

# How can forests and wood use help meet climate goals?

## What is at stake?

Forests and forestry play a key role in policy targets to achieve climate neutrality. For example, forests and wood products in the European Union (EU) remove approximately 380 MtCO<sub>2</sub>eq/year (compensating about 10% of total annual EU greenhouse gas emissions). According to the European Commission's proposed policy targets, the EU's Land Use, Land-Use Change, and Forestry (LULUCF) sector **needs to remove in addition approximately 50 MtCO<sub>2</sub>eq/year by 2030, 100 MtCO<sub>2</sub>eq/year by 2035, and 170 MtCO<sub>2</sub>eq/year by 2050.**

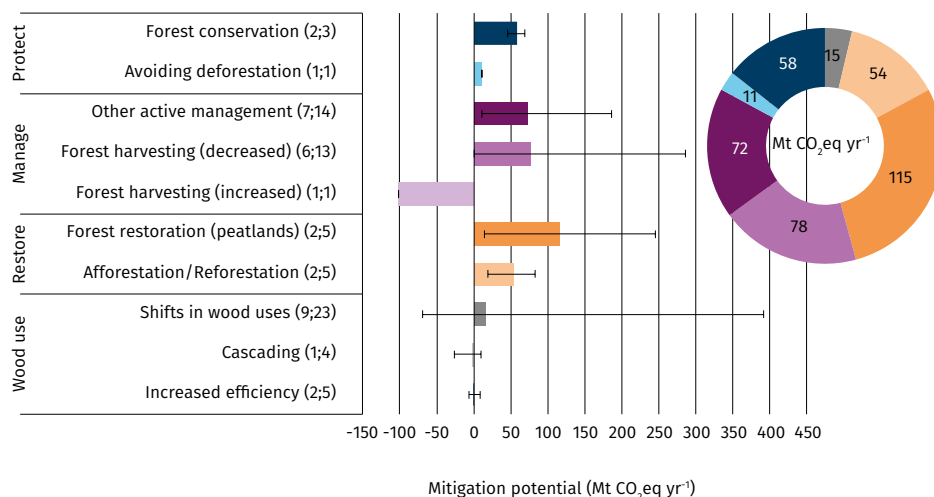
## How much can forests and wood use contribute to climate change mitigation?

Based on a review of the scientific literature, mitigation activities such as **avoiding deforestation, afforestation/re-forestation, shifts in wood use, wood cascading and increased efficiency can be combined** as they have limited effects on each other and can have positive impacts on biodiversity. When combined they **could provide an additional mitigation potential of up to 78 MtCO<sub>2</sub>eq/year by 2050 in the European Union, Norway, Switzerland and the United Kingdom.** This could increase to:

- 136 MtCO<sub>2</sub>eq/year when combined with forest conservation activities, or
- 150 MtCO<sub>2</sub>eq/year when combined with other active forest management, or
- 155 MtCO<sub>2</sub>eq/year when combined with decreasing forest harvest.

Climate change is affecting European forests, forestry, and forest product markets, which can both increase and decrease:

- Carbon sequestration by forests, through shifts in tree species ranges, forest productivity changes and increased disturbance damage.
- Carbon storage in wood products and possible substitution effects through changes in wood quality, supply and costs.



Forest-based mitigation potential by 2050 in the EU-27, Norway, Switzerland and the UK by mitigation activity type.

## Key messages:

- (1) **European forests and wood products can provide a significant contribution** to achieve climate neutrality by 2050, but their contribution is finite and cannot compensate for delayed actions in other sectors.
- (2) **Limited information is currently available on the related costs and feasibility** of realising the forest-based mitigation potential.
- (3) **A high degree of uncertainty applies** as different scientific studies use different data, methods, system boundaries, types of potential and scenario assumptions.

## How can the contribution by forest-based mitigation actions be maximised?

- **Adopt a holistic approach** that considers all relevant carbon pools and fluxes, as well as interactions between forest-based mitigation activities and with adaptation, and which minimizes trade-offs with biodiversity and ecosystem services.
- **Combine multiple forest-based mitigation activities** to maximise the effect and foster synergies, interactions, co-benefits and regional applicability.
- **Prioritise types of wood use** that give the largest net emission reductions.
- **Take note that forests across countries** differ, and so do implementation actions.
- **Move to policy implementation and develop appropriate support tools** (e.g., through incentive systems, exchange of best practices, devising a transparent, harmonized and robust monitoring framework).
- **Apply a long-term perspective beyond 2050 in climate and forestry policies, that considers climate change mitigation and adaptation together** to avoid future losses of forest carbon stocks and sequestration capacity.

The technology, capacity and strategies needed to deploy forest-based mitigation measures are readily available and have been used for decades. Maximum efforts, starting with the most sustainable and cost-efficient mitigation activities, should urgently be pursued to reduce net emissions.

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