over from the target groups benefit to a community benefit. b. Community/social/economic impact Another community benefit will come from the actual waste collecting and cleaning initiatives and the campaign, which will raise the awareness of far more people than the initially involved students and teachers. The fact that there is a number of schools from a number of different settlements involved in this activity, will make sure that the benefits are felt over a large expanse of physical area and population.
12	**Relevance for the TREE Project**	*(max: 500 words)* **a. Related to one or more of the priority sectors** (plastic, agrifood, wood) Not particularly related to one sector, but as plastic is the type of waste, which is most targeted by recycling initiatives, including this one, this sector will be within the main focus of the project. **b. Involves micro- and project-based learning practices** (list and mention how) The students go through an interactive training, which requires from them to carry out project-based learning tasks.
13	**Website** **E-mail** **Other contact info** **References**	*122 Primary school „Nikolay Liliev“ – Sofia* *https://www.eeagrants.bg/programi/okolna-sreda/proekti/proekt-„uchilishhe-za-zeleno-bdeshhe“-po-„malka-grantova-sxema-krgova-ikonomika“*

1	**Title**	Tough WASTE PRODUCTS #UPCYCLEBICYCLE

		GlobalGoals in Alkmaar
2	**Country**	*The Netherlands*
3	**How is/was it promoted?**	- within the framework of a European project - within the framework of a national project - as a part of a VET school curriculum - as a part of a research programme X as initiative of person/SDG community
4	**Context of implementation**	*The context where the best practice was developed* ☐ large city X small city ☐village
5	**Goals of the activity**	To give valuable waste a second life by having it collected
6	**Description**	*A detailed description of the practice (500 words), describing:* a. The activity was relevant to the topic of ☐ circular economy (CE), ☐ education for sustainable development (ESD), or X both CE and ESD b. **Main Steps** *(what was the preparation, what activities the participants went through, what were the results*) We have shown that we can give valuable waste a second life by having it collected by people with a distance to the labor market with an electric bicycle. 2100 kilos in 3 months! Alkmaar volunteers decided to collect green waste from horeca and bring it to agro farmers. The catering industry is thanked with sunflowers from the picking garden that grew on the coffee grounds. Tough waste products is a great initiative of the circular economy - where we no longer throw things away but reuse them -... to make it small and compact and therefore super successful. c. **Any specific theories,** which the practice was based on
7	**Implementation choices**	*Write a brief presentation of the best practice (max: 500 words) by referencing to:* a. Target groups HORECA sector and agro farmers b. Other participants in the activity, besides the promoter and the target groups (*did it take place in cooperation with a company, other VET providers or an NGO*) Cooperation between community, HORECA, agrofarms d. Duration 3 months e. Number of sessions/activities

		Collected waste when volunteers were able to visit involved horeca f. Teaching methodology, if applicable Non-formal learning g. Type of assessment and tools used to identify the benefits Common reached goal, successful results, satisfaction from all involved stakeholders. *If the activity described took place during covid-19 pandemic, mention if and to what extent it has been carried out in presence and/or online. If the activity started before covid-19 and continued during, how was it adapted?*
8	**Green skills targeted by the good practice**	*The green skills (see detailed explanations for each green skill after the end of this form), which the practice contributed to* *A) theoretically* *B) practically* ☐ Creative problem-solving A ☐ B x ☐ **Forward-thinking** A ☐ B ☐ ☐ Monitoring skills A ☐ B ☐ ☐ **Analytical skills** A ☐ B ☐ ☐ **Management skills** A ☐ B x ☐ Impact quantification skills A ☐ B ☐ ☐ Life-cycle management skills A ☐ B ☐ ☐ **Lean production** skills A ☐ B ☐ ☐ **Maintenance and repair skills** A ☐ B ☐ ☐ **Science skills** A ☐ B ☐ ☐ **Waste management** skills A ☐ B x ☐ **Environmental auditing** skills A ☐ B x ☐ **Ecosystem management** skills A ☐ B x ☐ **Pollution prevention** skills A ☐ B x ☐ **Eco-Design** skills A ☐ B ☐ ☐ Other, please, specify: _____ Cooperation skills Volunteering skills

9	**Materials/equipment**	*The materials/equipment required for carrying out the activities of the good practice* Bicycles, containers
10	***Who runs the activity***	☐a person ☐an organization/institution ☐a VET school ☐a company/enterprise X an NGO ☐other *(please, describe)*
11	***Benefits and results***	*(max: 500 words)* a. The benefits of this best practice for the target groups Alkmaar residents have come up with the Innovation Council and dozens of them are committed to making Alkmaar a beautiful living environment. Where innovative ideas are given a place to achieve a sustainable, clean, fair and inclusive city. Weekly SDG consultation hour on Friday about everything you want to ask about and do with the SDGs. b. Community/social/economic impact Sustainable, clean, fair and inclusive city.
12	**Relevance for the TREE Project**	*(max: 500 words)* a. **Related to one or more of the priority sectors** (plastic, agrifood, wood) Initiative connected with TREE project because shows practical example, how horeca can work together with community and agrifood using circular economie principles. b. **Involves micro- and project-based learning practices** (list and mention how) Project based learning was launch as a good practice implementation in the region. Through involving different stakeholders (horeca entrepreneurs, community, agro farmers) implemented initiative reached results and was good example of awareness campaign.
13	**Website** **E-mail** **Other contact info** **References**	*Any references listed, should be cited by using the APA referencing style (https://libguides.murdoch.edu.au/APA#:~:text=The%20APA%20referencing%20style%20is,and%20the%20year%20of%20publication.)* *https://globalgoalsalkmaar.nl/987-2/*

VIII. Conclusions

This Transnational Report aimed at providing an overview of the findings related to the themes of project TREE by the partners in the consortium. The information included Education for Sustainable Development and its application, the importance of green skills and circular economy as well as a review of the three selected sectors, namely plastic, wood and agrifood. The results of the questionnaires as well as the review of VET schools and the presented examples of good practices, show both the state and the outlook for the future in terms of ESD. It can be concluded that in all partner countries, there is room for improvement and that there is a clear interest and need for what will be developing.

IX. Bibliography

AgriTrain, (2020), Vocational Education and Training for Sustainable Development (VETSD) , MANUAL, PECO Institut e.V. / AgriTrain / www.agri-train.eu / Berlin

Agency for Science, Innovation and Technology (2020) *The future of Lithuanian industry – green innovations?* Available at : https://mita.lrv.lt/en/news/the-future-of-lithuanian-industry-green-innovations

Albertas Gapšys, Ovidija Eičaitė, Vida Dabkienė, Deiva Mikelionytė (2018) *Development Opportunities For Biogas Production From Animal Manure In Lithuania.* Available at: *http://managementjournal.usamv.ro/pdf/vol.18_4/Art18.pdf*

Balinov, B., (2018), MANAGEMENT AND SUSTAINABLE DEVELOPMENT: Summary, 4/2018 (71), CIRCULAR ECONOMY AND SUSTAINABLE DEVELOPMENT, Technical University, Sofia

Bičkauskė D., Šermukšnytė-Alešiūnienė K., Simanavičienė Ž., Kowalska K.(2020). *Challenges of digital transformation in the agri-food sector.* Available at: https://fsev.tnuni.sk/revue/papers/277.pdf

Bruneckienė J., Dagilienė L., Varaniūtė V., Zykienė I., Stasiškienė Ž., Kliaugaitė D., Gurauskienė I. (2021). Žiedinės ekonomikos iššūkiai ir galimybės Lietuvoje. Available at: https://www.ebooks.ktu.lt/eb/1556/ziedines-ekonomikos-issukiai-ir-galimybes-lietuvoje/

Budvytytė A. (2011). *Environmental education at secondary school system in Lithuania.*Available at: https://lup.lub.lu.se/luur/download?func=downloadFile&recordOId=1961765&fileOId=1961769

Chapter One. Trends in the forest sector - global and regional challenges, (2013), National Strategy for Development of the Forest Sector in Bulgaria

Chobanova, R., Kotzarev, L. (2018), THE FOREST SECTOR IN BULGARIA AND MACEDONIA, Project CB006.1.31.070 "Innovative initiatives for cooperation in the border region", co-financed by the European Union through the Interreg IPA Cross-border Cooperation Bulgaria-Make 2014TC16I5CB006

CircPro interreg Europe (2020). *Improvements in Lithuanian strategic framework.* Avaliable at: https://projects2014-2020.interregeurope.eu/circpro/news/news-article/8658/improvements-in-lithuanian-strategic-framework/

Circular Economy, Government of the Netherlands, as seen at: https://www.government.nl/topics/circular-economy/

Country report on the three priority area's of the UNECE strategy for Education for Sustainable Development., https://unece.org/fileadmin/DAM/env/esd/8thMeetSC/Netherlands.pdf

Dagiliūtė R., Pilžis K., Žaltauskaitė J., Sujetovienė S.and Kniuipytė I. (n.d.) *Plastics and its waste: trends and attitudes.* Available at: *http://uest.ntua.gr/thessaloniki2021-poster-session/wp-content/uploads/CostEstimationPayment/60bde3f8eb4caTc1pn/1321_Abstract_solid2021_DAG_KNI.pdf*

Dagiliūtė R. (2018).*(Un)sustainable consumption and some policies behind: Lithuanian case.* Available at: https://www.researchgate.net/publication/326799195_UNsustainable_consumption_and_some_policies_behind_Lithuanian_case

ECVET, (2021) Strategic framework for the development of education, training and learning in the Republic of Bulgaria until 2030, as seen at: http://ecvet.hrdc.bg/news/strategicheska-ramka-2030/

Education for Sustainable Development Program in Bulgaria, http://www.referati.org/programa-za-obrazovanie-za-ustoichivo-razvitie-v-bylgariq/90704/ref/p9

Eitfood (2022). In our country. *Lithuania:Lietuva.* Available at: https://www.eitfood.eu/in-your-country/country/lithuania#:~:text=Agriculture%20plays%20a%20significant%20role,of%20agri%2Dfood%20technologies%20innovators.

"ENVIRONMENT 2014 - 2020", NATIONAL STRATEGY FOR TRANSITION TO CIRCULAR ECONOMY 2021-2027: Project 2020

Environmental Education"Roundtable , (2012) https://www.moew.government.bg/bg/obrazovanieto-po-ustojchivo-razvitie-i-opazvane-na-okolnata-sreda-da-bude-vgradeno-v-uchebnite-programi-po-razlichnite-predmeti/

European Commission, Directorate-General for the Environment, (2017) Review of the Implementation of EU Environmental Policies: Key Aspects: Bulgaria, Publications Office, https://data.europa.eu/doi/10.2779/242263

European Commission (2019) *The Environmental Implementation Review 2019.*

European Commission (2022).*ECO-INNOVATION at the heart of European policies.* Available at: https://ec.europa.eu/environment/ecoap/lithuania_en

Green News.ie (2018). *Solutions to our plastic problem: lessons from Lithuania.* Available at: https://greennews.ie/lithuania-teach-other-countries-how-to-manage-plastic-waste/

Grigoryan A. A., Borodavkina N.Yu. (2017) *The Baltics on their way to a Circular Economy.* Available at: https://www.ssoar.info/ssoar/handle/document/56331

Fifth Dutch National SDG Report, (2021) https://www.sdgnederland.nl/wp-content/uploads/2021/08/Dutch-National-SDG-Report-2021.pdf

Galkute L. (2005) *School agenda 21: a Pilot Project in Education for Sustainable Development.*

Giangrande N., M. White R.,East M., Jackson R., Clarke T., Coste M.S. and Penha-Lopes G. (2019). *A Competency Framework to Assess and Activate Education for Sustainable Development: Addressing the UN Sustainable Development Goals 4.7 Challenge.* Available at: https://doi.org/10.3390/su11102832

Grundey D. (2009). *Developing Sustainability Principles at Lithuanian Universities: An Interdisciplinary Approach.* Available at: https://www.jois.eu/?48,en_developing-sustainability-principles-at-lithuanian-universities-an-interdisciplinary-approach

Institute for Circular Economy, Bulgaria, as seen at: https://iki.bg/en/

Jančius R., Gavenauskas A. and Usas A. (2021).*The Influence of Values and the Social Environment on the Environmental Attitudes of Students: The Case of Lithuania.* Available at: https://doi.org/10.3390/su132011436

Lašienė K., (2019) *Šiaulių profesinio rengimo centras prisidės prie ekologinių problemų sprendimo.* Available at: https://www.svietimonaujienos.lt/siauliu-profesinio-rengimo-centras-prisides-prie-ekologiniu-problemu-sprendimo

Lietuvos inovacijų centras. (2020) *Žiedinė ekonomika: naudoti, rūšiuoti, perdirbti, kartoti.* Available at: https://lic.lt/2020/08/29/ziedine-ekonomika-naudoti-rusiuoti-perdirbti-kartoti/

Lygnugarė I., Aurylienė I. (2022). *Aplinkosauginė konferencija mokiniams. Įdomioji ekologija.* https://www.aprc.lt/naujienos/aplinkosaugine-konferencija-mokiniams-idomioji-ekologija/

Mes rūšiuojam. (2022) Žiedinė ekonomika Lietuvoje – ko dar trūksta? http://www.mesrusiuojam.lt/ziedine-ekonomika-lietuvoje-ko-dar-truksta/

Mickevičiūtė E., Šleiniūtė A., Pitak I., Mumladze T., Sholokhova A., Denafas G.(2021). *Morphological Content And Recyclability Of Separate Collected Packages: A Case Study.* Available at: http://chemengine.kpi.ua/article/view/248944

Mierauskas P. (2020) *An Overview of Development of Sustainable Agriculture in Lithuania.* Available at: https://repository.mruni.eu/handle/007/16545

Miteva, A., (2017), Economic and Social Alternatives, Issue 1, 2017, Green Jobs in Bulgaria - Problems and Prospects

Mitova, D. (2021). Environmental sustainability of Bulgarian agriculture. Bulg. J. Agric. Sci., 27 (1), 72–79

Nikolov, D. (2020), Bulgarian farmers fear Green Deal will lower their incomes, EURACTIV Bulgaria, https://www.euractiv.com/section/agriculture-food/news/bulgarian-farmers-fear-green-deal-will-lower-their-incomes/

Navickas, Venslauskas K., Župerka V.(2009). *Potential and Possibilities of Biogas Production from Agricultural Raw Materials in Lithuania Kęstutis*. Available at: http://dspace.lzuu.lt/bitstream/1/2901/3/rural_development_2009_vol_2.pdf#page=365

Nikolov, D. (2021), Sustainable farming offers a boost to rural Bulgarian communities, as seen at : https://www.euractiv.com/section/agriculture-food/news/sustainable-farming-offers-a-boost-to-rural-bulgarian-communities/

OMEP, (2019), EDUCATION FOR SUSTAINABLE DEVELOPMENT 2020 – 2030, as seen at: https://omep-bg.org/2019/07/15/obrazovanie-za-ustojchivo-razvitie-2020-2030/

Organisation for Economic Co-operation and Development (2021). *Greening Lithuania's growth economics department working papers no. 1667.* Available at: https://www.oecd-ilibrary.org/docserver/5211d402-en.pdf?expires=1648135602&id=id&accname=guest&checksum=4A9BA1DCFE5AC7BE88BCC053786B7EFC

Panevėžio darbo rinkos mokymo centras (2019). *CIRCLE Žiedinė ekonomika profesinio mokymo kontekste.* Available at:

https://www.paneveziodrmc.lt/uploads/CIRCLE%20projekto%20pristatymas.pdf

Plastic Cup Foundation, Netherlands, as seen at: https://www.plasticsoupfoundation.org/
Plastic products for which there are sustainable substitutes are prohibited, (2021), Darik News, as seen at: https://dariknews.bg/novini/bylgariia/zabraniavat-plastmasovi-produkti-za-koito-ima-ustojchivi-zamestiteli-2287659

Poole T. (n.d.) *Lithuania: Developing new Agricultural Practices.*

Project "New skills and competencies - for a green and ecological Bulgaria" https://www.az.government.bg/pages/proekt-novi-umenia-i-kompetentnosti-za-zelena-i-ekologichna-bulgaria/

Ramanauskas J.; Vienažindienė M. ; Rauluškevičienė, J. ; Žukovskis J. (2021). Collaboration perspectives developing sustainable agriculture: the case of Lithuanian farmers. Available at: https://vb.ku.lt/object/elaba:115551959/

Recupero R. (2020). *Vilnius says no more single-use plastic!* Available at: https://zerowastecities.eu/vilnius-says-no-more-single-use-plastic/

Ritchie H and Roser M. (2018). *Plastic Pollution.* Available at : https://ourworldindata.org/plastic-pollution#total-plastic-waste-by-country

SDG, Netherlands, as seen at: https://www.sdgnederland.nl/over-sdg-nederland/

State Progress Council (2012). *Lithuania's progress strategy "Lithuania 2030".* Available at: *https://lrv.lt/uploads/main/documents/files/EN_version/Useful_information/lithuania2030.pdf*

Stefanov, V., Bulgaria is taking the first steps in circular economy: how will the state help, (2021), as seen at: https://business.dir.bg/ikonomika/balgariya-prohozhda-v-kragovata-ikonomika-kak-shte-pomaga-darzhavata

SustainableDoor, Netherlands, as seen at : https://www.duurzaamdoor.nl/

Sustainable Governance Indicators (SGI) (2021). *Lithuania*. Bertelsmann Stiftung. Available at: https://www.sgi-network.org/2014/Lithuania/Environmental_Policies

Sustainable Industry, Netherlands Enterprise Agency, as seen at https://english.rvo.nl/

System Transition Wood Construction NL, (2020) , as seen at: https://except.eco/projects/boosting-ewp/

The Business needs employees with green skills, (2013), https://www.karieri.bg/news/33072_biznesut_ima_nujda_ot_slujiteli_sus_zeleni_umeniia

The European Parliament resolution of 11 February 2021 on the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions European Skills Agenda for sustainable competitiveness, social fairness and resilience (2020/2818(RSP)), as seen at: https://www.europarl.europa.eu/doceo/document/TA-9-2021-0051_EN.html

The Good Wood Project, https://www.goodwoodproject.eu/bg/

The High School of Tourism participates in a project for the goals of sustainable development, 2020, as seen at https://www.borbabg.com/2020/04/27/gimnaziyata-po-turizm-uchastva-v-proekt-za-tselite-za-ustoychivo-razvitie/

THE NETHERLANDS NATIONAL MARKET REPORT, (2019), Institute for Forestry, Forest Products and Services, Probos Netherlands' Paper and Board Association, Royal VNP Netherlands' Timber Trade Association, Royal VVNH Ministry of Agriculture, Nature and Food Quality Ministry of Infrastructure and Water Management, as seen at: https://unece.org/DAM/timber/country-info/statements/netherlands2019.pdf

The Sustainable Development Goals: the situation for the Netherlands, as seen at: https://www.cbs.nl/en-gb/search?q=sustainable+development+goals

TIME Ecoprojects Foundation Project, http://www.poverty2prosperity.eu/bg/pages/

Trade, Agrofood Portal, Wageningen University, as seen at: https://www.agrofoodportal.com/ThemaResultaat.aspx?subpubID=2232&themaID=2276&indicatorID=3425&s ectorID=3436

Transition Time! A Circular Economy for Plastics, (2021), Dutch Sustainable Growth Coalition, as seen at: https://www.dsgc.nl/en/news/2021/TransitionTime-ACircularEconomyforPlastics

Transition Time! A Circular Economy for Plastics, (2021), Dutch Sustainable Growth Coalition, as seen at: https://www.dsgc.nl/publications/Transition-time-A-circular-economy-for-plastics/DSGC-Transition-Time-ACircular-Economy-for-Plastics-Publication.pdf

Tsvetanska, S., Dimitrova, E., Mihailova, I. , (2020), Vocational Education Volume 22, Number 6, 2020 Vocational Education, EUROPEAN POLICIES AND INSTRUMENTS IN VOCATIONAL EDUCATION AND TRAINING ORIENTED IN SKILL DEVELOPMENT 1) Mihai, University 2) Kliment Ohridski "2) National Agency for Vocational Education and Training 3) Center for Human Resources Development

Tzvetanska, M. (2020), Circular economy helps for a radical change of the economic model, as seen at: https://move.bg/circular-economy-interview

UNECE, United Nations Economic Commission for Europe (2005). Education for Sustainable Development in the Unece Region . *High-Level meeting of Environment and Education Ministries.* Available at: https://unece.org/fileadmin/DAM/env/esd/HLmeetMarchl2005.htm

UNECE, United Nations Economic Commission for Europe (2009). *Learning from each other. The UNECE Strategy for Education for Sustainable Development.* Available at: https://unece.org/environment-policy/publications/learning-each-other-unece-strategy-education-sustainable#:~:text=for%20Sustainable%20Development-,Learning%20from%20Each%2DOther%3A%20the%20UNECE%20Strategy,for%20Education%20for%20Sustainable%20Development&text=The%20UNECE%20Strategy%20for%20ESD,education%20in%20their%20respective%20countries.

UNESCO (N.D.). Education for Sustainable Development. Available at: https://en.unesco.org/themes/education-sustainable-development#:~:text=Education%20for%20Sustainable%20Development%20(ESD,of%20biodiversity%2C%20poverty%20and%20inequality. https://en.unesco.org/themes/education-sustainable-development

UNESCO (2014). *Shaping the future we want. UN Decade of Education for Sustainable Development (2005-2014). Final Report.* Available at: https://books.google.it/books?hl=it&lr=&id=ImZuBgAAQBAJ&oi=fnd&pg=PA5&dq=education+for+sustainable+development+stategy+in+lithuania&ots=ZFs6VtPK98&sig=C65SWKS1niH79GNMrANOxRGpCU8#v=onepage&q&f=false

USDA Foreign Agricultural Service (2017). *Forestry and Wood Products in Lithuania.* Available at: https://apps.fas.usda.gov/newgainapi/api/report/downloadreportbyfilename?filename=Forestry%20and%20Wood%20Products%20in%20Lithuania_Warsaw_Lithuania_2-28-2017.pdf

Uðeckienë L., Targamadzë V. (2005). *Challenges of sustainable development education to higher education in Lithuania.* Available at:

http://www.scientiasocialis.lt/jbse/files/pdf/vol4/68-79.Useckiene_JBSE_Vol.4_No.2.pdf

Varaniut V. , Bruneckien J., Dagiliene L.(2021) *'Local governments' perspective on implementing the circular economy*: *A framework for future solutions*.

Verslo žinios. (2019) Žiedinė ekonomika įsibėgėja – kaip pokyčiai palies Lietuvą? https://www.vz.lt/pramone/2019/03/29/ziedine-ekonomika-isibegeja--kaip-pokyciai-palies-lietuva

Vilnius University (2022). *VU Geographers are Analysing the Guarantee of the Country's Ecological Stability: Will it be Possible to Stop the Drastic Deforestation of Lithuania?* Available at: https://www.vu.lt/en/news-events/news/9611-vu-geographers-are-analysing-the-guarantee-of-the-country-s-ecological-stability-will-it-be-possible-to-stop-the-drastic-deforestation-of-lithuania

Vision on timber harvesting in The Netherlands, Dutch Timber Platform Ministry of Agriculture, Nature and Food Quality, directorate for Nature Conservation, https://www.probos.nl/images/pdf/boeken/VisionOnTimberHarvesting.pdf
https://www.europeansttc.com/netherlands-reports-further-rise-in-certified-imports-market-share/

V. Zolubienė (2020) *Profesinis orientavimas. Ekologija ir aš.* Avaliable at: https://www.verslas.kaunas.lm.lt/88-profesinis-orientavimas/728-ekologija-ir-a%C5%A1

Zachary M. V.(2021) *Sustainable Development in Lithuania: An Emerging Market Case*

Study. Available at: https://repository.upenn.edu/sire/89/

(2016), For ESD and the people, as seen at: https://www.ngobg.info/bg/reportage/100403-%D0%B7%D0%B0-%D0%BE%D0%B1%D1%80%D0%B0%D0%B7%D0%BE%D0%B2%D0%B0%D0%BD%D0%B8%D0%B5%D1%82%D0%BE-%D0%B7%D0%B0-%D1%83%D1%81%D1%82%D0%BE%D0%B9%D1%87%D0%B8%D0%B2%D0%BE-%D1%80%D0%B0%D0%B7%D0%B2%D0%B8%D1%82%D0%B8%D0%B5-%D0%B8-%D1%85%D0%BE%D1%80%D0%B0%D1%82%D0%B0.html

(2017) Why 21st century students need to learn sustainable development, National Network for children, as seen at: https://nmd.bg/%D0%B7%D0%B0%D1%89%D0%BE-%D1%83%D1%87%D0%B5%D0%BD%D0%B8%D1%86%D0%B8%D1%82%D0%B5-%D0%BD%D0%B0-xxi-%D0%B2%D0%B5%D0%BA-%D1%82%D1%80%D1%8F%D0%B1%D0%B2%D0%B0-%D0%B4%D0%B0-%D1%83%D1%87%D0%B0%D1%82-%D1%83/