ForestValue

CUTTING-EDGE FOREST TECHNOLOGIES AND MANAGEMENT SOLUTIONS

The ForestValue Catalogue of results - Joint Call 2017

ForestValue

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ABOUT FORESTVALUE

ForestValue – Innovating the forest-based bioeconomy is a European research initiative designed to boost innovation, sustainability, and competitiveness in the forest sector. Its goal is to support the transformation of forestry—from a resource-intensive industry to one that is knowledge-driven, resource-efficient, and resilient.

Why ForestValue Matters

Forests play a crucial role in Europe's transition to a sustainable, bio-based economy. To meet future challenges, we need modern forestry systems, smarter production technologies, and innovative business models. ForestValue addresses these needs by funding research and development projects that support:

- Sustainable forest management
- Modernised value chains
- Eco-friendly production and processing
- High-value forest-based products

A Collaborative Effort Across Europe

ForestValuebringstogether 31partnersfromacross Europe and beyond. These partners represent national and regional research programmes focused on the bioeconomy. Together, they cofund transnational calls for research proposals in the forest and wood sectors.

The initiative is supported by the European Union's Horizon 2020 research and innovation programme and is coordinated by the **Ministry of Agriculture and Forestry of Finland (MMM).**

ABOUT FORESTVALUE

Built on Proven Success

ForestValue builds on the achievements of three previous ERA-NETs:

- WoodWisdom-Net (2004–2017): Promoting innovation in wood-based industries
- FORESTERRA (2012-2015): Strengthening forest research in the Mediterranean region
- SUMFOREST (2014–2017): Enhancing research for sustainable and multifunctional forestry

Towards a Greener Future

By funding collaborative research, ForestValue is helping shift the global economy away from fossil fuels and toward sustainable, renewable resources. The initiative plays a vital role in ensuring forestry remains a key pillar of Europe's green transition.

The ForestValue ERA Net Cofund has received funding from the European's Union Horizon 2020 research and innovation programme.

THE MAIN OBJECTIVES OF FORESTVALUE



To promote increased innovation and competitiveness of the forest-based sector in Europe and support its transformation from a resource-intensive to a knowledge intensive, productive, resource-efficient and resilient sector. Sustainability and modernisation of forestry systems and downstream value chains including innovative business concepts and production technologies are needed to develop the forestry sector and the European bioeconomy, of which forestry accounts for a large share.



To comprise the joint implementation of a trans-national calls for proposals for research, development and innovation in the forest-based sector with a clear financial commitment from the participating national (and/or regional) research programmes and the EU. The topics of the ForestValue joint calls contribute to transforming the global economy from a dependence on fossil and non-renewable raw materials to a sustainable "bio-based economy".



To empower scientists with the skills needed to enable better communication for impact through additional activities on communication. »This is all to create a solid collaborative basis for a prosperous future European Research and Innovation Partnership on Forests and Forestry.«

Mika Kallio, coordinator, Ministry of Agriculture and Forestry, Finland (MMM).



ABOUT JOINT CALL 2017

ForestValue's First Joint Call: Supporting Innovation in Forestry

In October 2017, ForestValue launched its first joint transnational call for research, development, and innovation in the forest-based sector. The call ran until January 2018 and was co-funded by national and regional research programmes, along with the European Union.

What Was the Goal?

The call aimed to support cutting-edge projects that explored new ideas—whether strategies, technologies, products, or processes—to help the forestry sector and its value chain partners stay competitive, sustainable, and efficient. This included everyone from forest managers and manufacturers to resellers, consumers, and end users of forest-based bio-products.

How Did It Work?

The process was structured in two stages:

1. Pre-Proposal Stage:

- 114 eligible project ideas were submitted.
- These were peer-reviewed and ranked by an international panel of experts.
- From these, 49 top-rated consortia were invited to submit full proposals.

2. Full Proposal Stage:

- The invited consortia refined and submitted their complete project plans.
- Once again, a panel of international experts reviewed and ranked the proposals.
- Finally, the **Call Steering Committee** selected **17 outstanding projects** for funding, based on expert evaluations and available national, regional, and EU funding.

The Impact

This call marked a strong start for ForestValue's mission to strengthen Europe's forest-based bioeconomy by funding collaborative, high-quality research that brings real-world value to forestry stakeholders.



INNOVATING FOREST-BASED BIOECONOMY

TOPIC A

Innovative sustainable management of multifunctional forests

TOPIC B

Innovative industrial production and processing technologies, products, concepts and services



29 funding organisations

114 submitted pre-proposals	
49 submitted full proposales	
17 selected projects	



17 TRANSNATIONAL R&D PROJECTS SELECTED FOR FUNDING!

In the 2018 the ForestValue consortium and its call steering committee presented 17 transnational R&D projects that were selected for funding: 6 addressing the call topic A "Innovative sustainable management of multifunctional forests", and 11 addressing call topic B, "Innovative industrial production and processing technologies, products, concepts and services".

149 research teams from 13 ForestValue partner countries (Argentina, Austria, Finland, France, Germany, Ireland, Norway, Poland, Slovenia, Spain, Sweden, Switzerland and the UK) along with 3 teams participating with their own funding from Canada, Estonia, and Portugal aimed to work together in the next three years to develop solutions for sustainable forest management. These teams were also working to innovate the process of forest-based resources and the production of biobased products and services.

Sweden is funding the most projects per country (15), followed by Germany (12), Austria (9), Finland and Norway (8), Slovenia (7), France (6), Spain (5), UK (3), and (1) project each in countries; Argentina, Canada, Estonia, Ireland, Poland, Portugal and Switzerland.



Norway
Slovenia
France
Spain



1 Argentina, Canada, Estonia Ireland, Poland, Portugal and Switzerland

RESULTS OF THE PROJECTS

European forestry faces a number of challenges, from lack of resource efficiency and modernisation, to decline in available skills and human resources in the sector, and not to mention the need to ensure minimal environmental impact. As a key sector which provides rural jobs and a ects other industries, innovative tools and thinking is needed to ensure the sustainability of European forest resources moving forward. A catalogue of Innovative Forest-Based Value Chain Technologies and Management Solutions has been brought forward to address this.

This catalogue includes innovative solutions for the sustainable management of multifunctional forests as well as innovative industrial production and processing technologies, products concepts and services.

All together, these projects bring forward the following:

- New processes for producing wood products
- Better understanding of the properties of wood and technologies for its analysis
- New techniques and technologies to support the valuation and valorisation of forests and wood
- An understanding the players in the wood economy from the grassroots and introducing methodologies and tools to improve their performance

- Research on the effects of policy on the wood economy and providing insights for improvement
- New or improved wood products for industrial application
- Methodologies and tools to improve wood economy performance
- Techniques and technologies to support the valuation and valorisation of forests and wood

»Forestry players are encouraged to browse throught the catalogue and get in touch with the result owners to see how these results can benefit you!«

CATALOGUE OF RESULTS

The projects have produced 49 results that are organised into the following categories:



High-Value Added Wood Products



Wood Grading Solutions & Technologies



Wood Construction Material Innovations and Guidelines



Forest Management and Logistics Solutions



Policy Reports and Recommendations



Wood Material Research and Insights Library

Forestry players are encouraged to browse through our catalogue and get in touch with the result owners to see how these results can benefit you!

High-Value Added Wood Products

Result	Result type	Project	Contact
FunEnzFibres Production Tools for Cellulose Oxidizing Enzymes Technologies to produce high quantities of oxidative enzymes with low contaminating background activities and using simple conditions.	Tools	FunEnzFibres	Nina Aro - firstname.lastname@vtt.fi
FunEnzFibres Enzymatic oxidation to produce cellulosic fibres with improved solubility Contributes the sustainable conversion of wood fibres to textiles.	Process	FunEnzFibres	Kaisa Marjamaa - firstname.lastname@vtt.fi
FunEnzFibres Enzymatic oxidation to produce new type of micro- fibrillated cellulosic materials New material properties for packaging, and reduction of water and energy consumption in production.	Process	FunEnzFibres	Kaisa Marjamaa - firstname.lastname@vtt.fi
FunEnzFibres Effect of enzyme & cellulose type and reaction condition on enzymatic oxidation of cellulosic fibres Scientific and technical knowledge about LPMO oxidation of cellulose, especially for material applications.	Study	FunEnzFibres	Kaisa Marjamaa - firstname.lastname@vtt.fi Jenni Rahikainen - firstname.lastname@vtt.fi Vincent Eijsink - firstname.lastname@nmbu.no Aniko Varnai - firstname.lastname@nmbu.no Antje Potthast - firstname.lastname@boku.ac.at
StrongComposite Cellulose laminate stacking process at large scale A sustainable high-strength fibre composite, which allows to substitute less eco-friendly materials in various applications.	Process	StrongComposite	Satu Hamalainen - firstname.lastname@storaenso.com Gottfried Steiner - firstinitial.lastname@ibsteiner.com Ingo Burgert- firstinitiallastname@ethz.ch Wolfgang Gindl-Altmutter - firstname.lastname@boku.ac.at
StrongComposite cellulose composites with a biobased matrix A sustainable high-strength fibre composite, which allows to substitute less eco-friendly materials in various applications.	Prototype	StrongComposite	Ingo Burgert - firstinitiallastname@ethz.ch Andreas Hafner - firstname.lastname@nestcollaboration.ch
StrongComposite high-strength cellulose materials Shows the concept and potential of this novel cellulose material.	Prototype	StrongComposite	Ingo Burgert - firstinitiallastname@ethz.ch Wolfgang Gindl-Altmutter - firstname.lastname@boku.ac.at
StrongComposite strong cellulose-matrix composites Proof of concept that high-strength cellulose composites can be achieved.	Prototype	StrongComposite	Ingo Burgert - firstinitiallastname@ethz.ch Andreas Hafner - firstname.lastname@nestcollaboration.ch Wolfgang Gindl-Altmutter - firstname.lastname@boku.ac.at
StrongComposite functional cellulose materials Proof of concept of innovative approaches to produce hierarchical, multifunctional, and sustainable cellulose-based materials.	Prototype	StrongComposite	Lennart Bergstroem - firstname.lastname@mmk.su.se Ingo Burgert - firstinitiallastname@ethz.ch Markus Linder - firstname.lastname@aalto.fi

Wood Grading Solutions & Technologies

Result	Result type	Project	Contact
READiStrength State-of-the-Art Reports on Strength Grading Covers grading methodology, underlying regulations for applying strength grading procedures and industrial views on their applicability.	Publications	READiStrength	Anders Lycken - firstname.lastname@ri.se
FIRENWOOD testing and classification system for adhesives for structural fire applications A classification method improving fire design models by thorough experimental validation.	Classification System	FIRENWOOD	Simon Aicher - firstname.lastname@mpa.uni-stuttgart.de
Final CLICKdesign model A performance-based specification protocol to enable provision of a software tool for architects and specifiers to embed service life performance specification for wood.	Software	CLICKdesign	Ed Suttie - firstname.lastname@bregroup.com
FIRENWOOD State-of-the-art report A detailed overview of where wood elements can be applied with which requirements to fire resistance rating, and which field of use is currently excluded.	Study	FIRENWOOD	Patrick Dumler - firstname.lastname@tum.de
FIRENWOOD small-scale and model-scale testing Fire development and fire properties testing methodology.	Methodology	FIRENWOOD	Robert Olofsson - firstname.lastname@risefr.no
FIRENWOOD design models for structures with I-joists, CLT and glued-in fasteners Improved fire design models by thorough experimental validation.	Design Models	FIRENWOOD	Alar Just- firstname.lastname@ri.se
READiStrength Strength grading models based on log characteristics Solutions for manufacturers that can be implemented in different technical systems for scanner systems	Models	READiStrength	Magnus Fredriksson - firstname.1.lastname@ltu.se Andreas Weidenhiller- firstinitial.lastname@holzforschung.at Andreas Briggert- firstname.lastname@ri.se Udo Sauter - firstname.lastname@forst.bwl.de Olof Broman- firstname.lastname@ltu.se

Result	Result type	Project	Contact
READiStrength models for timber strength grading based on board characteristics Mathematical solutions for different technological grading applications which can be used by scanner manufacturers.	Models	READiStrength	Andreas Weidenhiller- firstinitial.lastname@holzforschung.at Olof Broman- firstname.lastname@ltu.se
READiStrength Combined wood log and board strength grading concepts Combinations of different state-of-the-art scanning technologies on log and board basis could provide new concepts for material flow through sawmill production.	System	READiStrength	Andreas Weidenhiller firstinitial.lastname@holzforschung.at Magnus Fredriksson firstname.1.lastname@ltu.se Franka Brüchert firstname.lastname@forst.bwl.de
READiStrength Timber strength prediction concept for CT data generating models of boards Wood board finite element models generated from CT data provide an advanced understanding of the wood strength	Process	READiStrength	Johannes Huber- firstname.lastname@ltu.se Andreas Weidenhiller- firstinitial.lastname@holzforschung.at Olof Broman firstname.lastname@ltu.se
Framework for grading of secondary timber An approach for assigning design properties for a batch of timber, when the situation is out-of-scope of EN 14081	Methodology	InFutUReWood	arin Sandberg - firstname.lastname@ri.se Dan Ridley-Ellis- firstinitial.lastname@napier.ac.uk

WOOD GRADING SOLUTIONS & TECHNOLOGIES

Wood Construction Material Innovations and Guidelines

Result	Result type	Project	Contact
hardwood_joint implementable design rules Allows practitioners to implement developed solutions into building practice.	Methodology	hardwood_joint	Carmen Sandhaas - lastname@kit.edu Elisabet Kuck - firstname.lastname@kit.edu
Quantification of structural damping in as-built tall timber buildings Provides exact tall timber building behaviour data allowing validation of calculations or optimising future designs.	System	DynaTTB	Marie Johansson - firstname.lastname@ri.se
Identification and quantification of the effects of connections and non-structural elements Provides architects & civil engineers better insight on different building technologies and how they affect the overall behaviour of tall timber buildings.	Publication	DynaTTB	Marie Johansson - firstname.lastname@ri.se
Finite element models for tall timber buildings Includes approaches used to model different kinds of tall timber buildings.	Model	DynaTTB	Marie Johansson - firstname.lastname@ri.se
Taller timber building wind design guidelines Covers specific design advice, state of the art (timber construction systems, finite element modelling, in-situ measurements,) and case studies.	Publication	DynaTTB	Marie Johansson - firstname.lastname@ri.se
Numerical modelling of asymmetrical CLT structures on seismic areas Design recommendations for multi-story timber buildings built in earthquake areas.	Study	InnoCrossLam	Boris Azinović - firstname.lastname@zag.si
Adaption of a 3D Multisurface failure criterion for clear wood The Abaqus user material subroutine includes multi-surface failure criterion with ideal plasticity.	Source Code	InnoCrossLam	Josef Füssl - firstname.lastname@tuwien.ac.at
State of the art in design of CLT structures Common practices and solutions for typical challenges in structural design for engineers dealing with CLT.	Blueprint	InnoCrossLam	Martin Schenk - firstname.lastname@tum.de

Result	Result type	Project	Contact
A tool for assessing the reuse potential of timber buildings An indicator system to assess if a building is designed for disassembly in accordance with ISO 20887	Publication	InFutUReWood	Ylva Sandin - firstname.lastname@ri.se
Design for deconstruction and reuse of timber structures- state-of- the-art-review It discusses technical premises for a potential circular use of timber in building construction in low-rise timber buildings, up to 3 storeys, in seven countries	Publication Study	InFutUReWood	Carmen Cristescu - firstname.lastname@ri.se Ylva Sandin - firstname.lastname@ri.se
Estimating the material stock in wooden residential houses in Finland Quantifying the amount of wood available in Finnish residential houses in 2017	Publication	InFutUReWood	Bahareh Nasiri - firstname.lastname@aalto.fi
Development of a life cycle inventory database and life cycle impact assessment of the building demolition stage: a case study in Germany Project-specific inventory data for the calculation of life cycle assessments for the building's demolition stage	Publication	InFutUReWood	Raphaela Ivanica - lastname@hfm.tum.de

WOOD CONSTRUCTION MATERIAL INNOVATIONS AND GUIDELINES

Policy Reports and Recommendations

Result	Result type	Project	Contact
Sectoral policies drive forest management and ecosystem services Provides leverage points for policymakers to increase coherence among future policies and improve implementation of multiple uses of forests.	Publication	DynaTTB	Mikko Mönkkönen -firstname.lastname@jyu.fi
ValoFor Report on forest owner characteristics, legal frameworks and forest behaviour Provides recommendations for practice, policy and industry on national and EU level specifically on small forest owners' perception towards the bioeconomy, forest management, climate change adaptation and forest conservation	Study, Methodology and Model	ValoFor	Artti Juutinen - firstname.lastname@luke.fi
I-MAESTRO Recommendations for Practice and Policy Policy recommendations on management strategies to ensure resilience and high levels of ecosystem services provisioning at different scales, ranging from stands and landscapes to the European level.	Publication	I-MAESTRO	Marcus Lindner - firstname.lastname@efi.int
I-MAESTRO European Database on Forest Disturbances The updated database will provide a precise overview of past events and trends, and better predictions for the future	Dataset	I-MAESTRO	Marco Patacca- lastnamefirstname@gmail.com Mart-Jan Schelhaas - martjan.lastname@wur.nl
I-MAESTRO analysis of impacts of disturbances, management and climate change scenarios on ecosystem services with forest models Uses forest simulation models addressing interactions between disturbances, forest management, climate change and structural complexity.	Study	I-MAESTRO	Patrick Vallet - firstname.lastname@inrae,fr Christopher Reyer - lastname@pik-potsdam.de
MULTIFOREVER Somatic plant market analysis survey Provides an understanding of the current knowledge and interest of the EU forest-wood sector to invest in somatic embryogenesis technology (Finland: done/submitted for publication; Sweden: ongoing: EU scale; coming soon).	Study	MULTIFOREVER	Daniel Gräns - firstname.lastname@slu.se Mikko Tikkinen - firstname.lastname@luke.fi

Result	Result type	Project	Contact
Report on small forest enterprise production and profitability The report can be used to better understand the economic constrains of small forest owners as a basis for policy development.	Study	ValoFor	Artti Juutinen - firstname.lastname@luke.fi
Report on the status of forest ecosystem services and biodiversity in small private forests Provides better understanding of the trade-offs between various ecosystem services.	Study	ValoFor	Silvio Schuler - firstname.lastname@bfw.gov.at

POLICY REPORTS AND RECOMMENDATIONS

The ForestValue Catalogue of results - Joint Call 2017

Wood Material Research and Insights Library

Result	Result type	Project	Contact
CLICKdesign validation and optimisation of the decay, exposure, insect, and resistance models A service life model to predict performance of wood in construction	Study	CLICKdesign	Ed Suttie - firstname.lastname@bregroup.com
Determination of the mechanical properties of multifunctional CLT Feasibility study and demonstrator for the manufacture of thermally activated wall elements.	Feasibility Study	InnoCrossLam	Matthias Arnold - firstname.lastname@tum.de
Mechanical behaviour for CLT elements design Covers the mechanical behaviour of cross laminated timber at in- plane shear loading and notched elements at out-of-plane loading - useful for the development of design codes and standards.	Study	InnoCrossLam	Henrik Danielsson - firstname.lastname@construction.lth.se
hardwood_joint rough shear plane effects Optimising timber joints by activating further load-carrying contributions such as friction through rough shear planes.	Engineering Models	hardwood_joint	Carmen Sandhaas - lastname@kit.edu Thomas Bader - firstname.lastname@lnu.se Reinhard Brandner - firstname.lastname@tugraz.at Jean-Francois Bocquet
hardwood_joint finalised single-fastener model Serves as a basis for the development of realistic joint models.	Engineering Models	hardwood_joint	Carmen Sandhaas -lastname@kit.edu Thomas Bader - firstname.lastname@lnu.se Reinhard Brandner- firstname.lastname@tugraz.at Jean-Francois Bocquet

Results types are: Blueprint; Commercial solution; Data set / data pool; Demonstrator; Feasibility study; Framework (e.g. software environment, policy document, legal framework); Hardware (e.g. chip, appliance, drone, sensor, system); Infrastructure (e.g. IT infrastructure, transport infrastructure, energy infrastructure, water infrastructure, building etc.); Methodology; Model (e.g. risk model, mathematical model, data model, physical model, business model etc.); Patent (e.g. utility, design patents and plant patents); Policy report; Prototype; Proxy/broker service; Research and/or virtual environment; Scientific publication (Refereed); Scientific publication (Refereed); Scientific publication (Refereed); Software (e.g. routine, integrated platform, library, plugins); Standard (e.g. norms, policies); Taxonomy / Ontology; Tool / Toolkit / toolbox; Training (e.g. learning tools, services, modules); White paper or similar publication; Other – please specify.

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