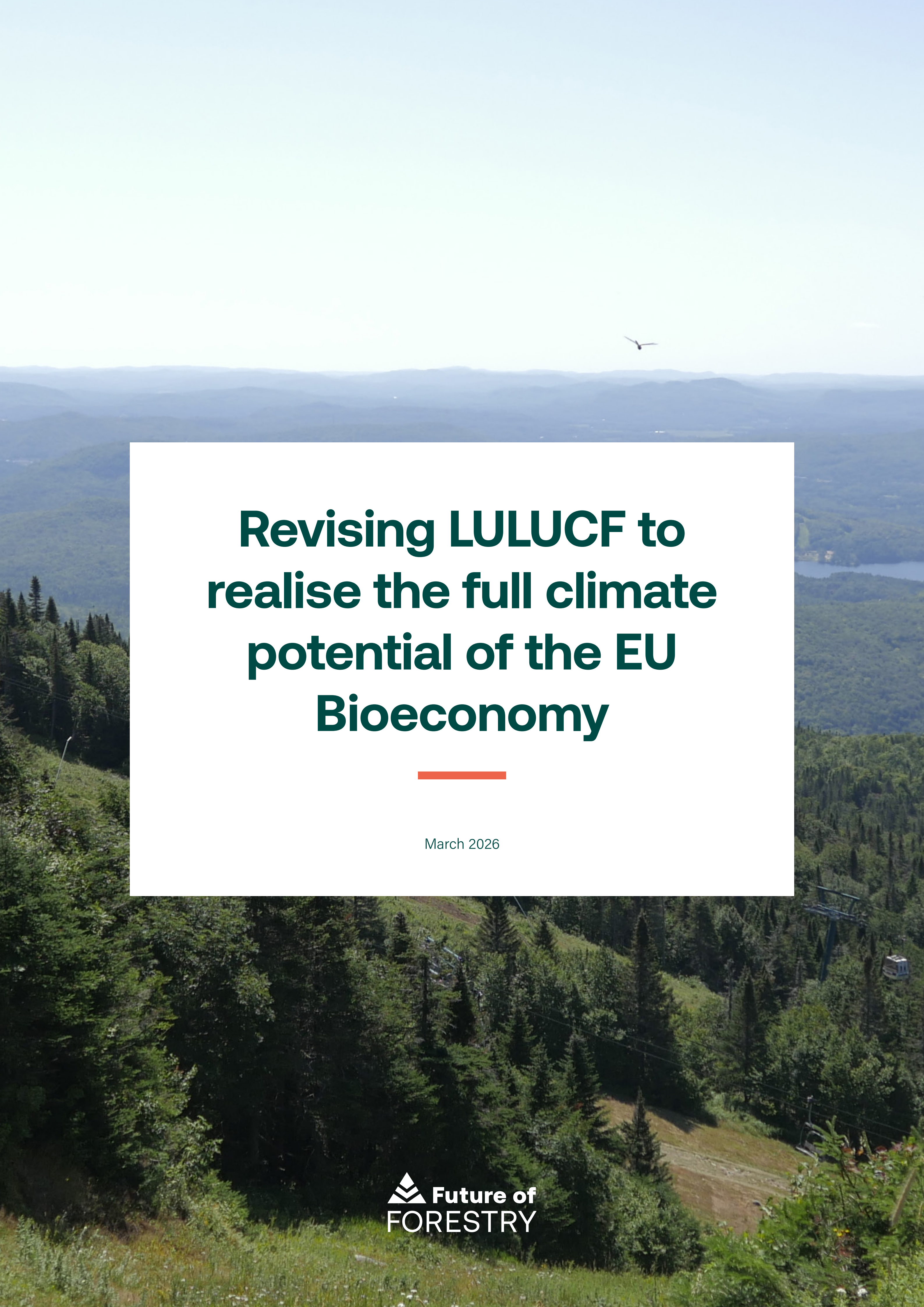


Revising LULUCF to realise the full climate potential of the EU Bioeconomy

March 2026

Future of FORESTRY

The EU must act swiftly and decisively to curb climate changes. We must stay firm on our climate goals and reach net zero emissions by 2050 at latest.

The key for reaching this objective is to make the best use of available local resources. The ETS I and II make sure that fossil emissions are efficiently reduced. However, the contribution of one of the legislations of the overarching climate architecture, the LULUCF, could be considerably enhanced. It indirectly reduces the amount of biomass that can be used in the bioeconomy and thus hinders the climate transition and the substitution of fossil-based products with bio-based alternatives.

As stated in the revised EU Climate law, the LULUCF sector has:

> *"a central role in a sustainable and circular bioeconomy and has the potential to provide long-term climate and environmental benefits contributing to the clean transition of the EU economy and reducing dependencies by substituting fossil-based materials".*

A similar statement exists in the EU Bioeconomy Strategy:

> *"By reducing strategic dependencies on fossil-based and imported raw materials, and by diversifying supply chains built on renewable and circular resources, the bioeconomy will also reinforce Europe's economic and resource security in a more uncertain world".*

For the Bioeconomy strategy to be realised as well as the LULUCF targets, the special characteristics of forests need to be taken into account, such as forest health, natural calamities, and uncertainties related to the impacts of climate change. The guiding light for climate policy in the LULUCF sector should be substitution of fossil -based products as well as maintaining the resilience and productivity of forests with active management. All wood-based material used to substitute fossil-based equivalents will in the long run decrease the amount of CO_2 in the atmosphere.

In this paper, the European Forest Coalition puts forward several recommendations on how to realize the full climate potential of the EU's bioeconomy, focusing on the future revision of the LULUCF.

The European Forest Coalition consists of like-minded forest owners, forest cooperatives, and forest and wood industries from around Europe. Together we know that European forests and wood products play a crucial role in building a stronger European bio-economy.

Finnish Forest Industries | FACHVERBAND HOLZINDUSTRIE ÖSTERREICH | FAM | Sit | ZSD SR

Asociace lesnických a dřevozpracujících podniků | Les Coopératives Forestières | Gospodarska zbornica Slovenije – Združenje lesne in pohištvene industrije | EMPL Estonian Forest and Wood Industries Association | Future of FORESTRY

The substitution effect

It is not enough to move away from a fossil-fuel based society. Fossil-based products must also be replaced with bio-based ones. To safeguard welfare and industrial competitiveness, renewable raw materials and products must increase at a rate corresponding to the reduction in fossil inputs. Forest-based products therefore play a central role in the transition, both as material feedstock and as an energy carrier at the end stages of value chains.

Wood-based products can replace fossil-based products, e.g. sawn-wood products instead of concrete, wood-based chemicals instead of fossil-based alternatives and biomass-based packaging and textiles instead of fossil-based plastic materials. The use of wood products also means carbon storage, such as in wood buildings where carbon can be stored for many decades or in carton board, which have a shorter life span, but is recycled many times and in the end often is turned into fossil free energy.

An AFRY study found that the substitution effect already today is equivalent to emission savings of 390 Mt CO_2-eqivalents in EU27. The same study found that in 2050, the substitution effect can increase carbon emissions savings to the level of 670 Mt CO_2-equivalents.

In April 2025, the new ISO standard 13391 (Wood and wood-based products - Greenhouse gas dynamics) was published. It specifies how to calculate the climate benefit of using wood products in an organisation's value chain or in an aggregated area. The standard outlines how to a) calculate carbon storage change in the forest; b) the emissions from producing the wood based industrial products; c) the storage of carbon in wood-based products and the d) the fossil emission substitution effect of the produced products on the market.

Realising the full climate impact of forests

As a consequence of the design of today's EU policies, the forest sectors' maximum climate benefit effect is not realised. Current policies focus on carbon sinks rather than substituting fossil-based products. Furthermore, the EU Climate Law limits the contribution of net removals to the Union 2030 climate target to 225 Mt CO_2-equivalents, while the LULUCF introduces a mandatory goal of 310 Mt CO_2-equivalents until 2030, making the forest sector the only sector with an overachievement target.

To reach the full climate potential, sustainable biomass is needed. To increase the biomass supply, we need active sustainable forest management, adapted to local forest conditions, forest types and practices that support healthy and resilient forests all over Europe. It would increase the forest growth, the carbon sink in forests as well as products and over time make it possible to increase the climate effect of the forest-based bioeconomy.

The risk of saturation of carbon stock in the forest eco-systems

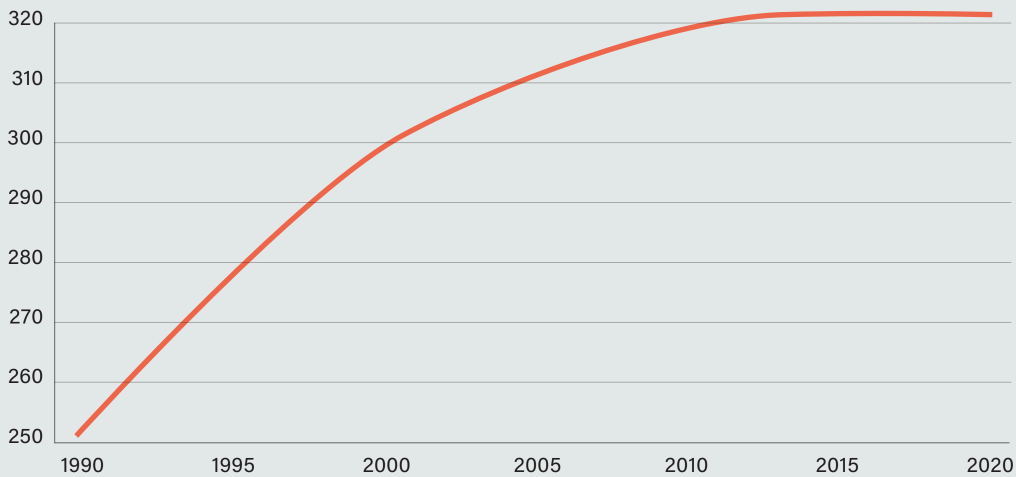
Another aspect to consider, when aiming at increasing the carbon sink, is the limited biological storage potential in the forest, before saturation and a higher risk of calamities occurs.

Large parts of the forests in Europe were totally devastated after WWII. The restoration of the forests in the decades following the WWII gave a boost to forest growth. According to the European Forest Institute (EFI) and other sources, forest area in the EU has expanded by about 37% and growing stock by 138% since the 1950s. As a result, in many European countries the standing stock has today reached the peak. With older forests and a larger standing stock, the storing of carbon in forests is risky, as it becomes more sensitive to drought, insect attacks (e.g. bark beetles) and other calamities such as wind fellings.

After WWII, Germany had a slow growing stock and poor forest conditions. Today, the growing stock has reached a plateau at ca 320 m3/ha, balancing the growth and harvest. Lately, the harvest has partly increased due to calamities such as storm fellings, bark beetle attacks and other natural causes.

FIGURE 1

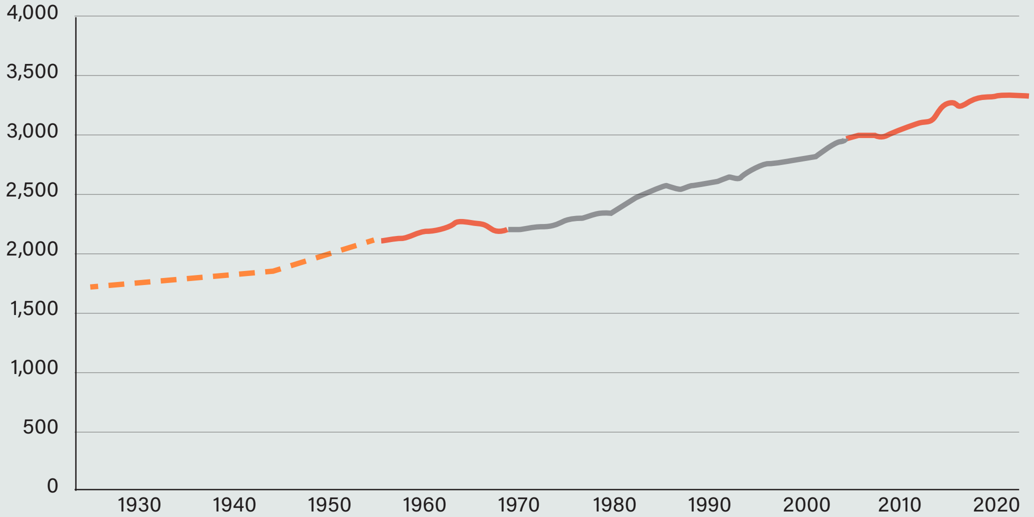
Average growing stock (m^3/ha) in Germany 1990-2020



Source: FAO FRA database

FIGURE 2

Total stock (m³sk/ha) in Sweden on productive forest land (1926-2021)



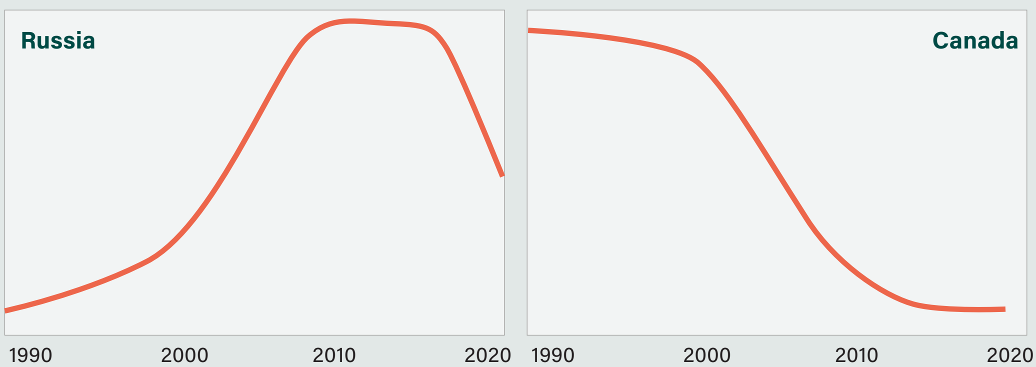
Source: Swedish Forest Survey, SLU, Umeå.

Sweden had a poor forest situation in the beginning of the 20th's century due to more than a century of overcutting. To enhance restoration, Sweden implemented its first national Forest Act 1903. As a result, Sweden has since the first National Forest Survey (1926) increased growing stock and wood harvesting. The growing stock increase has been reduced during the last ten years, caused by decreasing annual growth as well as increasing calamities, causing higher felling levels.

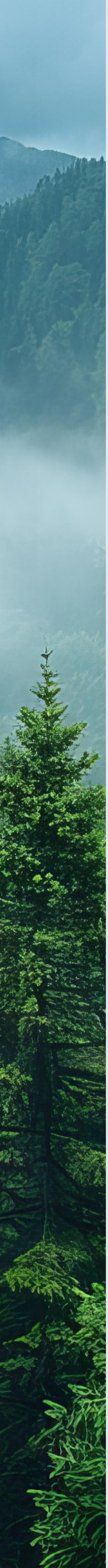
Many European countries have the same development, with a slower growing stock. However, in Canada and Russia, where large areas are untouched from forest management, declining growing stocks are mainly a result of large-scale calamities (insects and fires), which is normal in untouched boreal forests (Binkley 2024).

FIGURE 3

Average growing stock in Russia and Canada 1990-2020



Source: FAO FRA database.



PROPOSAL TO REALISE THE FULL CLIMATE POTENTIAL OF THE EU’S BIOECONOMY

In light of the above, we propose the following:

1 End the five years period and aim for a 2050-target

A single indicative 310 Mt CO_2e net removals goal for 2050 (binding 225 Mt CO_2e goal, complemented by a voluntary target of 85 Mt CO_2e), would give the LULUCF-sector a clear and long-term stable direction, instead of forcing it into short political cycles. Focusing on the 2050 objective rather than five year reporting periods better matches the biological and investment timeframes in forestry and land management.

As forest growth, planting, and harvest cycles run over decades, the LULUCF needs to allow for planning of rotation lengths, species choice and investments in processing capacity without the risk that short reporting periods trigger abrupt policy shifts. It also gives Member States the possibility to take strategic decisions on how to best support climate neutrality and design national trajectories that fit their forest age structure, disturbance risks and ownership patterns, instead of all being squeezed into identical five year compliance frames.

An indicative 2050 LULUCF-target should be aligned with net zero planning across ETS and ESR sectors, emphasising flexibility and the uncertainties inherent in the land-use sector clarifying and improving overall cost effectiveness. In addition, a single 2050 benchmark supports integrated climate biodiversity strategies that can only give full benefits after many decades.

2 Do not expand LULUCF into an AFOLU sector

It is vital that, the LULUCF-sector should not be expanded into an AFOLU-sector with agricultural biogenic emissions (nitrous oxide, methane). A regulation like that would only end up forcing the forest sink to compensate for agricultural emissions, counteracting the need to reduce emissions in all sectors.

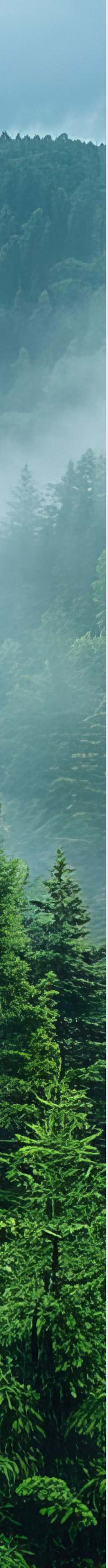
3 Extend and update the list of HWP and prioritize an increase of the HWP carbon stock

The HWP (Harvested Wood Products) accounting under LULUCF should be expanded to include a broader range of wood-based products and updated to reflect higher recycling rates and longer lifespans to better capture the real climate contribution of the forest sector.

Currently, the HWP methodology relies on relatively short default lifetimes (e.g. 35 years for sawn wood) and low recycling assumptions that no longer match modern construction and circular economy practices. Buildings and engineered wood products are designed for much longer use and recycling rates are much higher. By updating the half lives and decay patterns in the HWP pool to reflect longer service lives, the accounting would more accurately show the extended carbon storage and delayed emissions from material use. Higher recycling rates for mechanical wood fibres (e.g. in panels and packaging) also mean that carbon remains in use for a longer period, which should be reflected in the HWP calculations.

Expanding the HWP scope to include more product categories, but also bio-based products such as bio-chemicals and textiles, would better align LULUCF with the actual material flows and climate benefits of the modern wood industry.

An updated HWP methodology would strengthen the incentive for Member States and industry to prioritise long term recycling and to invest in the bioeconomy.



4 Allow MS to include negative emissions from Bio-CCS in LULUCF

Member States should have the possibility to count Bio-CCS towards their LULUCF-target. It would mean that parts of the unstable standing carbon sink would be replaced by secure permanent negative emissions.

5 Update the methodology for carbon sink and changes over time

The calculation of the carbon sink needs to be more realistic and allow for natural variations. Legislation must recognize that it is not possible to set exact short-term targets for a sink dependent on natural phenomena such as weather conditions and calamities including wind fellings, and insect outbreaks.

The calculation of the carbon sink is continuously adjusted, creating uncertainties and changes in reporting without actual changes in the sinks. There must be rules for how and when calculation changes occur, and changes in carbon sinks that are not statistically significant should not be reported as changes.

The large statistical uncertainty (large standard errors) in these estimates means that it is not reasonable to produce new figures with every improvement in estimation methodology.

In addition, the baseline should be constructed over a longer period of time, as outliers' years are not fully mitigated by the other years in the baseline.

6 ISO-Reporting

The Commission should present a legislative proposal (by 1 June 2026 at the latest) requiring Member States to report, alongside their LULUCF reporting, the climate benefits of forest-based products, based on ISO standard 13391. In a second phase, Member States could be incentivized to increase these climate benefits, using the existing level of benefits as a baseline. In a third phase, Member States should be required to enhance the climate benefits of wood and wood-based products. The long-term goal (2050/2060) should be for the climate benefits of wood-based products to be evaluated together with the carbon sink, ensuring that the combined effect grows to a level where the sector's overall climate contribution is accounted for.

7 Replanting Requirement, Afforestation & Resilience

Biomass is a strategic resource, but also a limited one. The forest land area is fixed, and even with efficient forest management there is an upper limit to how much raw material can be produced sustainably. A requirement to replant trees together with local afforestation strategies would ensure long-term regrowth of biomass. European afforestation potential varies by region, climate zone and land availability, but if it's done on mainly abandoned or low utilization forests, it contributes to several strategic values, like carbon sequestration additionality, regional supply of wood, high biodiversity values, new bioeconomy potential, energy resilience and job opportunities in rural areas of Europe.

Wood-processing industries' production relies on nearby wood. This is a great example of "Made in Europe" as wood raw material is mostly European, and most of the products are consumed and recycled in Europe. By securing the availability of wood raw material the EU could reduce dependence on imported resources as well as enhance the competitiveness and innovation of European industry.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