



MANAGING
STATE FORESTS
RESPONSIBLY

— European forests

Tackling climate change

Best practices from state forest
management organisations

How do our forests help mitigate climate change effects?

European forests cover a wide range of biogeographical regions and forest ecosystems, from the boreal and temperate forests of the north and west, to the alpine and Mediterranean forests of the centre and south. There are about 180 million hectares of forests and woodland in the EU, corresponding to 43% of the EU's land area. Through growth of the existing forests and planting new forests, the forested area in Europe expanded by 17.5 million hectares over the last 25 years.

Forests are tackling climate change in two fundamental ways, namely through climate mitigation and climate adaptation. Climate mitigation occurs when forests help to reduce the level of climate change, whereas climate adaptation means our forests must adapt to the negative impact of climate change.

Climate mitigation

Sink, Store and Substitute

Forests can help to reduce the level of climate change in three ways, known as the three Ss:

Sink – trees sequester carbon dioxide from the atmosphere as they grow.

Store – trees then store carbon in their wood, which can be harvested for wood products.

Substitute – wood products can then substitute for fossil fuels and high carbon-use building products such as concrete and steel.

The overall positive climate effect of European forests and the forest-based sector is estimated at around -806 million tonnes of carbon dioxide equivalents annually, which corresponds to circa 20% of all fossil emissions in the European Union¹.

¹ https://www.cepi.org/wp-content/uploads/2020/07/Cepi_-_study.pdf

Climate adaptation

Biotic and Abiotic Impacts

Unfortunately, our forests are also negatively affected by many climate change related factors, which can significantly impact their health and growth rates. This can, in turn, reduce our forests' ability to further mitigate climate change. Negative impacts are classified as:

Abiotic impacts – storms, drought, forest fires, snow breaks, torrential rains, flooding, mudslides.

Biotic impacts – pests and diseases.

European state forest management organisations (SFMOs) are coping with climate change challenges through a variety of silvicultural practices and measures enshrined in sustainable forest management (SFM). These measures are constantly being improved and developed by skilled and experienced forest professionals based on the recent achievements of forest science and research.



Mitigation and adaptation approaches across European state forests

As the case studies have shown, forests have a role to play, both in climate mitigation and adaptation. The mitigation and adaptation of forests are closely related, and in many cases, mitigation activities will also support the adaptation of forests, and vice versa.

Most of these activities have costs associated with them. Therefore, well-designed EU strategies and financial instruments are needed more than ever. In order to maximise the potential of forests to regulate climate, they must be actively and professionally managed to make them “climate resilient”. Only healthy and thriving forests can efficiently provide climate-related services.

Creation of new forest stands and restoring disturbed forests – establishing new forests and adapting existing forests will minimise climate change induced risks in the future.

Preventive adaptation measures, including water and fire management – enhancing forest resilience to climate change not only benefits forests but also protects people and infrastructure from fires, floods and other weather disasters.

Research, innovations and technology – new approaches such as mapping forest carbon potential or modelling species’ suitability based on site conditions are a regular part of today’s forest management planning strategies to make forests fit for the future climate.

Using wood and wood products – producing and using sustainable wood products means carbon is being stored and other high-use carbon materials, including fossil fuels, are being substituted.

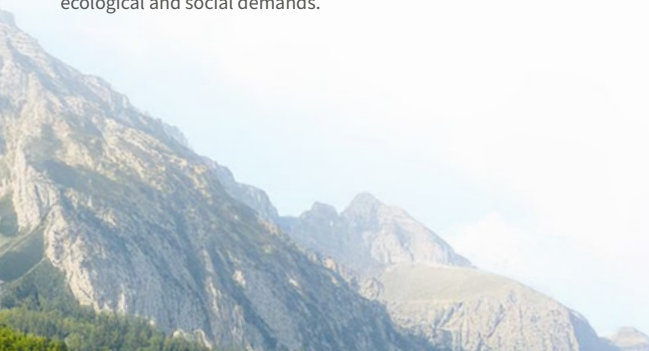
Multipurpose approach to combat climate change impacts – achieving climate resilient and adapted forests is done through active and sustainable forest management with an integrated approach, taking into account economic, ecological and social demands.

EU state forests play an important strategic role in climate change mitigation and adaptation by providing:

- Carbon sequestration and carbon storage in living trees.
- Long-term carbon storage in forest products.
- A sustainable alternative for fossil fuels and high energy-consuming materials.

EUSTAFOR’s policy recommendations for enhancing the contribution of EU state forests to tackle climate change are:

- **Lower the EU’s total greenhouse gas emissions (GHG)** through the sustainable increase of forest resources.
- **Promote the use of wood** to boost the bio-based circular economy, because the most significant contribution EU forests can make is through carbon storage in renewable materials and by providing a substitute for fossil-based materials and energy.
- **Support the active and professional management of forests** to make them climate fit and better able to cope with the challenges of climate change.
- **Mobilise additional resources and financial incentives** for the adaptation of EU forests and the restoration of forests damaged by climate change.
- **Reflect a holistic picture of the forest life and management cycles** in the new EU policy planning on climate change mitigation and adaptation, including a forward-looking approach to forest reference levels planning that takes into account current policies and market trends.



Best practices in climate mitigation and adaptation from European state forests

Creation of new forest stands and restoring disturbed forests

- 1 Coillte** – Establishment of native woodlands on cutover peatland
- 2 Österreichische Bundesforste AG** – Diversity as a prerequisite for climate-fit forests
- 3 ThüringenForst** – Climate change adaptation and mitigation based on forest conversion of spruce stands in higher elevations
- 4 Lesy České republiky** – Reforestation of forests affected by large-scale calamities caused by climate change in areas larger than 10 ha
- 5 Junta de Castilla y León** – Restoration of burnt forests in protected areas: adapting and mitigating climate change

Multipurpose approach to combat climate change impacts

- 6 Bayerische Staatsforsten** – Sustainable forest management to tackle climate change

Research, innovations and technology

- 7 Metsähallitus** – Carbon classification in forests as a tool for climate-smart forestry
- 8 Niedersächsische Landesforsten** – Forest management planning based on site water balances to cope with climate change
- 9 Office National des Forêts** – Adapting forest genetic resources in the face of climate change

Preventive adaptation measures, including water and fire management

- 10 Lasy Państwowe** – Adaptation of forests and forestry to climate change – small retention schemes and fire protection
- 11 Forestry and Land Scotland** – Adaptation of Scotland's forests and associated land to support Scotland's National Flood Risk Assessment

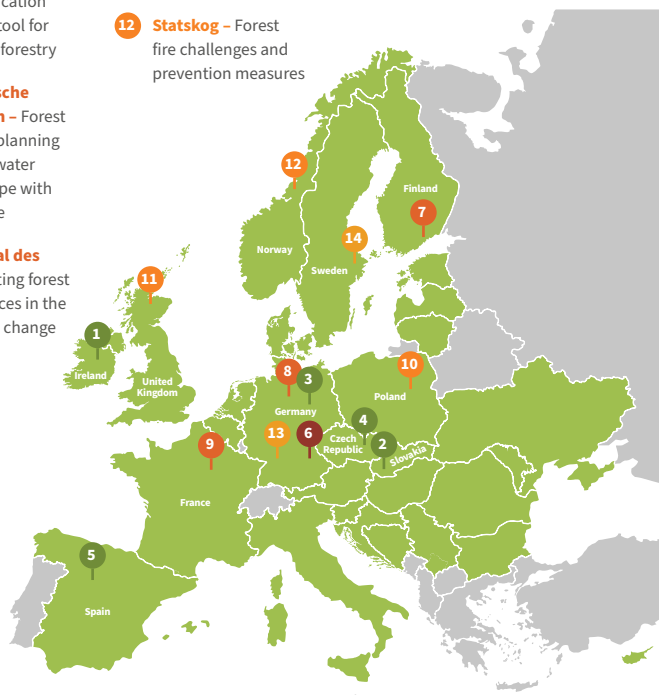
Using wood and wood products

- 13 ForstBW** – Adaptation and mitigation activities supported by ForstBW
- 14 Sveaskog** – Making sustainable biofuels from forest biomass



Scan to read the full case studies

EUSTAFOR represents the voice of European state forest management organisations who have sustainable forest management and the production of wood as major concerns.



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