

# Messages from the **Finnish Forest Bioeconomy Science Panel** to the next European Commission 2024–2029



**According to the Finnish Forest Bioeconomy Science Panel, the EU and the next European Commission should pay attention to the following themes:**

1. **The preconditions for the growth of the forest bioeconomy must be strengthened by increasing the value added.**
2. **Better understanding of the member state specific forest growth and health dynamics is needed.**
3. **Actions must be taken to enhance the role of bioeconomy in mitigating climate change and safeguarding biodiversity.**
4. **Amenity values of forests are an essential part of the forest-based bioeconomy**
5. **Responsible decision making and proactive forest policy must be evidence-based.**

European forests play key roles in the green transition: including the supply of renewable raw materials and energy, safeguarding biodiversity, and acting as carbon sinks and storages. According to Eurostat, about 65% of net annual increment is harvested in the EU. Since 2000, annual roundwood production in the EU has increased by 25% to ~500 million m<sup>3</sup>/year. To secure energy supply in the EU, demand for wood for energy is increasing. At the same time, the ageing of forests combined with large-scale forest disturbances such as drought, insect outbreaks, and fires will reduce the carbon sink. Additional forest protection and restoration may reduce the area of forest available for wood supply. These changes affect the current and future sustainable forest-based bioeconomy strategies and practices, which must also fulfill broad and diversified range of social and cultural forest values linked to European forests.

**Not all forest-related policy goals set by the EU can be achieved simultaneously especially in the short term, thus, decision makers will have to make choices regarding the uses of forests.** To support these choices, research-based syntheses are needed, upon which possible combinations of forest management, utilization, protection, restoration, and climate change mitigation measures can be based.



**39%**

Forests cover of  
EU's land area

EU's forest-based  
bioeconomy  
employs

**2.4** million  
people

The value added of  
EU's forest-based  
bioeconomy is

**121** billion  
€



The stock of timber in  
the EU's forests totals

**28.3** billion  
m<sup>3</sup>

**65%**

of the net annual  
increment of wood  
in EU forests is  
harvested

In the EU, forests  
sequester about

**10%**

of gross greenhouse  
gas emissions

Bioenergy represents

**56%**

of EU's renewable energy  
out of which c.a. two  
thirds is wood based  
(bioenergyeurope.org)



Forests support  
human well-being by  
providing space for  
rest, relaxation and  
exercise.

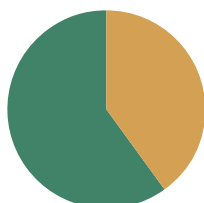
The forest area in the EU is owned by

Private owners

**60%**

Public sector

**40%**



## 1 The preconditions for the growth of the forest bioeconomy must be strengthened by increasing the value added

The growth of the value added in the forest sector cannot be based on the increased use of raw materials, since growth of EU forests has started to decline, while the utilization rate of forests is already high. In addition, the national and international climate and diversity goals for forests may set varying degrees of restrictions on increasing wood use.

### According to the Science Panel:

- We must be able to extend the value chain of raw material processing towards end products, in order to increase the value added.
- We need technical and economic analyses of new product innovations in the development phase on how to turn new innovations and future materials into value added in Europe.
- A focus on demonstrating new technologies is needed, because it will enable future commercial-scale production investments, improve the efficiency of existing processes, and thus the use of raw materials, while simultaneously reducing e.g., greenhouse gas emissions.
- Large scale utilization of bio-based carbon dioxide recovery and processing is needed. The carbon dioxide from forest and energy industries is renewable raw material that offers opportunities to manufacture hydrogen products without fossil raw materials or increasing the consumption of biomass.
- The EU has set green transition as its goal. Carbon footprint and handprint assessments in the construction sector should be widely applied to replace fossil, non-renewable and emission-intensive construction materials.
- In wood construction, long-lived and recyclable wood products increase long-term carbon sequestration and thus mitigate climate change.

- For timber construction, value addition can be increased without increasing felling volumes, when the products of the mechanical forest industry are further processed within the EU.
- Fiber-based packaging and textile innovations and their production investments have great potential to increase the value added of the forest sector in the packaging and textile industries. A shift from fossil-based raw materials towards sustainable use of renewables promotes the EU's green transition goals.
- In accordance with the cascading use principle regarding raw material use, all main and side streams should be used even more efficiently than at present. In addition to energy use, for example, lignin products can bring value added, e.g., as a component of adhesives and as a material for the battery industry.

## 2 Better understanding of the member state specific forest growth and health dynamics is needed

Due to forest ageing, growing season drought and forest damage, the EU forest sink has evolved in a way that is detrimental to the EU's climate change objectives.

Europe's forest ecosystems range from Mediterranean to temperate and boreal, with a corresponding diversity of tree species and varying degrees of private forest ownership and management practices.

As a result, the drivers and measures to enhance carbon sink capacity are likely to differ between EU member states.

### According to the Science Panel:

- Scenarios produced with different modeling techniques should be used to develop a consensus on realistic forest growth and possibilities to utilize forests in the changing climate.
- Scenario analyses should better evaluate disturbance risks related to climate change and possible actions such as diversifying tree species composition and forest breeding to respond to these challenges.



- The analyses must be based on systematic and unbiased forest information harmonized at European level, while maintaining expertise on member states' specific conditions.
- Investments to increase the growth and added value of the EU's forest resources must be fully assessed for synergies and tradeoffs with environmental and climate impacts in order to identify win-win situations.
- Committed forest owners and adaptive forest management support the sourcing of biomass, safeguarding of carbon stocks and biodiversity, and mitigation of and resilience against the adverse effects of large-scale natural disturbances.

### **3 Actions must be taken to enhance the role of bioeconomy in mitigating climate change and safeguarding biodiversity**

Climate change and biodiversity loss are two major global environmental challenges at present. Accordingly, the EU aims to put Europe's biodiversity on the path to recovery by 2030 and to reach carbon neutrality by 2050.

Improved forest management practices aiming at safeguarding biodiversity and adaptation to climate change are actively evaluated in terms of their impacts and the most cost-effective measures are mainstreamed.

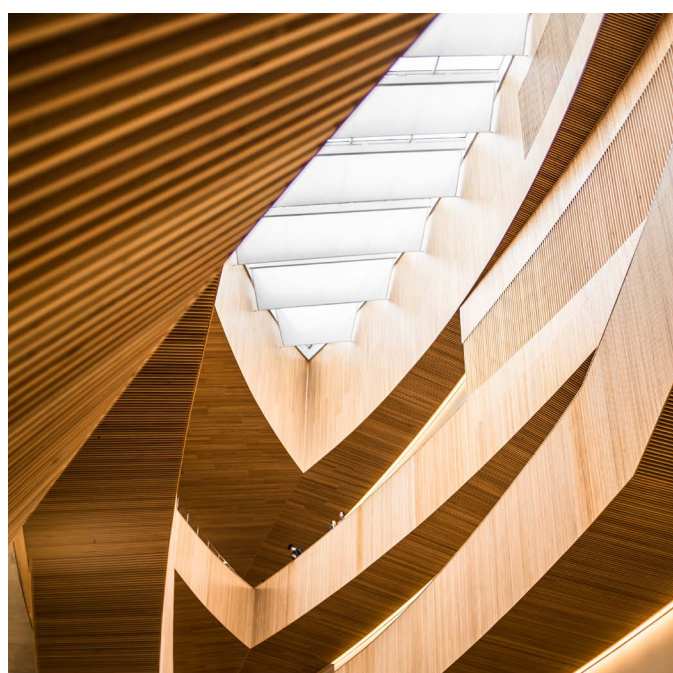
The Finnish Forest Bioeconomy Science Panel considers that in order to reach the different sustainability goals of forests, a better understanding of the synergies and trade-offs is needed.

#### **According to the Science Panel:**

- It is obvious that the carbon sink of forests will not be sufficient to meet the GHG mitigation targets of EU, and therefore the

focus should be redirected to the mitigation potential provided by biobased production, including capture, storage and utilization of biobased CO<sub>2</sub>.

- In safeguarding biodiversity, the network of high-quality protected areas should be targeted. Towards this aim, high-quality spatial data should be used in prioritization and planning of conservation and restoration measures as well as their linkages to managed sites.
- Forest owners' and citizens' views on the meaning and values and uses of forests are evolving in Europe, which affects the acceptance of forest policy in general and forest policy instruments more specifically across different regions.
- Thus, in addition to economic instruments and regulation, information-based instruments are essential to support the choices of forest owners in order to develop forest management practices to better tackle multiple objectives related to the forests.
- Cost efficient policy measures must be sought to reduce biodiversity loss, and to foster role of forests in adapting and mitigating climate change. This can be supported by, for example, by piloting ecosystem accounting.



# 4

## **Amenity values of forests are an essential part of the forest-based bioeconomy**

Amenity values of forests represent a broad set of intangible values, including sceneries and recreation, health and wellbeing benefits, and spiritual and religious aspects, that are increasingly demanded by urbanizing and ageing societies in Europe. These amenity values are seldom acknowledged in bioeconomy strategies. Their direct and indirect economic benefits for European societies and the bioeconomy are substantial, and regionally, their support for diversifying livelihoods, such as tourism and employment, can be significant. Forest amenity values are typically public goods and do not have markets, and therefore, their value for the society is not fully recognized.

The Finnish Forest Bioeconomy Science Panel considers that safeguarding and enhancing the amenity benefits of forests are needed to achieve wider the acceptability of the European bioeconomy by urbanized societies.

### **According to the Science Panel:**

- When developing policies or management measures, or spending public funds on European forests, it is important to obtain a wider understanding of the demand for amenity services and their support by the general public.
- Easily accessible forests providing a wide range of ecosystem services for urban societies contribute to public health and quality of life, while supporting the bioeconomy.
- Existing or arising conflicts between growing demands for biomass and forest amenity values may be resolved regionally, either through integration strategies (such as multiple-use forestry), or through segregation strategies (identification of key areas with high demand of amenity benefits).

- Integrative policies, business models, and funding mechanisms, such as payment schemes for cultural ecosystem services, are needed to enhance the adequate supply of amenity values.
- Forest extension services should be developed towards more comprehensive support for multifunctional management for forest owners, including for amenity values.

# 5

## **Responsible decision making and proactive forest policy must be evidence-based**

The knowledge base produced by research institutes and universities is a necessary condition for the development of decision making and the regulatory environment in a rapidly changing and increasingly unstable world. The Finnish Forest Bioeconomy Science Panel believes that a multi-level dialogue between scientific communities and decision makers is needed for the knowledge base to effective support decision making.

### **According to the Science Panel:**

- Guidance and regulation regarding forests and the forest bioeconomy must be reformed, by anticipating changes in the global operating environment and its economic, social, and environmental challenges, and based on scientific knowledge.
- A range of indicators based on clearly measurable quantities that describe the development of the state and the diverse use of the forests must be defined and introduced to support decisions.
- Forestry, innovation, and industrial policy must be aligned, and investment policy must support the entry of innovations to support reindustrialization of the EU.
- Scientific panels play a key role in broadly combining expertise from different disciplines with the decision-making situations at hand in a multidisciplinary manner, by combining different perspectives.



# The Finnish Forest Bioeconomy Science Panel

## **Additional information:**

Chair of the Finnish Forest Bioeconomy Science Panel Antti Asikainen  
Executive Vice President, Natural Resources Institute Finland  
antti.asikainen@luke.fi, tel. +358 295 323 250

## **Other contributors:**

Riikka Paloniemi, Unit Director, Finnish Environment Institute

Markku Karjalainen, Professor, Tampere University

Marileena Mäkelä, Senior Lecturer, Jyväskylä University

Liisa Tyrväinen, Research Professor, Natural Resources Institute Finland

Tekla Tammelin, Research Professor, VTT Technical Research Centre of  
Finland

Jari Vauhkonen, Professor, University of Eastern Finland

Ilkka Leinonen, Research Professor, Natural Resources Institute Finland

The Finnish Forest Bioeconomy Science Panel offers independent and interdisciplinary research information on the sustainable and versatile use of Finland's forests. The panel strengthens the knowledge base for decision-making and supports the development of forest-based innovations..

More information: [www.metsatiedepaneeli.fi/en](http://www.metsatiedepaneeli.fi/en)