TECH4EFFECT

KNOWLEDGE AND TECHNOLOGIES FOR EFFECTIVE WOOD PROCUREMENT

NORSKOG

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Honne
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Horizon 2020
European Union Funding
for Research & Innovation

Bio-based Industries
Consortium

BIO-BASED INDUSTRIES
Public-Private Partnership

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

- Coordinator: Rasmus Astrup

TECH4EFFECT

Consortium

Research institutes and universities

NIBIO
NORWEGIAN INSTITUTE OF BIOECONOMY RESEARCH

BOKU
University of Natural Resources and Life Sciences, Vienna

CNR-IVALSA
TREES AND TIMBER INSTITUTE

UNIVERSITY OF COPENHAGEN

E F I

UNI FREIBURG

Luke
NATURAL RESOURCES INSTITUTE FINLAND

WARSAW UNIVERSITY OF LIFE SCIENCES
SGGW

Owner associations and forest contractors

BOSCHIVE
IMPRESE
CoNaIBo
COORDINAMENTO NAZIONALE

Kuratorium für Waldarbeit und Forsttechnik GmbH

NORSKOG

SKOVDYRKERNE

Machine manufacturers and SMEs

IB

KONRAD

LATSCHBACHER

PONSSE

RTDS GROUP

State forests

ÖSTERREICHISCHE BUNDESFORSTE

Statskog

TECH4EFFECT

Background

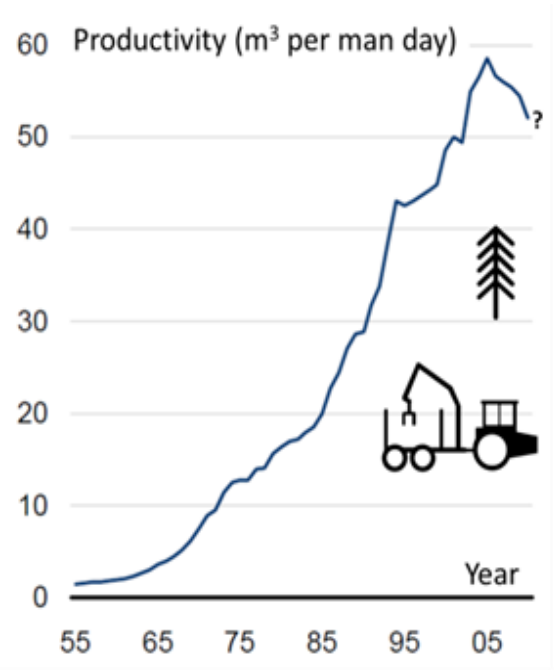
The bioeconomy needs growing amounts of biomass

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

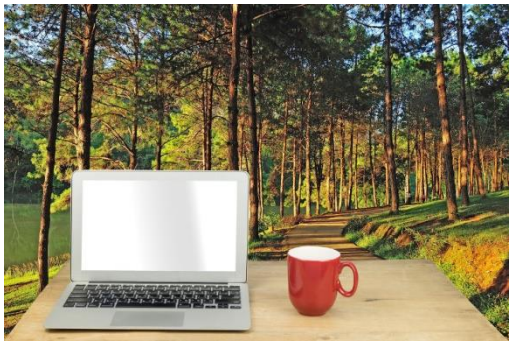
Harvesting

TECH4EFFECT Efficiency Portal

Environmental site impact

Efficiency Portal

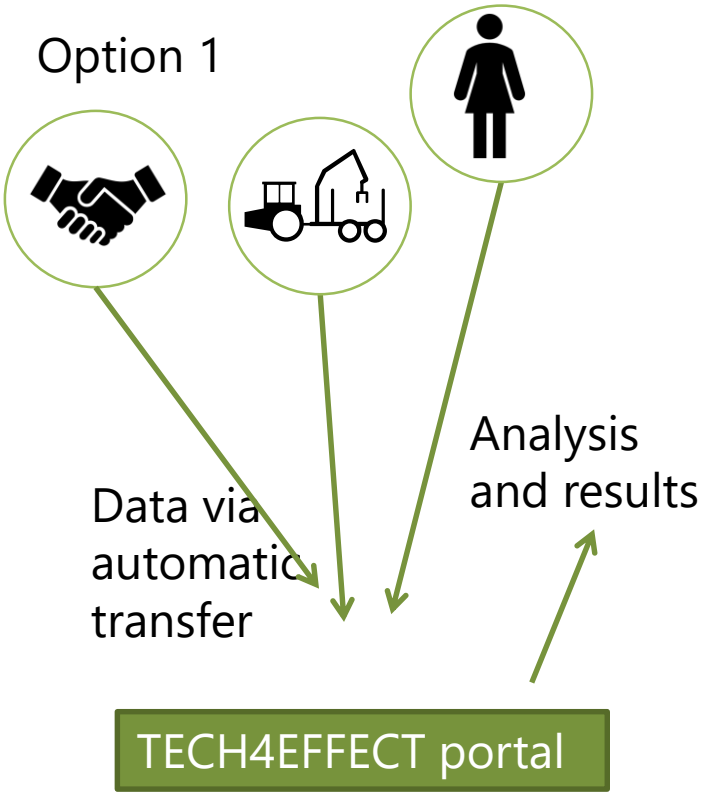
- Make sense of the vast amounts of machine data available
- Improve individual operator performance through individual follow up
- Predict performance for a given machine operating condition and identify inefficiencies

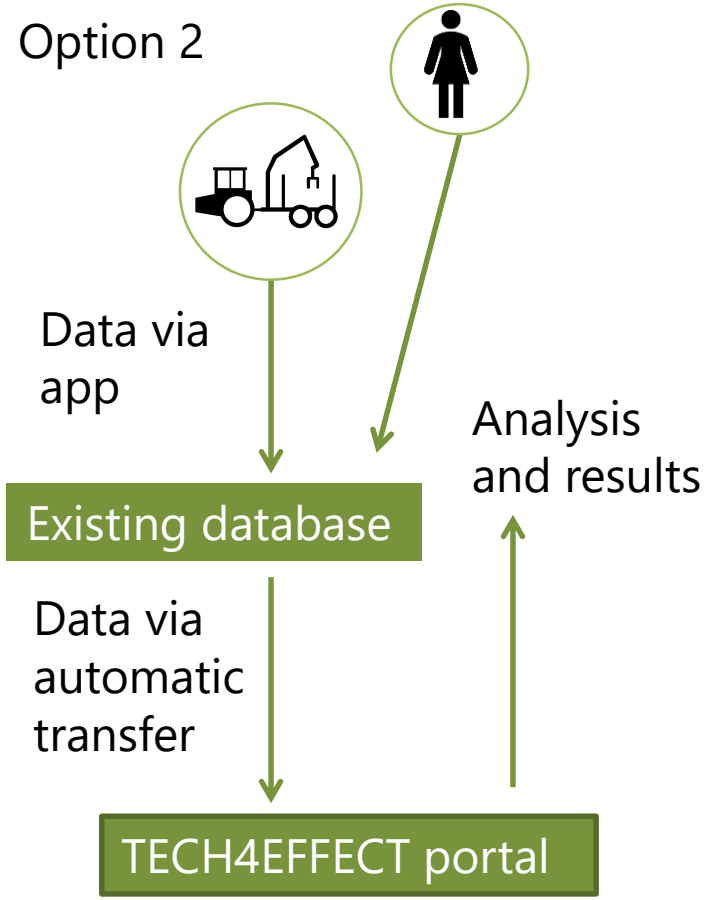


→ **Interactive benchmarking system for decision makers** (e.g. harvest operators)

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

How will it work?





Increase wood production

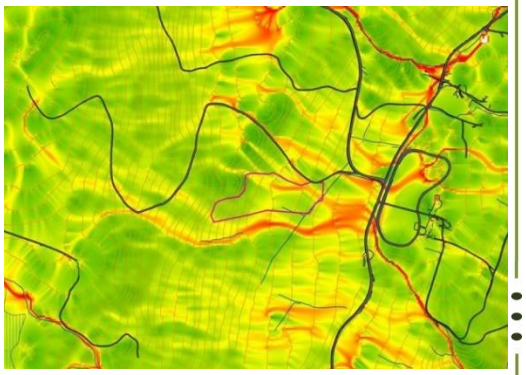
- Promote efficient silvicultural practices
  - Case study areas
- Identify possibilities for mechanization
- Decision support tool for motor-manual operations
- Forest growth simulations of different silvicultural systems
- Importance of business processes

Advance harvesting

- **Enhance accessibility of wood resources:**
  - Improved forest road network condition assessment and maintenance planning
  - Fully mechanized harvesting systems supported by traction winches in steep terrain
- **Improve dataflow and information:**
  - Live controlling of cable yarding operation through an advanced, sensor based approach
  - Value-optimized manual bucking
- **Reduce fossil fuel consumption:**
  - Harvesting machinery trimmed to fuel savings, while maintaining high productivity

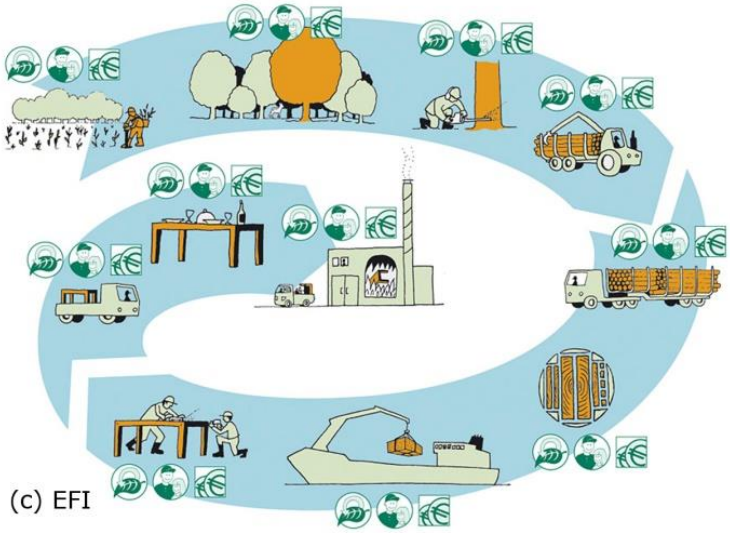
Site Impact

- **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



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Thank you for your attention..

.... and find us on

www.tech4effect.eu