

Bioeconomy Research and Education in Slovakia: What does Slovak society have to say about the needed transformation?



Lenka Marcineková, lenka.marcinekova@tuzvo.sk
Blanka Giertľiová, giertlio@tuzvo.sk
Department of Forest Economics and Policy, Faculty of Forestry, Technical University in Zvolen



INTRODUCTION

We are witnessing an increasing emphasis on sustainable economic models, with the bioeconomy as a key tool in the transition towards a more sustainable future. Its significance is growing not only on a global scale but also at national levels, where it plays a crucial role in various economic sectors. One such sector is forestry, which in Slovakia holds great potential to become a fundamental pillar of the bioeconomy. This has led to the recognition of a more specific concept—the forest-based bioeconomy—tailored to reflect national characteristics, available resources, and the structure of the forestry sector. As a specialized educational and research institution, the Technical University in Zvolen (TUZVO) actively contributes to both the study and the teaching of bioeconomy. Research has been aimed at identifying shifts in the perception of bioeconomy within Slovak society, with a particular focus on the urban public and TUZVO students. The objective is to examine how public discourse on bioeconomy has evolved over the past five years, how knowledge and attitudes among different groups have changed, and what role education plays in shaping these perspectives. We believe that the findings of the research will contribute to a deeper understanding of this issue and will help further the development of the bioeconomy, not only in academia but also in practice.



METHODS

Students of the Technical University in Zvolen
questionnaire survey
different study programs (Economics and Management of Natural Resources, Forestry, Wood Sciences)
Base Line State: 216 respondents in total (CL 90%, margin of error 6,38%)

Urban public in Slovakia
questionnaire survey
different cities (Bratislava, Zvolen, Košice)
Base Line State: 284 respondents in total (CL 95%, margin of error 5,81%)

Students' Familiarity with Bioeconomy



Overall Awareness

Around 70% of students have at least some level of familiarity with the concept of bioeconomy.

Highest Familiarity

Students from economically oriented study programs show the highest understanding of bioeconomy.

Lowest Familiarity

Students of wood sciences have the lowest level of bioeconomy familiarity compared to other study groups.



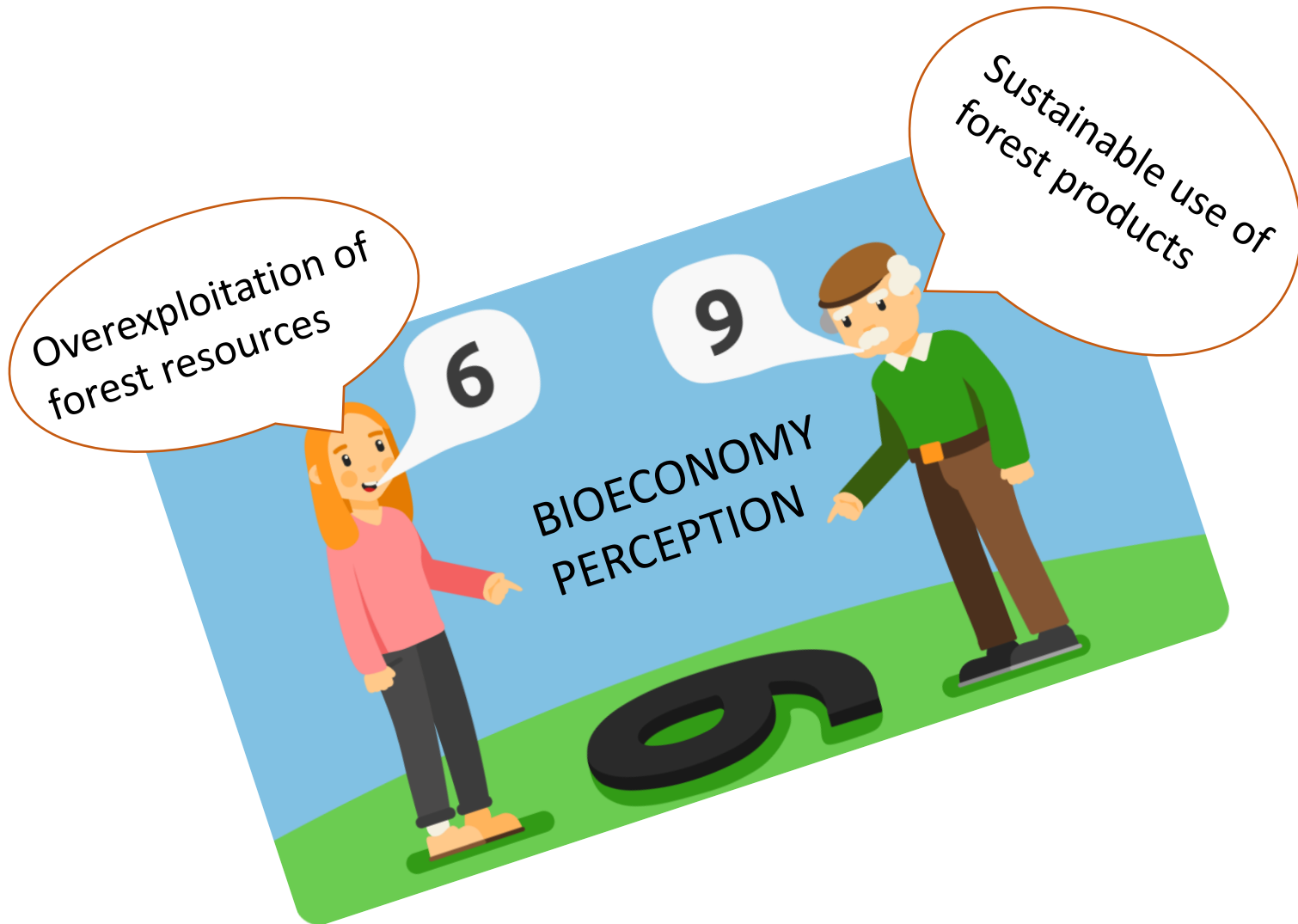
RISKS

- Forest ecosystem degradation
- Missing the „losing the bioeconomy momentum“
- In not increasing the funding to national bioeconomy development
- In weak position of forest sector within bioeconomy
- Deepening the conflicts between sectors and forest ecosystem services
- Too radical orientation towards the application of bioeconomy principles regardless of other socio-economic issues



ADVANTAGES

- Benefits for Slovak environment and economy
- Decrease of our fossil dependency
- Creating new employment opportunities
- More efficient biomass utilisation and diversification of biomass utilisation



CONCLUSION

- Bioeconomy as a transformation opportunity** - Enables the forest and wood-processing sector to shift from biomass production to a knowledge-based industry with higher value-added.
- Challenges in sustainability alignment** - The transition is hindered by inadequate supporting tools, requiring better policies and infrastructure.
- Need for assessing bioeconomy in education over time** - Evaluating changes in understanding, perception, and integration of bioeconomy in education is essential.
- Impact of societal and geopolitical shifts** - Recent developments influence bioeconomy awareness, policies, and education, necessitating adaptive strategies.
- Future directions** - Strengthening institutional support, refining curricula, and fostering academia-industry collaboration are key to advancing bioeconomy principles.