European Innovation Partnership on Raw Materials

Application for a Raw Materials Commitment

**Novel solutions of wood mobilisation for wood-based products**

**Acronym:**
NOWMOB

**Abstract / executive summary:**
This RMC has been developed on the basis of findings and gap analysis in the ECAMOB Commitment Enhancing the cascade use of wood by integrating an intensified mobilization of forest resources. The basic idea is to boost the innovation and foresight capacity of the EU wood-based material-related sectors, turning them into a stronger sustainable pillar of the EU economy and a more attractive industry increasing benefits for the bio-economy society. Changing forest ownership, different needs for land-use and management, intensive prospective plans and on-going actions for investments in wood procurement and wood-based industries and different demands for environmental control call for novel strategies, models and actions to intensify and modernise wood mobilisation. This is needed to ensure an enhanced sustainable supply of raw materials to the European forest-based industry, thus creating more thriving economy, job opportunities and revenues and forest land management in Europe. The commitment will define and pilot novel solutions and actions proving proposals for increasing wood mobilisation toward products and service that meet the demands among industrial customers and private consumers. Novel tools based on digitalization and industrial internet will be developed based on wood supply and demand, logistical, regional, environmental and profitability criteria. Its accuracy level will guarantee that wood resources are used most efficiently and the climate change mitigation potential is maximised. Reducing the gap between supply and demand of wood (short - to medium-term), this commitment will investigate and propose solutions for increasing the potential supply and allocation of wood from European forests in both a holistic approach and operative actions while securing environmental and social demands on the ecosystems. Triple Helix workshops and large-scale project planning meetings in strategic items are included in the agenda of the RMC.

**Links to the Strategic Implementation Plan:**
- **I. Technology Pillar**
  - **I.B Priority Area: Technologies for primary and secondary raw materials’ production**
    - **Action area n° I.3: Innovative extraction of raw materials**
    - **5) Forest operations**
    - **Action area n° I.4: Processing and refining of raw materials**
- **1) Innovative and flexible processing**
- **II. Non-Technology Pillar**
  - **II.C Priority Area: Knowledge**
    - **Action area n° II.10: Optimised raw materials flows along value chains**
- **1) Raw material partnerships**
- **3) Sustainable wood mobilisation**

**Coverage of the Action Areas referred to above:**

The RMC responds to Action areas I.3, I.4 and II.10 of the EIP/SIP on Raw Materials. Influential benefits are targeted for forest operations through dynamic logistic and techno-economic analysis of and improvements in operational environment, sourcing and extraction technology of raw materials, digitalization and cleantech solutions. Innovative and flexible processing is emphasized in development and piloting on wood-based value chains and consideration of alternative end-product strategies. In terms of geographical coverage, the RMC will address the full range of European situations where demand-driven additional mobilisation can be achieved either by gaining performance in current practices or by demonstrating new practices to reach out towards specific resources or areas currently untapped due to lack of know-how, equipment or economical balance under sustainable forest management and wood procurement conditions. Hence, a vast diversity of stakeholders will be targeted by the actions, from professional practitioners directly committed in the undertaking of wood mobilisation, supporting RTDI organisations to participating stakeholders driven by diverse socio-economic and environmental motivations and public decision-makers at European and national levels.

**Objectives of the commitment:**

NOWMOB aims to boost the capacity of EU wood-based material related sectors toward stronger economy and industry in the context of bio-economy. Accurate map of forest resources and wood availability will be elaborated on different wood species. Enhanced sustainable supply of raw materials to forest-based industries is secured through digitalization and cleantech, increasing forest production and management, matching different needs of land management, encouraging forest owners to business, improving business environment and skills of wood procurement companies and allocating wood efficiently to different wood users and mills. This leads to more thriving economy, forest-based sector, job opportunities and revenues, and commonly accepted land use in Europe. NOWMOB defines and pilots novel solutions, actions and proposals for increasing wood mobilisation, in the sense of Triple Helix.

**Description of the activities:**

The SRA of the European forest-based sector address with its Strategic Theme 2: Responsible management of forest resources, the sub-themes multi-purpose management of forests; forest ecology and ecosystem services; enhanced biomass production; secured wood supply; forest operations and logistics; resource efficiency. Manifold business models, incentive schemas developed and RTDI projects in order to enhance the supply and utilisation of wood. The majority of these projects are funded on national or regional level.

A new comprehensive and well balanced approach is needed to secure raw material supply for growing needs of different users of wood-based raw materials in Europe. Supply and demand of specific wood species, such as hardwoods (like oaks and cherries), calls for attention. Large industrial investments in many European countries lead to the need of more wood. Various by-products of sawmill and wood working industries are also growing in supply. Mobilizing the existing forest resources widely considering the different forms of forest ownership and land management
and subsequent material uses will enhance the opportunities of boosting the use of wood product and building a green society.

NOWMOB is elaborated by a strong European Research community, industrial network and public decision makers aiming at carrying out jointly major RTDI activities: Analysing, studying existing best practices and technologies for mobilising forest resources taking existing EU and Member State policies and legislations on this principle into consideration and piloting the proposed models on corporate and division levels. Holistic, dynamic, simplified tools can deliver recommendations and guidelines for policy-makers and value chain stakeholders and will allow them to analyse in parallel demand scenarios and feasible supply chains based on forests.

Triple helix discussion, planning, scenario and policy making platforms for enhanced wood mobilisation and innovative utilisation. Adapting the developed solutions on a national level while taking regional differences into consideration. Reducing and eliminating resource mobilisation bottlenecks while satisfying the needs of both woody biomass suppliers and users. Developing and testing flexible novel industrial digitalization and IT tools for sustainable forestry technologies and management practices with respect to climate change, industry needs and multi-functional societal demands in all European countries. Technology development, sustainable infrastructure and improvements in logging conditions, terrain trafficability and resistance to seasonality, including adapted working methods. Business models of SMEs, respective equipment and trained work forces, improvements in basic education and attraction of young generations.

Structures and improvements of private forest ownership toward more profitable supply units. Matching wood extraction potential and land-use planning to ensure adequate local log supplies, reducing the needs of log import and supporting the renaissance of pulp industries, increasing saw and plywood milling and, as a result, building and living with wood, as well as start-up of large-scale biorefineries. Strategic assessment and implementation of European hardwoods and softwoods, profitable allocation in product and service palette. Forest management, tree breeding, species selection and logging operations vs. forest dynamics, forest health and future’s available biomass stock. A variety of multi-criteria analysis is needed.

Target: 3-4 proposals for new H2020 projects.

Description of the expected impacts:

Responding to Action areas I.3, I.4 and II.10 of the EIP/SIP on Raw Materials, the present integrative and cross-disciplinary research and innovation activities study the best practises and innovative solutions to face the increasing demand for biomass for existing and future value added processes. The industry driven research and innovation work secures a direct exploitation and piloting the RTDI results into forestry and forest-based industries as part of the bio-economy society. Novel integrated resource efficient and safe-to-environment models and organisation innovations emphasize an advanced European mobilisation of forest-biomass enabling to add value from resources via consumer and industry products, hence creating new job opportunities, higher revenues and better environmental competence.

The ongoing and planned initiatives on EU member states level will be integrated to create a European knowledge-base for facilitating the communication within the forestry chain, and with the society in particular. The active involvement of small and medium enterprises in the European forest-based sector enhances innovations while strengthening the competitiveness. The RTDI based holistic models and concepts along the value added forestry-wood chain improves the knowledge-base in Europe that will allow selecting and allocating the appropriate raw material for each end use. Forest resource is seen as a bulk commodity, while in reality it represents a inhomogeneous
biological material with quality and property attributes depending on geographical origin, growing conditions, etc. Tailor made wood procurement concepts as well as product strategies have to be connected to these conditions for securing best economic and environmental performance of the forest-based sector.

**Expected innovation outcomes:**
- New products to the market
- New processes
- New services
- New technologies
- New business models
- New ideas to the market
- Societal innovation

**Comments:**

The holistic approach proposed in this RCM will define new and widely replicable business model in order to optimise the use of wood resources. A hierarchy of the use of wood will be elaborated taking into consideration the forestry value chain and the EU regional specificities. In order to maximise the mobilisation of wood resources and minimise the environmental impact, this RMC will collect and pilot the best sustainable forest managements existing at EU level. A common European regional guideline will be elaborated according the different region peculiarities. Solutions for engaging small forest owners will be explored. Proposals for enhancing logging and transports facilities for the forestry-based sectors will be parts of this RMC.

**Name of the coordinating organisation:**
Natural Resources Institute Finland (Luke)

**Country:**
Finland

**Entity profile:**
Governmental/public body

**Role within the commitment:**

Luke is the coordinator of the RMC (ref. ECAMOB TF1 Wood mobilization, 2014-), state research institute and major European player in the RTDI area: Wood-based value chains, biomass management, raw materials supplies, suppliers, processing and markets. Wood procurement and allocation, forest ownership, land management. Wood industries (sme & large) and sidestreams, biorefining. Triple helix platforms: EU, national, regional fora and RTDI networks.

**Other partners:**

**Name of partner:**
Institut Technologique FCBA

**Country:**
France

**Entity profile:**
Other

**Other:**
Institute of Technology - Applied Research

**Role within the commitment:**

FCBA is co-coordinator of the RMC, together with the coordinating body Luke Finland, and
Name of partner: Ecole Supérieure du Bois (ESB)
Country: France
Entity profile: Academia
Role within the commitment: RTDI partner. ESB is involved in the characterisation of wood quality both in terms of quantifiable properties (mechanical, physical and chemical) and the perception of quality by end-users.

Name of partner: Skogforsk, The Forestry Research Institute of Sweden
Country: Sweden
Entity profile: Other
Other: Non-profit research and innovation institute
Role within the commitment: RTDI partner. Industry integrated sustainable and resource efficient production of forestry products (refined raw-materials). Boosting industrial processes, efficient manufacturing, cascade use and reduced waste. Integration of Cut-to-Length harvesters, measurement technology and forestry ICT standards. Silviculture and breeding for increased and value-adding supply. StanForD 2010 and papiNet joining forestry and industry ICT. System analyses.

Name of partner: AIDIMA
Country: Spain
Entity profile: Other
Other: Research and technology institute
Role within the commitment: RTDI partner. AIDIMA is wood and furniture technology Institute. Technological, economic, environmental and socio-economic aspects and targets of wood mobilisation and supply are key issues in our daily activities and investigation. We represent more than 500 Wood based industry which are interested in this area, for the environmental impact improvement in logistics, but also for the economic impact with a better and new wood mobilization model.
Name of partner: Alterra / Wageningen University and Research
Country: Netherlands
Entity profile: Academia
Role within the commitment: RTDI partner. Alterra is a research and innovation oriented university, and involved in forest management and forestry planning, research and innovations in wood and wood-based products, sourcing and trade of bioproducts and forest sector analysis.

Name of partner: Austrian Wood Industries
Country: Austria
Entity profile: NGOs
Role within the commitment: Stakeholder representative: Rainer Handl, Master of wood technologies and economic affairs, expert of the Austrian Wood Industries. Responsible for resource issues in specific e.g.: safe raw material flow-leading, several projects in Austria www.forstholzpapier.at; member of expert pool in several logistic projects; member of board pro: Holz Austria (marketing network), expertise on LULUCF.

Name of partner: InnovaWood asbl
Country: Europe
Entity profile: Other
Other: European Innovation research network for wood products
Role within the commitment: Umbrella organisation for RTDI activities within the wood research community. InnovaWood will act as partner in the knowledge transfer and dissemination activities in the RMC. The InnovaWood network will cover the European context and will be used for extended knowledge transfer of research results and policy support on regional, national and European levels.

Name of partner: European Organization of the Sawmill Industry (EOS)
Country: Europe
Entity profile: Other
Other:
European Confederation

**Role within the commitment:**
Stakeholder representative. Participation in steering the RMC, integration of various stakeholders (wood working industrial companies, research institutes, governmental bodies, associations and NGOs), likewise it will have an important role in transfer of knowledge to industry partners, steering and accompanying the pilot testings, and testing and validation of the models in industrial and real time applications.

**Name of partner:**
European Panel Federation (EPF)

**Country:**
Europe

**Entity profile:**
Other

**Other:**
European Confederation

**Role within the commitment:**
Stakeholder representative. Participation in steering the RMC. European wood-based panels industry is suffering from tremendous wood cost increase. Consequently, EPF is principally supporting all actions aiming at mobilising more wood in a sustainable way for material use in the woodworking industries.

**Name of partner:**
Confederation of European Private Forest Owners (CEPF)

**Country:**
Europe

**Entity profile:**
Other

**Other:**
European Confederation

**Role within the commitment:**
Stakeholder representative. Participation in steering the RMC. CEPF aim at fostering reliable political framework conditions and strengthening national forest owners’ organizations capacities to enhance an economically viable, socially beneficial, culturally valuable and ecologically responsible sustainable forest management. CEPF acts in emerging issues and knowledge transfer, building bridge between family forest owners and society.

**Name of partner:**
European State Forest Organization (EUSTAFOR)

**Country:**
Europe

**Entity profile:**
Other

**Other:**
European umbrella organisation

**Role within the commit**
commitment:
Stakeholder representative. Participating the steering group of the RMC. The main objectives of EUSTAFOR are to analyze and investigate the existing framework conditions within the EU, in order to create the preconditions necessary for sustainable management of state forests. EUSTAFOR will keep the association's members involved and regularly informed in this RMC.

Existing EU contribution:
Yes
Source:
FP 7
LIFE
Competitiveness and Innovation Programme (CIP)
ERA-NET actions
COST - funding for R&I networking
European Structural and Investment funds (ESIF)

Period to implement the commitment:
Wednesday, 1 June, 2016 to Tuesday, 31 May, 2022