COUNTRY HOT TOPICS

GOFC-GOLD Network: SCERIN / MedRIN

Country: Romania

Team : Mihai Daniel Nita, Sergiu Florea - Transilvania University of Brasov

Joint Workshop of the GOFC-GOLD SCERIN and MedRIN Networks
CIHEAM conference center, Chania, Greece, July 16 – July 19, 2024
Land Cover Change (LCC) and Extreme Events in the Context of Climate Change

Mediterranean Agronomic Institute of Chania
Region of Crete
Eratosthenes Center of Excellence, Cyprus University of Technology
Aristotle University of Thessaloniki
NASA LCLUC Program
GOFC-GOLD and START, USA

Faculty of Silviculture and Forest Engineering

- Mapping High Conservation Value Forests across Europe (ForestPaths Horizon Project)
- Developing a Platform for monitoring Forest cover change and soil erosion for SDGs (SDGsEyes Horizon Project)
- Mapping illegal logging using remote sensing (SINTETIC Horizon Project)
- Developing digital forest management tools for small forest owners (Small4Good Horzion Project)
- Creating Historical SpySatellite composite and land cover map for Carpathian Ecoregion (G4B Biodiversa Project)
- Using Remote Sensing products to to perform quantitative risk assessments of climatic hazards (Nature Demo Horizon Project)

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Pan-European forest disturbance maps

D2.1

Next generation European forest disturbance map

Pan-European forest composition and structure maps

D2.2

European forest composition and structure maps
Available in August 2024

High conservation value forests in Europe

D2.4

High conservation value forests in Europe
Available in February 2025

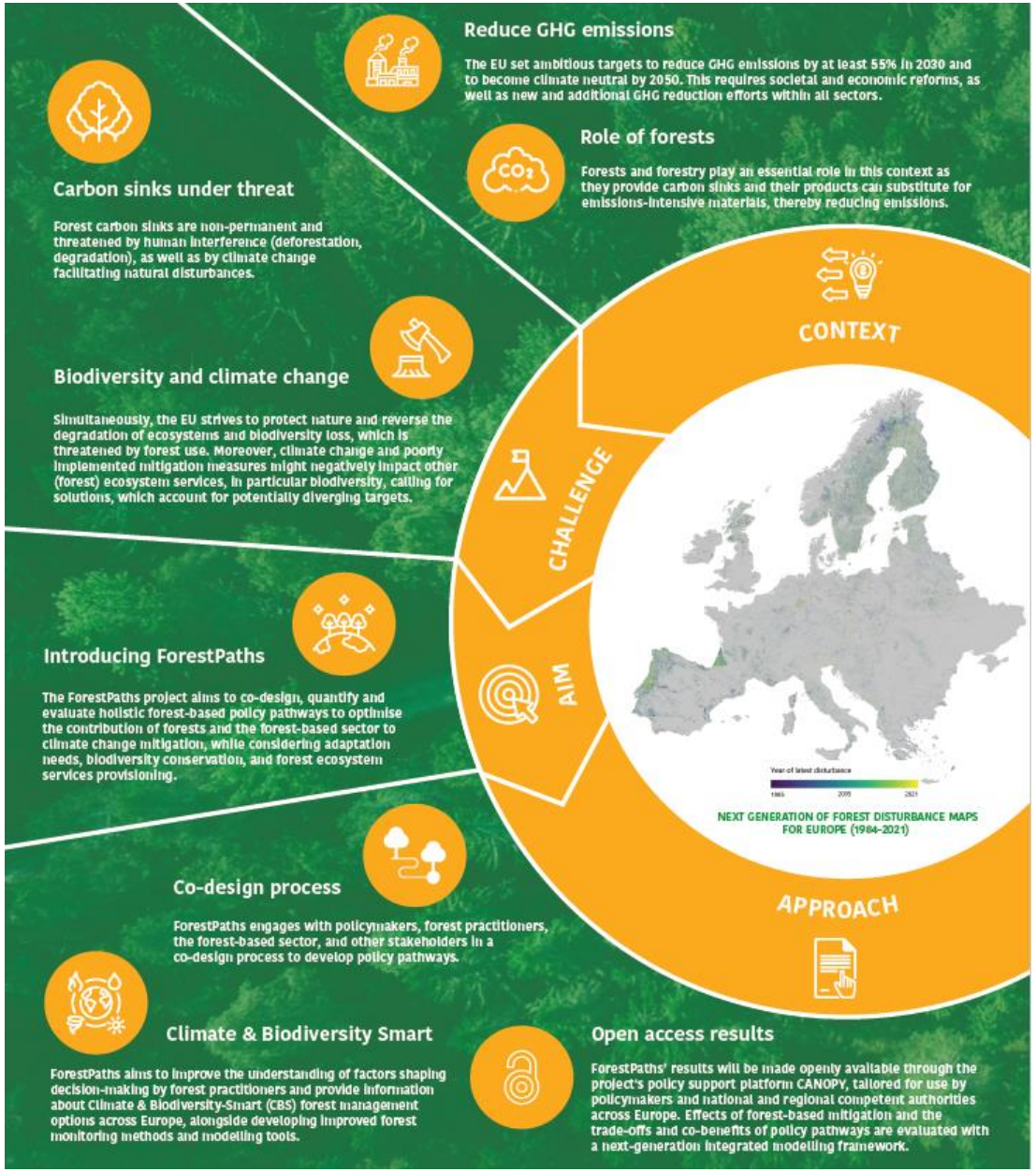
Funded by the European Union

This project receives funding from the European Union's Horizon Europe research and innovation programme under No 101056755, as well as from the United Kingdom Research and Innovation Council. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission. Neither the EU nor the EC can be held responsible for them.

ForestPaths

CO-DESIGNING HOLISTIC FOREST-BASED POLICY PATHWAYS FOR CLIMATE CHANGE MITIGATION

forestpaths.eu
@forestpaths_eu
ForestPaths Project



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SDGs EYES

Uncovering SDGs-EYES

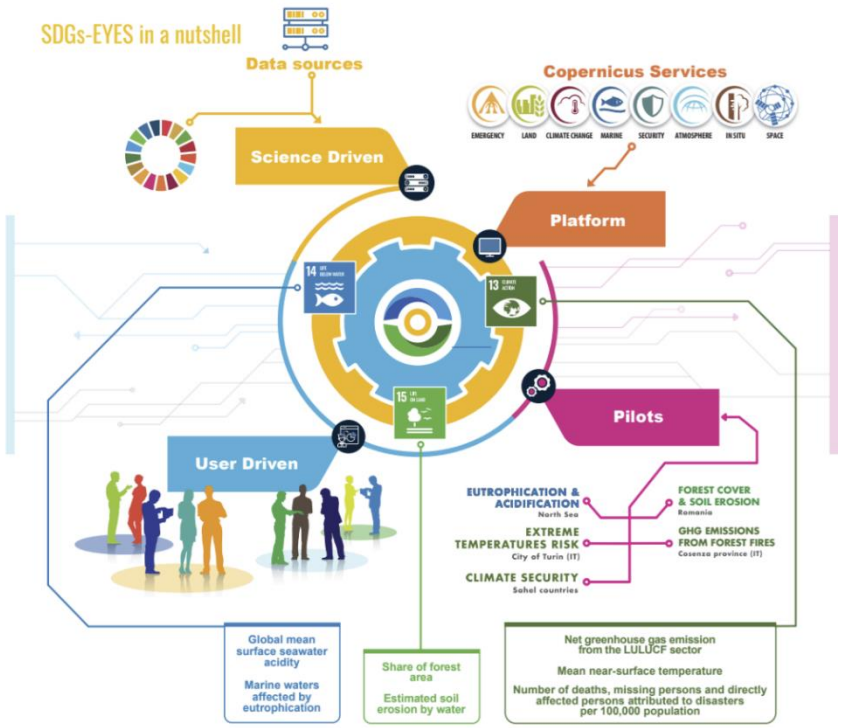
The **SDGs-EYES** Research and Innovation Action aims at **boosting the European capacity for monitoring Sustainable Development Goals (SDGs) based on Copernicus** through building a **portfolio of decision-making tools.**

The focus is on the monitoring of seven SDGs indicators related to the environment from an inter-sectoral perspective, aligning with **EU Green Deal priorities and challenges:**

13 CLIMATE ACTION
- Net Greenhouse Gas emissions from the Land Use, Land-Use Change and Forestry (LULUCF) sector
- Mean near surface temperature deviation
- Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population

14 LIFE BELOW WATER
- Global mean seawater surface acidity
- Marine waters affected by eutrophication

15 LIFE ON LAND
- Share of forest area
- Estimated soil erosion by water - area affected by severe erosion rate



Funded by the European Union

cmcc · SISTEMA · WAGENINGEN UNIVERSITY & RESEARCH · EARSC · SatCen · T&ECOSYSTEMS · A.S.L. TO3 · Forest Design · PEFC

Forest cover and erosion

Romania

15 LIFE ON LAND

- Share of forest area
- Estimated soil erosion by water

WHAT IS SDGs-EYES?

SDGs-EYES is a project funded by the European Union which aims at boosting the European capacity for monitoring and reporting the Sustainable Development Goals (SDGs) based on Copernicus, building a portfolio of decision-making tools to monitor those SDG indicators related to the environment from an inter-sectoral perspective, aligning with the EU Green Deal priorities and challenges.

Copernicus components that will be used:

CLIMATE CHANGE · EMERGENCY · LAND · SECURITY · SPACE

Objectives:

Leveraging high-resolution Earth Observation and remote sensing data to i) support monitoring deforestation and sustainable use of wood resources and ii) estimate the magnitude of potential rainfall-induced soil erosion.

Expected results:

A web-based Graphical User Interface (GUI) will enable the users to visualise maps of changes in forest cover and causes of change, maps of potential soil loss and the factors influencing soil erosion. In addition, users will be able to perform spatial and temporal analysis on the available maps through user-friendly tools.

SDGs-EYES partners:

- Leader: Forest Design
- Partners: CMCC Foundation (Euro-Mediterranean Center on Climate Change), Sistema GmbH, Meteorological Environmental Earth Observation (MEEO), European Union Satellite Centre (SatCen), PEFC Romania (Associated Partner)

Stakeholders:

Romanian authorities and local decision-makers managing land and natural resources. International or national associations outside the Pilot leveraging the proposed methodology for research, monitoring, decision-making and land-planning purposes.

Forests cover almost one-third of Romania, while croplands more than half. Romania ranks among the top 5 EU countries facing substantial losses and costs due to soil erosion, especially in agricultural areas (Panagos et al., 2015). In this context, the value of forests is not only hosting biodiversity but combating land degradation. The Olt River is the longest river flowing solely within Romania. Within its catchment, changes in forest cover often occur, making it a suitable site for monitoring forest cover change, soil erosion and their interplay.

Panagos, P., Borrelli, P., Poesen, J., Ballabio, C., Lugato, E., Meusburger, K., Montanarella, L. & Alewell, C. (2015). The new assessment of soil loss by water erosion in Europe. Environ. Sci. Policy, 54, 438–447.: http://dx.doi.org/10.1016/j.envsci.2015.09.012

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RESULT

Identification and traceability system for sawn wood

APPLICATION

This system when deployed within the primary processing industry allows:

- Accurate traceability of resources along all log transformation steps
- Link the final product (such as long-lasting structural components) to the unique tree standing in the forest

RESULT

On-board LiDAR scanning for value recovery optimization and forest inventory

APPLICATION

The elaboration LiDAR data can provide two independent services:

- Real-time optimization of value recovery during tree harvesting
- Elaborate a detailed post-harvest forest inventory

RESULT

Illegal logging satellite detection

APPLICATION

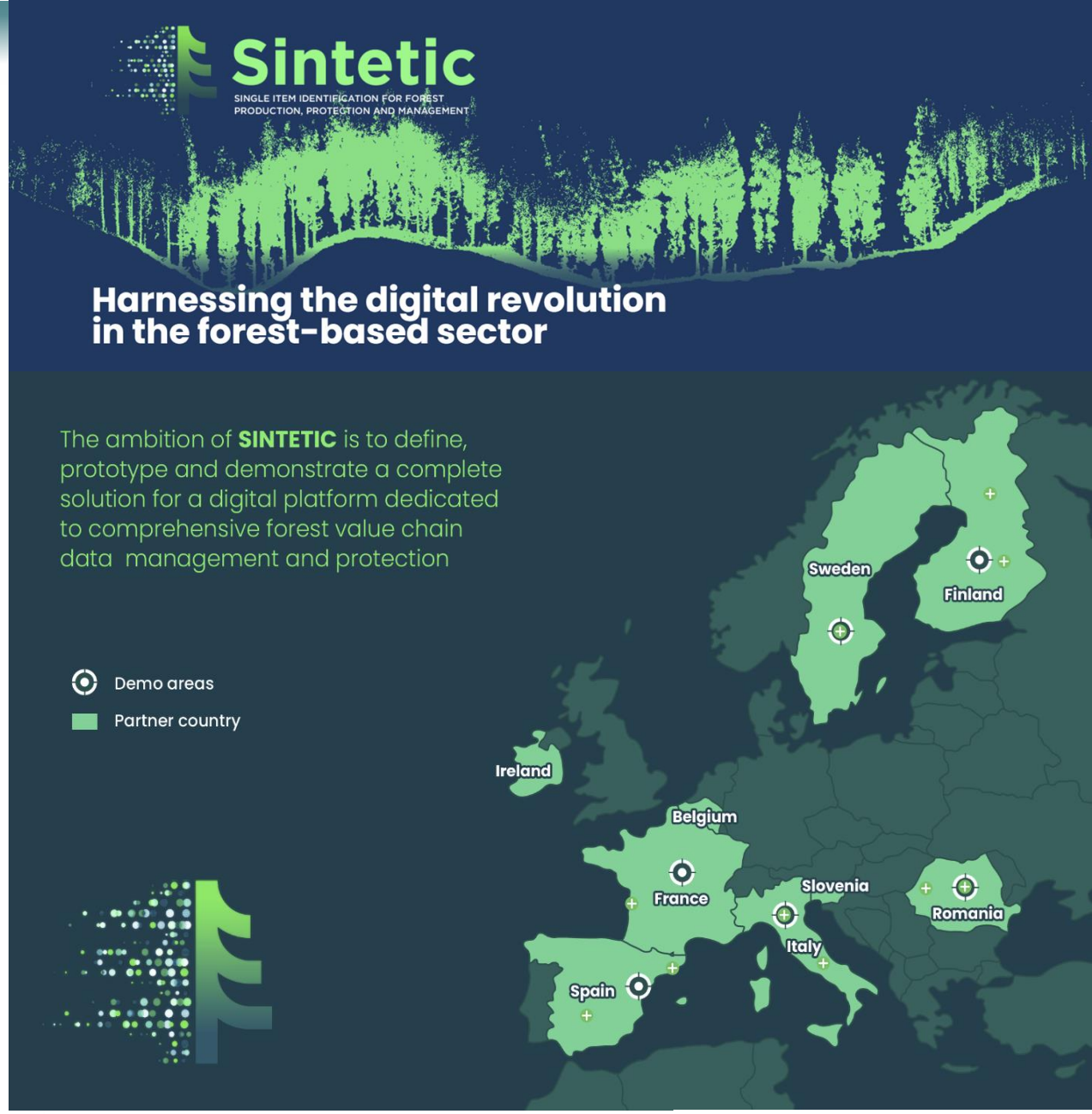
Early warning solution for the detection of forest cover changes based on free Copernicus data. Applicable to control illegal logging but also to monitor natural hazards (e.g. wildfire or gales)

RESULT

Forest ownership aggregation platform

APPLICATION

Integrated platform inside the SINTETIC one to enhance and facilitate fragmented forests inventories, planning and management



Mapping illegal logging using remote sensing

Funded by the European Union

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University of Brasov

Small4Good

Developing digital forest management tools for small forest owners

Funded by the European Union

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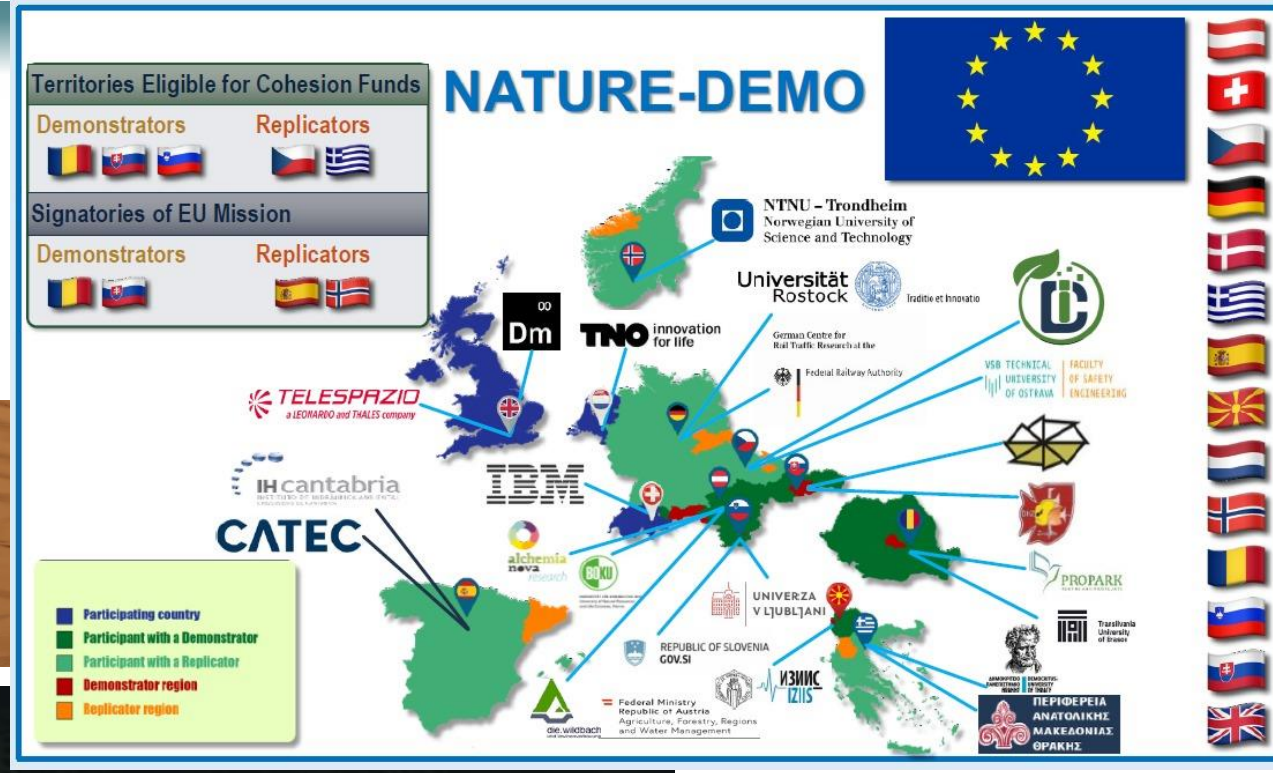
The Concept of NATURE-DEMO

The concept of nature-based solutions (NbS) is increasingly embedded in global and EU policy frameworks for sustainable development. However, to fully leverage their potential, more coherence and prioritization are necessary. Mainstreaming NbS faces several key challenges:



23 Collaborating Organisations

14 European Countries

4 Climatic Threats Addressed

5 Nature-Based Solutions

4 Sectors of Critical Infrastructure

8 Demonstrators and Replicators

3 Biogeographical Regions

6 Cohesion Funds Teritories

6 Supporting Authorities

30 Stakeholder Organisations

Using Remote Sensing products to to perform quantitative risk assessments of climatic hazards

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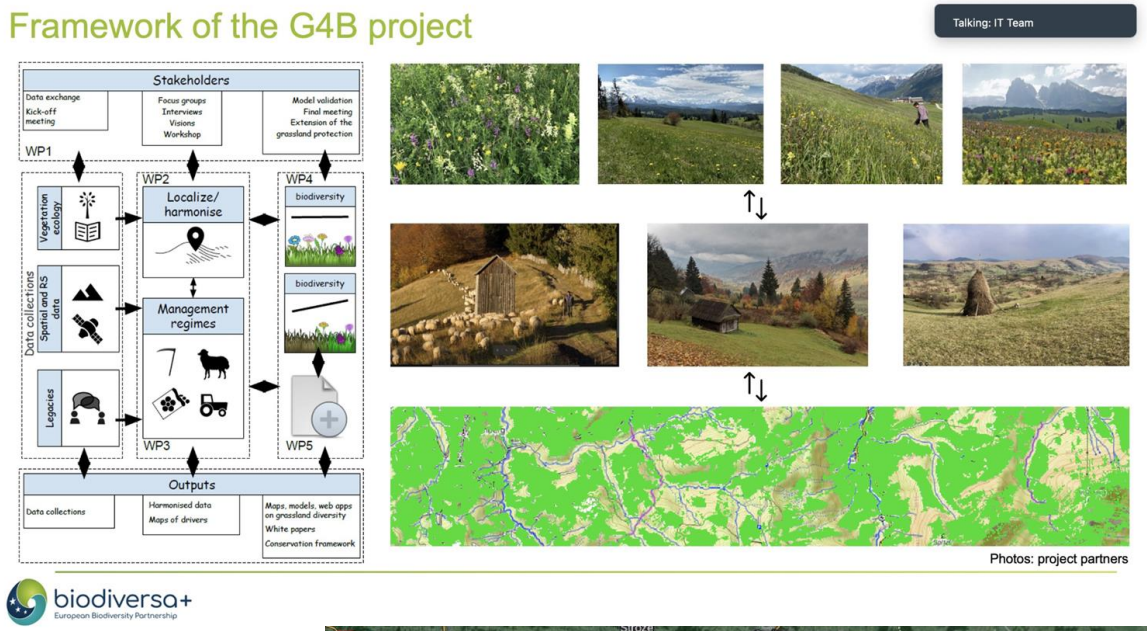

Creating Historical SpySatellite composite and land cover map for Carpathian Ecoregion (G4B Biodiversa Project)