Project *brief*

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Supply of wood processing residues – a basic calculation approach and its application on the example of wood packaging

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- **New calculation approach for the quantification of the supply of wood processing residues**
- **Results for the wood packaging industry in Europe show a supply volume of about 30 million m³(f)**
- **Wood processing residues from wood packaging equal a significant average share of 40% of its wood resource input (in wood packaging)**

Background

Waste reduction, recycling and increased material efficiency are key objectives in a complex industrial ecology. The wood processing industry also aims at a more intensive resource recovery and usable residual volumes. Significant volumes of wood processing residues (WPR) can be found at the EU level. However, to date, no reliable calculation approach has been established to quantify the supply of WPR volumes.

Objective

How can we close the data gap on the supply of WPR?
The objective of the study is to develop a basic calculation approach, which enables us to quantify the WPR supply of different value chains based on existing statistical production data. We apply the new method on the example of wood packaging.

Material flow analysis and material efficiency

We define WPR as a wood resource that accumulates during all processing and conversion steps of roundwood and wood products. The conceptual framework for calculating the supply of WPR is based on material flow analysis (MFA). We quantify the analysed flows based on conversion efficiency, i.e., product specific material efficiency rates, assigned to each conversion step. We apply our general calculation approach to core wood packaging products, i.e., the production data of pallets, light weight packaging, barrels and cable drums on EU-level. MFA enables us to differentiate the results into the WPR assortments sawmill by-products and other WPR as well as the wood resource input on different processing levels.

Main findings

The calculated supply of WPR of EU's wood packaging industry in 2018 was 29.7 million m³(f) (cubic meter wood fibre equivalent) with a total material input of about 70.8 million m³(f) and a production volume of about 40.8 million m³(f). The difference of 0.3 million m³(f) refers to losses within the material flow. A maximum volume of 29.6 million m³(f) sawnwood is used for the production of standardised wood packaging products, whereof the production of wood pallets demands 21.5 million m³(f).

Conclusion

The presented basic calculation approach allows to fill in the data gap on the supply of WPR, especially of end-use sectors. For the first time, so far less studied volumes of WPR are identified and quantified. The calculation approach supports the visualisation and understanding of material flows within the wood-based sector. The method can be further applied to other wood industry sectors and regions.

Photo: Ulrike Saal

Further Information

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