

TECH4EFFECT

KNOWLEDGE AND TECHNOLOGIES FOR EFFECTIVE WOOD PROCUREMENT



This project has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 720757.



TECH4EFFECT in numbers

- Partners: 19
- Countries: 7
- Budget: € 5.26 Million
- Duration: 4 years
- Start: 1st October 2016
- Coordination



NIBIO
NORWEGIAN INSTITUTE OF
BIOECONOMY RESEARCH



Consortium

Research institutes and universities



Owner associations and forest contractors



Machine manufacturers and SMEs



State forests



Background



The bioeconomy needs ever growing amounts of biomass



Forest management has to be profitable AND sustainable

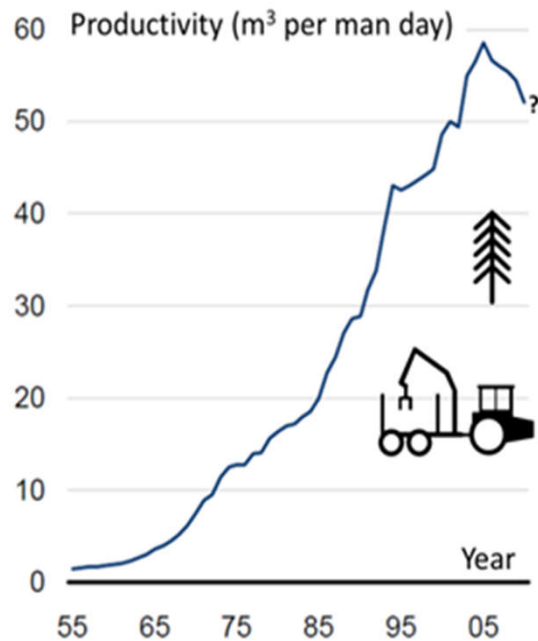


Harvesting is the most cost and fuel intensive part of forest management



Improved efficiency in forest management will result in an overall improvement of the environmental and socio-economic performance of the full value chain

TECH4EFFECT objective



Source: Skogforsk

To improve the efficiency of European forest management by enabling a **data-driven knowledge-based revolution** of the European forest sector while also providing key incremental improvements in technology

TECH4EFFECT Approach

Increased wood production



Harvesting



**TECH4EFFECT
Efficiency Portal**



Environmental site impact



Efficiency Portal



- Make sense of the vast amounts of machine data available
- Improve individual operator performance through individual follow up
- Predict performance for a given machine operating condition and identify inefficiencies



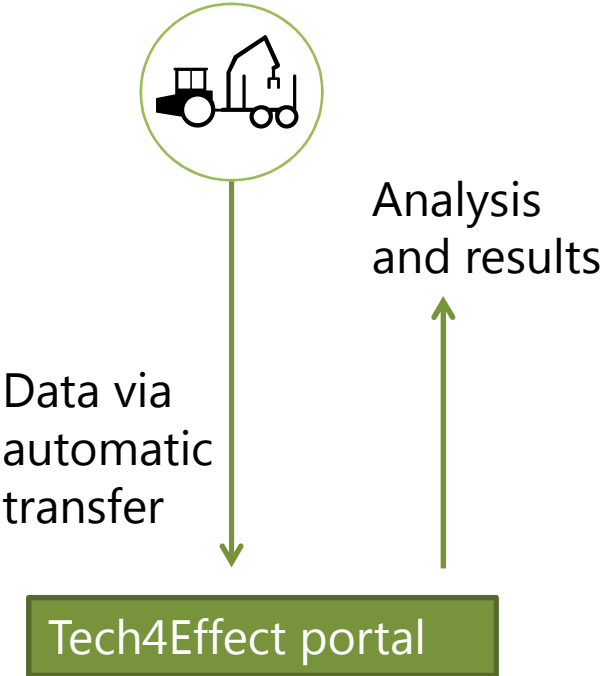
→ **Interactive benchmarking system for decision makers** (e.g. harvest operators)

→ **National Efficiency Portals** for Norway, Germany, Italy, Austria and Denmark

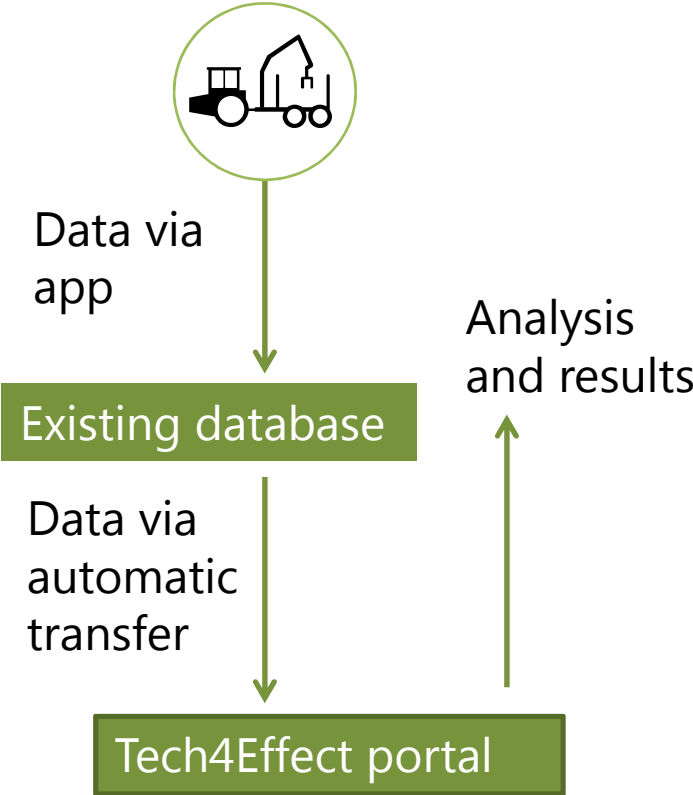


How will it work?

Option 1



Option 2



Increase wood production



- Promote efficient silvicultural practices
 - Case study areas
- Identify possibilities for mechanization
- Decision support tool for motor-manual operations
- Forest growth simulations of different silvicultural systems
- Importance of business processes



Improve harvesting



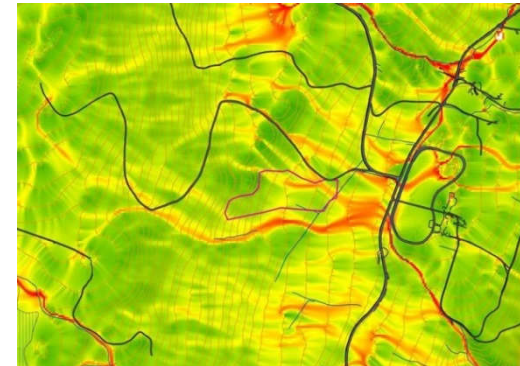
- **Improve planning through better information:**
 - Improve GIS tools
- **Improve dataflow and information:**
 - data based cable yarding operation through an advanced, sensor based approach
 - optimized manual bucking
- **Reduce fossil fuel consumption:**
 - machinery optimized for fuel savings and no unnecessarily long transport distances



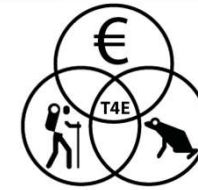
Site Impact



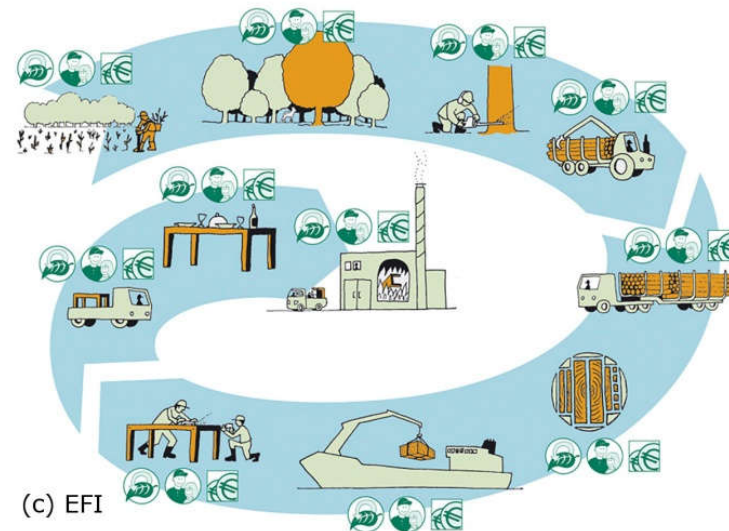
- **Reducing site impact through improved information and planning**
 - based on topography and hydrological conditions
- **Field trials of emerging machine concepts**
 - comparison of 8-wheel and 10-wheel forwarder
- **Methods for monitoring**
 - Drones and other technologies



Environment and Socio-Economics

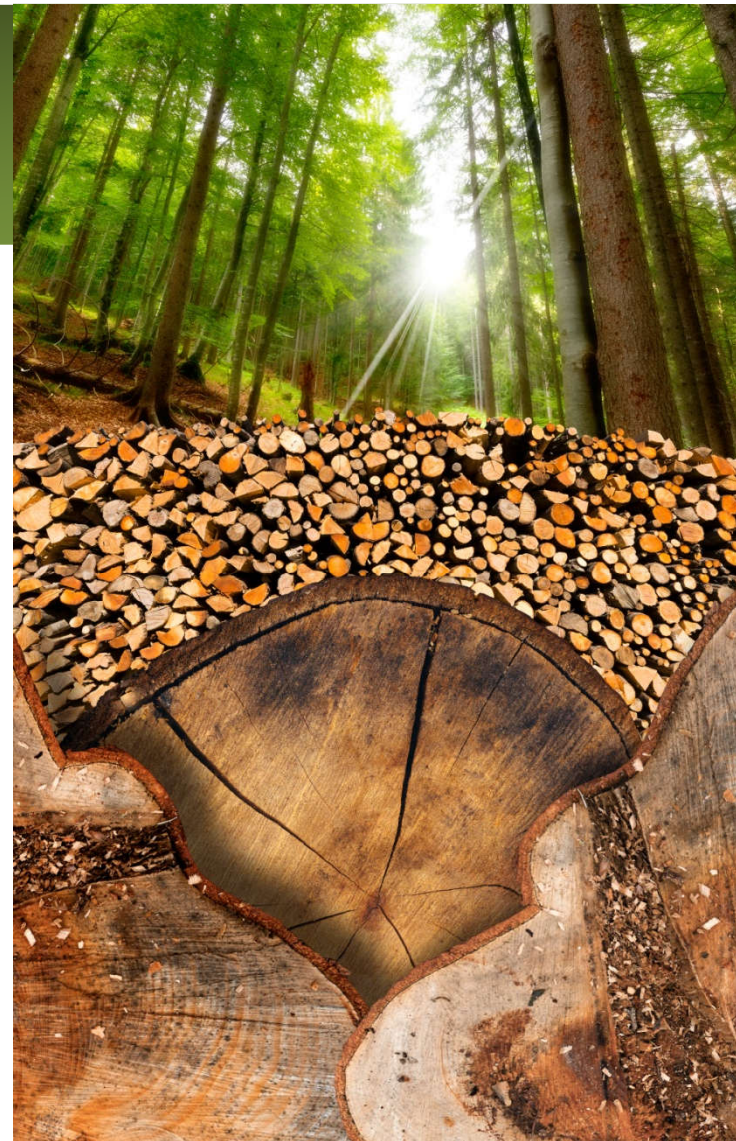


- **Impact** of the TECH4EFFECT technologies and procedures on:
 - greenhouse gas emissions
 - energy use
 - soil impact
 - employment and occupational safety
 - costs and benefits
- **Estimate on the wider potential** of the TECH4EFFECT technologies and procedures
 - possible efficiency gains at the regional and EU scale



Acknowledgements

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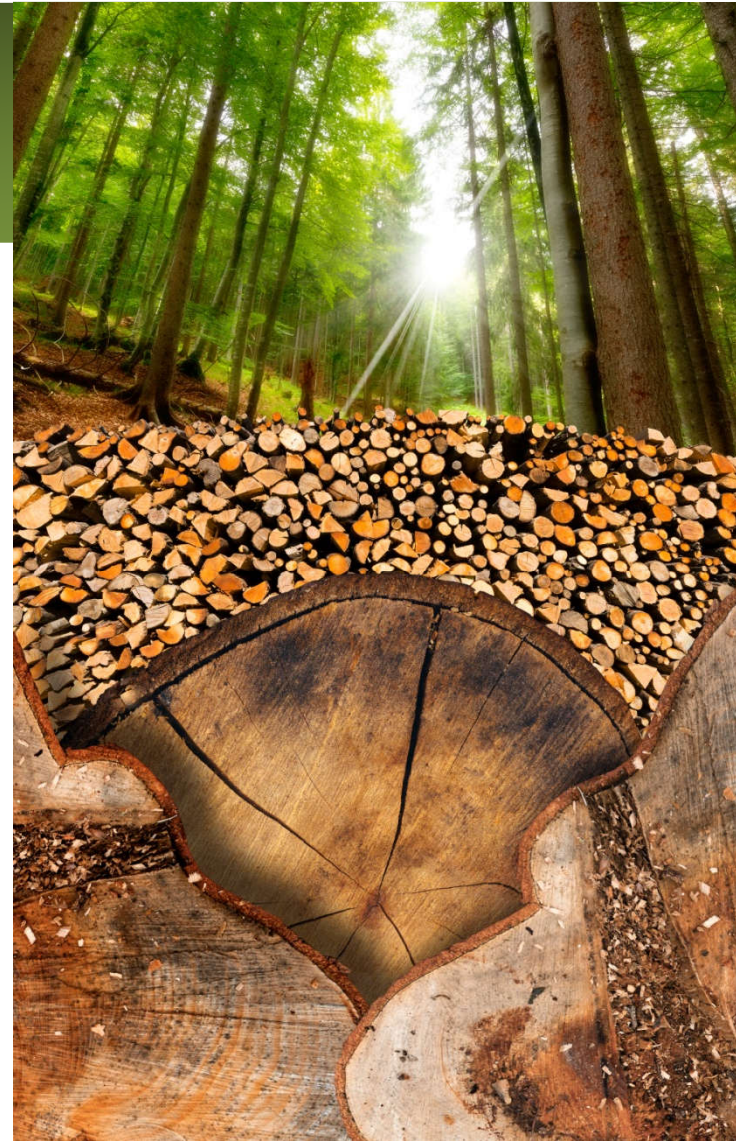


Thank you for your attention..

.... and find us on



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