



D4.2 Organizing training courses about gentle forestry

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EFFORTE project objectives

The Efforte project is built on the idea that forests and forestry provide a great potential to meet challenges of tomorrow by providing the Bio-based industry with efficiently processed raw material resulting in low carbon footprint.

To realize this and systematically replace fossil fuels and other non-renewable raw materials it is of great importance to find novel technologies and methods to improve and guarantee sustainability within the forestry.

The project is built on three different areas of development

- Trafficability (Better knowledge on soil properties, in particular soil mechanics)
- Efficiency in sustainable forest management and silviculture (development and utilization of novel technology, planning- and decision tools)
- Precision forestry (in mapping, characterizing, planning and operations by using information from different sources such as terrain maps and models, harvester data models for predicting detailed yield and operational cost and additional information from earlier silvicultural and harvesting operations)

Accomplished education, seminars and workshops

Introduction

Communication and dissemination based on research results from the project activities in combination with previous research is the key **to reach applications of knowledge based of novel techniques and methods. It is also of great importance to reach different groups and stakeholders connected to forestry with new knowledge and information. Examples** of different groups and actors are

- Forest owners
- Forest Companies
- Entrepreneurs and machine operators
- Society (schools, politicians, NGO's, press etc.)
- National and international researchers

This will be done by offering education and training courses, seminars and workshops (both indoors and as excursions in field). This is a report of communication actions halftime of the Efforte project between September 2016-February 2018.

Sweden (Skogforsk)

Become Traceless

- A one-day education/seminar about forestry without damage to soil and water

Background

Forestry and forest products is an important source in a global bio economy. When the trees grow they store carbon and when harvested they contribute to the production of renewable and fossil free production of all various kinds of products and energy. The need of volumes increases every year which

results in activities over large areas of forest land every year. This means off-road driving with different sorts of heavy machines and the side effect is a significant risk for driving damages on soil and water. The forestry thus has a great responsibility to reduce this negative impact on soil and water and avoid the most serious damages close to water, nature conservation and recreation. This is possible to accomplish with:

- Increased knowledge about how forestry affects the environment
- Changed attitudes about the importance to reduce negative impact on soil and water
- Improved and implemented new methods and techniques to reach the “traceless forestry”

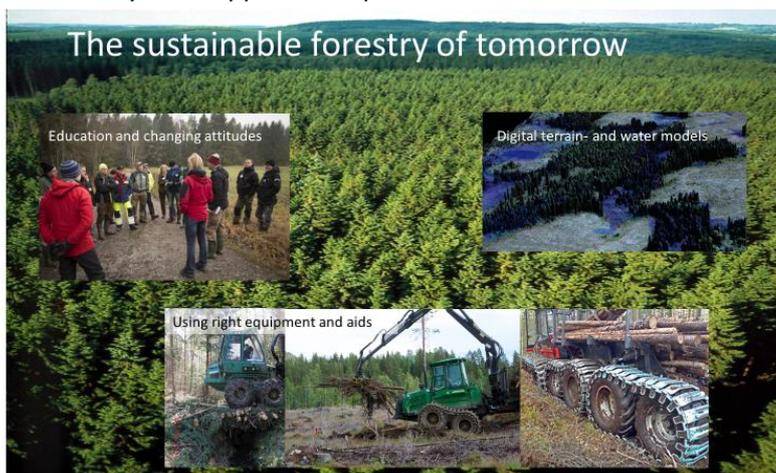
Aim and objectives

The aim of the training day/seminar is to increase the knowledge about a sustainable forestry among persons and professionals connected to the forestry. This is done through presentation of new research, spread of best practice and creating dialogue between forest entrepreneurs, employees, authorities and other with interest in forest and forestry. The purpose is to create an understanding of the impact forestry has on land and water, how all actors can work to reduce the negative impact and how forestry can contribute to a reduced dependence on fossil raw materials. Sustainability in forestry is defined concerning environmental impact, economic impact as well as social aspects of forests.

The goal is to:

- Increase knowledge and understanding of how forestry contributes to a global bio economy
- How to work with sustainability within the forestry
- Reach and enhance the dialogue among approximately 2000 persons with different interests in forestry.

Until February 2018 approx. 500 persons has attended a course



The forestry in a global and national perspective

The days start with a discussion about forestry in a global perspective. What influences the forestry and how does the forestry affect economy, environment and social aspects in a global as well as a regional perspective.

The next part involves discussions about national (Swedish) condition.

Productive Forest land represents half of the land area

Almost all harvesting activities are mechanized (mostly cut to length with harvesters and forwarders)

90% of all forest operations are carried out by contractors and 50% of the forest land is owned by private landowners. How does that influence:

- Legal responsibility and authority
- How to make agreements considering economy, environment and social aspects
- Economics and business development from different perspectives with the aim of developing the entire forestry of landowners, forest companies, entrepreneurs, executives and industry

Development of our sustainable forestry

Presentation and dialogue about new research and established knowledge within Ecology, geology, hydrology and how forestry have impact on soil and water
Best praxis concerning technique, methods and applications within the forestry
The use of "Big Data" in forestry application of terrain models and soil moisture maps,
Decision support and tools for more efficient and more sustainable forestry

Field exercise with practical application

We discuss the forestry process (in field) based on different roles (forest owner, contractor, employee, authority or NGO-member)

How can we reach a sustainable forestry, what are the important issues to solve concerning negative impact on soil and water?

How do we apply Big Data and different applications built on the combination of data?

How does the information transfer between forest activities work and how should it work?

How do we use practical solutions and what is the driving force?

What is our common vision of the future?

ELMIA wood 2017

- International forest exhibition 7-10 June 2017

During the 5 day exhibition results and new applications from the EFFORTE project were spread among approx. 15 000 visitors. Our stand was manned with 5 researchers connected to research within the project and contained information and demonstration about:

Adapted methods on soft soils, visualized through a forwarder simulator with possibilities to build wood bridges and brush mats.



Field demonstration with real wood bridge and other protection of soil and water



Illustration of Depth To Water maps through a "magic" sandbox



Conferences and workshops

- Various occasions during the project time

Presentation of Big data sources, terrain-/ water-models and applications used in operational forestry on IUFRO conference in Freiburg autumn 2017 and on RIU conference in Skinskatteberg autumn 2017

Workshop about Big Data applications together with the Skogforsk board members and other special invited persons. Spring 2017

Finland

Training course

- Three day training course in soft soil logging

A training course by Luke for logging contractors, forest machine operators and other practitioners in the forestry. Done in May 2017. Content:

- Soil and water behavior, knowledge and research
- Methods and technique for less negative impact on the environment in forestry
- Novel Big data sources
- Solutions for improved operations in soft soil

Seminars

- EFFORTE/MEOLO project research seminar

Presentation of different subtasks within the EFFORTE and MELO -projects directed to researches on a seminar in September 2017

-EFFORTE seminar and field trip

In October 2017 Luke and Metsäteho arranged the EFFORTE seminar and field trip to R&D partners and stakeholder. Roughly 35 R&D specialists and practitioners participated in the event. The group visited the most important case study areas, where EFFORTE research experiments had been carried out in preceding summer.. The presentations focused on recent findings and ingoing research topics within the EFFORTE topics such as utilization of new tools and applications related to trafficability and increasing forest growth with precision forestry.



Conferences and workshops

- *Various occasions during the project time*

Presentation of soil mechanics and post-harvest quality control on IUFRO conference in Freiburg autumn 2017

Presentation of Industrial Scale Bioeconomy and its Requirements on NOFOBE and NB-NORD conference in Lappeenranta, June 2017

France

Training course

Training session co-organised with BoisLim

"Réduire les impacts au sol lors des chantiers d'exploitation forestière" directed to the French forest industry

Presentation and distribution of the PraticSol guide in Nice, Winter 2018 directed to the French forest industry

Scotland

Seminars

Industry meeting of forest professionals in Edinburgh. Done by Woodilee Consultancy Ltd in conjunction with James Jones and Sons Ltd. April 2017.

CONFOR talk on March 7th 2018 to industry heads relating to the work completed and how Scotland is testing the Finnish model in relation to trafficability in conjunction with water models.

Publication in Institute of Chartered foresters magazine April 2017 – understanding trafficability in different forest contexts.

Publication on Soil trafficability published in Forestry and Timber News March 2018

CONFOR – confederation of forest industries. Directed to landowners and practitioners in autumn 2017. Done by James Jones and Sons Ltd