

June 2022



## SATELLITES MONITOR FOREST CHANGES IN FINLAND

### >>> A few years later

Over the past few years, the solution has evolved and it has been taken into operational use within the practice of the Finnish Forest Centre.

*Joni Norppa, Terramonitor*



BENEFICIARIES	Terramonitor	Finnish Government	Finnish Forest Centre; Forest authorities and managers; Forest industry	Citizens and Society
	TIER 1: SERVICE PROVIDER	TIER 2 PRIMARY USER	TIER 3 SECONDARY USER	TIER 4 END USER BENEFICIARIES
SERVICES	Sentinel-1 Sentinel-2 Sentinel-3 Sentinel-5P	Detection and classification of forest biomass changes; Interpretation of service interprets types of changes (time frame and geometry); Estimation of biomass volume change	Improved law enforcement and overall forest management; Financial and operational benefits due to optimised forest inspections; Detection of unexpected or illegal loggings.	Improved biodiversity preservation; Improved wood and forest resource planning and consumption

Value chain definition following SeBS Methodology - <https://earsc.org/sebs>

### The space-based solution

This Copernicus-based solution was produced by a commercial company for a Public administration. Today, additional types of Copernicus Sentinels data are now used namely Sentinel-1, Sentinel-2 Sentinel-3 and Sentinel-5P.

### The Usage Maturity Level

In the past few years, the solution has transitioned to the UML 5, with solution being integrated in the workflow of the public administration.

Thematic Area



AGRICULTURE,  
FOOD, FORESTRY  
AND FISHERIES

Region of Application



FINLAND

Sentinel mission used



S1  
S2  
S3  
S5P

Copernicus Service used



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Usage Maturity Level



5

**ECONOMIC**



- Cost savings of operating expenditure have been registered
- Efficiency gains have been registered

**ENVIRONMENTAL**



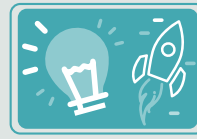
- Reduced depletion of natural resources

**REGULATORY**



- The solution has helped to inform the design/ review of policy parameters
- There were improvements in the policy monitoring capabilities of the PA in charge
- The solution has facilitated or improved the compilation of institutional reports by the PA

**INNOVATION**



- The solution has helped to create some new business
- There were positive market externalities

**SCIENCE**



- The solution has helped to improve understanding about a specific topic of interest traditionally not related to Earth Observation (EO)
- There was an increase in technical/scientific expertise related to Copernicus/EO within the PA
- There was an increase in technical/scientific expertise related to Copernicus/EO at the service provider

**SOCIETAL**



- Sense of trust/community for the involved actors has increased
- Strategic added value was registered for society as a whole

Benefits classification following SeBS Methodology - <https://earsc.org/sebs>

**Interesting facts...**

The service is fully operational and it can be scaled geographically and technically anywhere in the world. The Sentinel-based data can also be supported with other data sources to provide even more accurate situational awareness.



**Outlook to the future**

In the future, the Service Provider will continue to deliver similar services for other authorities and companies internally.



**Acknowledgements**

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