

BOOK OF ABSTRACTS

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Towards a sustainable forest-based bioeconomy in Germany– socioeconomic indicators and resource productivity

T2.21 Pathways towards sustainable and circular forest-based bioeconomies: Advances in research to address challenges and realize opportunities

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Abstract: The monitoring of socioeconomic indicators of the forest-based sector in Germany was initiated as part of the Charter for Wood initiative in 2004. The objective was to increase the per capita use of wood and wood products from sustainable production. At this time, sustainability referred to sustainable forest management and production of wood and wooden products, climate change mitigation effect through increased CO₂-storage, and the creation of jobs and value added. To monitor these goals, wood use and socioeconomic development of the forestry and timber cluster have been quantified on an annual basis in wood balances and cluster statistics. These approaches provide data on jobs, turnover, and gross value added of forestry-based economic activities as well as on total supply and use of wood and wood-based products.

Since its initiation, the German Charter for Wood has evolved and is dealing with more sustainability aspects. In today's circular bioeconomy approach CO₂-storage in wood-based products remains an important aspect, as does employment. However, the transformation of fossil-based towards bio-based economies is bringing the obvious limits in availability of wood and biomass in general to the front. Circularity aspects for a sustainable use of biomass are becoming increasingly important.

However, circularity still remains an ambiguous concept covering a range of approaches. Two main approaches are the operationalization of circularity within the existing economic system and the transformation of the socio-economic structures. The forestry and timber cluster is not yet characterized by fully closed production loops, and efficient material use of wood, i.e. reducing, reusing and recycling, needs to be further implemented in wood-processing value chains. In 2020, gross value added of the German forestry and timber cluster was approx. 60 billion Euros and a total of almost 126 Mio. m³ of woody resources (including roundwood, wood residues, and post-consumer wood) were used. To link outcome of wood processing to resource use we calculate resource productivity and use available data on wood material flows and socioeconomic output indicators. We present disaggregated results and discuss implications for reducing, reusing and recycling woody resources in the forestry and timber cluster on its way to circularity.