

To Whom It May Concern,

Open letter for the consideration of Earth Observations in the Forest Monitoring Law

We, as European Earth Observation (EO) experts, write this letter to underscore the critical role of remote sensing in enhancing and sustaining forest monitoring in Europe. As demands, pressures and challenges for forests increase, EO data offers unique capabilities for consistently measuring and monitoring forests over large areas, with local detail and frequently over time, and thus provides for timely and actionable assessments and management of forests across Europe. Having noted the Commission's proposal for an EU Forest Monitoring Law (FML)¹, we would like to emphasize that the EO community is willing and able to contribute our growing expertise to its design and implementation, and to enhance forest monitoring as a cornerstone for ensuring that forest-related strategies and activities relating to climate, bio-economy and biodiversity targets are based on accurate and reliable data.

We are convinced that EO data and derived information offer powerful and efficient means for monitoring and ensuring compliance with various forest-related regulations and agreements at national, European and international levels. The European Union and its member states hold the world's most powerful EO capacity through the Copernicus program. Copernicus provides free and open access to space-based data from a fleet of satellites, along with derived products and services, complemented by national remote sensing capacities and datasets (i.e. from national airborne LIDAR campaigns). At the same time, Europe is not making good use of these opportunities to the extent possible and necessary compared to forest monitoring efforts in other parts of the world².

Our research community has been actively engaged in numerous research activities and initiatives such as several ongoing EU-funded and coordinated projects with European forest monitoring as a key objective (see **Annex 1**). From these experiences, we would like to emphasize key points highlighting the importance and relevance of EO in European forest monitoring:

1. **Complementarity of ground-based/National Forest Inventory (NFI) and remote sensing data:** future forest monitoring is not a question of remotely sensed versus ground-based monitoring but rather how to harness the advantages of different data collection approaches for specific applications. Given the need for monitoring multiple forest variables and indicators, the idea of integrated ground and satellite-based monitoring should be the foundation of any future forest monitoring system.
2. **Responding to the growing demand for forest information:** There is a growing need for the provision of actionable forest information based on reliable data. Some of these sources are best collected by ground-based surveys (i.e. stem diameter, dead wood, species), others can be better monitored using satellite data (i.e. tree cover density, forest area changes, forest disturbances and fires, forest connectivity), and quite a few benefit from a suitable combination of satellite and ground-based data (i.e. forest biomass, type, age, structural characteristics). Combining ground-based plot measurements with the mapping capabilities of remote sensing provides

¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52023PC0728&qid=1737033359918>

² See for example <https://doi.org/10.1088/1748-9326/abd81b>

information from the European to the local level, underpinning strategic forest management, forest conservation and restoration, and the development and implementation of sustainable and climate-smart forestry practices.

3. **More timely monitoring:** satellite monitoring provides for the systematic and rapid tracking of forest changes and changes within forests that require timely assessments, e.g. from natural disturbances such as bark beetle, windthrow or fire, all aggravated by climate extremes. The implementation of the Regulation on Land Use, Land Use Change and Forestry (LULUCF) and consequently the necessary decision-making and monitoring of actions in land management also require more frequent updates of data sources for annual greenhouse gas estimation and reporting.
4. **Improving consistency, comparability and completeness across Europe:** EO data offers consistent European data coverage and helps to overcome the diversity of capacities and approaches used in national forest monitoring efforts, i.e. for tracking progress towards shared goals. While some countries have well-established, operational NFI-based forest monitoring systems in place, in some cases accompanied or complemented by EO-based monitoring, others face challenges in keeping forest information complete and up to date. EO can help to fill data gaps and underpin a more complete and consistent assessment of the state of forests at similar levels of detail and quality across Europe.
5. **Enhancing transparency:** the role of forest-related solutions to climate change and loss of biodiversity has increased the interest of society and different stakeholders in where and why forests are changing. EO data can be a key source of data, providing maps and other illustrative information open source and easy-to-find, accessible, interoperable, and reusable (FAIR) manner to stimulate the understanding, sharing and accountability among many stakeholders.

Based on these points, we strongly encourage the FML under discussion to take full consideration of the role EO can play in underpinning a more resilient and sustainable future of European forests. Capitalizing on its EO capacities, it is key for the EU to maintain its competitiveness and leadership to make use of transformative solutions (such as remote sensing and AI); and also for the monitoring of sustainable forest management in Europe and beyond. We are ready to collaborate with policymakers, forest managers, and other stakeholders to develop and implement an efficient and integrated forest monitoring framework and we look forward to contributing with our expertise to this important initiative.

Sincerely,

78 signatories to this letter (see **Annex 2**)

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Annex 1: Examples of ongoing EU research projects with forest monitoring objectives

Project Acronym	Cordis link	Project information
FORWARDS	https://cordis.europa.eu/project/id/101084481	https://forwards-project.eu/
ForestPaths	https://cordis.europa.eu/project/id/101056755	https://forestpaths.eu/
ForestNavigator	https://cordis.europa.eu/project/id/101056875	https://www.forestnavigator.eu
ForExD	https://cordis.europa.eu/project/id/101039567	https://www.bgc-jena.mpg.de/en/bgi/forexd/
RESDINET	https://cordis.europa.eu/project/id/101078970	https://ife.sk/news/project-resdinet-has-been-launched/
PathFinder	https://cordis.europa.eu/project/id/101056907	https://pathfinder-heu.eu/
Open Earth Monitor Cyberinfrastructure	https://cordis.europa.eu/project/id/101059548/	https://earthmonitor.org/
DIGIFOREST	https://cordis.europa.eu/project/id/101070405	https://digiforest.eu/
MONIFUN	https://cordis.europa.eu/project/id/101134991	https://www.monifun.eu/
NextGenCarbon	https://cordis.europa.eu/project/id/101184989	https://www.slu.se/ew-kalender/2024/12/nextgencarbon/ (Official website in progress)
RemoTrees	https://cordis.europa.eu/project/id/101086287	www.remotrees.eu
CLIMB-FOREST	https://cordis.europa.eu/project/id/101059888	https://www.climbforest.eu/

Annex 2: Signatories to the FML open letter

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