

The challenge

- An expanding European bioeconomy needs access to increasing biomass quantities and qualities.
- Harvesting and supply of biomass are the most cost and fuel intensive elements, where efficiency gains offer the most leverage for improvement.
- The next leap in efficiency gains, considerably reducing supply costs, will come from knowledge-based management.
- Environmental considerations must become an integral part of supply performance evaluation.

The solution

Enable a **data-driven knowledge-based** revolution of European forest management to:

-  Plant and grow more wood
-  Make timber harvesting faster, cheaper and safer
-  Decide in which length and parts to cut a tree
-  Limit effects on soil and use less fuel for machines

Partners



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TECHNOLOGY AND DATA FOR EFFICIENT FOREST MANAGEMENT



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TECH4EFFECT Approach

TECH4EFFECT links forest management and tree harvesting with the newest technologies. For maximum impact, TECH4EFFECT combines:



Silviculture



To increase wood production, we:

- Identify efficient silvicultural practices.
- Identify possibilities for mechanization and new technologies.
- Investigate the impact of different silvicultural systems by simulations.
- Develop a decision support tool for motor-manual operations.

All while taking into account the importance of business processes and sustainability.

Site impact



To reduce site impact, we:

- Improve planning, based on topography and hydrological conditions.
- Compare the effects of different machines and equipment on site impact and costs.
- Test new methods for quantifying and monitoring site impact.



Harvesting

To make harvesting more efficient, we:

- Improve forest road network condition assessment and maintenance planning.
 - Assess fully mechanized harvesting systems supported by traction winches in steep terrain.
 - Enable management of cable yarding operations with advanced sensor technology.
 - Modify machine settings to optimise fuel consumption.
- Developed a mobile application for value-optimized manual bucking: **T4E Bucking App**.



Environment & socio-economics

To estimate the potential of the TECH4EFFECT technologies and procedures for ecoregions and at regional and EU level, we analyse the impact on: greenhouse gas emissions, energy use, employment and occupational safety, and costs and benefits.

SILVISMART - The TECH4EFFECT Efficiency Portal

Silvismart uses data from forest operations and transforms it into business intelligence and decision-making support. It includes an interactive benchmarking system and will be locally available via national portals.

How does it work?

- Automatically receives and securely stores data from different types of forest machines.
- Prepares the data for analysis.
- Analyses and visualises the collected data, including benchmarking.



Silvismart benefits

Silvismart is your virtual point of entry to productivity figures and advice on how to improve the efficiency of your operations. It is:

- Secure and automatic
- Compatible with different machine types
- Different user profiles maintain control over who has access to which data elements