



NATIONAL FOREST CENTRE
– CENTRE KNOWLEDGE TRANSFER AND FOREST PEDAGOGY

**Analysis of the state of environmental education
and forestry vocational education
in Slovakia and Norway**

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INTRODUCTION

Forest and forestry have significant cultural and historical significance for Slovakia and Norway. The similarity is in the connection of the lives of residents to the forest and the use of forest products in everyday human life. The difference is in ecological and ownership conditions, as well as in environmental behaviour in relation to the environment.

Forestry is currently facing difficulties arising from global problems, especially climate change. Society is faced with questions about how to solve these tasks, correctly interpret them and participate in the growth of the knowledge level of society.

The National Forestry Centre (hereinafter referred to as NLC), within the framework of international cooperation with the forestry education centre **Skogkurs from Norway**, implemented a project called **EE_YOUTH** - *Transfer of knowledge and practical experience in youth education in the field of environmental education and transfer of knowledge and further education in forestry* during 2024. The key target group of the project was **YOUTH aged 15-19**. It is precisely from the youth that in the near future the creation of correct decisions with an emphasis on effective solutions in issues related to mitigating the impacts of climate change will be required. Education and development of environmental literacy are required by the whole society; therefore, the activities and outputs of the EE_YOUTH project were also directed at upper secondary school teachers, forest owners and managers. The main objective of the project was to transfer new ideas and current topics from Norway for increasing environmental awareness and the level of environmental literacy in the field of forest and environmental protection, solutions for mitigating the impacts of climate change, bio-economy and positive presentation of forestry.

In order to obtain input information for the implementation of the project, an *Analysis of the status of environmental education and vocational training in forestry in Slovakia and Norway* was developed together with a Norwegian partner, based on a comparison of the state of forests and the specifics of forest management and the conditions for ensuring environmental education of society in the given countries. For the purposes of the analysis, a questionnaire *Survey of the perception of forests and the environment by youth* was also carried out, in which more than 300 students of grammar schools, vocational high schools and conservatories from both countries participated. The final part of the Analysis is dedicated to recommendations for pedagogical and forestry professional practice, inspired by the knowledge and direct experience gained during the *study trip* of the project team in Norway. The outputs of the analysis and survey, as well as the experience from the study trip, provided many stimuli for reflection and the creation of educational programs for youth, teachers, forest owners and managers.

Finally, it is necessary to thank everyone who participated in the preparation of the publication and especially colleagues from the Norwegian partner institution for their cooperation and professional approach.

Andrea Melcerová - project manager

FORESTS AND FOREST MANAGEMENT

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Forest and forest management in Slovakia

Slovakia is a country with a long-standing forestry tradition. The origins of rational forest management date back to the times of the Austro-Hungarian Empire, there were the first steps taken towards conscious management and at the same time preserving forest wealth for future generations. Currently, forestry expertise combines theoretical and practical knowledge about forests and their management, applied in the daily work of foresters aimed at sustainable forest use. Due to the great diversity of natural conditions and types of habitats, forests in the Slovak Republic (hereinafter referred to as “SR”) have a diverse species, age and spatial structure.

The area of forests has been increasing for a long time. Currently, forests occupy more than 2027 thousand ha of the country's area. Approximately 49.9% of the forest area (976.2 thousand ha) is managed in Slovakia by **state organizations**, the remaining area of forest area (approximately 978.6 thousand ha) is managed by non-state entities: **private, community, church, municipal and agricultural cooperatives**.

Forest cover is at the level of 41.4%¹ and, like the area of forests, has been growing in the long term. The age structure of forests is also changing - it is significantly unbalanced, with an increasing share of young stands, especially in the 1st and 2nd age classes (trees under 20 years old). The average age of trees in Slovak forests is 71 years.

The **tree composition** has been changed in compared to the original representation of tree species. Currently, deciduous trees predominate with a representation of 64.5%. The presence of coniferous trees (35.5%) has been decreasing for a long time due to the effects of harmful factors in forests (especially wind and bark beetles). The most common tree species in the forests of the Slovak Republic are beech (35.1%), spruce (21.3%) and summer and winter oaks (10.4%).

According to the predominant use, forests are divided into three categories: **commercial, protective and special purpose forests**. The most common category is commercial forests, which make up 72.8% of the area of forests in the Slovak Republic, i.e. 1,423.8 thousand ha. These are intended mainly for the production of wood and other forest products while ensuring the non-production functions of forests. The area of protective forests currently reaches 340.5 thousand ha, i.e. 17.4% of the area of forest stands in the Slovak Republic. The main objective of management in protective forests is to ensure their protective functions, in particular the protection of soil, water and infrastructure. Special purpose forests are declared to ensure the specific needs of society, legal entities or individuals. Their share is 9.7% of the area of forest stands in the Slovak Republic, which represents an area of 190.4 thousand ha. **The predominant management method is the undergrowth management** method. 75% of forests are managed in this way, mainly commercial forests and special purpose forests.

¹ Zelená správa – Správa o stave lesného hospodárstva SR 2023, Ministerstvo pôdohospodárstva a rozvoja vidieka SR, dostupné online [Zelená správa za rok 2023](#)

Wood is a strategic raw material representing an ecological, renewable, recyclable and strategic material of the future. Its rational use and processing supports industry and increases employment. In addition, by storing carbon in forests, in products from harvested wood and by using wood as a substitute for non-renewable raw materials and energy sources, the forestry and wood sector contributes significantly to mitigating climate change. The **growing stock** in 2023 reached 487 million m³, which represents 284 m³ of wood per hectare. In the given year, 7.22 million m³ of wood was harvested in the Slovak Republic, which was only 0.046 million m³ more than in the previous year. The harvesting of coniferous wood (51.7%) prevailed over deciduous wood (48.3%). The share of wood harvested in the process of eliminating the effects of harmful factors in forests reached 35.8% (2.755 million m³). This is the lowest share of accidental (calamitous) logging since 2002.

Forest and Forestry in Norway

Norway is a country in the western part of the Scandinavian Peninsula. It is similar to Slovakia in terms of population (4.7 million) and forest cover. However, it is almost 7 times larger. Of the total area of the country of 323,758 km², forests cover an area of 122,000 km². A comparison of the basic specifics of both partner countries from the point of view of forestry is described in *Table 1*.

Norway's forest cover is at the level of 40%, while the **area of forests** in the country is increasing². Approximately 86,000 km² are economic forests, or forests fulfilling a production function. 17% of the area of Norwegian forests is protected - in addition to 47 national parks. Norway also has more than 3,200 other protected areas³. In forests dominate Norway spruce (*Picea abies*), Scots pine (*Pinus sylvestris*) and birch (*Betula pendula* and *Betula pubescens*). About half of the economically usable forest stands are made up of coniferous trees, mainly fir and pine. Towards the south of the country, the tree composition gradually changes from coniferous forests to mixed forests, with a gradual transition to deciduous forests. In the forests north of 67° north latitude, northern birch predominates. Pine and spruce are mainly used economically.

In the ownership, structure dominated by **private forest owners**. According to www.statskog.no, the share of private forests in Norway is greater than in any other country in Europe. 77% of the forests belong to private owners, with the dominance of owners of small-scale forests. Community forests make up 7.5% of the forest area and 6% of the forests belong to the state. Statskog manages state forests. Municipalities and local governments own the remaining forestland.



Forest wealth is of considerable cultural and historical importance to Norway. Norwegian forests are part of the largest continuous forested area in the world, the boreal coniferous forest belt. It is the largest carbon storage and the most extensive ecosystem on land. In Norway alone, forests bind three times more carbon dioxide than Norwegian cars generate in a year. More than half of the species of Norwegian forest fauna and flora are registered on the so-called "red list" of endangered species.

² <https://nordicforestresearch.org/wp-content/uploads/2023/06/Nordisk-skogsstatistik-2023-mindre.pdf>

³ <https://www.norgesnasjonalparker.no/en/other-protected-areas/>

The rich reserves of wood raw materials in Norwegian forests have also enabled the extensive development of the woodworking industry in the country. The origins of the wood trade date back to the 14th century. The city of Drammen is important in this respect, as it was once one of the main European ports for the log trade. Currently, the wood trade and the woodworking industry contribute significantly to GDP. The main commodities are mainly cellulose, paper and furniture, with a significant part of the manufactured products still being intended for export. Annual wood consumption is approximately 7 million m³, while the stock is at the level of 1.23 billion m³. The **average hectare stock** is, based on data from Nordic Forest statistics (2023), at the level of 101m³. The average annual volume increase is 3.1m³. Compared to the 20s of the last century, the average increase and stock have almost tripled. In this sense, the forestry sector is also significant, with approximately 25,000 employees in Norway.

At present, climate change and its impacts on forest ecosystems and the forestry sector are a topical and frequently discussed topic in the country. The consequences of climate change are also a challenge for Norwegian forests, especially in terms of their possible impact on the biodiversity of boreal ecosystems, or the possible spread of new tree species to these areas. Within the framework of expert discussions, measures are being developed and adopted to limit the recent decline of native spruce forests. They are aimed at eliminating the generation of emissions that cause the greenhouse effect, which causes global warming and changing climatic conditions in Nordic communities.

| FOREST MANAGEMENT | | | | |
|--------------------------|--|-------------------|--|-------------------|
| |  NORWAY | |  SLOVAKIA | |
| Area | 385 207 km ² | | 49 035 km ² | |
| Population | 5,52 mil. | | 5,42 mil. | |
| Forest cover | 37,8% | | 41,4% | |
| Growing stock | 1004 mil.m ³ | | 487 mil.m ³ | |
| Annual growth | 24 mil.m ³ | | 12 mil.m ³ | |
| Tree species composition | broadleaved: 41,1% | coniferous: 56,9% | broadleaved: 64,8% | coniferous: 35,2% |
| Most common tree species | Scots Pinus: 29,6% | | Beech: 35,4% | |
| FOREST OWNERS STRUCTURE | | | | |
| State/municipality | 12% | State | 50,6% | |
| private/family | 78% | Community | 32,8% | |
| Community | 7% | Minicipality | 4,0% | |
| Industry/companies | 3% | Private | 7,3% | |
| | | Church | 1,8% | |
| | | Agriculture | 0,1% | |

*Table 1: Specifics of forest management in Norway and Slovakia
(Inside: NO - Skogkurs; SR - Správa o lesnom hospodárstve za rok 2023)*

ENVIRONMENTAL EDUCATION OF YOUTH

Darina Výbohová, Veronika Jaloviarová, Dagmar Sélešová, Anna Lena Albersten,

Formal environmental education of Youth in Slovakia

Environmental education (hereinafter EE) is one of the cross-cutting topics and is a mandatory part of the educational content of state educational programs (hereinafter SEP) from kindergarten to upper secondary schools. In vocational upper secondary schools, it is an important part of general education and also of vocational subjects. Individual topics and objectives of EE can be fulfilled in the educational content of school educational programs (hereinafter SchEP) by emphasizing the environmental nature of the subject. Schools can also create a separate subject with an environmental focus, or the issue of EE is directly integrated into, for example, a study field of a vocational upper secondary school (*e.g. as a separate study field or focus, e.g. 3916 6 - Environment, as a separate subject, e.g. Ecology*). Many schools also design SchEP as a **school focus on environmental program** an emphasis on the protection and creation of the environment and address this issue within interest groups.

Environmental education in Slovakia is provided by various forms, methods and means of activity such as **effective project-based teaching, competitions, discussions, exhibitions, exercises, creative workshops, participation in various environmental activities and events** (paper, plastic collection, waste separation, brigades), programs and projects (*e.g. Earth Day, Ecofootprint, Green School and others*).

In addition, the Ministry of Education of Slovak republic annually allocates funds in the amount of 50 0000 Euros in its budget for schools to implement successfully **expanded development projects** aimed at supporting and developing EE under the name "*Enviroproject*". Another form of EE support from the Ministry of Education is financial contributions for **several competitions** on this topic. (*e.g. in the field of using alternative energy sources Enersol SK and eight-year grammar schools focused on the attitude towards the environment and its pollution Ekoposter*). Subject Olympiads and, in the case of high school students, **Secondary School Professional Activity** also offer opportunities for deeper familiarization with environmental protection issues⁴.

In the 2020/2021 school year, the State School Inspectorate (SSchI) paid attention to the inclusion of EE in the process of education and training in 44 upper secondary schools. 23 gymnasiums (hereinafter referred to as G), 21 upper secondary schools (USSch)⁵. The evaluation was carried out based on findings from questionnaires submitted to the school principal and school students (*G - 1,015 respondents, VUSSch - 744 respondents*).

⁴ *TS Ministerstva školstva, Dostupné na: [Environmentálna výchova v školách | Ministerstvo školstva, výskumu, vývoja a mládeže Slovenskej republiky \(minedu.sk\)](https://www.minedu.sk/)*

⁵ *Štátna školská inšpekcia, Správa o environmentálnej výchove v strednej škole [UZP ENV G SOS.pdf \(ssi.sk\)](https://www.ssi.sk/wp-content/uploads/2020/12/UZP_ENV_G_SOS.pdf) dostupné na : www.ssi.sk/wp-content/uploads/2020/12/UZP_ENV_G_SOS.pdf*

Upper secondary schools paid adequate attention to EE in the educational process. In grammar schools, they incorporated it into the SchEP as part of developing competencies in the area of attitudes and values, and thematic areas of the crosscutting theme were mostly implemented into the curricula of selected subjects. USSch mainly included the issue of EE in professional subjects and in general education subjects or it was directly integrated into the field of study. **The conditions for good work were supported by the use of appropriate professional and methodological materials, less teaching programs.** An important factor in planning and implementing environmental activities was the selection of a school **EE coordinator with knowledge** of their approved subjects and insight into environmental topics. Activities of the EE coordinator in grammar schools and secondary vocational schools:

- Coordinates the cooperation of subject committees, through the heads.
- Provides methodological consulting services for colleagues on matters of EE implementation.
- Involves class teachers in organizing environmental activities.
- Mediates training for teaching staff.

Teacher training in the given issue was insufficient and the expansion of knowledge among pedagogical staff was also lagging behind. Schools declared a wide range of internal school activities in EE, involvement in the implementation of short-term, less in long-term projects. The involvement of schools in the area of developing students' knowledge, their skills and attitudes towards environmental problems in the educational process was ensured in several subjects even outside of school hours. They prioritized the possibility of participating in lectures with well-founded experts, involvement in projects and various competitions. The achievement of significant successes in competitions with environmental themes should be positively evaluated. A great benefit was that students actively participated directly in the field in practical activities related to environmental protection. However, there were also those who did not show interest in them, which requires improvement. Cooperation with many professional and social organizations, companies, civic associations and parents played an irreplaceable role in the activities of schools when organizing environmental events.

Significantly positive findings

- involving schools in projects and competitions with an environmental focus
- cooperation with institutions operating in the field of environmental issues

Areas requiring improvement

- training of ENV coordinators

Recommendations and suggestions for school principals

- supporting teaching staff in acquiring environmental knowledge
- ensuring training of environmental education coordinators
- motivating and recruiting students for their active participation in environmental events outside of school hours

- streamlining cooperation with the student school council in organizing environmental activities
- procuring a sufficient number of existing and current teaching aids with a given topic
- prioritizing the creation of interest groups/clubs with an environmental focus

Current opportunities and offers for secondary school teacher education

The acquisition of professional competencies for the performance of specialized activities, which is the role of the environmental education coordinator, is carried out within the **framework of the planned professional development** of pedagogical and resilient employees of schools, school facilities and social assistance facilities, which is regulated by **Act No. 138/2019 Coll.** about pedagogical employees and professional employees and on amendments and supplements to certain acts, as amended.

Several teachers of various approved subjects have completed training on the topic of ENV in the teaching process. Courses and seminars with an ecological-environmental focus are intensively implemented by some non-governmental organizations (Špirála, Živica, Sosna, Daphne, NGO Tatry and others), but also by the Slovak Environmental Agency, the Technical University of Zvolen, the Faculty of Natural Sciences of the Comenius University in Bratislava and the National Institute of Education and Youth, which has in its 2023/2024 offer catalog ([NIVAM-KATALOG-FINAL-FinalovajObalka.pdf](#)) a program called “*Environmental Education in the 21st Century*” for a broad target group, but not specifically for EE coordinators. The participants passed on the acquired knowledge to their colleagues through internal education (updated education).

In 2020, the Slovak Environmental Agency obtained authorization to provide innovative teacher education under the title “*Environmental Education and Education for Sustainable Development*”. The aim of innovative education is to develop professional knowledge, didactic skills and abilities of pre-primary, primary and secondary education teachers in the field of EE with the aim of integrating it into the mandatory content of education and training in schools.

The NIVAM website has published a mapping of opinions on the current state (2011-2012)⁶ within the framework of youth research *Environmental education and training of children and youth – current situation in Slovakia from the perspective of interested organizations, entities and individuals* ([Environmentálna výchova a vzdelávanie detí a mládeže – aktuálna situácia na Slovensku – Výskum mládeže \(vyskummladeze.sk\)](#)). The findings also concern the education of teachers and lecturers in EE and training:

- it is neither systematic nor systemic;
- it is not coordinated nationwide;
- there is no proportional offer in all regions;

⁶ NIVAM Identifikačný list výskumu ID: DAVM34 dostupné na : [Environmentálna výchova a vzdelávanie detí a mládeže – aktuálna situácia na Slovensku – Výskum mládeže \(vyskummladeze.sk\)](#)

- it is left to the interest of the teachers themselves;
- the issue of the quality of the lecturers and the content of the educational courses is also problematic;
- not all activities are nationally accredited;
- teachers are not sufficiently motivated to complete their education in the field of EE

Non-formal environmental education in Slovakia

The advantage of environmental education (EE) is, in addition to its educational potential, a wide range of topics, environments, methods and forms of activities, implementers and also the **possibility of combining formally implemented EE with informal**, when the transfer of knowledge, insights and experiences is implemented in an extracurricular environment through organizations, individuals, non-governmental organizations, etc. It is implemented outside or sometimes parallel to the main education system (Ministry of the Environment of the Slovak Republic and its sectoral organizations, 2015).

Attention is paid to improving the quality of EE in the *Environmental Policy Strategy of the Slovak Republic until 2030 – Greener Slovakia (also known as the Envirostrategy 2030)*. The National Strategy for Sustainable Development considers it crucial to focus on the upbringing and **education of children and adolescents**. The aim of the *Departmental Concept of Environmental Education, Training and Awareness by 2025* is to create a comprehensive system of environmental education, training and awareness in the environmental sector, focusing on various target groups and using innovative tools while maintaining the principles of sustainable development⁷. The departmental organization of the Ministry of the Environment of the Slovak Republic (MESR) – the Slovak Environmental Agency (SEA) states that its **task is to raise public environmental awareness through a comprehensive offer of informal EE programs**. Within the *Concept of EE Development in SEA by 2030*, its four priority areas and objectives include capacity development for EE implementation, innovation and improvement of EVVO offer, model environmental education centre (EEC) and **national coordination** (Šimonovičová, 2020)⁸.

Based on the above, SEA is currently conducting a pilot verification of the set **certification of EE** providers from various organizations and entities for various target groups. At the level of individual self-governing regions, various initiatives developed to support informal EE - for example. The Banská Bystrica Self-Governing Region addressed to EE implementers in the region to compile a *Guide to the*

⁷ Ministerstvo životného prostredia Slovenskej republiky. 2015: Rezortná koncepcia environmentálnej výchovy, vzdelávania a osvetu do roku 2025. Ministerstvo životného prostredia SR a jeho rezortné organizácie. Zostavil: Slovenská agentúra životného prostredia, Banská Bystrica. 35 s. Dostupné na [Environmentálna výchova a vzdelávanie | SAŽP \(sazp.sk\)](http://www.sazp.sk)

⁸ ŠIMONVIČOVÁ, J. 2020: *Koncepcie rozvoja EVVO v SAŽP do roku 2030*. Dostupné na [Environmentálna výchova a vzdelávanie | SAŽP \(sazp.sk\)](http://www.sazp.sk)

Offer of Environmental Education in the Banská Bystrica Region for the given school year (2024/2025) for **secondary schools** within the jurisdiction of the region.

The Ministry of the Environment, other organizations of the Ministry of the Environment of the Slovak Republic also implement informal EE, such as the contribution organisation. They are for example State Nature Conservation Agency, the Slovak Museum of Nature Conservation and Speleology, the Slovak Mining Museum, the Bojnice Zoo, the Dionýz Štúr State Geological Institute, the Slovak Hydro meteorological Institute, the Research Institute of Water Management, the Slovak Water Management Company and national parks). The organizations within the jurisdiction of other departments implemented Informal EE:

- The Ministry of Education, Science, Research and Youth of the Slovak Republic (NIEY)
- **The Ministry of Agriculture and Rural Development of the Slovak Republic** (National Forest Centre, State forest Enterprise of Slovak republic)
- The Ministry of Defence of the Slovak Republic (Military Forests and Properties of the Slovak Republic, š. p.)

The non-governmental organization, business entities, civic associations and self-employed persons (Ekoforum, DAPHNE, Ekocentre Malá liška and others) implemented the informal EE to education.

Non-formal and informal EE implemented in the form of various educational activities, events on important environmental days, discussions, exhibitions, excursions, open days, professional conferences, seminars, film festivals and events for marginalized groups. Editorial and publishing activities are also important, publishing information, educational and promotional materials, collections, periodicals, popular science publications, methodological manuals, interactive CDs and the like (Navrátil in Sarvašová, 2016)⁹.

Forest pedagogics as a part of non-formal EE

The Ministry of Agriculture and Rural Development of the Slovak Republic issued an authorization to ensure forest pedagogy (FP) activities in 2017 to its departmental organization - the **National Forestry Centre** (NFC). The forest pedagogy activities provided by its organizational unit called the **Centre for Knowledge Transfer and Forest Pedagogy** (CTKFP; until 2021 the Institute of Forestry Consulting and Education, previously the Institute for Education and Training of Forestry and Water Management Workers of the Slovak Republic). Among other professional activities, the CTKFP coordinates FP activities as part of the EE for forestry organizations and entities, ensures the implementation of forest pedagogy education, and prepares methodological material for forest pedagogy and campaigns to support forestry.

⁹ SARVAŠOVÁ, Z. a kol. 2016: *Lesy pre spoločnosť – lesy bez bariér. Vybrané príklady lesnej pedagogiky z Nórska a Slovenska*. Národné lesnícke centrum – Ústav lesníckeho poradenstva a vzdelávania Zvolen. 2016. ISBN 978-80-8093-216-9, s. 38-41

The main implementers of the LP are state and non-state forestry entities. The largest of them is the state enterprise LESY SR. As a state enterprise carrying out forest pedagogy activities, but falling under the Ministry of Defense of Slovak republic, there are Military Forests and Properties of the Slovak Republic. Among non-state entities, forest pedagogy activities are mainly provided by the Municipality Forests in Bratislava, Municipality Forests in Košice, a.c., Forest property of Inovec, I.I.c., Municipality Forests in Banská Bystrica, I.I.c., Municipality Forests of Brezno, I.I.c., Municipality of Forests of Spišská Belá, I.I.c., Municipality Forests Kremnica, I.I.c., Municipality Forests in Dobšiná spol. I.I.c., Municipality Forests in Podolíneč I.I.c., Municipality Forests in Jelšava I.I.c and other city and municipal forests, forest reserves. Private organizations, church forests, and state administration in the forestry sector also carry out Forest pedagogy activities.

Support for FP activities is provided by organizations such as the Slovak Forestry Chamber, the Association of Employers in Forestry, the Union of Regional Associations of Owners of Non-State Forests of Slovakia, the Association of Owners of Community and Private Forests of the Banská Bystrica Region, the Slovak Hunting Chamber, PEFC, and the Trade Union Drevo – Lesy – Voda. In 2017, the **Ministry of Education, Science, Research and Youth of the Slovak Republic** expressed its support for recommending schools to participate in FP activities and projects on the website lesnapedagogika.sk.

According to the **Report on the Status of Forest Pedagogy for 2023** (Taraba, 2024)¹⁰, which is processed annually by the NFC, 1084 FP activities were carried out in Slovakia in 2023, attended by slightly more than 100,000 participants. The most frequently implemented form of FP, almost 250 times, was a forest walk (supervised by a certified forest educator) and the environment in which FP activities took place was a forest in over 22% of cases. The most frequent topics of FP activities were topics such as Forest (functions, meaning, and protection), *Animals in the Forest*, *Spring in the Forest*, *Forest Hidden in a Book*. The most represented target group is families with children, then elementary school students. Only less than 400 secondary school students experienced FP activities in 2023. Reports on the state of forest pedagogy for the years 2020 - 2023 are available at www.lesnapedagogika.sk.

Forest pedagogy for Youth

NFC - CTKFP and the implementers of FP activities have been aware of the need to implement programs aimed at secondary school students and youth at several working meetings over the years in the area of informal EE. Until 2023, these were rather isolated, unsystematic, methodologically unprepared activities in the form of meetings with foresters, professional lectures, discussions, forest planting, etc. The Ministry of Rural Development of the Slovak Republic supported a pilot project entitled **LESU ZDAR! - Forest pedagogy educational program** for secondary schools in 2023. Its

¹⁰ TARABA, M. 2024: *Správa o lesnej pedagogiky ako súčasť environmentálnej výchovy za rok 2023*. Dostupné na [Správa o LP za rok 2023 – Lesná pedagogika \(lesnapedagogika.sk\)](http://Správa o LP za rok 2023 – Lesná pedagogika (lesnapedagogika.sk))

aim was to influence the values and attitudes of youth towards forestry and at the same time present it as an open and modern sector. It also provided information about the production of wood raw materials as a tool for mitigating climate change and offered youth the opportunity to acquire practical skills related to forestry activities and forest care. The project created a new impetus for optimizing educational practice and creating new partnerships. The project applied methods and activities of experiential pedagogy and authentic learning, such as research, experiential and professional educational activities about forests and forestry, carried out in real conditions. The project provided methodological assistance from an external consultant.

The following secondary schools were involved in the pilot project: Gymnasium of Ľudovít Štúr in Zvolen, Gymnasium Andrej Sládkovič in Banská Bystrica, and Gymnasium of Milana Rúfus in Žiar nad Hronom, Vocational upper secondary school of Samuel Mikovíni in Banská Štiavnica, vocational agro-food and technical secondary school in Kežmarok, Pedagogical upper secondary school in Turčianske Teplice.

In terms of organization and implementation of the LESU ZDAR! project, the following activities were carried out: contacting secondary schools to participate in the project, coordination meeting of project actors, webinar for secondary school teachers, initial survey for students, introductory workshops implemented at participating secondary schools, 1st, 2nd, 3rd day with a forester, final questionnaires and creation of LP methodology for informal EVVO activities intended for secondary schools. The following forestry organizations and enterprises cooperated in the pilot project: Faculty of Forestry of the Technical University in Zvolen, Institute of Forest Ecology of the Slovak Academy of Sciences, NFC - Centre of Excellence LignoSilva, Municipality Forests in Banská Štiavnica I.I.c., Forests Banská Belá I.I.c., Municipality Forests in Banská Bystrica I.I.c., Municipality Forests of Spišská Belá I.I.c., Municipality Forests in Kremnica, I.I.c., and State Forest Enterprise of Slovak republic, FE Sever.

In the project LESU ZDAR! interviews were also conducted with school teachers, who stated:

“The project certainly touched on the educational area of Human and Nature. As for the current standard of the Biology subject, the emphasis is on connecting the knowledge acquired in school with everyday life, so the project certainly contributed in this direction. I see the development of attitudes that were developed through the activities as a benefit, because they had the opportunity to find out what the value of the forest is.” (Ľ. Štrbáková, Gymnasium of A. Sládkovič, Banská Bystrica).

“Children are not used to going to the forest and they are not used to working. In the project, they realized that there is some work behind everything, because they had the opportunity to try out classic work activities, skills, manual work, and finding the things necessary for life. They saw the forest in reality, not just in a picture or a film, but a real one that they could experience – through smells and tastes. They themselves assessed whether they dressed well or badly.” (T. Róth, Gymnasium of A. Sládkovič, Banská Bystrica)

“It is a good opportunity that they were given – to have an idea about forestry. We would also welcome a visit from experts to our school with the aim of presenting the forestry study program – from

the Faculty of Forestry but also from other workplaces and institutions. Students need to know exactly what professions are and how they could apply themselves – specific activities, because they have no idea at all and it would not even occur to them that they could study this and that this exists.” (M. Sajvaldová, Gymnázium Žiar nad Hronom).

CTPLP on January 30, 2024 in Zvolen at the FP coordination meeting presented project for Forest educators, where a few observations from the project implementation and its activities:

- it is better if at least two forest educators participate in the project with one secondary school;
- during the project activities, it is necessary to create an atmosphere in which students must feel safe, it is important to communicate with young people as with adults;
- it is appropriate to alternate the locations of implementation of individual activities, which was also positively evaluated by school educators and especially students;
- the forest environment shows how things really flow around us in contrast to the "fast times" we live in;
- the project offered a space where myths about forestry could be destroyed in an informal debate based on what was experienced (it resonated especially on the 2nd day with a forester);
- the project supported students in choosing a university with a natural, technical focus;
- for forestry enterprises, the project can offer students who later express an interest in working in the enterprise (and thus the project can contribute to maintaining employment in forestry);
- after the completion of the project activities, the forestry enterprise can agree with the involved school on the implementation of operational practice for students of the involved secondary vocational schools;
- the point of view of professional orientation, it is possible to create a LESU ZDAR! project module for the 8th and 9th grades, so that students can decide when choosing a secondary school for forestry.

Forest pedagogy in the form of the project LESU ZDAR! can offer informal EE intended for secondary school students, and in a modification also for younger youth. The implementation of FP activities requires financial support from the interested departments and EE actors.

Environmental education Aspects in Norway

Formal environmental education in Norway

Formal Environmental Education of YOUTH is interdisciplinary in the curriculum. This means that education for sustainable development is integrated into all subjects. The Norwegian educational curriculum "*Kunnskapsløftet 2020*"¹¹ defines it as follows:

¹¹ <https://www.udir.no/in-english/>

"Sustainable development as an interdisciplinary topic is intended to help children and young people understand the fundamental principles and developments in society, and also to be able to find solutions to emerging challenges related to change. Sustainable development means protecting life on Earth and ensuring the needs of people living here now, without destroying the ability of future generations to meet their own needs. Sustainable development is based on the understanding that social, economic and environmental conditions are interconnected".

Lifestyle and resource consumption have local, regional and global consequences. In education, students generally develop competences that enable them to make responsible decisions and act ethically. Students must learn to understand that all individual activities and choices matter. This topic includes issues related to the environment and climate, poverty and resource distribution, conflict, health, equality, demography and education. Today's youth are tomorrow's managers of knowledge and values. It is important to provide them with the knowledge that will enable them to make the right decisions in the future.

For the youth target group in Norway, one of the key topics is "**Innovation in Technology**", which has a significant impact on people, the environment and society. Technological literacy and knowledge of the links between technology and the social, economic and environmental aspects of sustainable development are therefore key points in education and discussion among young people. While technological developments can help solve problems, they can also create new challenges. Technological knowledge means understanding what dilemmas can arise from the use of technology and how to deal with them.

Environmental education of upper secondary school teacher

In Norway, great importance is attached to increasing the competences of teachers in the field of environment and development¹². A mandatory six-month course on nature, society and the environment has been included in general teacher education. Teachers in upper secondary schools can participate in various training courses related to environmental education. More than 80% of all teachers in upper secondary schools, regardless of their field, have completed an additional 40-hour training course focusing on the environment and sustainable development. The educational topics of the course include current topics of environmental problems, motivation for discussions with students, topics of sustainable resource consumption, circular economy, but also the moral and ethical consequences of environmental challenges. One of the significant goals is, among other things, to show that the world is actually progressing thanks to – and not despite – international cooperation.

Various universities and their specialized centre provide most of the offers for upper secondary teacher education. One of them is the Norwegian Centre for Science Education, which is a Department

¹² <https://www.un.org/esa/earthsummit/norway/english3.htm>

at the Faculty of Mathematics and Natural Sciences at the University of Oslo. Various NGOs also provide teachers the specific courses in non-formal environmental education links to practical training.

Non-formal and informal environmental education

Several professional organizations provide environmental education as support to schools through leisure activities. In the framework of professional cooperation, projects aimed at developing the competences and practical skills of young people contribute to environmental education. One of them is the project of the Norwegian educational company Skogkurs "**JOB:U**" with a focus on recruiting young people for summer jobs for work in the forest. The aim of the project is long-term, strategic and systematic cooperation between actors in forestry, which will provide young people with the opportunity for relevant professional forestry practice. In addition, the project contributes to increasing and improving awareness of forestry activities.

Skogkurs provides the educational program "**Learning about the Forest**" (**Skoleskogen**), which aims to provide children and young people with knowledge about forests and forestry. Skogkurs implement the educational program "Learning about the Forest" in close cooperation with the Ministry of Agriculture and Food of the Kingdom of Norway and several interest groups in the forestry and wood industry.

The educational program also has its own online platform (www.skolesjkogen.no), where teachers and students can find tasks, activities and lesson plans in line with the school curriculum. The online teaching materials inspire students to use forests and wood-based materials and provide educators with a great tool for carrying out practical activities in nature.

The forest as a learning space offers many opportunities for discovery, practical learning and physical activity for young people. In addition, the forest is suitable for training in work habits related to sustainable development. Forest management requires a dialogue between research and practice, as well as a deeper understanding of the connections.

Vocational education of forest owners and managers in Slovakia

Increasing the professional level of employees is a fundamental tool for ensuring the sustainable development of individual sectors. Meeting this requirement is essential in the current period, because the forestry sector has new challenges. It is necessary not only to respond to current tasks, but also to prepare employees for changes in advance. These are mainly new requirements of society for forests (ecosystem services) and for the implementation of adaptation and mitigation measures for climate change. One of the decisive tools for increasing the professional level of employees is lifelong learning.

The importance of education in the context of acquiring new knowledge and skills in forestry defined in the **New EU Forest Strategy**, which states “*People with a wide range of skills are behind the provision of many services that forests offer. The increasing importance of the multifunctionality that forests will play in the transition to a sustainable and climate-neutral future will require a high-quality set of skills, including experts in more rigorous sustainable forest management practices, including adaptive afforestation and forest restoration, architects, engineers and designers, food scientists, data specialists, chemists and ecotourism facilitators. It is therefore important to develop appropriate curricula, knowledge and skills*”.

Ensuring high-quality knowledge and skills of employees is a challenge for the entire forestry sector, the heterogeneity of which reflected in the professional level of employees of individual forest managers. On the one hand, there is a stable organizational structure in state and larger non-state entities managing forests. This structure includes employees with different levels of education, knowledge and competencies. The situation is diametrically different for owners and managers of small-scale forests. These owners in most cases do not have forestry education (in a survey of landowner representatives, 62% stated that they had no forestry education). Therefore, the guarantee of professional forest management based on the institute of a professional forester.

The current education system in Slovakia for the needs of forestry based on **Act No. 568/2009 on lifelong learning, which in Section 2** defines the basic concepts as follows:

(1) Lifelong learning is all activities carried out throughout life with the aim of improving knowledge, skills and abilities. Lifelong learning as a basic principle of upbringing and education applied in the educational system of the Slovak Republic consists of,

a) school education and

b) further education following the level of education achieved in school education.

Further education enables one to obtain a partial qualification or a full qualification or to supplement. Then is possible expand or deepen the qualification acquired in school education, or to satisfy interests and acquire the ability to participate in the life of civil society.

Secondary education of forest management employees provided by secondary vocational schools in Banská Štiavnica, Bijacovce, Ivanka pri Dunaji, Prešov, Tvrdošín and Poltár and vocational upper secondary schools for forestry in Banská Štiavnica, Liptovský Hrádek and Prešov. The number of students in forestry and related fields in the 2019/2020 school year was 1,256 (of which 144 were girls) and increased by 68 students every year. Four-year secondary education with a school leaving certificate can be obtained in three fields of study - 4219M 01 forestry - forestry operation, 4219M 02 forestry - landscape ecology and 4556 K - forest technology operator.

All three levels of **university forestry studies** (bachelor's, master's and doctoral) with a focus on forestry and applied zoology and hunting in Slovakia are provided by the **Faculty of Forestry of the Technical University in Zvolen**. The length of full-time study at the bachelor's and doctoral levels is 3 years and at the master's level 2 years. In the case of part-time study, it is 4 years at the bachelor's and doctoral levels and 3 years at the master's level.

In the field of further **vocational education in forestry**, the National Forestry Centre (NLC) through the Centre for Knowledge Transfer and Forest Pedagogy focuses on the development of human resources in the field of forestry, environmental protection and rural development. More than 1000 participants, mainly forestry employees from state and non-state entities, participate in the educational activities provided by the NLC annually. Educational programs implemented in the form of lectures, conferences, seminars, workshops, but also practical training.

In the area of increasing professional level and professional education, the NLC focuses on:

- verification of professional forestry qualifications for activities (professional forester, forest reproductive material, preparation of Forest Management Programs (FMP), professional qualification in the field of plant protection products on behalf of the Ministry of Forestry and Forestry of the Slovak Republic),
- verification of technical qualifications (preparation of FMP),
- vocational forestry education (in particular):
 - Professional training for professional forest managers (OLH) exams;
 - Current knowledge from key areas of work of a professional forest manager (further education of OLH certificate holders);
 - Professional training for the professional competence examination for activities with forest reproductive material;
 - Training of holders of certificates of professional competence for activities with forest reproductive material;
 - Professional education in the field of plant protection products;
 - Wood assortment;
 - Education in the field of hunting;

- Language education:
 - Professional English language for foresters;
 - Professional German language for foresters;
- Environmental education and public relations:
 - Educational program Forest Pedagogy;
 - Educational program Forest Guide;
 - Forest Health;
- Non-formal education about Forest and Forestry;
 - Learning about forest;
 - Minimum forestry qualification.

Vocational training system in forestry in Norway

Forestry in Norway is a future-oriented economic sector. It requires expertise and competences to ensure healthy competition in the economic chain. The actors want to raise the level of forestry competences at all levels of forestry management through joint investment in new dissemination technology and inclusive cooperation in the development of training courses. Secondary and higher education institutions provide specific training programmes in the formal further education sector.

The forestry profession at secondary school educates operators as well as administrative staff. Students usually start this study after completing secondary school at around 16 years of age. The forestry study is a three-year education, supplemented by two years of professional practice in a forestry company. The study concluded with a final certificate. There are several upper secondary schools in Norway that offer the first year of vocational studies in the agricultural and forestry sectors. The specific two-year education (second and third years) is situated at eleven different schools in the regions. Students who would like to continue their studies at university can do so by completing an additional year of secondary school with studies in chemistry, mathematics, etc.

Students who have completed upper secondary school forestry studies at secondary school have the opportunity to start their studies at universities. **Topics related to forestry and environmental issues** offered at master's programs at **five Norwegian universities**. Within forestry, there are study fields such as forestry, forest ecology, forest technology, forestry management at, University of Bergen, Norwegian University of Science and Technology, Norwegian University of Life Sciences, Arctic University of Norway, and University of Oslo. The studies are three years (bachelors) and five years (masters). It is also possible to continue with doctoral studies.

The educational institution Skogkurs is a non-profit organization that has been the **main provider of lifelong learning** based on the needs of various segments of the forestry sector since 1958. It organizes approximately 800 practical training courses annually. Currently, Skogkurs has partnerships with 37 scientific and professional forestry organizations. In addition to education, it also engages in

activities aimed at raising public awareness of the importance of forests. Skogkurs provides consulting services to forest owners, publishes educational materials, and organizes professional conferences. Since 2021, it has also been educating its clients through electronic platforms, namely podcasts (*Skogkurs podden*) and online webinars. Skogkurs carries out its activities throughout the country in the following areas¹³:

- forest management
- planning
- forest management
- forest cultivation
- ecology and certification
- multiple use of forest land
- construction and maintenance of forest roads
- operation of forest equipment
- wildlife and hunting management.

¹³ <https://skogkurs.no/kurs/kursbeskrivelser/>

YOUTH'S PERCEPTION OF THE FOREST AND ENVIRONMENT

Darina Výbohov, Andrea Melcerov

Specifics of the target group of forest pedagogy – adolescence, youth aged 15-19

Adolescence lasts approximately 3-4 years and transforms a child into a biologically mature person. This period is characterized by a milder and calmer course compared to puberty. The formal achievement of adulthood also contributes to the overall positive attunement. During this period, a young person accepts the role of an adult, which is reinforced in some adolescents by their entry into employment. Anticipation and planning of the future in adolescents is predominantly optimistic.

The thinking of an adolescent is more mature and flexible. Radicalism, the pursuit of absolute solutions and pseudo-philosophizing occur in the adolescent's thinking.

The adolescent tries to achieve performance with as little effort as possible. However, adolescents can also become enthusiastic about some activity and can work hard, especially within their areas of interest, which are diverse for them. Adolescents have a need for immediate satisfaction of their needs. They are often impatient and do not like to postpone the satisfaction of their needs.

Conflicts with authorities persist during this period. According to Štovec et al. (1994),¹⁴ there are frequent intellectual disputes in communication, when the adolescent gives reasons to defend his opinions. He uses generalizations and logical arguments. In the adolescent period, there is an effort to philosophize, to search for causes and relationships of things. Cognitive abilities are at the level of an adult, but the adolescent has little life experience.

Young people at this age like to seek out and prefer intense experiences. They like loud music, fast driving, extreme sports, etc. Typical for adolescence is the so-called daydreaming and this concerns the rest of life, work relationships or problems, technology and social relationships in the future. Adolescents experience the first disappointments in their lives (not admitted to university, not finding a job, the breakup with a partner, etc.).

According to Gbor and Porubanov (2016)¹⁵, adolescents have the following additional cognitive, social and emotional prerequisites for perception and learning:

- Qualitative intelligence is close to maximum performance, creative thinking stands out.
- The development of abstract thinking peaks, which continues to be improved and shaped by education.
- They can work with concepts, realize and understand the essence and true meaning of concepts.
- Dissatisfaction with only one way to solve a task or problem.
- The ability to create assumptions based on real reality.

¹⁴ ŠTOVEC, J., BUBENKOV, E., LEPIEŠOV, K., SZABOV, K, 1994: PSYCHOLGIA A PEDAGOGIKA. Vydavatel'stvo OSVETA, Martin, 1994, str. 196-200

¹⁵ GBOR L., PORUBANOV D. 2016: *Vybran kapitoly z vvojovej psycholgie*. Vysokoškolsk uebnica. Tribun EU.

- There are confrontations from what has been experienced, heard, seen, read and obtained in other ways and sources.
- Frequent critical evaluation, dissatisfaction, unclear desires and subsequent pessimism.
- Colloquial speech is varied, more plastic and often contains inappropriate and vulgar expressions.
- Creating a moral ideal and trying to get closer to it. Specific people from the present or the past can embody moral values (artists, athletes, movie heroes, influencers from social networks).
- The danger of extremist judgments (choosing extremes) and refusing to compromise.

Recommendations for education practice

According to Loyová and colleagues (2016)¹⁶, recommendation for the work of a teacher with adolescents is a partnership relationship. Cooperation with them is not usually difficult, adolescents generally have an optimistic and easily adaptable personality - they have enough time, energy and freedom for their own self-realization and self-improvement, which deepens their interests, which often result in their chosen profession. They know how to set high realistic goals. In education, it is appropriate to assign adolescents longer-term and more demanding projects and use teamwork. Adolescents are open to discussions. When working on projects, the role of the teacher is to be a helpful, onlooker partner/advisor. However, the adolescents still need to have their needs met immediately - they are therefore quite impatient.

Interpretation of questionnaire survey results

For the purposes of compiling the analysis, a questionnaire was conducted "Survey of the perception of forests and the environment by youth", which was participated by more than 300 students of gymnasium, vocational upper secondary schools and conservatories from both research countries. Link to the Survey: [Prieskum vnímania lesa a životného prostredia mládežou](#).

In the questionnaire, survey participated 312 students, of which 43.55% were men and 43.15% were women (13% did not specify gender). The students from Slovakia studied at grammar schools (70.4%), secondary vocational schools (21.9%), conservatories (0.3%) and other (7.4%). The Norwegian students were from secondary vocational schools (60%) and conservatories (26.7%) and 13.3% of the students did not answer this question regarding the type of school attended. The students from Slovakia who came from rural areas (51.2%), and 48.8% from urban areas. Of the Norwegian students, 80% of the students came from rural areas, 13.3% from urban areas and 6.7% did not answer the question regarding permanent residence.

¹⁶ LOYOVÁ, D. a kol. 2018. Lesná pedagogika – učebné texty k vzdelávaciemu programu. Národné lesnícke centrum, Zvolen, 112.s. ISBN 978-80-8093-240-4

How do today's youth perceive forestry and the environment?

- 75% of young Slovak respondents perceive forestry as excessive logging, and definitely agree with the statement that, in our country, more wood is harvested per year than grows per year. On the contrary, 80% of young Norwegians disagree with the given statement.
- When asked about knowledge related to the profession of a forester, the answers of Slovak students reflected negative experiences or insufficient information (foresters do not take care of the forest sufficiently, plant little, cut down more, sit in the office and prohibit camping in the forest). The answers of Norwegian students showed greater insight and personal experience and involvement in managing a family-owned forest.
- Slovak youth appear neutral on the issues of using forest products, recycling and saving energy in everyday behaviour. Young Norwegians have a more positive attitude towards gathering wild berries, eating wild game, separating and recycling. In Norway, a live Christmas tree is part of the Christmas tradition (this answer by 60% of respondents), while up to 70% of Slovaks preferred a traditional Christmas tree.
- At the time of the questionnaire survey, both Slovak and Norwegian respondents were not active in a club, association or society dedicated to the environment or environmental topics. Despite the fact that up to 64.7% of respondents do not agree with participating in community activities to clean up the environment, the majority of Slovak students believe that it is necessary to increase civic responsibility in this area. Norwegian students believe that it is necessary to educate children and youth through informal environmental education activities.
- Positive agreement in both participating countries, with 86.9% of students agreeing that foresters need to communicate more and more effectively with the public.
- To create an overall picture of the environmental awareness and behaviour of young people, it is also important to find out where young people get information about forests and the environment. According to the survey, Slovak youth obtain this information on the Internet (63.5%), and for Norwegian youth, the source of information is school and family (80%).

The results of the survey show that the environmental awareness of Slovak youth **is different** compared to Norwegian youth. The quality of information sources, family customs and traditions, and the specifics of the countries in forest ownership and management have a strong influence.

SUMMARY AND RECOMMENDATION FOR PRACTICE

The European Commission in the report “Europe needs more scientists” (2004) expressed the importance of science education and support for research and knowledge transfer. There it declares the need for high-quality environmental education for young people. At the same time, within the framework of the “*New Forest Strategy to 2030*”, the *European Commission* has committed itself, through the Climate Education Coalition, to promote cooperation between pupils, students, teachers and stakeholders on the role of forests, including the benefits of outdoor environmental education. The need to address climate change and biodiversity loss is becoming more urgent in Europe and the world. In order to advance the development of solutions to mitigate the impacts of climate change and halt biodiversity loss and ecosystem degradation, it is very important to integrate this issue into environmental education for young people and lifelong learning for adults.

To ensure relevant resources and information, it is necessary to support the training of teachers on modern methods of environmental education for young people. For educational practice within environmental education, training and awareness - raising, it recommended, based on the implemented project:

- to educate youth in the form of informal environmental education activities (in the forest, in the hunting ground, in the zoo, in forestry organizations, etc.), to implement excursions with an interactive program;
- to include methods for creating one's own thought operations in the educational process (discussions with experts, analysis of myths and facts, own collection of data, information and their evaluation);
- to focus on the quality and relevance of information related to the environment, forests, natural resources and forestry on the internet, social networks;
- to use cooperation with enterprises/firms not only within the dual education program, but also for students of grammar schools and secondary schools with other professional specializations (an example is the LESU ZDAR! project - forest pedagogy's environmental education program for secondary schools);
- to organize activities for schools/students where they will create and care for green infrastructure in cities and towns, develop work habits, cooperation and civic responsibility among youth.

Education and awareness - raising are also important for forest owners and can focus on new environmental topics such as adaptive forest management, circular bio economy and positive presentation of forestry. It is precisely targeted, age-appropriate information, mediated through multiple communication means and methods that can effectively develop critical thinking and constructive attitudes of young people in relation to topics related to forests and forestry. Based on the example of interesting inspirations from Norway, is recommends for forestry professional practice:

- to cooperate with educational institutions and schools to jointly and flexibly respond to the needs of practice and create the necessary educational programs for adolescents and forest owners. For example, the Norwegian Wood Cluster focuses on supporting career guidance and orientation for forestry professions;
- to connect professional forestry institutions to formal and informal education and civic and community activities. The company Skogkurs creates opportunities for employment for young people. During the 6-week summer jobs in the forest, young people get to know the specifics of the Norwegian forest and work in the forest. The most skilled are given the opportunity to continue working as operators for forestry services;
- to create opportunities for young people to gain practical experience directly in the educational process. Students in Norway have the opportunity to use the harvester technology simulator at school without restrictions. Educational environmental activities are accessible in places other than school (for example, students have free access to the Domkirkeodden open-air museum and the Innlandet scientific education centre in Gjøvik);
- to motivate forest owners to learn about current innovations in forestry (use of drones when working in the forest, virtual reality, etc.);
- to diversify wood production and introduce agroforestry practices. For example, private forest owners in Norway often use forest areas to establish Christmas tree plantations for regional sales;
- to emphasize the WORK - LIVE balance of employees in forestry companies. In Norway, the priority is not only the professional fulfilment of work tasks, but also a friendly working atmosphere and the mental health of employees;
- to introduce new procedures and technologies in organizing education and media communication (e.g. a forestry podcast or offering educational courses for professional and lay audiences accessible on e-shop);
- to be an example in a rational approach to the environment in everyday behaviour (using wood in the architecture of buildings or natural acceptance of work culture for a calm and clean work environment).

New ideas from the implementation of the **EE_YOUTH project** will be processed into the output "*Project Implementation Report*". The content focus of the output will be an educational program of forest pedagogy for the target group of youth aged 15-19 and a proposal for innovative education of secondary school teachers, focused on the possibilities of developing environmental education, cooperation and connections with professional practice. Professional topics focused on innovations in forestry, forest protection and a positive presentation of forestry will be part of the offer of further education for forest owners and managers, provided by the National Forestry Centre.