

EARSC Contribution: Proposal for a Regulation on a Monitoring Framework for Resilient European Forests

Focused on innovation, the [European Association of Remote Sensing Companies, \(EARSC\)](#) is a trade association with more than 140 company members from all over Europe. EARSC represents the Earth Observation (EO) industry. EARSC welcomes the efforts of the European Commission to develop an EU-wide forest observation framework to provide open access to detailed, accurate, regular, and timely information on the condition and management of EU forests, and on many products and ecosystem services that forests provide.^{1 2} The European Commission's ambitious objectives for restoring and expanding Europe's forests are commendable, marked by policy initiatives and strategies geared towards significantly improving the quality and quantity of Europe's forests by 2030. Forests cover approximately 40% of the EU's landmass, absorbing nearly 10% of its total greenhouse gas emissions annually. However, these forests face mounting pressures from climate change, invasive species, and human activity.

The achievement of Europe's forest restoration goals demands coordinated efforts across EU Member States. It is critical to empower decision-makers at both the EU and Member State levels with harmonised and timely information. Precise data and monitoring systems are indispensable for assisting Member States in conducting assessment and monitoring changes. **To accomplish this, leveraging timely and accurate forest monitoring facilitated by Earth Observation technology is fundamental.**

Earth Observation capabilities are essential for effective forest management and conservation, providing services such as forest cover mapping and monitoring, which inform strategies like forest management plans, carbon offset programs, and biodiversity conservation. By placing a strong emphasis on ethical data-sharing practices, **policymakers can facilitate more effective collaboration among stakeholders**, safeguard sensitive ecosystems, and advance sustainable environmental stewardship goals.³

Earth Observation services also embrace forest resource inventorying, supporting natural hazards prevention, climate adaptation, and natural capital assessments. Additionally, EO facilitates the evaluation of forest damage from fires, extreme weather, and pests, guiding climate mitigation, sustainable management, and reforestation efforts, assisting in supply chain transparency and law enforcement. All in all, such **monitoring is essential for assessing policy effectiveness and advancing towards the 2030 targets, ensuring the success of EU forest legislation.**

With only six years remaining until 2030, the urgency of the timeline necessitates accelerated implementation and robust support with appropriate tools. **The European Union must understand**

¹ ["Industry view for the systematic inclusion of Earth Observation for forest management" EARSC. July 2022.](#)

² ["EARSC Statement - EU Forests - New EU Framework for Forest Monitoring and Strategic Plans" EARSC. May 2022.](#)

³ Ensuring transparency and collaboration through data sharing is vital for effective forest management and conservation. However, when handling sensitive information about critical ecosystems such as primary forests, ethical data-sharing practices are non-negotiable. This involves implementing stringent privacy and security measures to safeguard sensitive data from exploitation or misuse. It is paramount to evaluate how data sharing may impact ecosystem vulnerability and disseminate information in a manner that minimises harm and upholds ethical standards.

and leverage all available resources. By collaborating with providers of existing data and solutions, the EU can effectively utilise proven technologies and methodologies while maximising efficiency. **Complementary commercial Earth Observation missions, designed to be interoperable with Copernicus datasets, have a crucial role to play in enhancing Copernicus data and information.**

The value of high and very high-resolution (VHR) satellite data in monitoring forests with unprecedented detail and accuracy must be recognized.⁴ The integration of VHR imagery into the EU forest monitoring framework also provides a unique opportunity to leverage advanced layers for comprehensive environmental protection. These layers, including species identification and the detection of illegal activities such as littering, illegal landfills, or illegal tenure, are essential tools in the arsenal for forest conservation efforts.⁵ By analysing these layers together, decision-makers can gain a comprehensive understanding of forest health, threats, and areas requiring immediate attention. This integrated analysis is only possible with the level of detail that VHR imagery provides. VHR imagery is therefore not just an improvement to monitoring capabilities, but also a strategic investment in the future of Europe's forests. Optical and radar satellites offer access to such data, enabling precise monitoring of forest dynamics, including tree health, deforestation, and reforestation efforts. Contributing with frequently refreshed (up to daily), global, highly detailed (up to sub-meter per pixel) data, **commercial satellite imagery can offer additional spectral, spatial, and temporal resolutions to allow EU policymakers and Member State authorities to gain detailed and near real-time insights into the state and health of forests regionally, in Europe, and globally.**

The availability of robust information for data-driven decision-making is vital, and the engagement and collaboration with EU providers of existing forest monitoring solutions are essential for the success and implementation of an effective and efficient framework for forest monitoring and strategic planning. **To effectively incorporate existing forest monitoring solutions into the new EU Framework, the following steps should be considered:**

- **Mapping Existing Solutions:** Conducting a comprehensive review and mapping of existing forest monitoring solutions offered by various providers. This will provide a clear understanding of available technologies, functionalities, and capabilities.
- **Evaluation and Integration:** Suitability evaluation of existing solutions based on criteria such as accuracy, scalability, and alignment with EU requirements. Identifying synergies and opportunities for integration with the new EU Framework to enhance monitoring capabilities and achieve strategic objectives.
- **Contribution of frequent, EU-wide coverage:** Recognize the importance of harmonised, EU-wide coverage. Commercial Earth observation data can increase the frequency of reporting on Europe's forests, to at least a monthly basis. This is essential for identifying critical events like illegal logging, drought risks, and pest calamities. Commercial datasets enhance Sentinel's acquisition frequency. This is important, especially considering Europe's cloud conditions. On top of this, commercial missions offer coverage of the whole EU which is enormously valuable for harmonised and comparable reporting across EU Member States and regions.

⁴ High resolution defined as 1.5-5m, VHR defined as under 1m.

⁵ By leveraging VHR imagery's precision, advanced layers can be created to detect illegal activities like littering and illegal dumping, crucial for preventing environmental degradation and reducing fire risks. Importantly, illegal waste disposal and unauthorised land use are often precursors to fire, which, if occurring close to forest areas, can have dramatic impacts on biodiversity and forest health. Additionally, VHR imagery enables detailed species mapping, enhancing biodiversity monitoring, and providing insights into habitat conditions and climate change impacts.

- **Contribution of Very High-Resolution Satellite Data:** Recognize the value of very high-resolution satellite data in monitoring forests with unprecedented detail and accuracy. Optical and radar satellites offer access to such data, enabling precise monitoring of forest dynamics, including tree health, deforestation, and reforestation efforts.
- **Continuous Improvement and Innovation:** Fostering a culture of continuous improvement and innovation by encouraging providers of existing solutions to enhance their offerings based on feedback from EU stakeholders and evolving requirements. This will ensure that the new EU Framework remains dynamic and responsive to emerging challenges and opportunities.
- **Collaboration and active discussion with user communities:** It is important to establish communication channels that can help to ensure awareness, acceptance, and adoption of the contribution of satellite-derived data and services into the EU Framework for Forest Monitoring and Strategic Plans.

The EU's comprehensive policy framework underscores the importance of preserving forests while addressing climate change and promoting sustainable development. **Leveraging the combined power of public and commercial datasets and tools significantly enhances Europe's monitoring capabilities and is crucial for achieving the European Union's aspirations in environmental stewardship and promoting sustainable land management practices globally.**