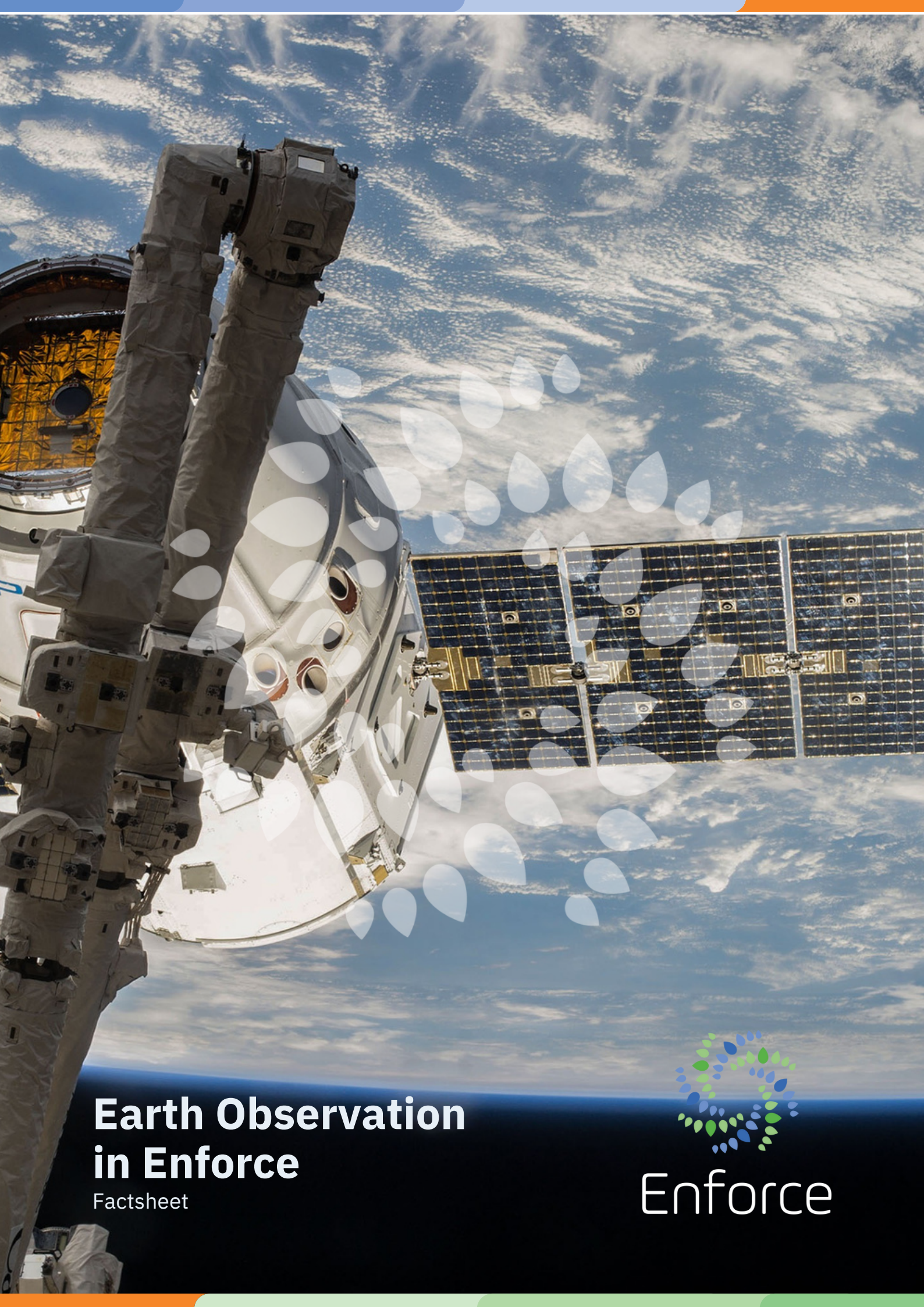




Earth Observation in Enforce

Factsheet



Enforce

Earth Observation Factsheet



What is Earth Observation?

Earth observation refers to the collection, analysis, and interpretation of **data** about the Earth's physical, chemical, and biological systems. This is typically done using remote sensing technologies, such as **satellites**, aircraft, drones, or ground-based sensors.



What Does Earth Observation Monitor?

- Weather, climate and air quality
- Land use and natural resources
- Natural hazards and disasters (e.g. earthquakes, floods, wildfires)
- Ocean, coasts, and water systems
- Urban development and infrastructure
- Environmental quality and ecosystem health
- Human activities and mobility



Why is Earth Observation Important?

Earth observation helps us **monitor changes on the Earth's surface** and in the atmosphere, providing reliable information to support decision-making in areas such as agriculture, urban planning, **environmental protection**, and disaster response ([see all areas tackled by EO here](#)).

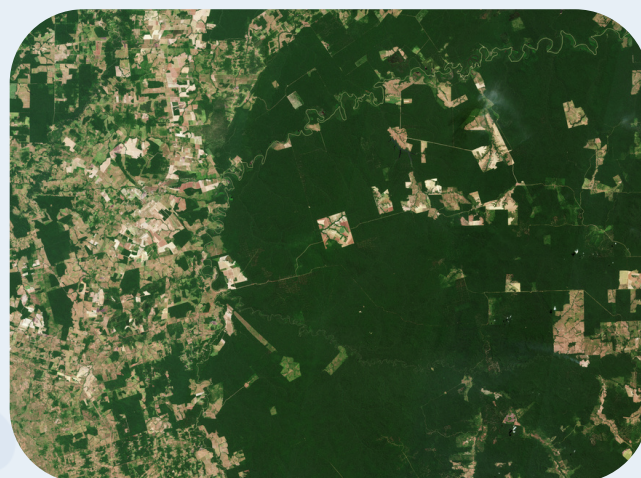


Earth Observation in ENFORCE

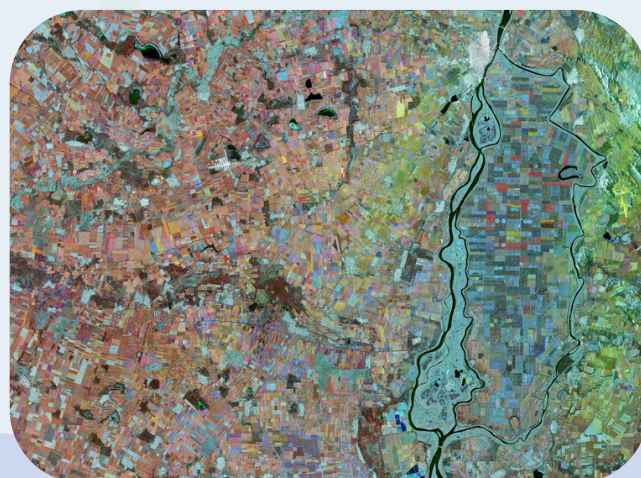
ENFORCE accelerates users' uptake of open Earth Observation (EO) data and information for the benefit of Europe. Through the [Copernicus Programme](#), Europe provides **free and open access** to satellite data and operational services, such as land, atmosphere, climate, and marine monitoring, which are crucial for supporting evidence-based environmental management and compliance.



ENFORCE also set the ambitious goal of developing a **Data Readiness Level** framework to evaluate the maturity of environmental data for use as evidence in regulatory processes. Such a matrix will significantly enhance the role of Earth Observation data as reliable proof in court proceedings and insurance cases.



The **case studies** in ENFORCE are connected with The [Group on Earth Observations \(GEO\)](#) initiatives and flagships, focusing on developing EO-based solutions to tackle **environmental compliance** challenges. ENFORCE also strengthens the links between GEOSS and Copernicus, showcasing their mutual benefits by promoting the exploitation of Copernicus services, such as [Copernicus Land Monitoring Service](#), [Copernicus Atmosphere Monitoring Service](#) and others.

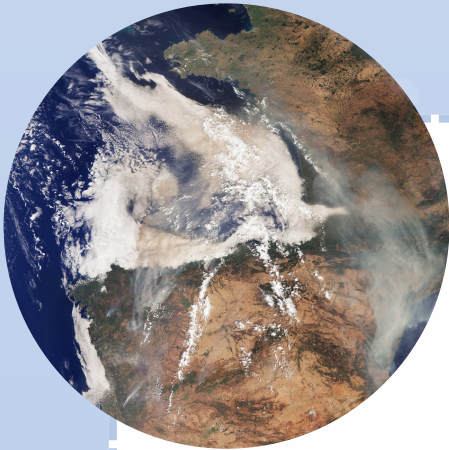


Earth Observation in Action



Water Quality Monitoring

Satellites, such as **Sentinel-2** and **Sentinel-3** from Copernicus program, allow authorities to track water quality in lakes and rivers more efficiently than traditional sampling. In Germany, EO complements EU-required sampling by extending coverage to hundreds of lakes, helping detect **algal blooms** and protect ecosystems ([read more here](#) about an exemplary service provided by EOMAP).



Air Quality Forecasting

In Riga, Latvia, satellite data—combined with powerful **atmospheric modelling**—enables daily air quality forecasts that empower citizens to make healthier choices. Sentinel observations feed into the **Copernicus Atmosphere Monitoring Service** (CAMS), which integrates with ultra-high-resolution urban models to generate street-level **pollution maps**, helping vulnerable individuals avoid harmful exposure and reducing emergency hospital visits ([read more here](#)).

Wildfire Management

In Crete, regional authorities employ Sentinel satellite data to accurately map the extent and types of land impacted by **wildfires**. This EO-based platform supports comprehensive **post-fire assessments**—clarifying burnt areas and land cover—so that relief efforts can be efficiently targeted, and future mitigation measures planned with greater precision ([read more here](#) about an exemplary service provided by GET – Geospatial Enabling Technologies).



Earth Observation in Action



Forest Monitoring & Sustainable Land Use

In Portugal, satellite imagery combined with AI enables **large-scale monitoring** of eucalyptus plantations, tracking new plantings, harvests, burnt areas, and plantation age ([read more](#) about the case here). In Sweden, the Swedish Forest Agency uses satellite-derived clear-cut maps to advise around 300,000 private forest owners on optimal cutting practices, which supports **sustainable replanting**, improves long-term timber yields, and preserves natural forests that benefit ecotourism ([read more here](#) about the case).



Farm Management Support

Earth observation from satellites helps farmers make **smarter decisions** for both their crops and the environment. In vineyards, satellites can show vine health and grape ripeness, allowing growers to optimize harvests and reduce **unnecessary fertilizer** use ([read more](#) about an exemplary service provided by TerraNIS).

For potato farmers in Belgium, satellites provide detailed images that track crop growth and **guide irrigation** and nutrient management ([read more](#) about an exemplary service provided by VITO). By giving precise, timely information, satellites support higher yields, better-quality produce, and more sustainable farming practices that minimize environmental impact and **protect rural ecosystems**.



Earth Observation, from both public and commercial providers across Europe, offers unparalleled opportunities to monitor our environment and turn data into actionable insights. The ENFORCE project is a key step in demonstrating how EO can complement citizen science and other data sources, helping authorities and society use this information effectively—even as evidence in courts and regulatory processes. Nowadays EO-based knowledge can be smoothly integrated into users' workflows thanks to solutions provided by growing number of providers. By connecting technology, policy, and real-world applications, ENFORCE highlights the growing relevance of Earth Observation for sustainable and accountable environmental management.

Emmanuel Pajot, Secretary General, EARSC

Explore more Earth Observation-based success stories & how it can support your case:

[Sentinel Benefits Studies](#)

[eoWIKI](#)

Acquire a service directly at:

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Project funded by

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This project has received funding from the European Union's Horizon Europe programme under grant agreement 101134447— ENFORCE. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them. Co-funded by UK Research and Innovation (UKRI) under the UK government's Horizon Europe funding Guarantee. This work has received funding from the Swiss State Secretariat for Education, Research and Innovation (SERI).