

Policy recommendations for utilizing forestry side streams

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Interreg
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CIRCULAR ECONOMY
CEforestry

COVER PICTURE: Heili Salmela, Centria UAS

Sustainable Utilization of Forestry Side Streams to Promote Circular Bioeconomy

FORESTRY INDUSTRY side streams from sawmills in the Baltic Sea region represent a vast, yet underutilized resource. Currently, many of these residues serve as low-value products, such as bioenergy. However, recent research under the CEForestry project demonstrates that these side streams such as bark and needles can be converted into high-value compounds, including tannins for industrial applications and antibacterial extracts for the cosmetics and food industries.

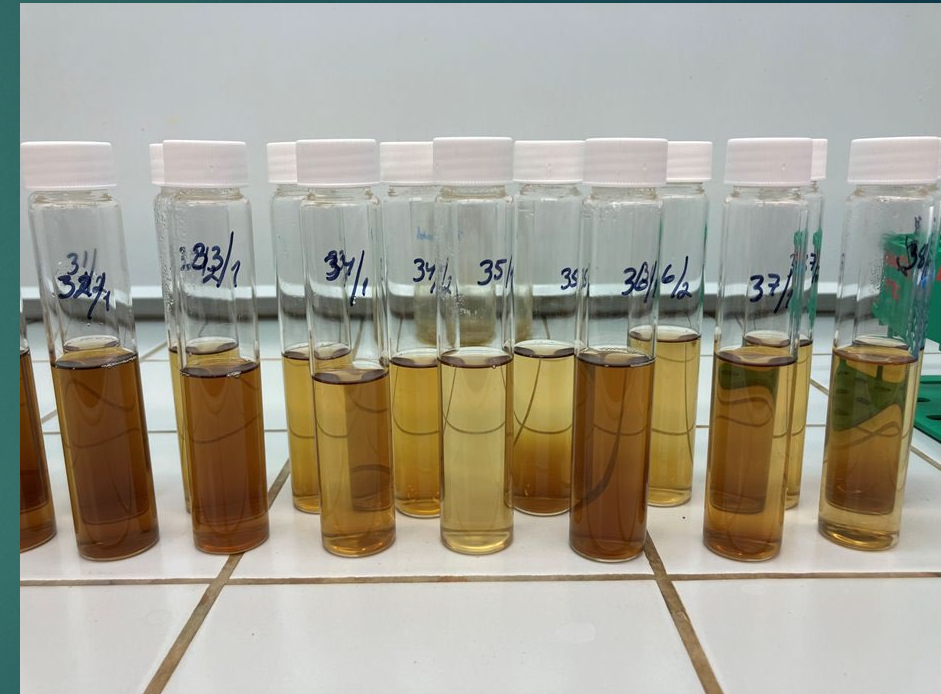
THIS BRIEF outlines policy recommendations to foster a circular bioeconomy by promoting the sustainable utilization of forestry side streams, while integrating best practices in sustainable forest management, business model innovation, and market-driven technological advancements.

Conclusions

1. Forest industry side streams from sawmills could be utilized in industrial scale high value-added products such as
 - Tannins as biocides for wastewater treatment and in pulp mills
 - Tannins for treatment of leather as tanning agents to replace imported vegetable tannins
2. Business potential has also been found in antibacterial extracts for cosmetics and food industry. These applications require more development to meet regulatory, safety and profitability needs.

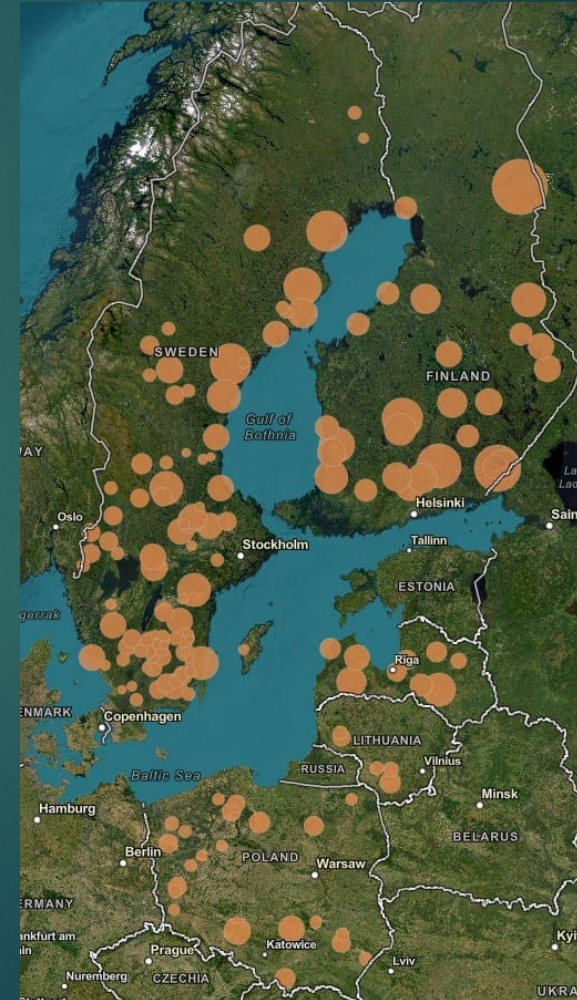
Recommendations

1. Forestry side streams from sawmills could be utilized in industrial scale high value-added products such as
 - **Tannins as replacing biocides** for wastewater treatment and in pulp mills
 - **Tannins for treatment of leather** as tanning agents to replace imported vegetable tannins
2. Business potential has also been found in antibacterial extracts for cosmetics and food industry. These applications require more development to meet regulatory, safety and profitability needs.



Recommendations based on

- ▶ A map of available forestry side streams from sawmills
- ▶ Techno-economic feasibility
 - ▶ Tannins replacing biocides
 - ▶ Tannins for treatment of leather
- ▶ Market demand
 - ▶ Global tannin market 1 000 000 tons/year
 - ▶ 60% tannins for leather treatment
 - ▶ Antibacterial products market 27,9 billion USD in 2024
 - ▶ Health care, personal care, food industries
- ▶ Business model



Thank you

Time for questions