CHANGING EXPECTATIONS OF SOCIETY AND POLICY FOR HIGHER FORESTRY EDUCATION

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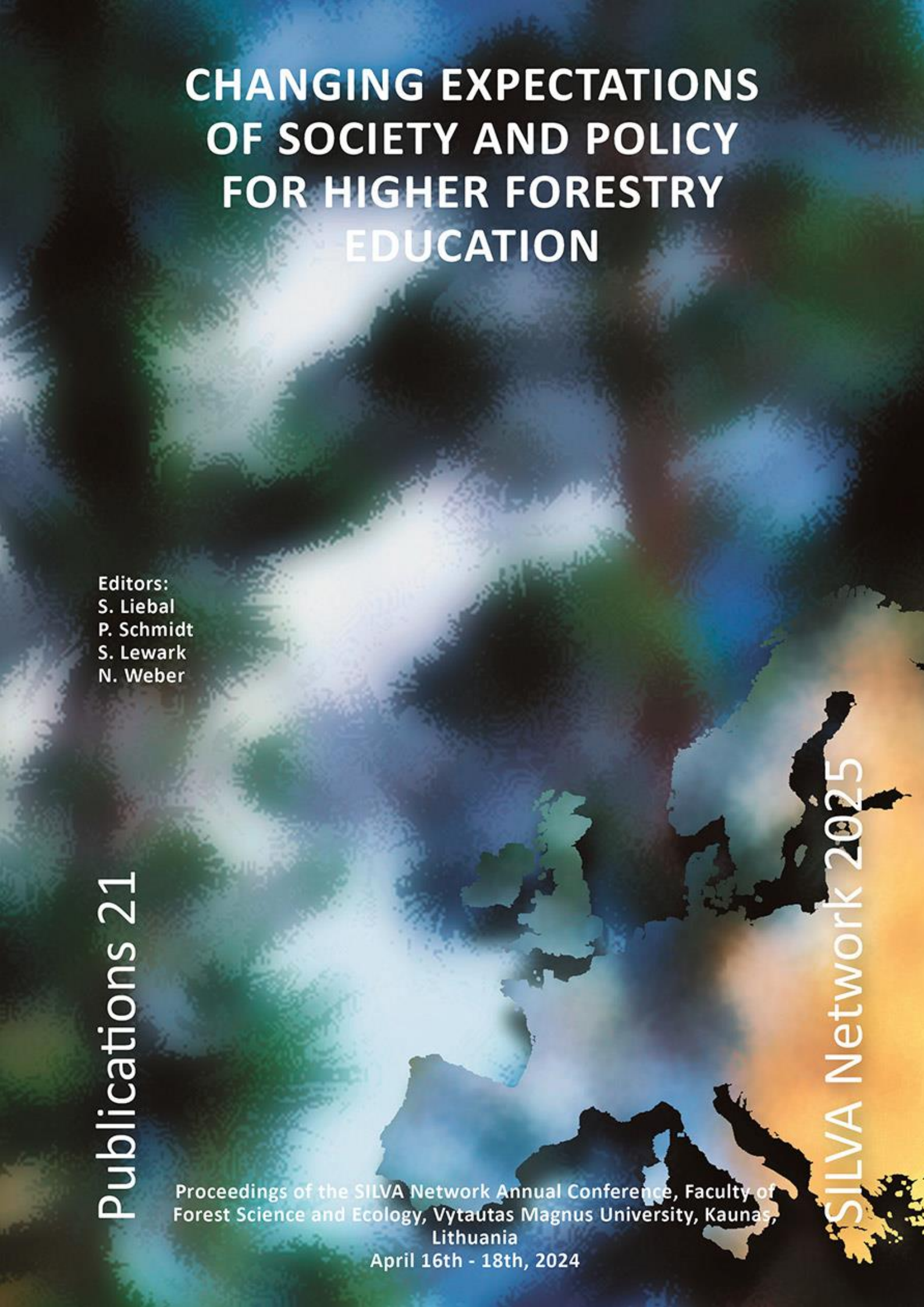

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Abstracts of the SILVA Network Annual Conference

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Faculty of Forest Science and Ecology,
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Silva NETWORK

Changing expectations of society and policy for higher forestry education

Forestry is becoming increasingly complex as a result of the requirement to balance numerous stakeholder interests. Forestry is challenged by issues such as climate change, carbon sequestration, biodiversity conservation, rural development, and adaptive ecosystem management. In the course of the energy transition, forests are seen as an important source of bioenergy. On our way towards more bioeconomy, forests shall sufficiently supply us with raw material. Forest products and services satisfy a wide range of ecological, social and economic needs and address a variety of interests, people and organizations. The number of forestry stakeholders is continually growing, spanning territorial, social, economic, and political borders. Nevertheless, or perhaps precisely because of this, social expectations and values have changed considerably in recent years. Forestry has partly lost its social license to operate and its position in land use consultation, due to its bad name as wood cutter and its introvert attitude. The question arises, how forestry can regain acceptance. Forestry education should provide the equipment and the attitude to engage in this challenge.

Forestry education has a long history and has changed considerably: Having focused on forest management in the past, it now emphasizes the management of natural resources for valuable connections between humans and ecosystems. How can forestry education help to address contemporary forestry practice challenges? How should present and expected future societal needs be incorporated into forestry education and its curricula? To transform forestry education, efforts must be made to coordinate and connect relevant institutions and stakeholders. A collaborative effort from all stakeholders appears to be the way ahead in changing the existing forestry education model to accommodate new courses and skills that will better train future foresters.

Conference contributions may include:

- Current problems and coping techniques in higher forestry education.
- Actual and expected role which forestry education plays in society today and in future.
- Surveys of higher forestry education forest curricula to meet stakeholder demands.
- Expectations for higher forestry education from forest policy and practice.
- Changes in higher forestry curricula, teaching and learning experiences, tools, and strategies for meeting societal needs.
- Development of a higher forestry education curricula in the context of societal demands and global issues.
- Competencies in higher forestry curricula to integrate and disseminate knowledge across discipline boundaries.
- Climate change mitigation and adaptation as major concerns in higher education forestry courses.
- Various organizations' perspectives on higher forestry education.

Conference Program

Tuesday: April 16, 2024	
11.00 – 12.30	Registration & Welcome *Venue: Faculty of Forest Science and Ecology, Vytautas Magnus University, Kaunas*
12.30 – 14.00	*Lunch*
14.00 – 14.30	**Welcome Address**: Prof. ASTRIDA MICEIKIENĖ, Chancellor of the Agriculture Academy, Vytautas Magnus University (VMU) **Conference Opening**: NORBERT WEBER, President SILVA Network & Chairman of Forest Policy and Forest Resource Economics, TU Dresden (Germany) **IUFRO Announcement:** MIKA REKOLA, IUFRO Research Group 6.09 "Forest Education" coordinator & Director, Master of Science programme, Forest Sciences, University of Helsinki (Finland)
14.30 – 15.45	**Keynote Speech** **Addressing societal expectations through curricular innovation, example from Sweden** – VILIS BRUKAS, Southern Swedish Forest Research Centre, SLU (Sweden) **Session 1: Development of a higher forestry education curricula in the context of societal demands and global issues** **Human and social science knowledge and curricula in forestry higher education** – ISTVÁN LÜKÓ, BÁLINT HEIL, University of Sopron (Hungary)
15.45 – 16.15	*Coffee break*
16.15 – 18.15	**Reflections on the Master "Environmental sciences with specialization in Forest and Landscape Management" in the context of society today and the graduate surveys over the past 10 years** – NOËMI BRÜGGEMANN, ETH Zürich (Switzerland) **Irish Forestry Education: Expanded Horizons** – MARIE DOYLE, University College Dublin (Ireland) **EUROSILVICS: Open-access repository for education support in silviculture and forest ecology** – FRITS MOHREN, Wageningen University and Research (Netherlands) **Education and nature-based solutions: bending the curve for biodiversity** – ANŽELIKA DAUTARTĖ, Faculty of Forest Sciences and Ecology, Agriculture Academy, VMU (Lithuania)

Wednesday: April 17, 2024	
9.00 – 10:15	**Keynote Speech** **Forestry education in a changing policy environment: Lithuanian example** - NERIJUS KUPSTAITIS, Forest policy expert, Vilnius (Lithuania) **Session 2: Expectations for higher forestry education from forest policy and practice** **Expectations for higher forestry education from forest owners perspective** – ALGIS GAIŽUTIS, Lithuanian Forest and Land Owners Association (LMSA) (Lithuania)
10.15 – 10.45	*Coffee break*
10.45 – 12:45	**The young forestry network in Germany – a link between practice and higher forestry education** – FLORIAN BORN, Junges Netzwerk Forst (Germany) **Session 3: Emerging topics in higher forestry education** **The multidisciplinary nature of urban forest planning and management. Latvian experience** – IEVA KRAUKLE, ILZE STOKMANE, KRISTINE VUGULE, Latvia University of Life Sciences and Technologies (Latvia) **Bioeconomy perception by students at the Technical University in Zvolen** – JAROSLAV ŠÁLKA, Faculty of Forestry, Technical University in Zvolen (Slovakia) **Comparing the contents of higher forestry education programs at German universities** – MIRIAM T. HAUSL, ELISABETH VIEHWEGER, Chair of Forest Policy and Forest Resource Economics, TU Dresden (Germany)
12.45 – 14.00	*Lunch*
14.00 – 15.30	**Workshop keynotes** **Forest education in the context of the Forest Europe process –** JULIET ACHIENG, European Forest Institute, Bonn (Germany) **Rooted in Collaboration: Investing in Youth to Strengthen Forestry Education** – ISABELLE CLAIRE DELA PAZ, President of International Forestry Students' Association (IFSA), Freiburg im Breisgau (Germany) **Workshop:** Emerging hot topics in higher forest education - Which topics and issues should higher forestry education address?
15.30 – 16.00	*Coffee break*
16.00 – 17.00	Discussing the future of SILVA Network - World-Café´s. Topics: 1) SILVA Network Tasks: What is special about the network and what functions should it take over in future? 2) SILVA Proceedings: There is space for more – How can we use the good reputation of the SILVA Proceedings to make more out of it?" 3) SILVA Network Visions: Which role do we want to play in a European Joint Accreditation and Quality Assurance Systems for higher forestry education?
17.00 – 17.30	General Assembly of the SILVA Network
19.30	*Conference Dinner – Kaunas City Centre*

Thursday: April 18, 2024
8.00 – 15.00. Field visit to the forests of Dzukija national park

Excursion Program

Field visit to Dzūkija National Park

Established in 1991, Dzūkija National Park is the largest protected area in Lithuania, located in the southern part of the country. Dzūkija nature is renowned for its vast forests, sandy continental dunes, raised bogs and marshes, picturesque rivers, streams and springs which flow through the valleys overgrown with lush meadows. Majority of the national park is covered by pure Scots pine (Pinus sylvestris) forests intertwined with traditional villages protected for their region-specific old wooden architecture and rich ethno-cultural heritage, alive traditions and customs, hollow-tree beekeeping, old crafts and folk songs. During the field visit, we will travel to the largest village in Lithuania – Marcinkonys, sightsee Dzūkija nature, its conservation practices, and ongoing scientific research.

Stėgalios bison paddock was opened in March of 2023 aiming to conserve and increase European bison (Bison bonasus) population in Lithuania. Bison is European wide protected species, nationally listed as near-threatened. Enclosures protect newly formed herd translocated from Central Lithuania, were their numbers have rapidly increased in the recent years. The smaller enclosure is open to the public, visitors can observe grazing bison from a viewpoint.

Čepkeliai State Strict Reserve was established in 1975 in order to protect Čepkeliai mire. Čepkeliai is the largest raised bog in Lithuania (58.6 km^2) which formed in the watershed of Katra, Ūla, and Grūda rivers with relict eutrophic lakes and islands. The raised bog has unique flora and fauna as the area is

inhabited by many protected and rare species. The mire is surrounded by sandy plains, continental dunes, forests.

In Dzūkija, **continental dunes** had formed as early as 15 thou. years ago, by strong winds shaping land formations. In the past, open sandy plains and dunes were common part of landscape. Dunes are associated with many specialized vascular plant species. Nowadays, only a few continental dunes remain open. In 2023 nature management project LIFE-IP NATURALIT restored three dunes in geomorphological reserves. It is expected, a long list of red-listed species such as Eastern pasqueflower (Pulsatilla patens), Woodlark (Lullula arborea), Nightjar (Caprimulgus europaeus), hymenopterans and other will be favoured.

Eastern pasqueflower (Pulsatilla)

During summer of 2023, international group of scientists **installed rhizotrons** in the Dzūkija National Park Living Lab. Rhizotrons are underground constructions with observation windows for long term root and soil interaction study. The main objective is to compare tree root mortality among pure Scots pine, silver birch and their mixtures. Rhizotrons were installed in a frame of eco2adapt, a Horizon Europe project which aims to address challenges concerning climate change effects and increase of forest resilience.

Rhizotron in Dzūkija forests

Contents

1 Addressing societal expectations through curricular innovation, example from Sweden

Author(s): Vilis Brukas [1]

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Abstract

In many European countries, declining numbers of students pose existential challenges to forestry faculties that struggle with meeting the demand for competent professionals in the sector. This also causes an identity crisis for forestry educators and for the profession as a whole. Sweden is not an exception. Despite high importance of the forest sector in country's economy and excellent job market, numbers of applicants had been shrinking since the turn to the 21st century until very recently. Societal debate concerning utilization versus protection of forests is becoming sharper and young people are not attracted by education that, reputedly, is preparing "timber fellers".

In a targeted effort to address these massive challenges, the SLU's Faculty of Forest Sciences launched several new Bachelor's and Master's programmes in different geographic locations and with distinct thematic specialisations. Among them, we have *Forest & Landscape* that is the first Bachelor's programme at SLU conducted in English. Established in 2021, the programme is delivered as a joint effort between two of SLU faculties and has an innovative thematic profile. It links classical forestry subjects with a strong landscape component, including several courses in social science and landscape design. Launched in 2021, the programme appears to be an attractive option as for Swedish as for foreign students. Forest & Landscape can boast with high course evaluations and with innovative features, such as the writing-across-curriculum module aimed at enhancing students' skills of scientific writing throughout the programme. If interested, students can spend a study period at Wageningen University and Research (WUR) and obtain a double degree from both, Dutch and Swedish universities.

Overall, Forest & Landscape can be duly regarded as a great success that was made possible due a blend of a vigorous bottom-up initiative and strong support from the top university administration.

2 Human and social science knowledge and curricula in forestry higher education

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Keywords: curriculum, social sciences, sustainability, communication, forestry policy, sociology

Abstract

In forestry education, the biosphere, technosphere, and sociosphere are integrated into a holistic system of teaching and learning. Despite this, human and social sciences often receive less emphasis in curricula. Yet, in the modern context, the connection between society and forests is critical. The societal perception of forestry, often negative due to misunderstandings about forestry and hunting professions, necessitates greater sociological awareness. Forest managers today must adopt new responsibilities, such as ecosystem and integrated resource management, resolving conflicts, and engaging with local communities on environmental issues.

Forestry curricula should not only serve as professional and pedagogical documents but also reflect legal-political frameworks. A paradigm shift is required to incorporate humanities and social science knowledge, ensuring that forestry graduates are equipped to educate various stakeholders, including professionals and the public. This shift will involve grounding curricula in psychological, sociological, and philosophical principles, fostering a more holistic approach to forestry education. An organizational background is also necessary to coordinate training of instructors and related research.

Our presentation explored the theoretical background and the need for curriculum reform. It also presented examples of new forestry course designations, as well as the integration of secondary and tertiary education. The proposal for a Sustainability Knowledge Transfer Center highlights the importance of combining sociological research with professional communication activities, exemplified by Sopron University's 2023 short-course training for university instructors without pedagogical qualifications.

3 Reflections on the Master “Environmental sciences with specialization in Forest and Landscape Management” in the context of society today and the graduate surveys over the past 10 years

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Abstract

In 2008, the first graduates of “Environmental sciences with specialization in Forest and Landscape Management” completed their studies at ETH Zurich, marking a shift from the traditional “Forestry” curriculum.

For the Silva Network presentation 2024, we aim to: a) outline our curriculum and emphasize its distinctive features compared to conventional forestry studies, and b) present the results of our graduate surveys, reflecting on their implications for our curriculum and the evolving needs of society, along with suggestions for potential implementation.

During the first two years of the Bachelor's program, students gain a solid foundation in general natural sciences, with specialization commencing in the third year. The proportion of forest-related credits varies from 10% to 30% depending on individual course selections, while students are also required to complete 10% of their credits in social sciences and humanities. The Master’s program places a stronger emphasis on forestry, yet still offers a diverse array of courses covering topics such as landscape patterns, processes, and mountain hydrology.

Every four years, we conduct surveys among our graduates to assess their career outcomes. In 2022, we achieved a response rate of 70%. Previous surveys indicate that our graduates are well-prepared for professional practice, with 62% continuing to work, at least in part, within the forestry sector. There is a high demand for our graduates even though (or maybe also because(?)) they are not “typical” forest engineers. Notably, 76% secured a job within two months after graduation, 89% would choose this study program again and 94% are very satisfied or satisfied with their current job situation (Graduate survey, 2022). In a survey conducted by Gredig (2017) among prospective employers, respondents expressed high levels of satisfaction with our graduates. When asked about their educational priorities, they particularly emphasized the importance of personal competencies.

We are constantly striving to enhance our study program by incorporating diverse feedback. Currently, we are focused on two key questions: What should be the ideal scope of our forestry curriculum—specialists versus generalists? Additionally, how can we more prominently highlight the personal competencies gained in each course?

Gredig, S. 2017, Förster oder Forscher – wird die Waldausbildung an der ETH den Ansprüchen der Arbeitgeber gerecht? Bachelorarbeit. 63 S.

Graduate survey 2022: More information on the curriculum and the survey: https://ites.ethz.ch/wald-und-landschaft/portal-forest-and-landscape/teaching.html

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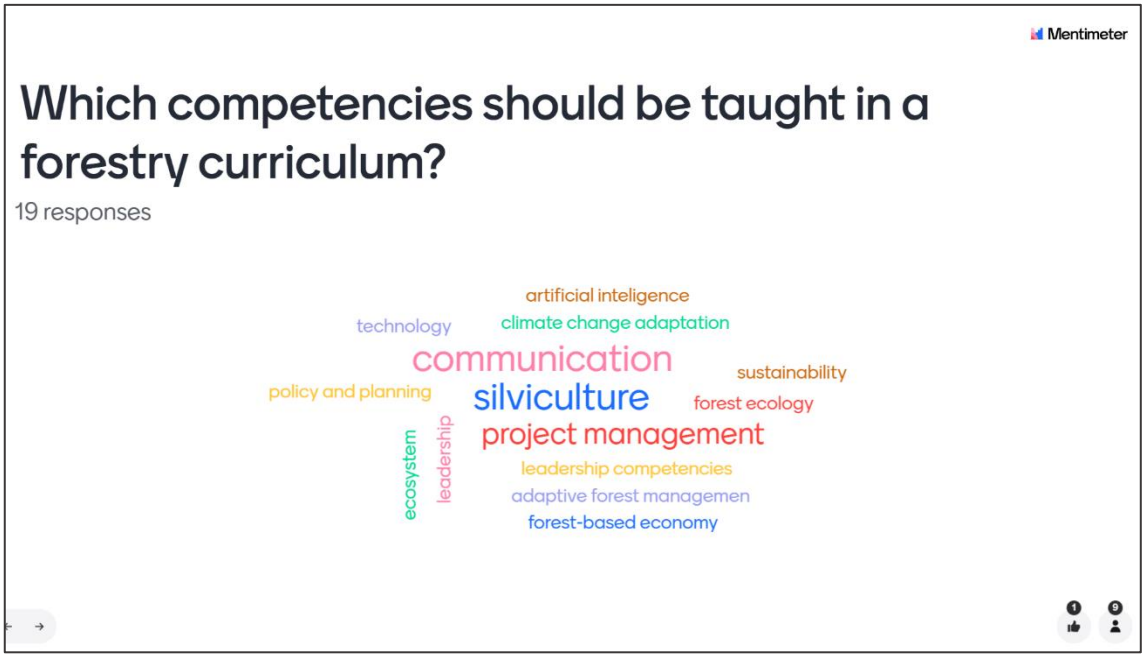
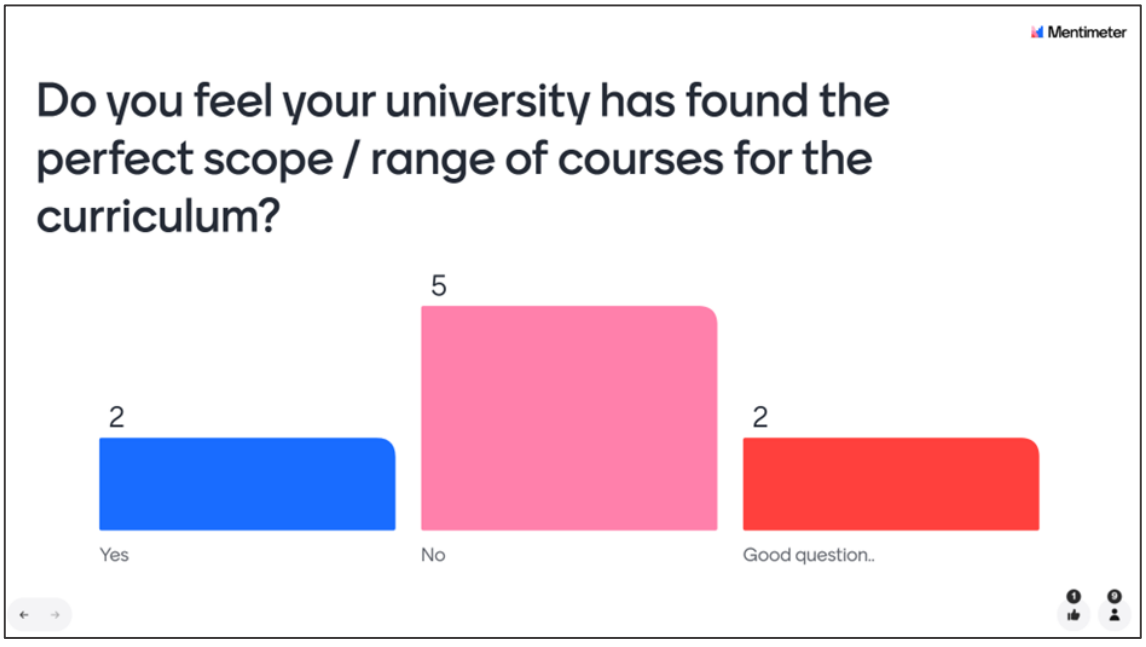
Answers to mentimeter questions at the Silva Network Conference on the 18. April 2024 in Kaunas





4 Irish Forestry Education: Expanded Horizons

Author(s): Marie Doyle [1]

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Abstract

The development of Irish Forestry education is closely related to the rapid expansion in forest cover from 1% in the 1920s to 11% in 2023; there was a recognised need to educate these pioneer foresters in the skills needed to move from unplanted land to mature plantations that would provide both timber and rural employment.

In the early years, forestry education focussed on communicating the technical skills to appropriately prepare land for planting, decide on planting schemes, species selection and management. Initially, the focus was relatively narrow as a small number of species were used in the afforestation programme and only land of marginal quality was planted.

In the 1980s, the world woke up to how unfettered economic development and increasing biodiversity losses and climate change were not unrelated. This led to the era of sustainable forest management and reflected itself in policies and practises that required closer-to-nature management systems and the expansion of forestry practice beyond a focus solely on commercial productivity and the limited number of species that had been focussed on to date. This evidently required quite a shift in the structure and content of Irish forestry education programmes to address the ecological and social aspects hitherto not considered. The expertise needed to deliver this, as well manage the growing requirement to be 'accountable' for forestry practises to the wider community – and a whole host of other scientific disciplines presented quite a challenge.

These days, in the era of climate change and biodiversity concern, along with the growing awareness in the Irish population of the value of trees, the discipline of 'forestry' often appears with negative connotations of single species plantation forest, rampant clearfelling and a sole focus on profit, while in reality, we continue to strive to meet the expanded goals for forestry education (see Fig. 1).

Fig. 1: Current Challenges of the Higher Forestry Education in Ireland

5 EUROSILVICS: Open-access repository for education support in silviculture and forest ecology

Author(s): Frits Mohren [1]

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Abstract

Increasingly, academic teaching in silviculture and forest management is part of more general BSc and MSc programmes in environmental sciences and land use and resource conservation and management. As a result, dedicated mono-disciplinary teaching in silviculture and forest management is receiving less attention and disciplinary knowledge given less emphasis. While this allows more emphasis on problem solving skills and competences, it also calls for alternative means to provide students with access to classical forestry topics such as silviculture and forest management systems.

The EUROSILVICS project, funded by the Erasmus+ Collaborative Partnership programme, is carried out to make such classical, disciplinary knowledge in silviculture and forest management available for use in a wide array of teaching, ranging from academic programmes in forestry and forest management, to professional teaching in silviculture, and vocational training in forest ecology and forest management.

EUROSILVICS creates a common digital resource for innovative higher education in forestry, based on an Open Access web-based facility with educational material of the participating institutions made available as an Open Access Library for Learning. Education material in national languages will be reviewed and translated into English to allow for international use in digital learning. The project involves 6 leading European universities: Leuven University (prof. Bart Muys, BE), Ghent University (prof. Kris Verheyen, BE), the Austrian University of Life Sciences BOKU (prof. Hubert Hasenauer, AT), Eberswalde University for Sustainable Development (prof. Peter Spathelf, DE), and the Swedish University of Agricultural Sciences SLU (prof. Gustaf Egnell, SE), and is coordinated and led by Wageningen University and Research WUR (prof. Frits Mohren, NL).

The project is centred around the establishment of a dedicated open access platform for forestry education material, both basic and applied, and including supplementary material such as exercises, excursions, links to professional websites, etc. The project includes a robust review and editing procedure for quality assurance, links to other open sources and to repositories of professional associations, and outreach to individual users as well as other institutions involved in forestry-related education.

The project runs from 2022 and 2025, with as tangible outcome a consolidated, interactive repository of education material that can be used in a versatile way by individuals and

institutions involved in higher education in forestry. In this way, the project aims to contribute to the understanding of forest resources in Europe and elsewhere, and to wise and sustainable management and use of forests as nature-based solutions for resource supply in the bioeconomy and for climate mitigation.

6 Forestry education in a changing policy environment: Lithuanian example

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Keywords: forest policy, forestry education, national forest agreement, forest 4.0

Abstract

The volume of policies related to forests and directly affecting forest management is increasing on a pan-European scale. Accordingly, society's expectations and needs for forests and forest management are changing and diversifying. At the same time, the competing and often contradictory demands of individual interest groups of the society on forest policy are strengthening and polarizing. Lithuania is no exception here.

In order to respond to these challenges, changes in forest policy are necessary. And these changes are directly related to education on forest issues, both in a broad and a narrow sense. On the one hand, it is important to develop science-based, clear and reasoned education of the general public on forest topics. On the other hand, it is important to educate forestry specialists with a broad ecosystem approach and horizon who understand today's issues. Such specialists would be able to both contribute to forest policy changes and practically implement the new forest policy measures in forests.

Meanwhile, today's foresters are usually equated with loggers and only in good cases identified with forest growers. Such a position of foresters in society does not allow them to be specialists in forest ecosystems, able to combine the diverse needs of society for the forest. As a result, although the need for foresters does not decrease (both in the government and in private forest companies), the prestige and popularity of the profession is very low, the numbers of forestry students in Lithuania are decreasing rapidly and leads to the **shortage of highly skilled forestry specialists** in just a few years (see Fig. 1):

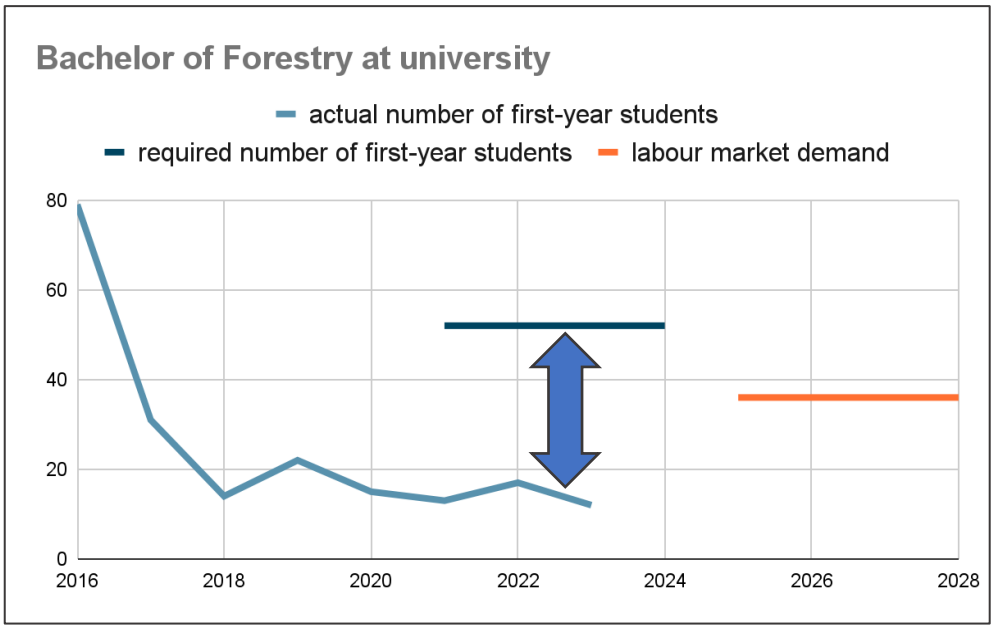

Fig. 1: Bachelor of Forestry at university. Source: Analysis of the need for forestry specialists in 2021-2024, Vytautas Magnus University (Specialistų poreikio tyrimo ataskaita.pdf)

Focused, coordinated and long-term actions of all participants in the forest sector are needed to change the situation. In Lithuania, the **National Forest Agreement** process, which took place in 2021-2022, could be considered the beginning of such actions. Both in the national forest vision and in specific thematic agreements, great attention is paid to the development of forest science and education, public education on forest issues, specifically the image of the forestry profession.

Cooperation between all actors in the forest sector, primarily between science, politics and business, is essential in order to develop further forestry education system that would adequately respond to today's challenges and close the gap between demand and supply of high qualified specialists.

In order to enable the future forester to make decisions adapted to a specific situation, abandoning redundant legal regulation and mandatory universal rules that do not create added value and developing of decision support tools and systems based on the latest scientific knowledge, best practices and modelling are necessary.

The **Competence Centre** being created within the framework of the ***Forest 4.0*** project can serve well to implement all these directions of change. The use of the latest digital technologies and broad partnerships would allow for the development of the smart forestry concept, including the education and training of specialists at the appropriate level.

7 Expectations for higher forestry education from forest owner‘s perspective

Author(s): Algis Gaižutis [1]

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Keywords: forestry education, national forest agreement, private forest owners

Abstract

The need for changing policy for higher forestry education is widly discussed in recent years. Just to mention few relevant sources on national and EU level:

- **The new EU forest strategy for 2030 / chapter 2.4. Developing skills and empowering people for sustainable forest-based bioeconomy** [COM(2021) 572 final, adopted 16.7.2021] Link...>>>

  Link: https://eur-lex.europa.eu/legal-content/lt/TXT/?uri=CELEX%3A52021DC0572

- Project M-04-32/20 **„Preparation of the methodology for determining the need for forestry specialists and qualified workers and forecasting the need for the years 2021-2024“** (Miškų ūkio specialistų ir kvalifikuotų darbuotojų poreikio nustatymo metodikos parengimas ir poreikio prognozė 2021–2024 metams), [2020-11-25 - 2021-10-24 by Faculty of Forest science and Ecology, Vytautas Magnus University] Link...>>>

  Links:

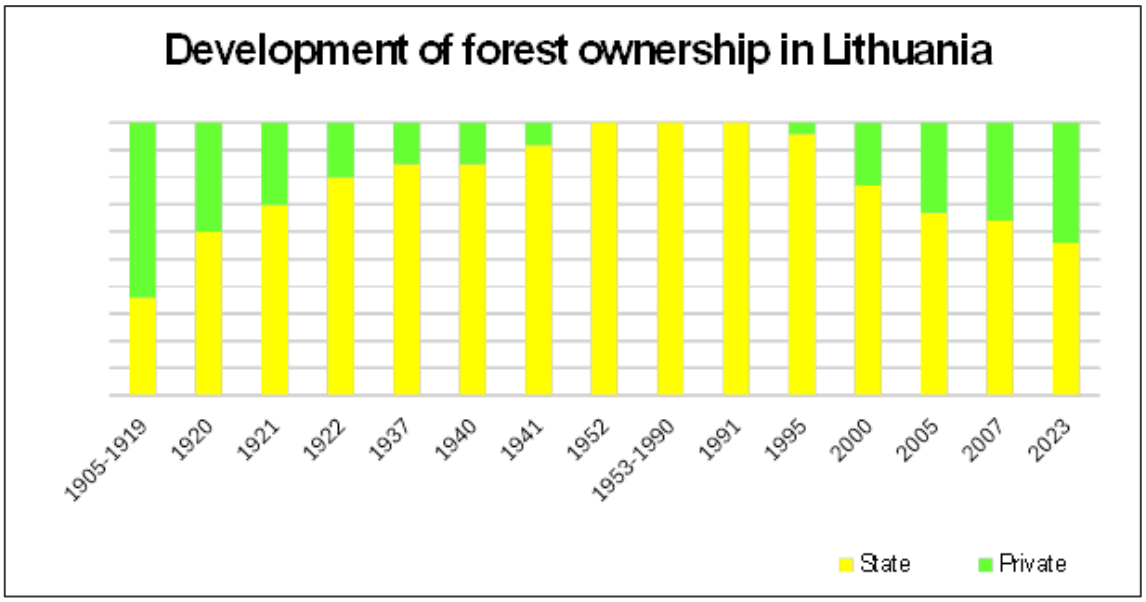
  https://www.vdu.lt/cris/entities/project/f3ba4846-5771-4bb8-83b8-f5bfedf3c059

  https://am.lrv.lt/uploads/am/documents/files/Mi%C5%A1ko%20mokslo%20darbai/Spesialist%C5%B3%20poreikio%20tyrimo%20ataskaita.pdf

- **National Agreement on Forests/ Topic II "The development of science and education systems related to forests„** *28 February 2022* (Nacionalinis susitarimas dėl miškų/II tema „Su miškais susijusių mokslo ir mokymo sistemų vystymas“ [since March 2021-NAF not completed yet] Link...>>>

  Link: https://nacionalinismiskususitarimas.lt/wp-content/uploads/2022/03/NMS-II-temos-susitarimu-grupes-darbo-rezultatas.pdf

That reflect changes in needs for forests and forest management from forest owners, forest industry’s and society's point of view. That is important for new born private forest owners sector, which appears after gaining back Lithuanian Independence after 1990. The number of private forest holdings reached 250 thous., with big fragmentation and small mean area (~3,4 ha).



Source: Forestand Land Owners Association of Lithiania, 2024

In order to reflect to these challenges, the expectations for forestry education and forestry extension are indicated. To name only few most urgent needs:

- One of priority problems, indicated by private forest owners, is the need to cover the gap of availability of **educated foresters** able to work in private forestry. The shortage of skilled forestry specialists is very actual, but even available specialists are not prepared to work in private forestry specific.
- Other important issue- the need to cover gap of availability of **forest machinery operators** (educated in forestry and with practical skills). There are no any institution in Lithuania, providing education and training for such kind of specialists.

The perspectives to realize these demands of development of science and education systems related to forests were discussed via National Forest Agreement process, which took place in 2021-2023. Forest owners took active part in this process and now we expect realisation of agreed objectives.

8 Establishment and development of the Young Forestry Network as a link between practice and higher forestry education in Germany

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Keywords: forest network, participation, forestry education, Young forestry professionals

Abstract

The Young Forestry Network (JNF) is a dynamic association of over 1,600 young forestry professionals, students and practitioners in Germany. Founded in 2017 and integrated into the German Forestry Association, the JNF offers a platform for exchange, professional development and innovative ideas in the forestry sector (DFV 2024).

The main objective of the JNF is to represent the interests of young foresters and promote their professional development. Key activities include organizing over 50 events per year, including presentations, networking meetings, excursions, and lectures. The network serves as a platform for members to explore political participation processes, expand their professional network, and develop new skills. Events and initiatives are driven by member interests, ensuring a high level of engagement and relevance. At the core of JNF's philosophy is a bottom-up approach to event planning and execution. This philosophy ensures that the network remains vibrant, relevant, and aligned with the evolving interests of its members.

Maximilian Axer (2019) presented the network's first developments back in 2019. Since then, it has become clear that a minimum of structure is needed. As a result, bylaws were drafted in a participatory process, particularly to provide a higher degree of legitimacy to those responsible within the network. In particular, the structure was established that the federal board, consisting of the two federal spokespersons and the managing director, is elected by the members. Another important body of the network remains the advisory board, which is composed of the federal board and the regional and university representatives. These official steps were important so that the JNF could officially become part of the German Forestry Association in 2022, which supports the network financially and administratively.

In 2022, a working group for public relations has been established that focuses on social media activities. With over 7,000 followers on Instagram and Facebook, each post reaches several thousand people. Internationally, the JNF now supports the establishment of similar organizations in Europe, promotes cross-border exchange and contributes to a networked forestry

sector. Through these developments, the JNF offers young forestry experts a platform to shape their careers and actively contribute to the future of forestry.

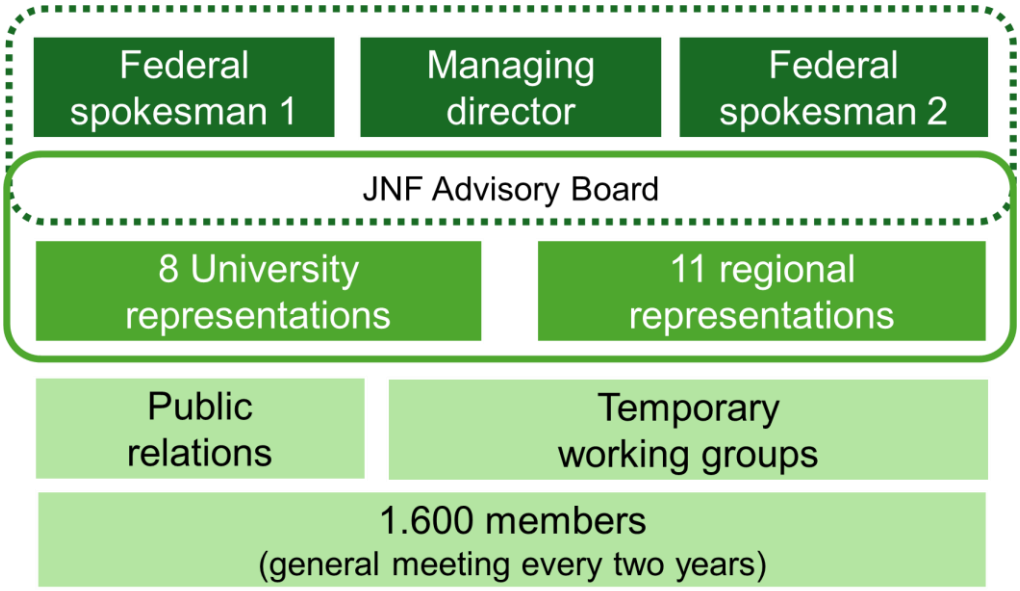

Figure 1: Structure of the Young Forestry Network: In general, every member is encouraged to contribute their ideas and energy following the bottom-up approach. Representatives from forestry universities and federal states meet regularly with the three members of the federal board

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9 The multidisciplinary nature of urban forest planning and management - Latvian experience

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Abstract

Until recently, forest planning and management was considered a closed planning environment, with specific, narrow tasks, mostly economic, a strict legal framework, which often did not consider the management of forest areas in relation to the development of the area, despite the fact that forests, and especially urban forests, have multiple functions: social, ecological, environmental protection, environmental education, aesthetic and economic.

Nowadays, the field of forest planning in Latvia is changing significantly. Forest spatial planning appears in the spatial development plans of municipalities. Modern forestry is increasingly emphasising the social functions of forests, which include recreation, cultural and historical aspects, forest environmental education, the collection of forest products and the importance of forests for psycho-emotional health. The range of stakeholders involved in forest management has broadened considerably. To ensure the maintenance and development of the various functions of forests, forest planners and managers of different specialisations, landscape architects, spatial planners, environmentalists, sportsmen, tourism developers, artists and various service providers need to be involved in forest planning and management processes.

The interests of all stakeholders in forest processes need to be analysed and balanced as far as possible to avoid conflict situations. In the management of forests, especially urban forests, the regulatory, management and utilisation interests of stakeholders can vary considerably.

Regulating parties: the Parliament of the Republic of Latvia and the Cabinet of Ministers as legislators, the State Forest Service, the State Environmental Service, the Nature Conservation Authority as supervisory bodies. The Municipality as the issuer of binding regulations, the Municipal Building Authority and the Municipal Police as supervisory bodies.

Owners as managers: the role of owners may include the State, the municipality, legal and natural persons engaged in forest management, environmental protection and education.

Users: the general public, educational institutions, the armed forces, industry, non-governmental organisations.

10 Bioeconomy perception by students at the Technical University in Zvolen

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Abstract

The presentation builds on previous research by Masiero et al. (2020), Výbošťok et al. (2022), and Marcinekova et al. (2023). The societal transformation towards a bioeconomy provides an opportunity to shift current economies and societies towards greater sustainability, with a focus on mitigating environmental pressures. Such a transition requires the involvement of all stakeholders in bioeconomy discussions and decision-making processes, including studying their perceptions of bioeconomy. Among all stakeholders, the future generation is particularly important, as understanding their perception of bioeconomy is crucial for the generation that will manage this area in the near future. For this reason, we focus our attention on students from three bioeconomy-related fields at the Technical University in Zvolen: forestry studies, wood processing studies, and natural resources management studies. We identified significant differences in bioeconomy perceptions among these groups. Familiarity with the concept is quite high, with more than two-thirds having heard about bioeconomy prior to the survey. The main sources of information were news, university courses, and social media. The study program had a greater impact on the perceived importance of forests within the bioeconomy than the type of study. Overall, students perceive the development of a forest-based bioeconomy as favouring sustainable forest management. The results can be used to enhance the extent to which bioeconomy is addressed in study programs at the university. The Technical University in Zvolen should aim to: (1) Make bioeconomy studies appealing to students through creating dedicated bioeconomy university programs or adapt current programs. (2) Develop a communication strategy promoting bioeconomy studies and reaching out to potential students.

Cited Literature:

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11 Comparing the contents of higher forestry education programs at German universities

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Keywords: study programs; higher forestry education curricula, satisfaction with study subjects, personal development; young talents

Abstract

This survey, conducted by Miriam Hausl, Elisabeth Viehweger and Sandra Liebal from TUD Dresden University of Technology, in close cooperation with members of the "Junges Netzwerk Forst," aims to identify the thematic focuses of higher forestry education curricula in Germany. Furthermore, it examines the extent to which these focuses align with the interests and expectations of students in a world of social change, also with regard to the perception of forests and their functions. By investigating the current range of subjects, this study aims to determine how study programs have been thematically adjusted in the past years. Adjustments have mainly undertaken due to changes of societal expectations, job marked demands and emerging new career opportunities for graduates. Additionally, our study can serve as a basis for future developments of these study programs.

The core methodology of the study involved a survey comprising both quantitative and qualitative questions. The survey was distributed via the "Junges Netzwerk Forst" to students and recent graduates of forestry degree programs, yielding 429 usable responses. The number of respondents enabled a statistical analysis of all nine forestry degree programs at universities and universities of applied sciences in Germany.

It was found that students at universities of applied sciences feel better prepared for practical work life compared to those at universities (see Fig. 1). Furthermore, the statistical analysis found that male respondents feel more confident than their female counterparts. The career aspirations of university students change more frequently than those of students at universities of applied sciences.

Between the nine locations offering forestry degree programs, the survey identified differences regarding a) the thematic focuses offered in the study programs and b) the satisfaction with these offerings as perceived by students (see Fig. 2 and 3). Overall, it was found that students do not perceive an oversupply in any subject area. Many expressed a desire for more in-depth content.

The favorite subjects were "Silviculture and Forest Practices," "Botany," and "Nature Conservation and Ecology." The least liked subjects were "Science, Technology, Engineering and Mathematics (STEM) Subjects", "International Processes", and "Scientific Work", even though only the amount of "STEM Subjects" were assessed as appropriately, on average, across all nine locations.

Figure 1: Feeling of being prepared for job market by students of forestry-related study programs in Germany, differed by university locations. 0 - not prepared at all; 1 - barely prepared; 2 - moderately prepared; 3 - well prepared; 4 - very well prepared. Survey conducted in April 2024

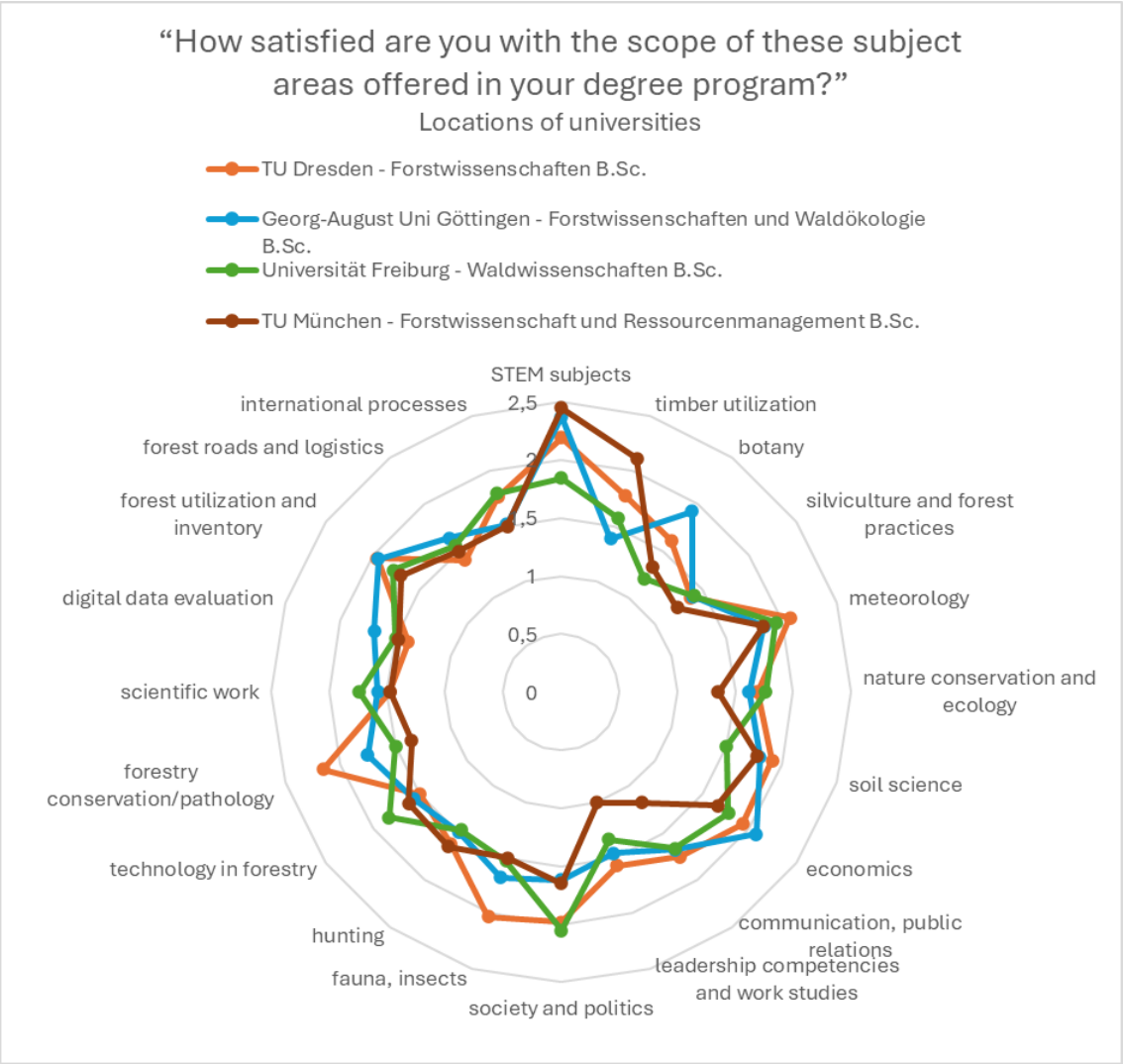


Figure 2: Satisfaction of university students with the scope of different subjects of their forestry education curricula. 1= is/was too small; 2= exactly right; 3= is/was too much. Survey conducted in April 2024

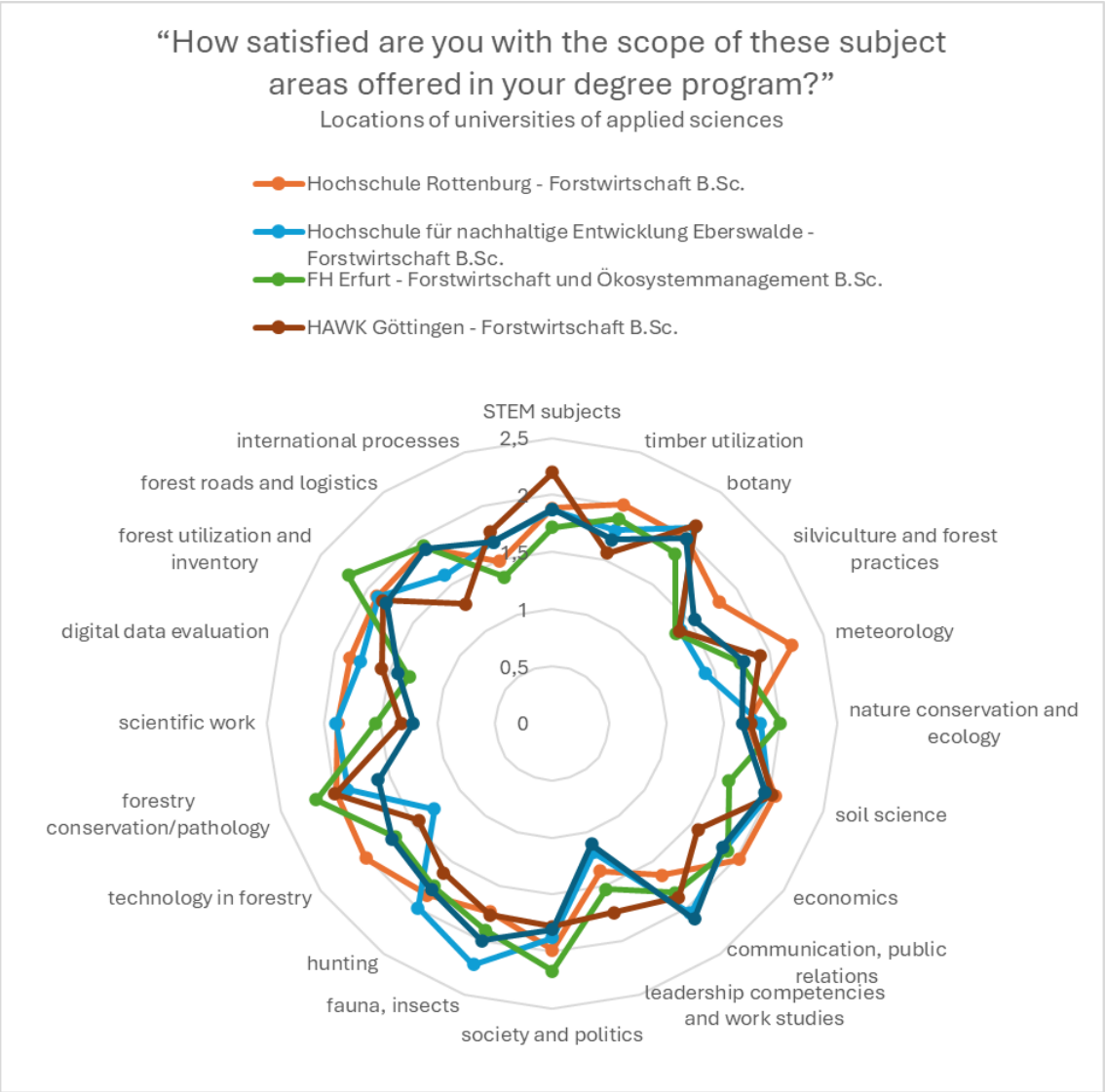


Figure 3: Satisfaction of students at universities of applied sciences with the scope of different subjects of their forestry education curricula. 1= is/was too small; 2= exactly right; 3= is/was too much. Survey conducted in April 2024

12 Workshop Results

Workshop Topic:

Emerging hot topics in higher forest education - Which topics and issues should higher forestry education address?

The workshop started with a short discussion about potential new topics. However, it turned out that there are dozens of new and potentially interesting topics, such as:

- tree-based landscapes / trees outside forests (e.g. woodlands, plantations, agroforestry, urban forests)
- forests in large-scale crises (e.g. forest-water-climate nexus, forest restoration)
- forests in armed conflicts
- forests and human health
- bioenergy
- bioeconomy and sustainable materials
- governance and participation
- artificial intelligence and digitalization in forestry
- transdisciplinary and interdisciplinary projects
- forest education global core curriculum

According to the study program and its main contents, it is obviously that not all of these topics can be included in the curricula in future. Therefore, in the next step we focused on:

- Gaps which currently exist in teaching and learning
- Wishes and demands
- Methods how to implement new topics

The Participants have been asked to write down their thoughts on sticky notes. The results have been collected on the wall.

Gaps:

- Qualifications for students (of students before enrolment)
- Communication and leadership
- Social competencies
- Interdisciplinarity
- Awareness and understanding of the concepts and definitions
- Integration into practical use in a complex professional environment

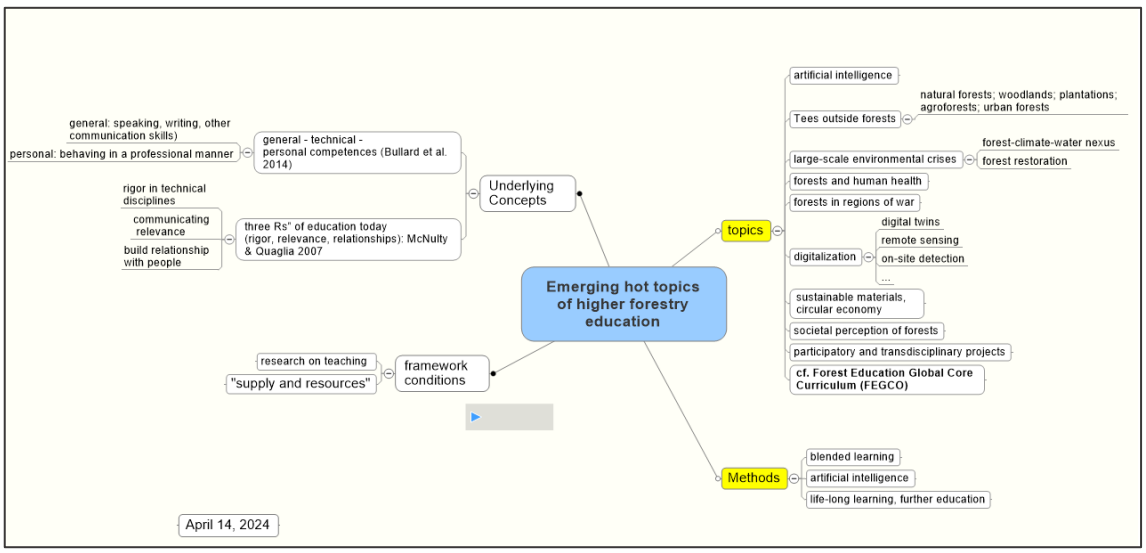
Wishes & demands:

- Transparency of the content in the curricula
- Rewilding (nature conservation)
- Climate change issues
- Forest ecosystem services
- Change (and changing) of societal goals
- Problem-based learning
- More exchange between students and teachers and practice
- Not so often: reforms and changes of the curriculum and study programs

How to implement new topics:

- Updated content of lectures
- Practical trainings
- Subject change in typical soft skill trainings
- Open discussions on demands
- MOOCs
- Webinars and virtual events
- Student exchange
- More facultative courses
- E-learning

In addition to the above-mentioned topics, gaps, demands and ways of implementation, Norbert Weber has prepared an overview of emerging hot topics. However, this overview was not displayed within the workshop.



Source: Norbert Weber

13 Group photo