Wood Supply 4.0 | Smart Wood Supply Chain Management



Digital transformation of the value chain from the forest to the processing industry

Digitalisation is becoming increasingly important in the forestry sector and the need for digital transformation is becoming ever clearer, especially in the forestry-timber supply chain, i.e. the value chain from the forest to the processing industry. In order for this transformation to bring about the greatest possible improvement in efficiency in economic and ecological terms for the actors involved, it is necessary to identify at which points and in which processes in the supply chain there is the greatest need for digital technology, or where this can be expected to bring the greatest benefits. Changes can range from optimised work processes to the emergence of new or modified business models. Core elements are the networking of relevant points and processes - also between the actors - and the creation of interoperability of applications and systems, many of which are already available but still mostly isolated.

The Wood Supply 4.0 project aims to identify the most beneficial digital technology possible and relies on qualitative methods to determine demand, on economic methods to assess the potential of digital technology, and on case studies to test the feasibility of individual technical approaches and to assess their effects. The aim is to explore in detail (a) where the operational potential of Industrie 4.0 lies in the optimisation of existing value creation processes and (b) where the strategic potential of Industrie 4.0 lies for the further development of existing or the development of new business models. Building on these findings, the ecological and social benefits of these potentials will be clarified through a differentiated and holistic assessment.

The following project results are to be generated in the course of this research project: 1) Process map with operational potentials of Industry 4.0 technologies in the forestry-wood chain, 2) Detailed description of extended business models (e.g. new service offers), 3) Evaluation of new value chains through experimental, disruptive business model scenarios, 4) Creation of an evaluation matrix of strategic and operational potentials, and 5) Documentation of experiences from case studies. With these results, the Wood Supply 4.0 research project not only forms a foundation for further research in the field of Wood Supply 4.0, it is also, in particular, an initial step on the way to implementing Industry 4.0 in forestry and wood industry practice in a targeted manner.

The project is funded by the Federal Ministry of Food and Agriculture (BMEL) through the Agency of Renewable Resources (FNR Fachagentur Nachwachsende Rohstoffe e.V.) under the funding code FKZ 22015317.

MORE DETAILS

CHALLENGE ADDRESSED

5.- Enhance economic and environmental performance of forest supply chains

KEYWORDS

Industry 4.0

COUNTRY OF ORIGIN

Germany

DOMAIN

Harvesting, infrastructure, logistics

Research and development

DIGITAL SOLUTION

Yes

SCALE OF APPLICATION

National

TYPE OF SOLUTION

Networks, testbeds, R&D platforms

INNOVATION

Yes

START AND END YEAR

2019 - 2022

CONTACT DATA

OWNER OR AUTHOR

Georg-August Universität Göttingen, Fakultät für Forstwissenschaften

Prof. Dr. Dirk Jaeger

forsteng@uni-goettingen.de

REPORTER

FBZ

Marie-Charlotte Hoffmann

marie-charlotte.hoffmann@wald-und-holz.nrw.de

REFERENCES AND RESOURCES

MAIN WEBSITE

https://www.uni-goettingen.de/de/631552.html

PROJECT WEBSITE

--

PROJECT REFERENCE

BMEL FNR FKZ 22015317

RESOURCES

--

LOGO OF BEST PRACTICE

LOGO OF MAIN ORGANIZATION

GEORG-AUGUST-UNIVERSITÄT GÖTTINGEN

PROJECT UNDER WHICH THIS FACTSHEET HAS BEEN CREATED

Rosewood 4.0

POST DATE

18 Dec 2021

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 862681

A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY

cesefor
Centro de Servicios y Promoción Forestal y de su Industria de Castilla y León