

HORIZON-CL5-2021-D1-01-09: The contribution of forest management to climate action: pathways, trade-offs and co-benefits

Specific conditions	
<i>Expected EU contribution per project</i>	The EU estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 18.00 million.
<i>Type of Action</i>	Research and Innovation Actions

Expected Outcome: Project results are expected to contribute to some of the following expected outcomes:

- A comprehensive assessment of the climate mitigation potential of EU forests and forest-based sector through modelling of different policy pathways, taking into account climate change related risks, physiological and biogeochemical responses to environmental change and management practices, adaptation needs, biodiversity goals, and the provision of other ecosystem services. The effects analysed have to include changes in carbon sequestration, forest health, productivity, substitution and biophysical factors, including the causes and time dynamics of these changes. The assessment of the potential and limits of forest-based products and biomass for energy in delivering climate benefits will inform public authorities on the most suitable approach to forest policy and forest bioeconomy.
- Development and improvement of robust and transparent methodologies for high-resolution monitoring and reporting of forest carbon pools and their interactions through a combination of in-situ data collection and remote sensing methods to be used to advance land use, land-use change and forestry (LULUCF) reporting under the UNFCCC and

compliance under EU legislation. Methods developed under this action will additionally feed into the development of the Forest Information System for Europe (FISE).

Scope: Proposals under this topic should develop a comprehensive assessment of different pathways of the EU forest GHG balance in view of the reviewed 2030 and 2050 climate targets and other relevant EU environmental legislation and objectives incorporating:

- Biodiversity goals consistent with the EU Green Deal objectives and Biodiversity Strategy 2030 goals. Issues considered include the use non-native tree species, intensive thinning, transition between intensive and close-to-nature silviculture, and strict protection of forests.
- Uncertainties related to climate change and natural disturbances risks.
- Adaptation needs of existing and future forests, including factors determining their adaptation potential.
- Mitigation potential of afforestation and other forest activities including their opportunity costs.
- GHG impact of forest bioeconomy, including substitution effect of forest-based products and energy against realistic counterfactuals and with appropriate time dynamics.
- Renewable energy targets and the needs of forest-based bioeconomy for sustainable domestically-sourced feedstock.
- Biophysical effects, including changes in air temperature and precipitation associated to changes in surface albedo, land-surface properties, emissions of biogenic volatile organic compounds, transpiration and heat flux.
- Assessment of trade-offs and synergies between climate-oriented forest management, and other objectives, for example recreational and amenity values;

Having such models/assessment at their disposal and understanding their time dynamics, uncertainties and system boundaries, policy-makers will be better suited to incorporate forests in the design and evaluation of possible solutions and pathways for climate change mitigation and adaptation.

Monitoring and reporting on changes to forest carbon stocks is essential for policymakers (both national and EU) in order to be informed of trends in the forest sink evolution and to develop annual approximated greenhouse gas inventories. Actions should support the use of higher tier (and higher accuracy) methodologies and geographically explicit land-use data in accordance with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories²⁹ and its 2019

²⁹ <https://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.html>

Refinement³⁰. Especially needed are actions to fill existing gaps resulting from inventory bias towards the most economically relevant tree species and carbon pools.

Proposals under this topic should therefore aim to develop knowledge, tools, models, databases and country- and region-specific values available to Member States, where possible integrating with Integrated Assessment Models (IAMs) and climate models to improve monitoring and reporting of forest carbon pools. Remote sensing data sets can be helpful in estimating or verifying forest living biomass gains and losses, forest area changes, forest health status and in identifying carbon-rich old-growth forests or natural disturbances. Sample-based systems, on the other hand, should support mapping changes in other forest carbon pools such as soil organic carbon in mineral and organic soils, and dead organic matter. More robust estimation of fluxes among these forest carbon pools, which are often neglected in greenhouse gas inventories, will assist in estimating their importance as carbon reservoirs and the role that forest management can play in enhancing them, taking into account biodiversity needs and resilience. Considering biophysical effects will improve the understanding of trade-offs among climate objectives and their articulation with forest management practices.

Actions should envisage clustering activities with other relevant actions, initiatives and programmes, including Horizon 2020 Work Programmes and the LIFE Programme, COPERNICUS and relevant research infrastructures to promote synergies, integration and co-operation. They should make use and contribute to knowledge exchange and networking European platforms and consider devising a novel decision-making platform to ensure effective dissemination of the results to the target stakeholders (i.e. policy-makers and relevant national competent authorities). The Joint Research Centre (JRC) may participate as a member of the consortium but is not eligible for funding. Cooperation and planning for further exploitation of actions results during and after the project end is strongly encouraged.

³⁰ <https://www.ipcc-nggip.iges.or.jp/public/2019rf/vol4.html>

³¹ The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.

The Director-General responsible may delay the deadline(s) by up to two months.

All deadlines are at 17.00.00 Brussels local time.

The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for years 2021 and 2022.