# My Sustainable Forest

- Earth observation services for silviculture

## About the project

**MySustainableForest** provides Earth Observation (EO) geo-information products across the wood sector to support the production chain from sustainable forest management procedures to wood quality entering sawmills, pulp mills or other wood transforming industries.

**MySustainableForest** leverages Copernicus Data and Information Access Services (DIAS), namely Sentinel data, and heterogeneous local data sets provided by users. The data is transformed into modular processing components such as LIDAR models, satellite models, wood quality models and socio-economic models that are accessed through a user-friendly web platform.

EO products support forest users' decision-making relative to site and wood characterisation, biomass and CO2 stocking, forest health, vulnerabilities and socioeconomic accounting of forests and wood resources. Users include forest owners and managers, transport fleets, sawing mills and quality industries. By providing timely, high quality geo-information about forests, these products promote the "coherent, holistic view of forest management, cover the multiple benefits of forests, integrate internal and external forest-policy issues, and address the whole forest value-chain" - EU Forest Strategy, 2013.

## Objectives

Satellites enable communication devices to operate globally, providing geo-information and geo-localisation capabilities. **MySustainableForest** integrates satellite data across the silvicultural chain, deriving valuable information on forests and wood quality from satellites, LIDAR, and sound waves to serve the wood-industry realm. **MySustainableForest** tackles challenging technological, commercial, societal and political objectives:

1. Support forest managers with site-specific geo-information products derived from satellite, LIDAR, meteorological and in-situ data, together with customised forestry models
2. Provide the products in an easy-to-access manner through a web-based platform
3. Demonstrate the quality, usability and cost-benefits of products across the broad community of wood stakeholders in Europe
4. Contribute recommendations for policy makers to support EU forest owners and wood transformation industries

# Services

**MySustainableForest** provides kits of specialised forest or wood quality geo-information products that support sustainable forest management, good forest practices and high standards of wood quality entering the industry. The following six services are offered:

### Forest site characterisation

Provides information on the status and condition of forest components, such as: forest extension; stand delineation; forest infrastructures; main forest types; stand variables, consisting of dominant height, stand age, and stand density; forest disturbances, including clear cuts and fire scars; and topography, which considers DEM, slope, and aspect.

### Wood characterisation

Models and maps wood fibre attributes linked to the wood product potential and performance such as pulp yield, density, strength and stiffness of lumber.

### Biomass and CO2 stocking

Estimates the living volume of trees in a forest and its CO2 stock. The above ground biomass and CO2 stock products are key for the biomass industry and carbon accounting.

### Forest condition

Monitors and measures forest health condition, identifying stressed vegetation due to drought, frost, plagues or any other hampering cause.

### Ecosystem vulnerabilities

Identifies and informs an array of ecosystem descriptors and vulnerabilities, namely: watershed extent, hydrological network, biodiversity indicators, habitat fragmentation, floods and soil erosion.

### Forestry accounting

Produces analytics based on the System of Environmental Economic Accounting (SEEA) proposed by United Nations.

# Case demos

**MySustainableForest's** services and products are tested across Europe's bioclimatic regions and most representative forest types: temperate natural forests (oaks) and plantations (*Pinus* spp.) in Spain; Mediterranean and temperate continental forests (heterogeneous stands and lowland pedunculated oak forests) in Croatia; Mediterranean (*Eucalyptus* spp.) plantations in Portugal; oceanic forests in France and temperate continental forests in the Czech Republic and Lithuania.

Case demos represent the diverse and multi-pronged nature of geo-information toolkits; the examples below illustrate just a sample of the varied products being tested in each region.

## Croatia

Forest mask, site index, wood density ranking, CO2 stock

## Lithuania

AGB, main forest types, burnt scars, clear cuts

## Czech Republic

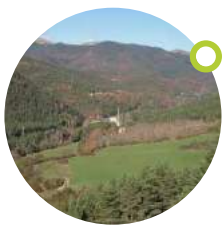
Forest infrastructure, stand height, forest age year, burnt scars

## Portugal

Drought estimation, forest vitality, biotic damages, frost damages

## France

Snow damages, DEM-elevation, wood stiffness, wind damages



## Spain

Strength class, stand density, monetary and physical wood accounts, stand delineation

# Contact info

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## Partners

**MySustainableForest** project is composed of 11 European partners. The institutions in partnership represent a comprehensive range of:

- SMEs, academia and research, forest owners associations and large industrial and technological corporations.
- The various forest types across Europe through the chosen AOI sites: Portugal, Spain, France, Croatia, the Czech Republic and Lithuania.

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