

ForestValue



Ministry of Agriculture and Forestry of Finland



Harvesting small-diameter wood: a sustainability and innovation uptake challenge

BioFuture2025 Annual Seminar 2019
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Prof. Teppo Hujala

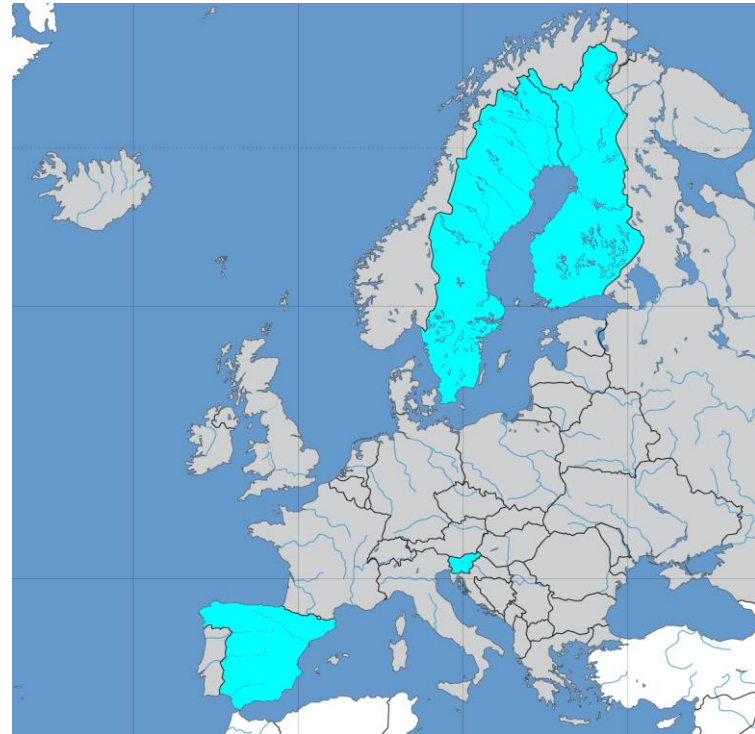
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Small-diameter wood: a large underutilised resource in growing European bioeconomy



SMALLWOOD partner countries



https://commons.wikimedia.org/wiki/File:Europe_location.png

(Country colours added for SMALLWOOD countries)

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SMALLWOOD project 1.2.2019 – 31.1.2022

Sweden (Coordinator: Tomas Nordfjell, SLU, Umeå;
Bracke Forest, Bräcke)

Finland (UEF Joensuu)

Slovenia (Slovenian Forest Institute, Univ. of Maribor)

Spain (Universidad Politécnica de Madrid (UPM))



Technological innovation updated: Bracke Felling Head C16.c



Multi-tree (multi-stem) solution
for small-diameter wood
harvesting

Suitable for restoration
thinnings, energy wood
harvesting, cutting of roadsides

SMALLWOOD project: some
modifications to the head and
field tests

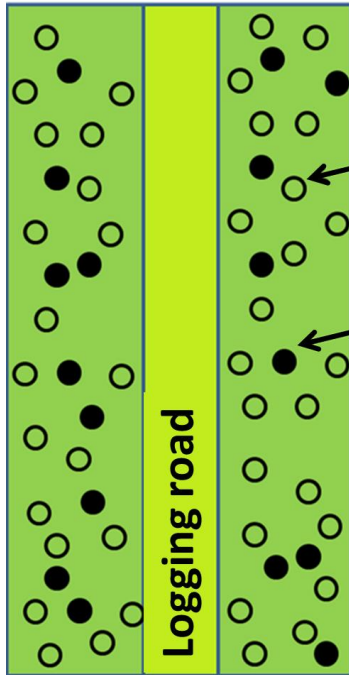
Photographs: Bracke Forest Ltd.



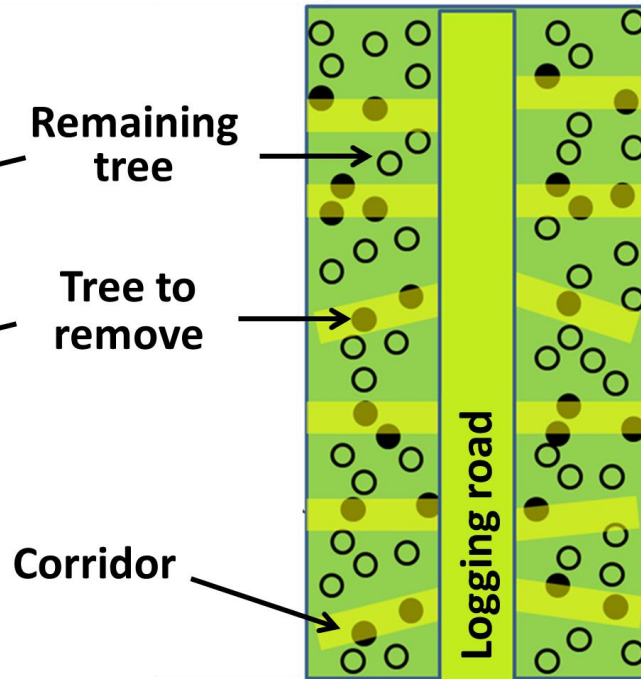
Boom-corridor thinning improves efficiency



Selective thinning



Boom-corridor thinning



Rationalization of harvesting operations aims to decrease costs and improve profitability

Earlier research at SLU and Luke has shown that the method is promising

However, barriers remain

WP1 Project management and monitoring

SDS1 Conv. thinning stands

SDS2 Coppice stands

SDS3 Fire prev. bush areas

SDS4 Linear areas

WP2 Harvesting- and supply systems for innovative and sustainable management of multifunctional SDS

Functionality, productivity, possible logistic systems, future development of treated stands, economic system analysis, applicability within different management systems

WP3 Socio economic aspects of the SDS stand managements

Private forest owner motivation, acceptance from the public opinion, business opportunities and rural development.

WP4 Environmental assessment of the SDS managements

Tree damages, soil damages like rutting and soil compaction, material and energy consumption and emissions to air, water and soil.

WP5 Overall analyses of the economic, social and environmental values of the SDS managements

Analyses that include results from traditional economic system analysis (WP2), socio economic analyses (WP3) and LCA analyses (WP4) into multi criteria decision analyses.

WP6 Communication and project transnational outreach

Ambitions:

Operations

Socio-economics

Environment

Overall sustainability

Specific challenges for the research



Innovation uptake among forest owners and service providers
→ Studying the factors that accelerate and decelerate adoption
→ Analyzing networked business models around small-diameter wood

Understanding the overall sustainability impacts
→ Generating and applying a multi-criteria assessment framework

Reaching wide value creation promises
→ Macroeconomic analysis of business potentials

Thank you!



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