

# EFFORTE

Efficient forestry by precision planning and management for sustainable environment and cost-competitive bio-based industry



## Summary

Forests and forestry will play a key role in making a European bio-based economy a reality. By applying modern technology to forestry techniques, the EFFORTE project will improve efficiency and sustainability throughout the entire forest-based value chain within EU.

EFFORTE recognises that, like many businesses, forestry can be viewed as a chain of events over a long of time. As such, it can be improved using data analysis approaches that can optimise each stage adding value step-by-step and as a whole. In addition, deploying geographic information systems in combination with information about stand and soil properties, EFFORTE will help increase revenues and production while reducing undesirable environmental impacts.

The EFFORTE project is based around three core elements of technology and know-how covering the fundamentals of soil mechanics. Firstly, seeking to avoid soil disturbances, accelerate machine mobility and assess persistence of soil compaction and rutting. Secondly, improving the productivity and efficiency in silvicultural operations in tree planting and young stand-cleaning operations. Finally it seeks to develop precision forestry based on data analysis ('big data') to increase cost-efficiency and boost new business opportunities.

<https://www.luke.fi/efforte/>

### Type of Action:

Research & Innovation Action

**Value Chain:** VC2 – forest-based

**Start date:** 01 September 2016

**End date:** 31 August 2019

**BBI JU contribution:** € 2,230,221.00

## Objectives

- To develop and adopt novel technology and tools that improve efficiency and sustainability of forestry and throughout the entire forest based value chain within EU.
- To develop scientifically firm and technoeconomically feasible methodology to predict trafficability of the given forest stands prior to forest operations.
- To increase forest growth and achieve a step forward in the productivity of tree planting and young stand management by accelerating technology development, testing of new innovative solutions and supporting adoption of new tools and methods.
- To develop, customize and pilot modern 'Big data' solutions that will increase productivity, decrease negative environmental impact and facilitate

## Expected impacts

- Improving the efficiency in silviculture and harvesting operations
- Improving accessibility to wood resources leading to a significant increase in productivity in forest operations over a representative period of time: a 1% annual increase in forest growth, projected on a 20 year period, would yield 22% increase with respect to the original volume, roughly equivalent to 2 years of forest growth gained
- Increasing forest operations output while reducing negative environmental impacts: reducing soil disturbance, more efficiently performed thinning and/or more efficiently extracted logging residues
- Reducing fuel consumption in the forest harvesting process by at least 15%



realization of a sustainable, competitive  
and efficient forestry through the whole  
forestry chain

## **EFFORTE new deliverables unwrap big data in forestry**

25 September 2017

Interested in big data and its usage in forestry? [Have a look](#) to EFFORTE newest deliverables! These fresh-from-the-oven deliverables are about producing forest trafficability maps, how those maps can be used in precision forestry, and how to improve the efficiency in regeneration activities.

- Natural Resources Institute Finland - Luke (Finland)
- Oy Arbonaut Ltd (Finland)
- Institut Technologique FCBA (France)
- Metsäliitto Cooperative (Finland)
- Stiftelsen Skogsbrukets Forskningsinstitut - Skogforsk (Sweden)
- Metsäteho Oy (Finland)
- UPM-Kymmene Oyj (Finland)
- SLU - Sveriges Lantbruksuniversitet (Sweden)
- Stora Enso Oyj (Finland)
- WBF Agroscope (Switzerland)
- Forêt & Bois de l'Est (France)
- ONF - Office National des Forêts (France)
- SEFE - Sté d'Exploitation Forestiere de l'Est (France)
- Comptoir des Bois de Brive (France)
- Woodilee Consultancy Ltd (United Kingdom)
- COPACEL – French Association of Paper Industries (France)
- SCA SKOG AB (Sweden)
- HOLMEN AB (Sweden)
- Sveaskog Förvaltnings AB (Sweden)
- Stora Enso Skog AB (Sweden)
- James Jones and Sons Ltd (United Kingdom)
- Södra Skogsägarna Ekonomisk Förening (Sweden)
- Creative Optimization Sweden (Sweden)

## Project coordination

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