Land Monitoring Service

NATIONAL COLLABORATION PROGRAMME

Thursday 22 May, 2025

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PROGRAMME OF THE EUROPEAN UNION

Copernicus Europe's eyes on Earth

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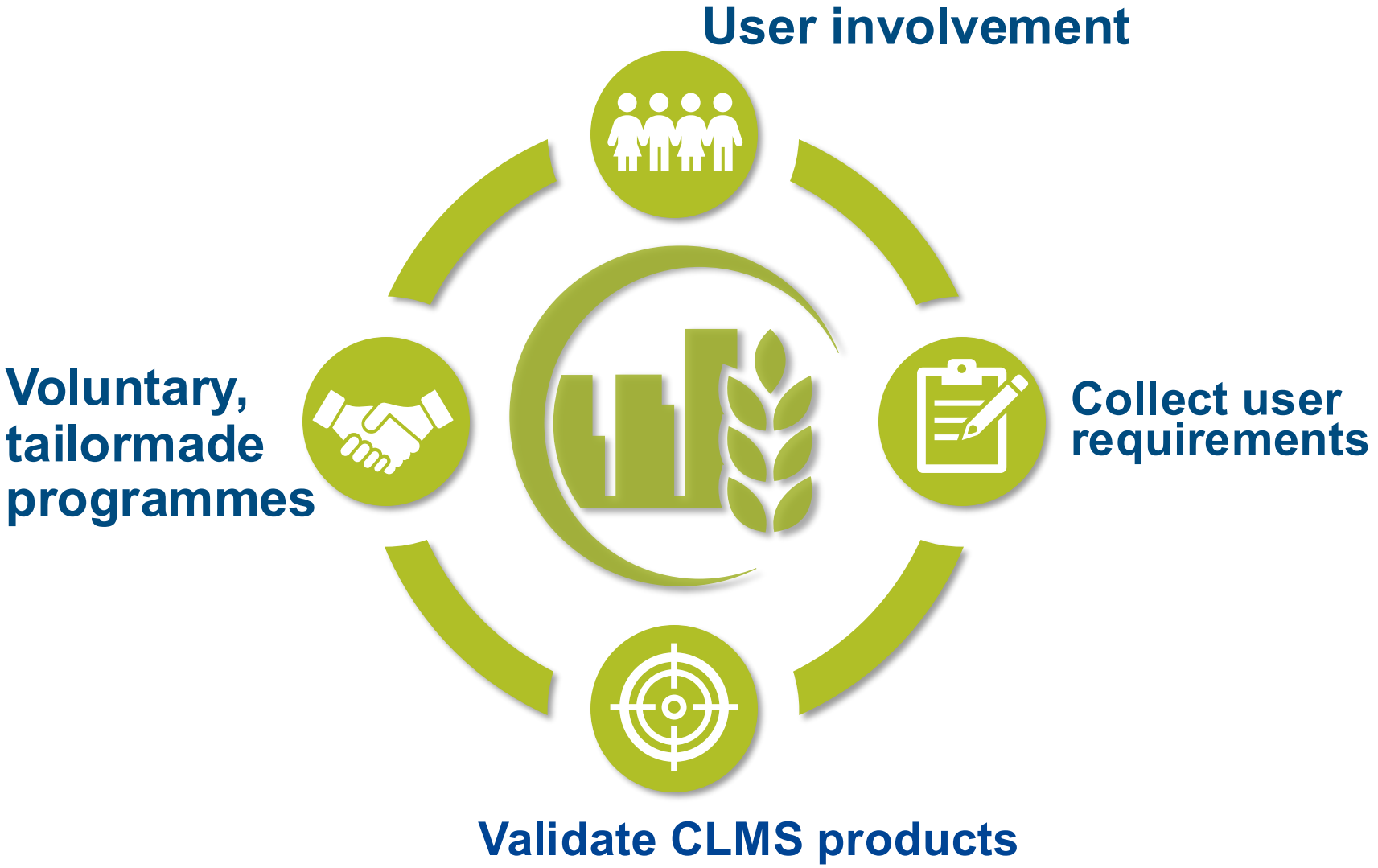
European Commission

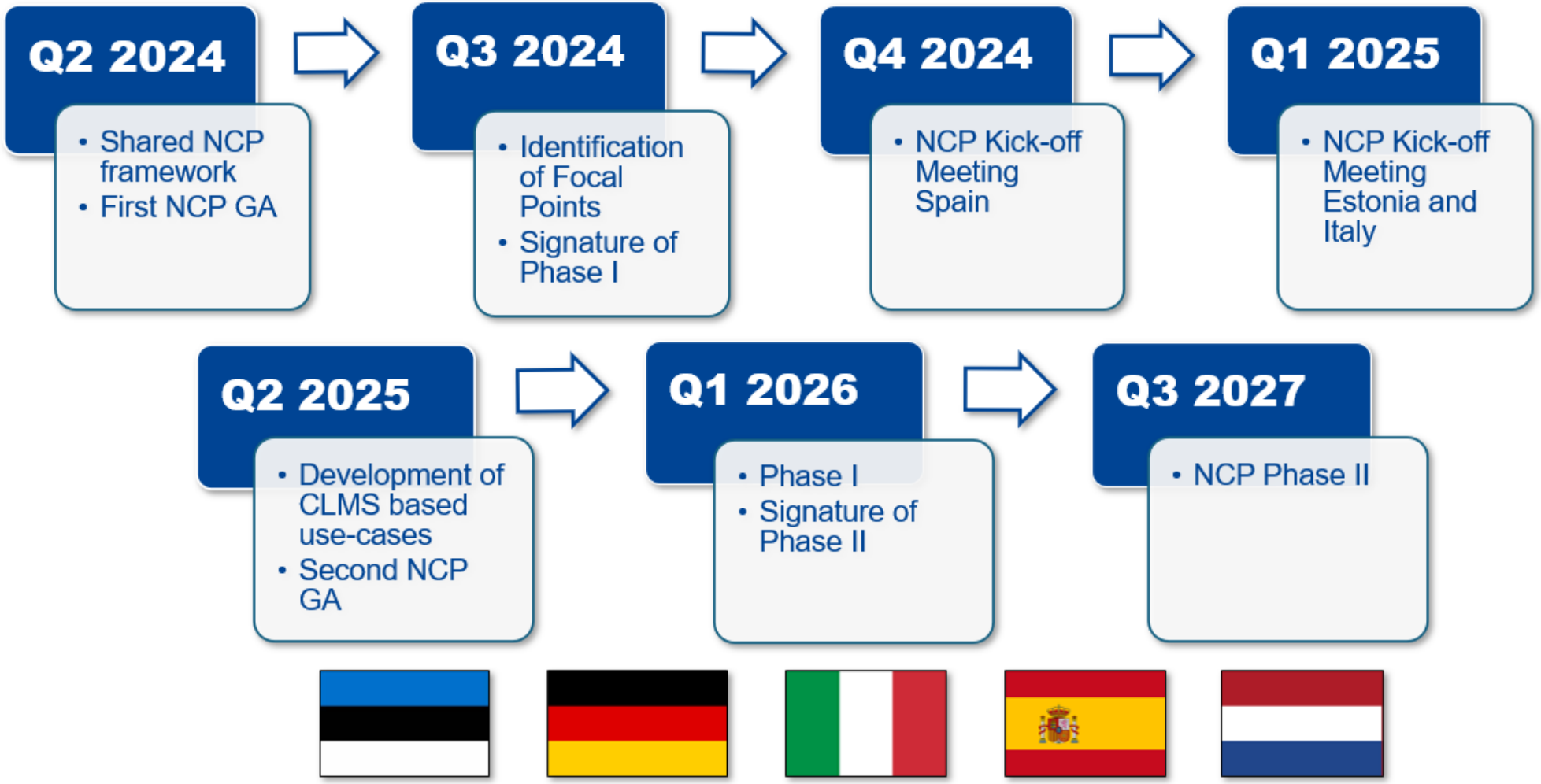
Agenda NCP GA

Start	End	Agenda Item	Confirmed Speaker
08:30	09:00	Registration	-
09:00	09:30	Welcome speech (10min) + Update on status of Phase I (20min)	Usue Donezar
09:30	09:45	Q&A session on Memorandum of Understanding	Corina Samson
09:45	10:00	Status NCP Germany	Saskia Förster
10:00	10:15	Status NCP Netherlands	Kees van Duijvendijk
10:15	10:30	Status NCP Estonia	Indrek Laas
10:30	11:00	Coffee break + Group picture	-
11:00	11:15	Status NCP Italy	Ines Marinosci
11:15	11:30	Status NCP Spain	Samuel Parada
11:30	11:45	Involving developmental agencies in the NCP	Michel Massart
11:45	12:00	Focus Team Coastal Applications	Samuel Parada & Christoph Schröder
12:00	13:00	Session on user requirements	Christoph Schröder
13:00	13:15	Presentation on communication support	Hayden Waller
13:15	13:30	Closing remarks	Usue Donezar
13:30	14:30	Lunch	-

Objectives of the CLMS NCP



NCP implementation timeline



Memorandum of Understanding

- Signatures duration 18 months
- When signing MoU, the country **commits** to all 4 mandatory modules
- Country can **choose** to do up to 4 optional modules
- Payment for mandatory modules when completed and accepted by EEA

- Use case stories
  - Support the EEA
  - Max. two per country
- Organisation of CLMS meetings
  - Min. two per country (Kick off Meeting should be one)
- Support progress monitoring
- Final report

- Focus teams
- Training sessions
- Visiting Ph.D. students at the EEA
- Number: Max two/year
- Duration: 6 – 12 months
- Communication material

Characteristics: NCP Focal Point

Requirements

- Need: FP + alternate
- Must represent the same, national authority
- Institutions reimbursed for participation

Tasks:

Organisation of:

- national-level NCP consortium
- modules
- NCP General Assembly (two/country)
- Dialogue with the EEA to sign MoU and during NCP implementation
- Ensuring timely completion of modules

Proposed Optional Modules

Focus Teams

- Suite of products related to vegetation
- LULUCF
- Inland water
- Coastal applications
- Sharing methodologies of national activities

Trainings

- Ground Motion
- Suite of products related to vegetation
- Biophysical parameters
- Hydrological data
- CLCplus BackBone

Visiting PhD students

- Preparations for first visiting PhD student initiated

Communication

- Support to communication activities

Progress Phase I

Currently half-way through Phase I:

- 5 countries have signed Memoranda
- NCP Kick-off meetings Spain, Italy and Estonia
- Development of CLMS use cases
- Focus team: Coastal applications in Spain
- Creation of CLMS Information Leaflets in national languages

Copernicus NCPs Workshop – Take home messages

- Ensure long-term continuity of NCPs
- NCPs are now a permanent Copernicus feature
- Country-specific approaches with harmonisation efforts
- Include user fora to reach all relevant stakeholders
- NCP as main feature for user uptake
- Prioritise outreach in local languages
- Sufficient funding needed, preferably via grants
- Leverage FPCUP networks and actions
- Strong cooperation with Member States and entities

Improvements and lessons learned from Phase I

- **Development of comprehensive guideline for Financial Instruments**

- **Development of supplementary documents for support:**

  - Description of formal Kick-off Meeting and
  - Description of mandatory and optional modules with examples provided
  - Communications guidelines for regular and structured communication between countries

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National Collaboration Programme

Navigating the MoU and Financial Instruments

Corina Samson

22nd May 2025

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Objectives

Key Points for MoU Implementation

- Reinforce correct use of the MoU
- Clarify financial instruments
- Address confusion on work commencement
- Explain payment processing
- Share lessons learned from first phase

The MoU – What It Is and What It's Not

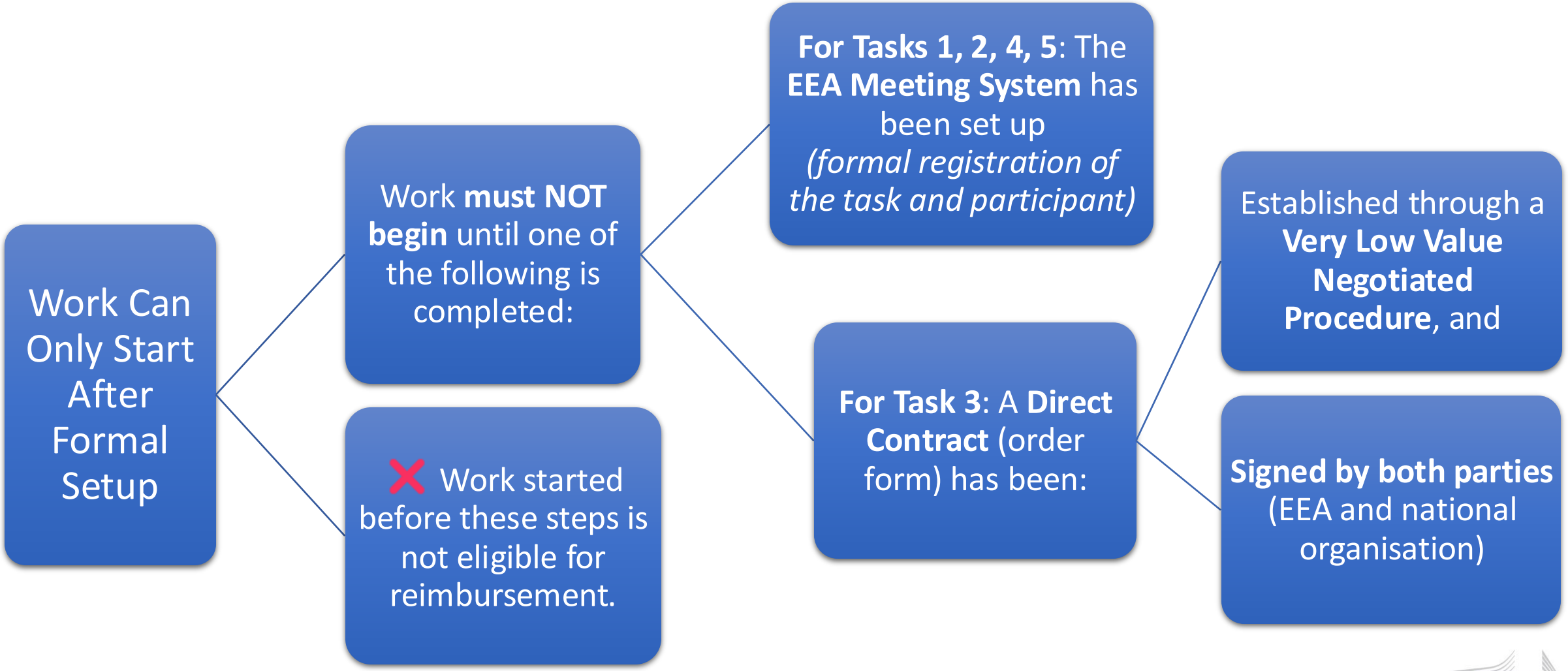
✅ A framework for collaboration

❌ Not a legally binding contract

❌ Not an automatic green light to begin work

Requires EEA's explicit written approval before starting any task

When Can Work Start?



How is Payment Made?

Payment Channels

✓ Via EEA Meeting System

For Tasks 1 (Coordination), 2 (Use Cases), 4 (KPI Monitoring), 5 (Final Report)
➤ Setup required **before work starts**
➤ Triggers reimbursement upon EEA acceptance of deliverables

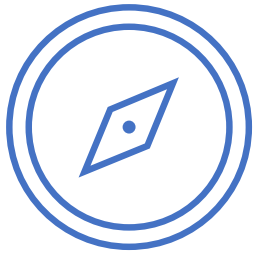
✓ Via Direct Contract (Order Form)

For Task 3 (CLMS Meetings)
➤ Must be based on a Very Low Value Negotiated Procedure
➤ Legally binding only after both parties sign
➤ Triggers reimbursement upon receipt by the EEA of an invoice and acceptance of deliverables

Breakdown of Tasks & Payments

Task	Days	Payment (€)	Mechanism
Coordination	13	€9,100	Meeting System
Use Cases	2	€1,400	Meeting System
Meetings	18	€12,600	Order Form
KPI Monitoring	3	€2,100	Meeting System
Final Report	3	€2,100	Meeting System

What's Coming Next



Comprehensive guideline

Detailed steps

Procedures

Key Takeaways

- MoU = framework, not contract
- Don’t start work until approved
- Use correct payment channels
- Communication with EEA is essential

Questions?

Contact us:

Finance Marie.Got@eea.europa.eu

Legal/Procurement
Corina.Samson@eea.europa.eu

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Thank you!

Copernicus EEA

land.copernicus.eu

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Status NCP Germany

CLMS NCP GA 2025

Saskia Förster and Christian Schweitzer
(German Environment Agency)

22 May 2025

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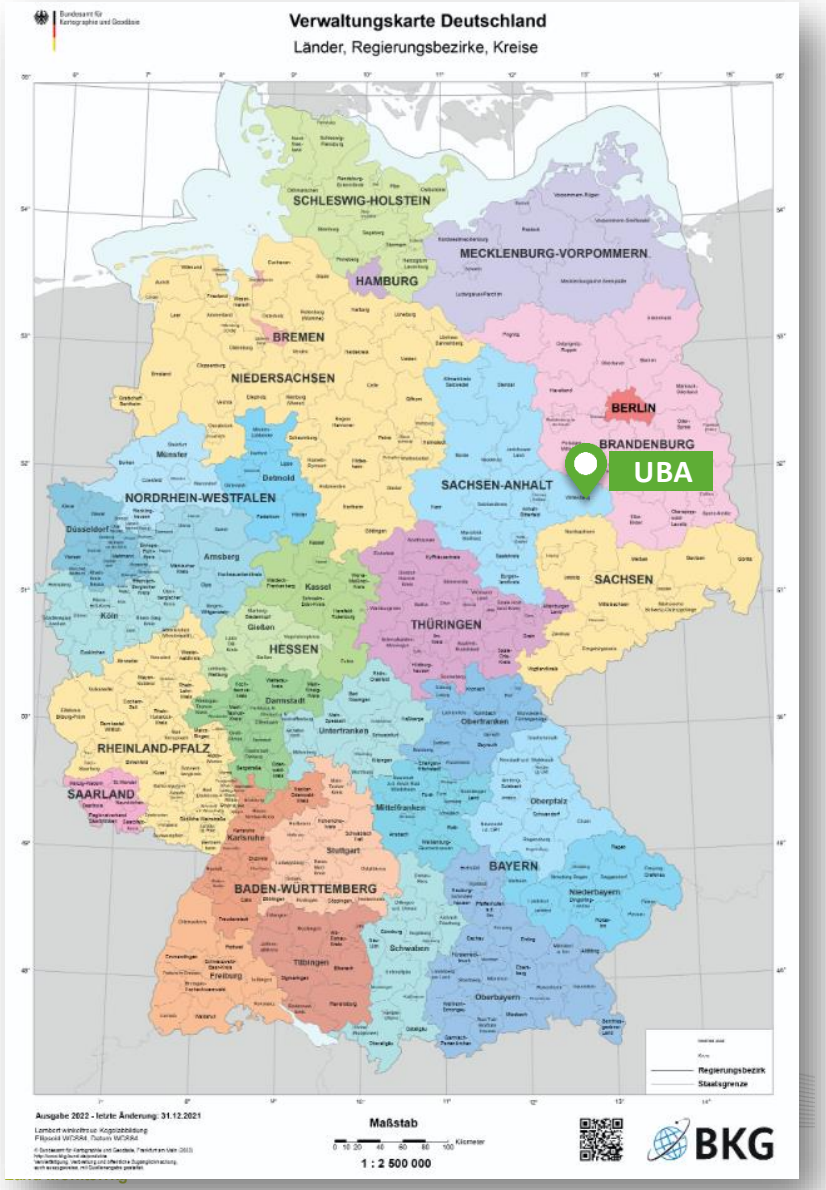
Stakeholders and challenges in user uptake in Germany

Large number of public stakeholders with various demands and levels of expertise at different administrative levels:

- **National** agencies and offices such as Federal Environment Agency (UBA), Federal Agency for Cartography and Geodesy (BKG), Federal Statistical Office (DESTATIS), German Meteorological Service (DWD)
- **Regional** state offices in **16** federal states such as Environmental Offices, Land Surveying and Geoinformation Offices, Agriculture and Forestry Offices, Urban Planning and Construction Offices
- **Local** district/communal offices in **294** districts and **106** independent cities

Many more (potential) users in research & academia, commercial sector, NGOs, associations, ...



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National Copernicus structure

Europäische Kommission

Copernicus Committee

Copernicus User Forum

German Delegation
(Ministry, DLR Space Agency, Members of national Copernicus expert network)

National Coordination

German Government

Bundesministerium für Forschung, Technologie und Raumfahrt

Responsibility for national Copernicus programme

DLR Space Agency

DLR German Space Agency at DLR

Support of ministry in implementation of programme

National Copernicus expert network
(based at federal agencies and institutions)

Six Copernicus core services

+ inland waters
+ georesources and -risks
+ agriculture

Copernicus Netzwerkbüro Wald
Copernicus Netzwerkbüro Verkehr
Copernicus Netzwerkbüro Kommunal
Copernicus Netzwerkbüro Boden

Network offices: Forests, communal, traffic, soil and energy

Contact point, user support and information, networking, training, collecting user requirements, support in development of Copernicus products and services

Bundesministerium für Forschung, Technologie und Raumfahrt

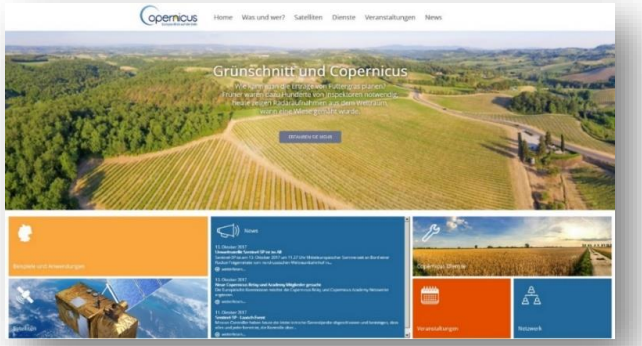
DLR German Space Agency at DLR

National Copernicus user uptake strategy

Copernicus Strategy (2017, update 2024)

Community events

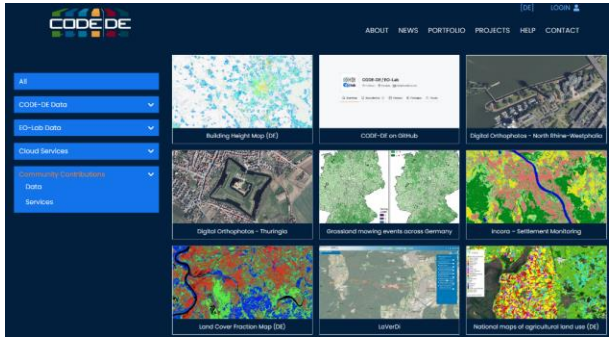
Website



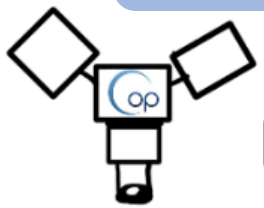
www.d-copernicus.de

Expert network

Data access and processing platform



National Copernicus integration projects



FPCUP projects

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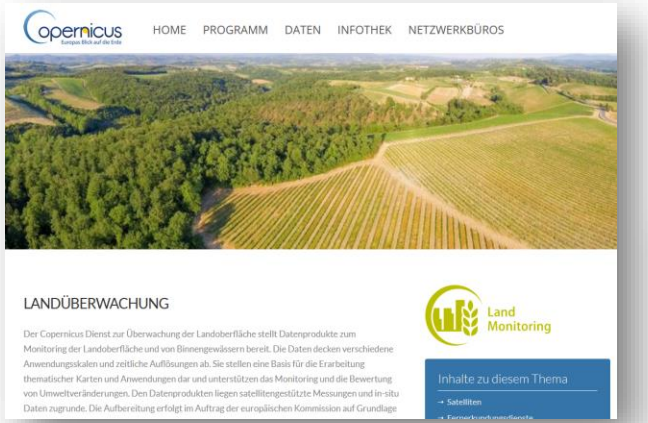
National Copernicus user uptake strategy - CLMS

Land Monitoring Subpage on National Copernicus website



CLMS Newsletter (3-4 per year)

Leaflet (Nov 2024)

National CLMS coordination and contact points

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Bundesamt für Kartographie und Geodäsie
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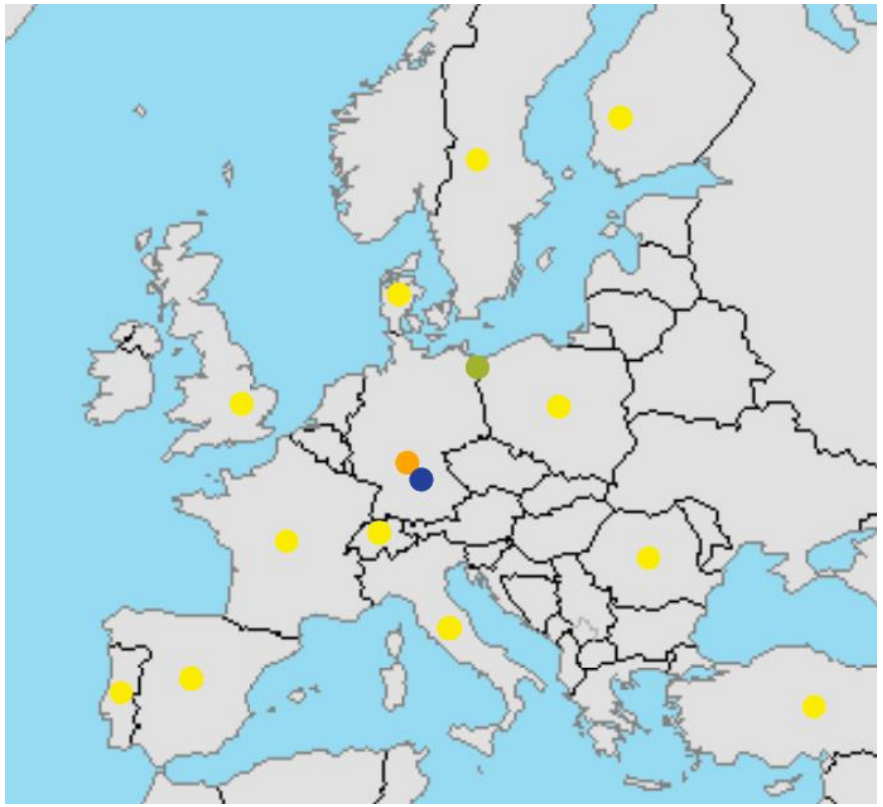
NCP activities: Use cases from Germany

1. Review of existing use cases
    - None so far at CLMS website!
2. Identifying suitable use cases
    - Search in publication databases, workshops, newsletters, direct contacts
    - Planned: Call for submissions of use cases to be distributed in national CLMS newsletter and at user events
3. **First use case will be published very soon** (28.05.2025)
    - Provided by Heike Gerighausen (JKI)
    - Topic: Loss of agricultural soil due to soil sealing using CLMS CLC and imperviousness products along with national soil and climate data



https://land.copernicus.eu/en/use-cases

NCP activities: User surveys – Review

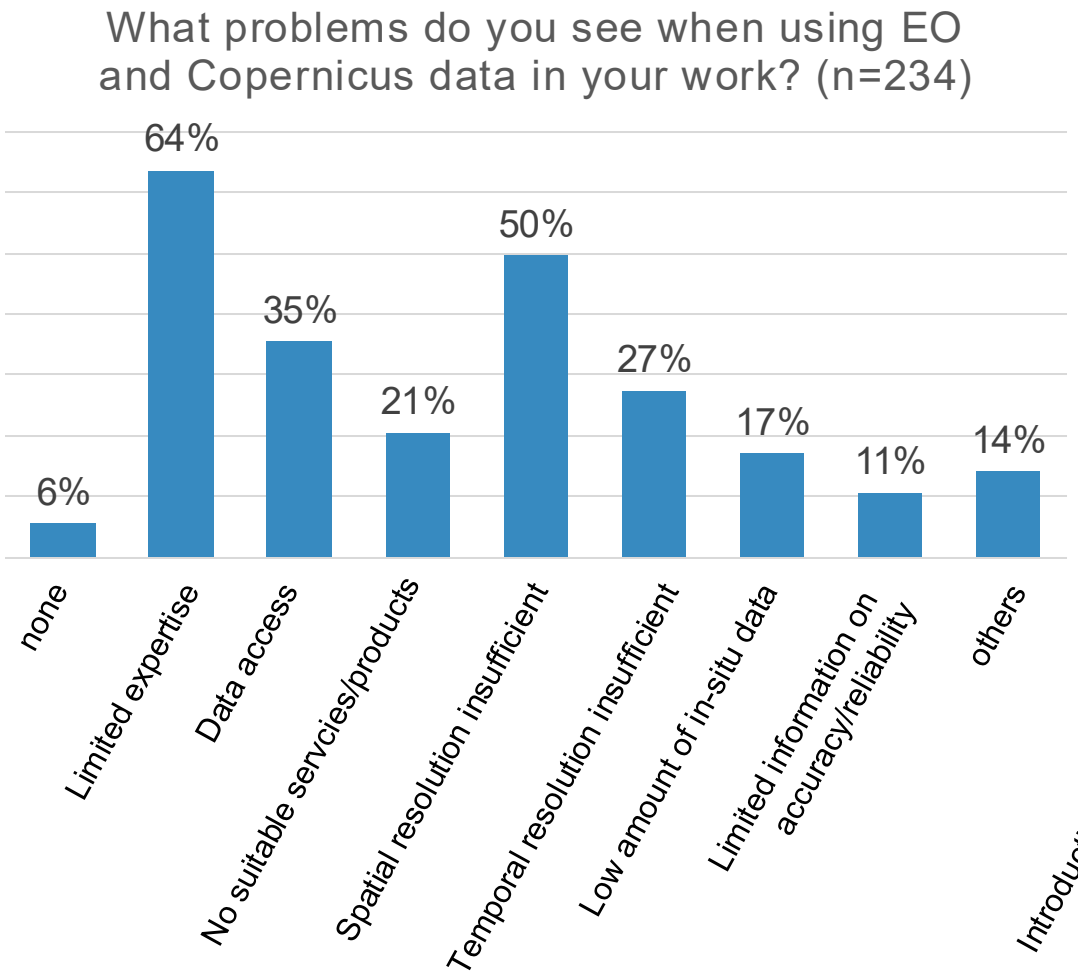
1. Review of Copernicus user surveys conducted among German users, with land focus, in 2022-24

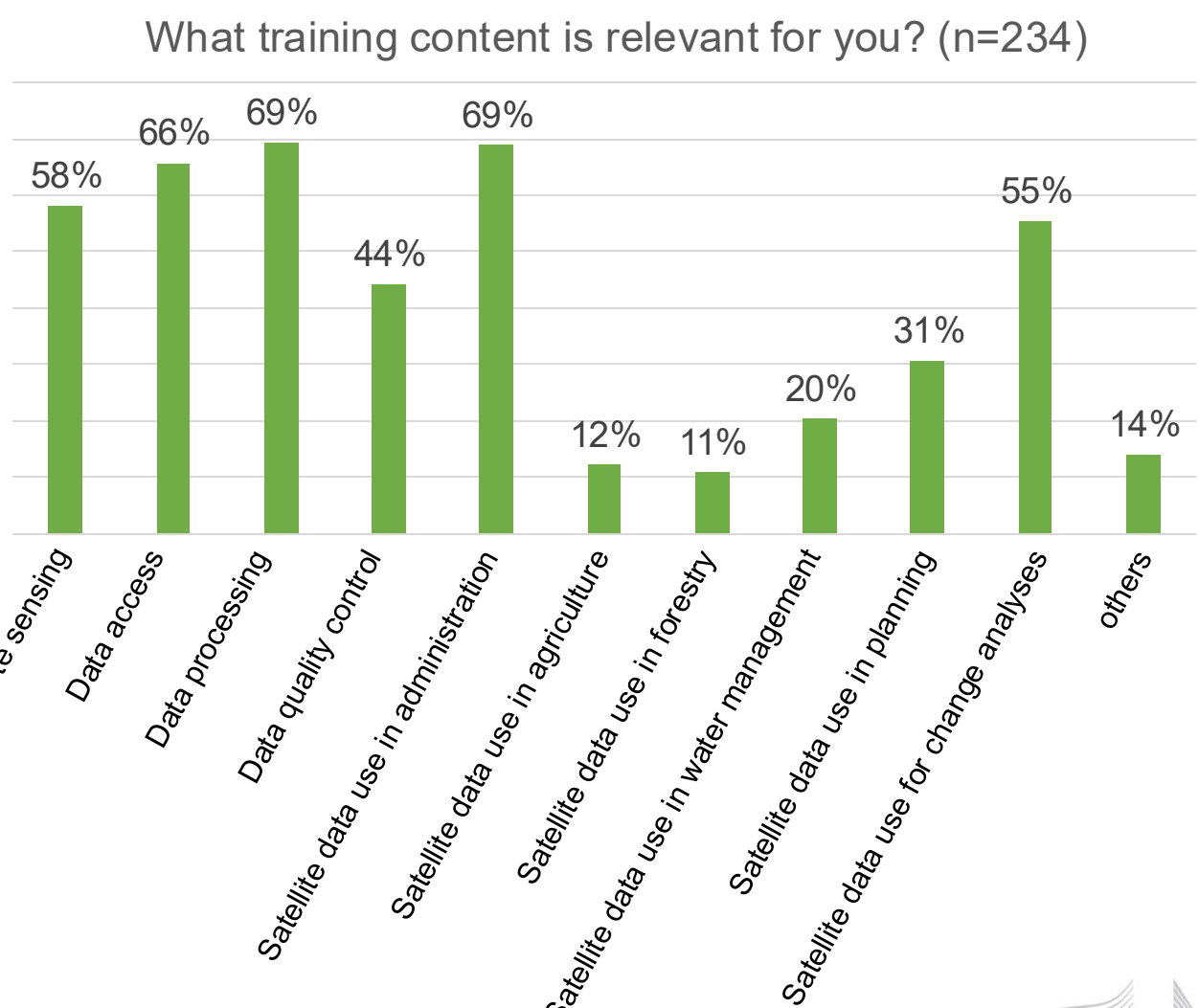
Organisator (Project)	Date	Thematic field	Responses
BKG/AdV (survey)	2022	Data demands	88
HU/UFZ (BIGFE, survey)	Q3 2022	Water	49
HU/UFZ (BIGFE, survey)	Q1 2023	Water	20
BfG/LAWA (workshop)	Q4 2023	Water	~70
BKG/SKD (survey)	2023	Data demands	119
Thünen (NWB Wald, survey)	Q4 2024	Forest	195
EurA (NWB Kommunal, survey)	Q4 2024	Urban	98
GFZ/Fern.lab (SQuBa, survey)	Q4 2024	Training demands	234

2. User survey results: Qualitative summary of main findings, detailed results in publicly available reports (in German)

3. Plan user survey as part of Online-Workshop 2025 (in collaboration with EEA)

NCP activities: User surveys – Selected results





Source: DLR Space Agency / GFZ Potsdam Fern.lab (2025)

NCP activities: 2-day National Online-Workshop on CLMS and national products in September 2025

- **Objectives**: inform about CLMS portfolio and data access and national products and services, demonstrate best practice examples, conduct online user survey (requirements, feedback), inform about national contact points and support
- **Date and format**: 2 days in Sept 2025, online, modular
- **Organisation**: National land-related Copernicus expert network + (German-speaking) members of EEA Copernicus Team

Forest Type 2018. European Union's Copernicus Land Monitoring Service information. https://doi.org/10.2909/77873ff3-4edf-48d4-94cd-c5b7b61da29e
Dominant Tree Species for Germany 2017/2018. Thünen. Blickensdörfer et al. (2022) https://doi.org/10.3220/DATA20221214084846

Ongoing / planned NCP activities

- Planning in-person session at national Copernicus Forum event in spring 2026
- Update national CLMS newsletter and webpage (relaunch summer 2025)
- Promote PhD visit opportunity at EEA
- Quarterly meetings of German NCPs of CLMS, CAMS, C3S, CMEMS
- Update meetings on CLMS NCP with EEA

2015

2017

2018

2020

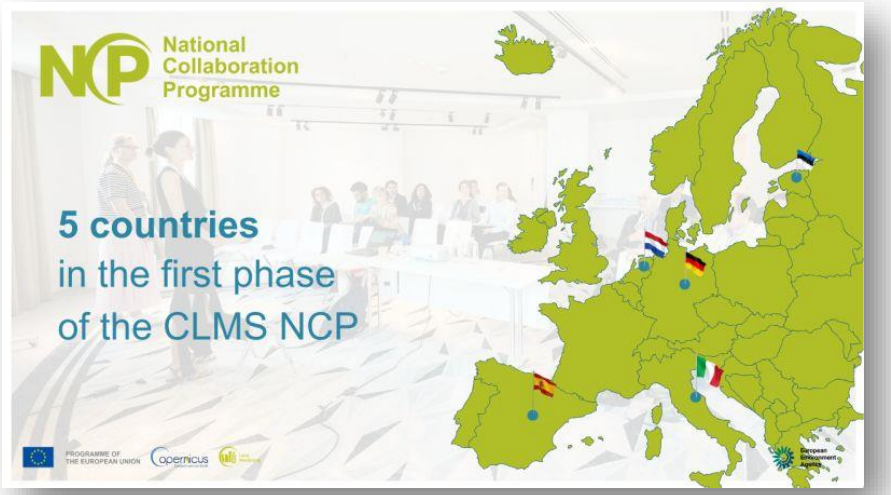
2024

2022

Copernicus Forum
Spring 2026
in Darmstadt/Germany

Summary and outlook

- Large number of stakeholders with various levels of expertise, capacities and demands
- National Copernicus structure and user uptake strategy in place
- CLMS NPC activities bring added-value:
  - Mandate for actions
  - Use cases and events
  - Direct contact to EEA Copernicus team
  - Closer exchange among NCP partners (national / other member states)
- Towards 2nd CLMS NCP phase…?



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Thank you!

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National Collaboration Programme update for The Netherlands

NCP General Assembly

Kees van Duijvendijk, CLMS focal point NL

22 May 2025

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EO Challenges in NL

- Long history of GIS and EO products for land monitoring, which are still the basis for many public uses.
- Small country with very high density of monitoring and registering almost everything in-situ (agriculture, land-use, water quality, etc.).
- NL acquires and provides VHR (0.3m) and radar data multiple times each year through the Satellietdataportaal, which often becomes the basis for public services on ground motion and change detection.
- Difficult to position Copernicus Services and other open data, due to large number of private companies that provide similar services.

https://viewer.satellietdataportaal.nl/@52.09949,4.296513,18/?datastrip=20250425_PNEO-03

Main objective for NL in the CLMS NCP

- Assess current use of CLMS products for use cases
- Create a strong (user) community for EO products
- Organize a series of ‘EO4Impact’ events with partners
- Possibly link events with training on CLMS products
- Find ways to better position Copernicus Services
- Current problem:
  - User communities have been fragmented over thematic domains, often link to project financing
  - No insight on current use/needs of different Copernicus products

Indicative planning

- Q4 2024: Sign MoU for CLMS phase 1
- Q1 2025: Assess preliminary use cases and training needs
- Q2 2025: Start building (GEO Netherlands) community
- Q3 2025: Organize smaller (half) day events
- Q4 2025: Organize three-day EuroGEO with strong focus on Copernicus
- Q1 2026: Final reporting for CLMS NCP, and plans moving forwards

The Netherlands

GROUP ON EARTH OBSERVATIONS

NSO - Netherlands Space Office
9,323 followers
7mo •

Exciting news!
On October 2nd, the European Environment Agency (EEA) and NSO - Netherlands Space Office officially signed the National Collaboration Programme (NCP) for the Copernicus Land Monitoring Service (CLMS). The Netherlands is one of the first five countries to join phase 1 of this initiative!

This program is a significant step forward, supporting the uptake of Copernicus Land Services and strengthening the Earth observation (EO) community. Workshops, use-case development, and training will empower stakeholders to use CLMS data effectively.

At the signing, EEA Executive Director Leena Yla-Mononen and CLMS Project Lead Usue Donezar Hoyos emphasized the importance of this partnership. Harm van de Wetering, Director NSO, added:

"This collaboration embodies what NSO stands for, bridging technology, service provision, and end-user engagement in Earth observation. It's a key pillar in our long-term strategy to leverage space technology for global challenges."

Assessment of use cases

- Very limited use found of use cases with CLMS data
- Main use of CLMS is in research projects
- Limited use because data is not always actionable (delay in production)

- Only public users, so far are:
  - Assessing damage of mining activities (**quick scan**, Instituut Mijnschade)
  - Assessing state of infrastructure (**quick scan**, RWS)
  - CLMS for natural capital monitoring (**statistics**, CBS)

- Some demand indicated to use CLMS instead of aerial photo's

Structure community around GEO / Copernicus

- The Netherlands will host the EuroGEO Symposium 2025 from 13-15 October in The Hague
- Launch of GEO Netherlands in 2025, during EuroGEO
- Organize EO events linked to the structure of Copernicus services
- Link technical needs with overall needs (involvement in programs)

Assessment of training needs

- Difficult to find a good way to position training needs
  - **Researchers** have an interest in the latest products and technical aspects, also in the planned upcoming products
  - **Public users** care about uses in thematic domains, and not in single-products. Moving forward, more interest in training on thematic domains (link with Copernicus Thematic Hubs).

- Main interest in linking CLMS training with (already planned) in-person events, and limited interest in webinars
- Assess possibilities of **thematic training** instead of product explanation

Our experiences in NL

- Surprisingly little awareness of Copernicus services at public users.
- Copernicus services mainly used as quick-scan or in statistics, also due to sometimes low update frequency (‘outdated products’).
- EO communities are often not sustainable; the previous Land community has disappeared after a project ended.
- Private sector are struggling with Copernicus Services and not embracing (or aware of) possible win-win scenarios.
- For most Copernicus Services, there is an existing NL alternative.
- People focus too much on improvements, and too little on using what is possible now. Eternal innovation loop, with no clear endpoint.

The positive end ☺

- Most people like to know more about CLMS and NCPs in general, and public organizations are willing to strengthen the role of NSO as NL focal point for Copernicus and its services.
- Organized EO events are in high-demand by all stakeholders, and have a very high attendance (especially if organizations are given the room to provide input on the future developments)
- NSO can expand their role on EO uptake, by creating a (hopefully more sustainable) EO community around Copernicus and GEO.
- Organizations want to incorporate CLMS data, but are in need of support. Many projects seem to be available to provide this support.

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Thank you!

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Status of NCP Estonia

NCP GA 2025

Indrek Laas

May 20nd 2025

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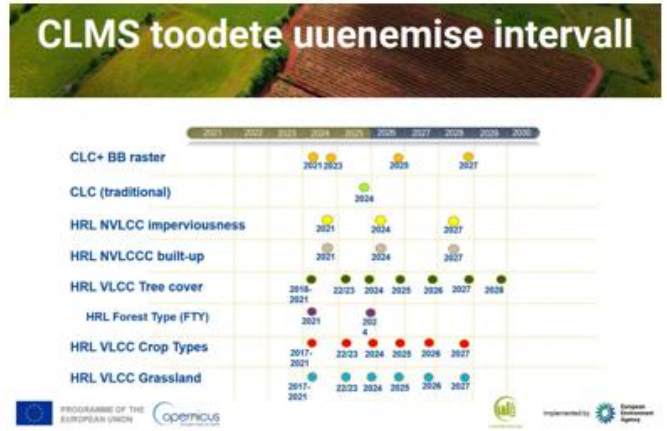
Activities of the NCP

Objective: awareness raising about CLMS products in Estonia



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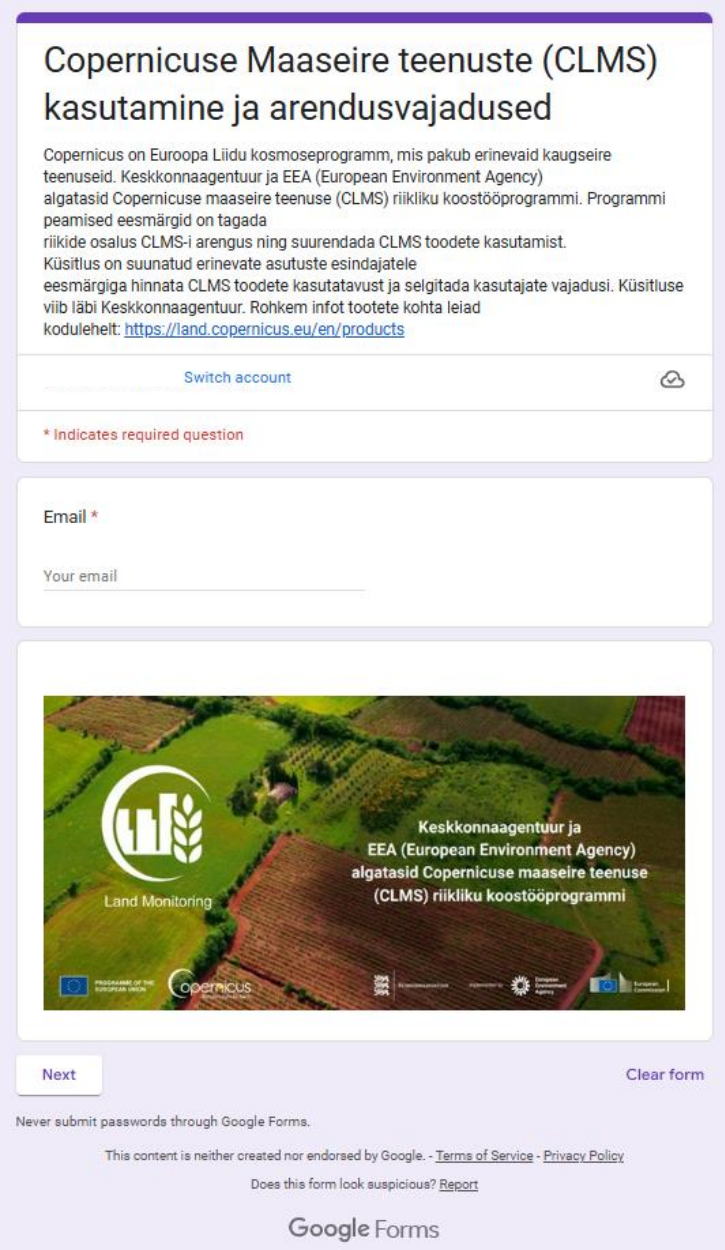
Activities of the NCP

Objective: collection of user needs (survey)

- Geological Survey of Estonia
- Estonian University of Life Sciences
- Estonian Environment Agency
- Estonian Land Board
- Estonian Environmental Board
- Agricultural Registers and Information Board
- Estonian State Forest Management Centre
- Statistics Estonia
- Tallinn University of Technology
- University of Tartu



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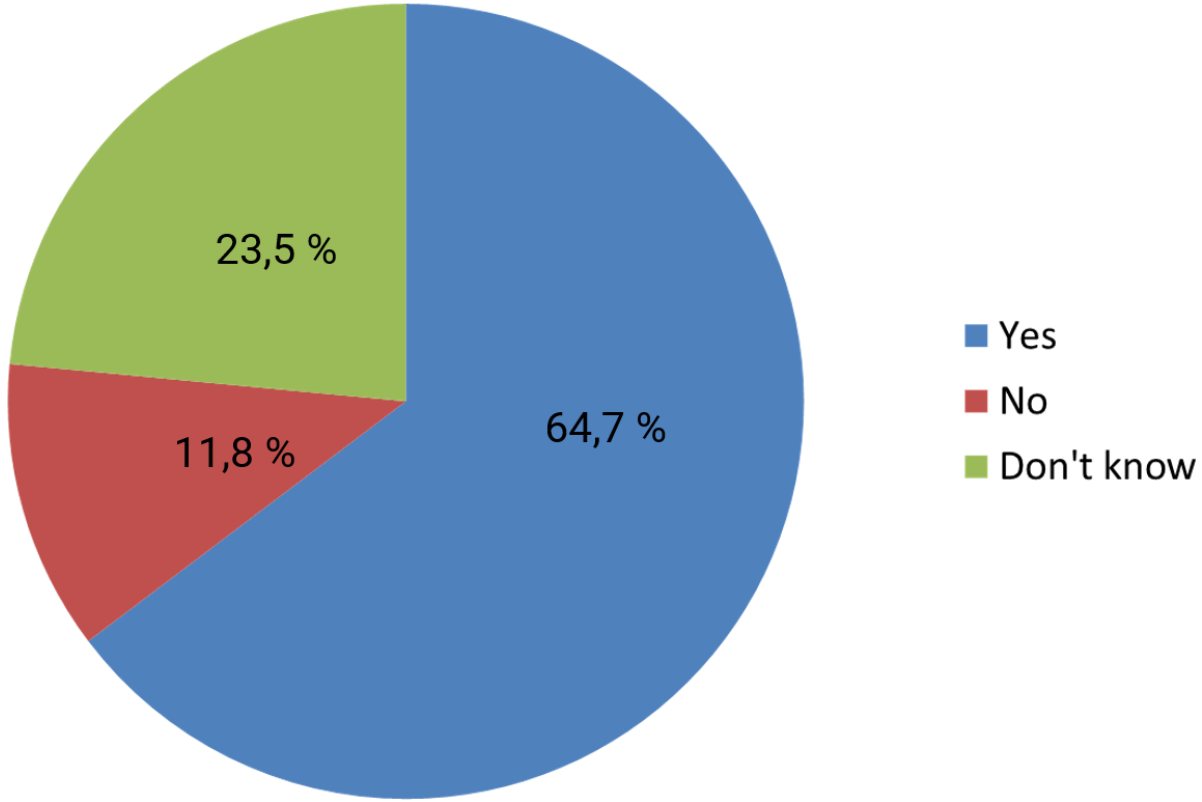
Activities of the NCP

Objective: collection of user needs

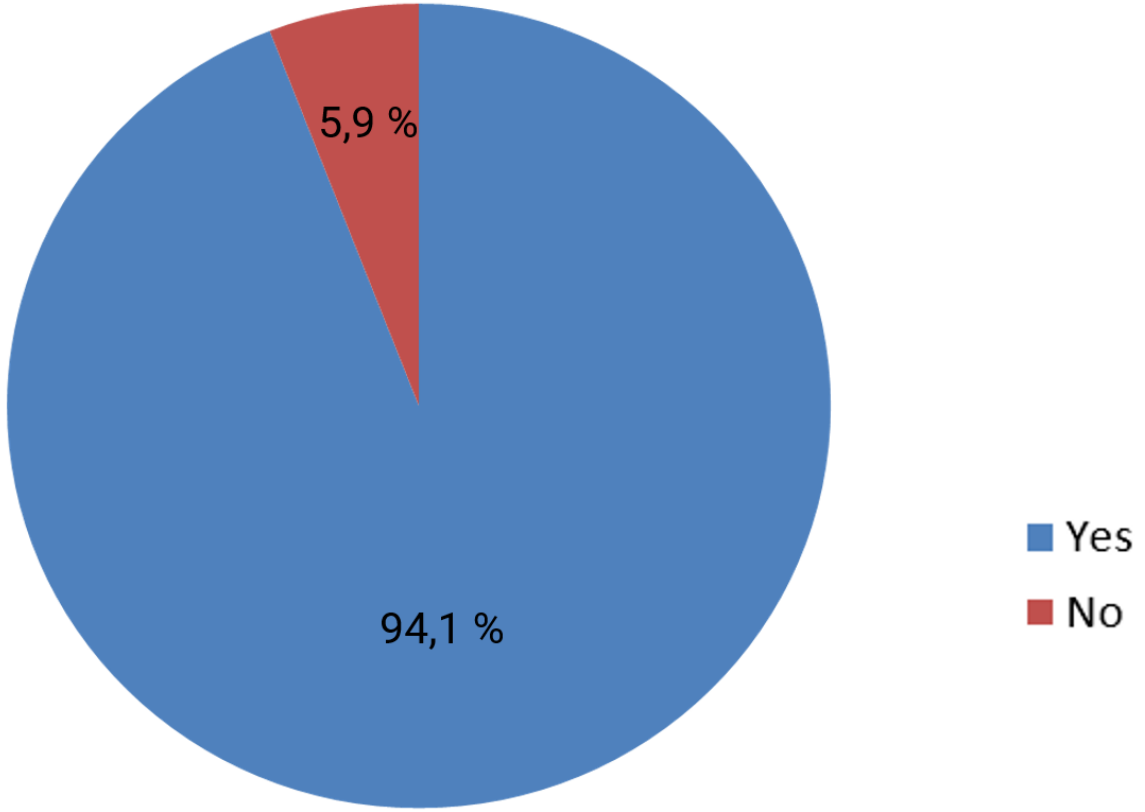
Has your institution used or does it use any CLMS products?



Activities of the NCP

Objective: collection of user needs

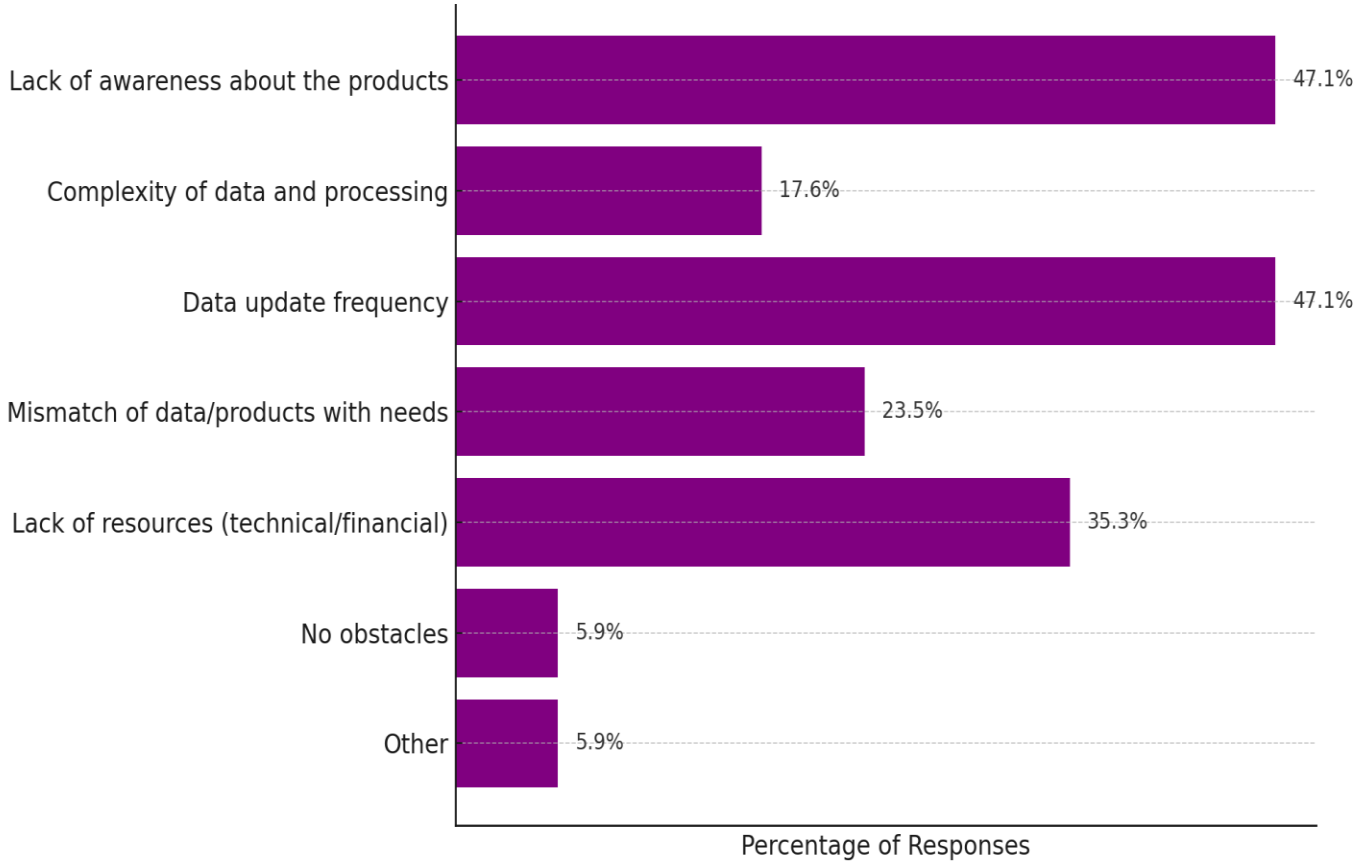
Does yor institution use
other Copernicus data/services?



Activities of the NCP

Objective: collection of user needs

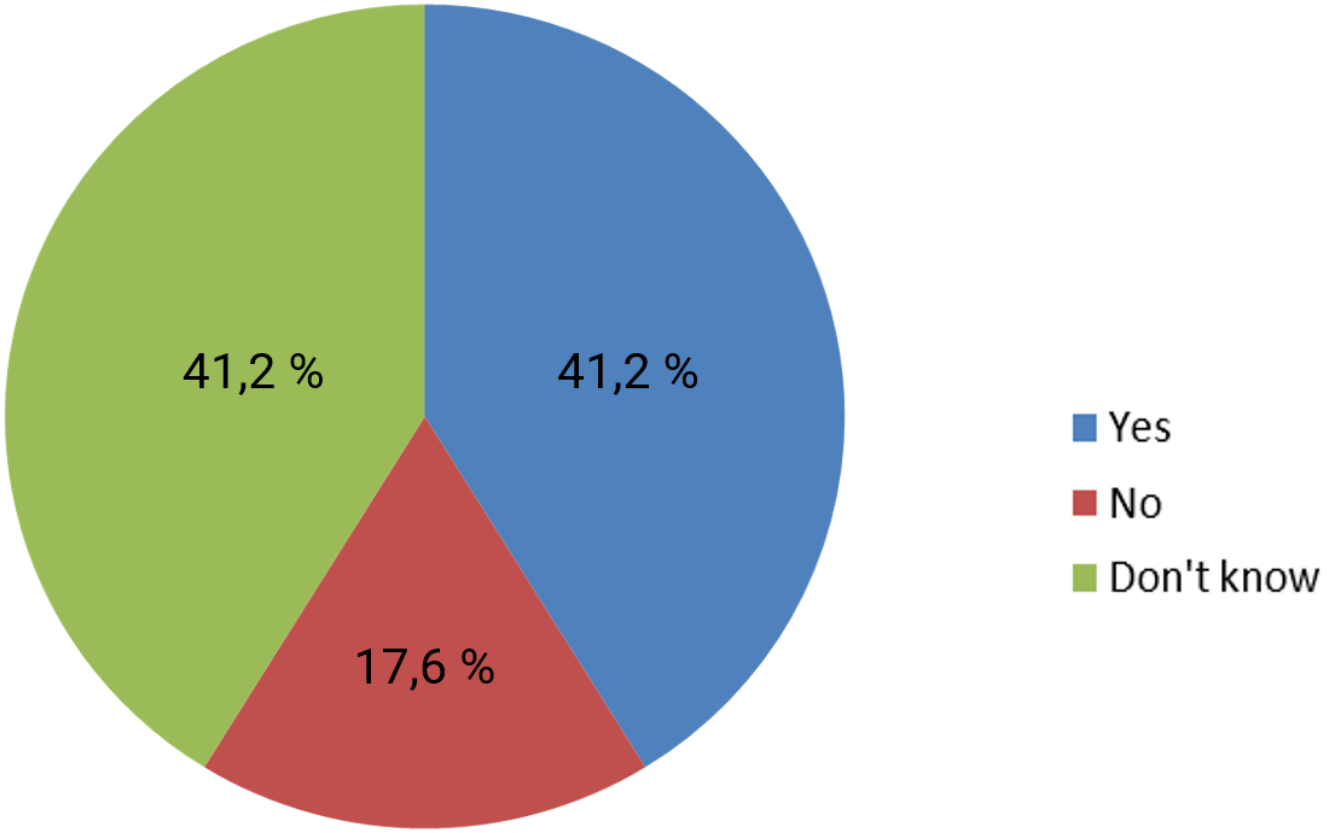
What are the main obstacles in using CLMS in your institution?



Activities of the NCP

Objective: collection of user needs

Would you need additional information, training or guidlines for using CLMS products?



Activities of the NCP

Kick-off meeting
to raise awareness
about the CLMS products
(82 participants)

AGENDA

10.00 – 10.10	**Welcome** *Estonian Environment Agency*
10.10 – 10.50	**Introduction of novelties of CLMS** *European Environment Agency*
10.50 – 11.30	**Monitoring of EU policy objectives in EEA: land use and land cover products, data and classifications used** *European Environment Agency*
11.30 – 12.10	**Preparations for Land Monitoring System in Estonian Environment Agency** ● **Environmental and climate objectives related to land and soil use** *Estonian University of Life Sciences* ● **Update of digital soil map** *Estonian Environment Agency* ● **Methodology for creating a forest mask** *Estonian University of Life Sciences* ● **NFI as provider of in-situ data** *Estonian Environment Agency*
12.10 – 12.30	**Short break**
12.30 – 13.00	**Vegetation monitoring in CLMS** *European Environment Agency*
13.00 – 13.40	**Exchange of land use and land cover data between EEA and member states** *European Environment Agency*
13.40 – 13.50	**Wrap-up** *Estonian Environment Agency*

Activities of the NCP

Next steps

- **Training Sessions**

• Participate in **EEA-organized training sessions**

- **Use Case Stories**

• Identify 2 relevant use cases where CLMS data has been used

- **Final Report**

• Provide feedback on CLMS portfolio improvements

Land Monitoring Service

Thank you!

Copernicus EEA

land.copernicus.eu

Land Monitoring Service

STATUS NCP IN ITALY

NCP General Assembly 2025

Ines Marinosci

22 May 2025

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ISPRA - The Italian Institute for Environmental Protection and Research

- ISPRA is part of a network known as National System for Environmental Protection - SNPA, which is made up of 19 Regional and 2 Autonomous Province's Environmental Protection Agencies (SNPA), established by Regional Laws.
- ISPRA, as the National Focal Point (NFP) of the European Environment Agency (EEA) network Eionet and in accordance with the Eionet network modernization process initiated by the EEA, coordinates the national flow of data for the Land Monitoring Service of the Copernicus programme towards European level.
- As such, it produces high-resolution spatial and thematic land use and cover data and maps that can serve as a national reference for conducting analysis of the state of the territory and landscape and for studying natural and anthropogenic processes.
- ISPRA promotes user uptake actions at both national and local levels, leveraging products and data from the Copernicus Land Monitoring Service (CLMS).

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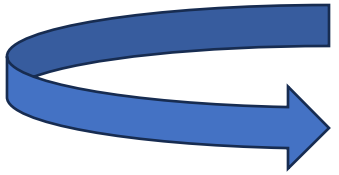
UPTAKE ACTIONS

- Training meetings to SNPA for the project “Italian NRCs LC Copernicus supporting activities for the period 2017-2021” related to production, verification and enrichment activities for Copernicus Land Monitoring Service products (local component 2012, CLC2018, HRLs 2015)
- February 2020: Educational and training workshop on geographic data processing and EO techniques within the CLMS – Liguria Regional Environmental Protection Agency
- June 2020: CLMS thematic workshop – ISMEA Copernicus Academy
- June 2022: Educational and training workshop on Copernicus and EO and geoinformation for the environmental protection and land management – GREEN MED Symposium (general public)



in the meantime……the FPCUP actions…….

FPCUP ACTIONS: Italian projects

Framework Partnership Agreement for Copernicus User Uptake

52% approved (13 projects)

Tier 1 National User Uptake

Tier 2 Global actions

100% approved (10 projects)

88% approved (8 projects)

Tier 3 Business solutions

Most of them specific for CLMS

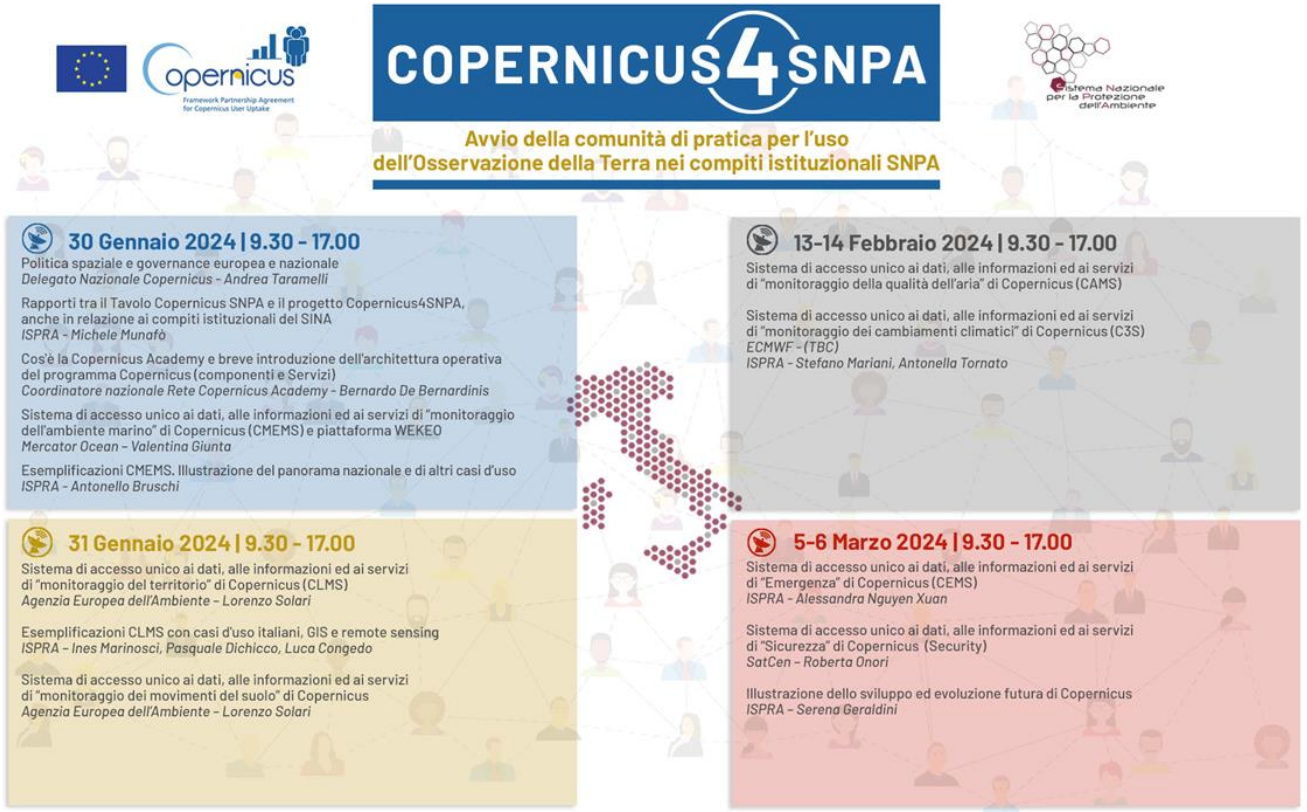
FPCUP ACTIONS: Italian projects

The general aim of the action is to broaden the knowledge and effective use of Copernicus Program within the National System for Environmental Protection (SNPA)

- **6 introduction days of training** to the project participants (**60 Participants** in total);
- **20 specific training** (2 days training on 2 Copernicus Services selected by beneficiaries) – to each local Agency – about 50-100 participants per Agency (**1083 Participants** in total)

All EEs were involved

FPCUP: *User uptake actions to National System for Environmental Protection (SNPA)*



About 200h training on Copernicus Services

FPCUP ACTIONS: Italian projects

CLMS training in 15 Regions

FPCUP: *User uptake actions to National System for Environmental Protection (SNPA)*

COPERNICUS4SNPA

Avvio della comunità di pratica per l'uso dell'Osservazione della Terra nei compiti istituzionali SNPA

30 Gennaio 2024 | 9.30 - 17.00
Politica spaziale e governance europea e nazionale
Delegato Nazionale Copernicus - Andrea Taramelli

Rapporti tra il Tavolo Copernicus SNPA e il progetto Copernicus4SNPA, anche in relazione ai compiti istituzionali del SINA
ISPRA - Michele Munafò

Cos'è la Copernicus Academy e breve introduzione dell'architettura operativa del programma Copernicus (componenti e Servizi)
Coordinatore nazionale Rete Copernicus Academy - Bernardo De Bernardinis

Sistema di accesso unico ai dati, alle informazioni ed ai servizi di "monitoraggio dell'ambiente marino" di Copernicus (CMEMS) e piattaforma WEKEO
Mercator Ocean - Valentina Giunta

Esemplificazioni CMEMS. Illustrazione del panorama nazionale e di altri casi d'uso
ISPRA - Antonello Bruschi

31 Gennaio 2024 | 9.30 - 17.00
Sistema di accesso unico ai dati, alle informazioni ed ai servizi di "monitoraggio del territorio" di Copernicus (CLMS)
Agenzia Europea dell'Ambiente - Lorenzo Solari

Esemplificazioni CLMS con casi d'uso italiani, GIS e remote sensing
ISPRA - Ines Marinosci, Pasquale Dichicco, Luca Congedo

Sistema di accesso unico ai dati, alle informazioni ed ai servizi di "monitoraggio dei movimenti del suolo" di Copernicus
Agenzia Europea dell'Ambiente - Lorenzo Solari

13-14 Febbraio 2024 | 9.30 - 17.00
Sistema di accesso unico ai dati, alle informazioni ed ai servizi di "monitoraggio della qualità dell'aria" di Copernicus (CAMS)

Sistema di accesso unico ai dati, alle informazioni ed ai servizi di "monitoraggio dei cambiamenti climatici" di Copernicus (C3S)
ECMWF - (TBC)
ISPRA - Stefano Mariani, Antonella Tornato

5-6 Marzo 2024 | 9.30 - 17.00
Sistema di accesso unico ai dati, alle informazioni ed ai servizi di "Emergenza" di Copernicus (CEMS)
ISPRA - Alessandra Nguyen Xuan

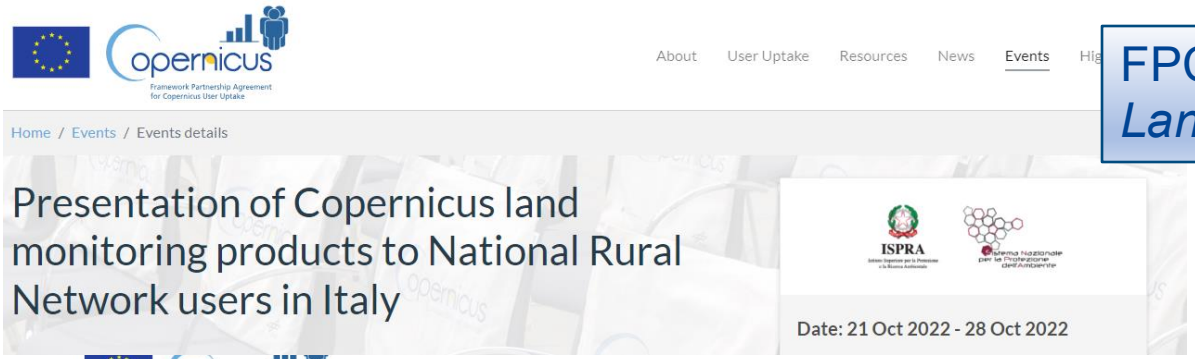
Sistema di accesso unico ai dati, alle informazioni ed ai servizi di "Sicurezza" di Copernicus (Security)
SatCen - Roberta Onori

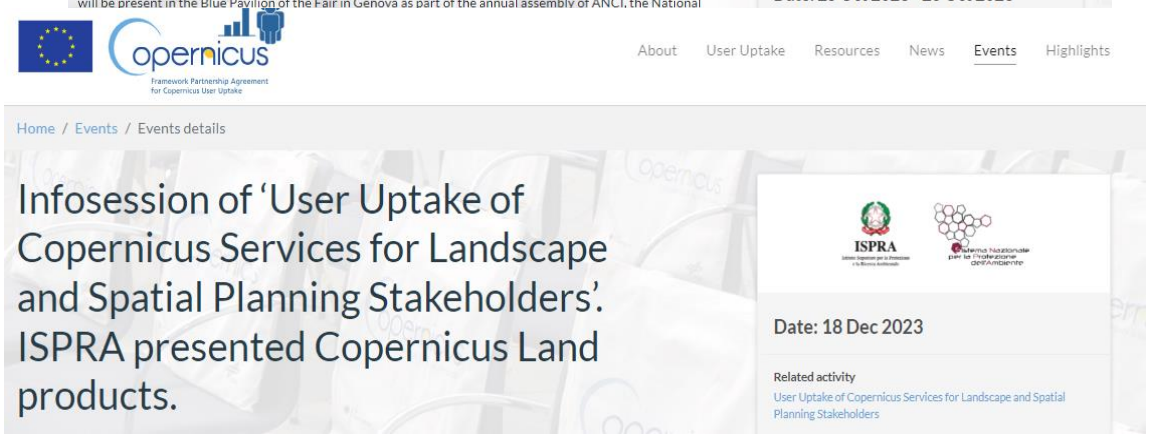
Illustrazione dello sviluppo ed evoluzione futura di Copernicus
ISPRA - Serena Geraldini

About 200h training on Copernicus Services

FPCUP ACTIONS: Italian projects

FPCUP: *User Uptake of Copernicus Services for Landscape and Spatial Planning Stakeholders*



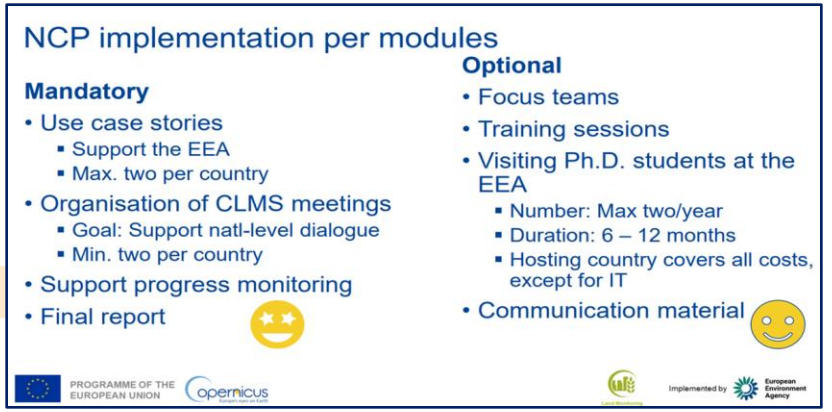


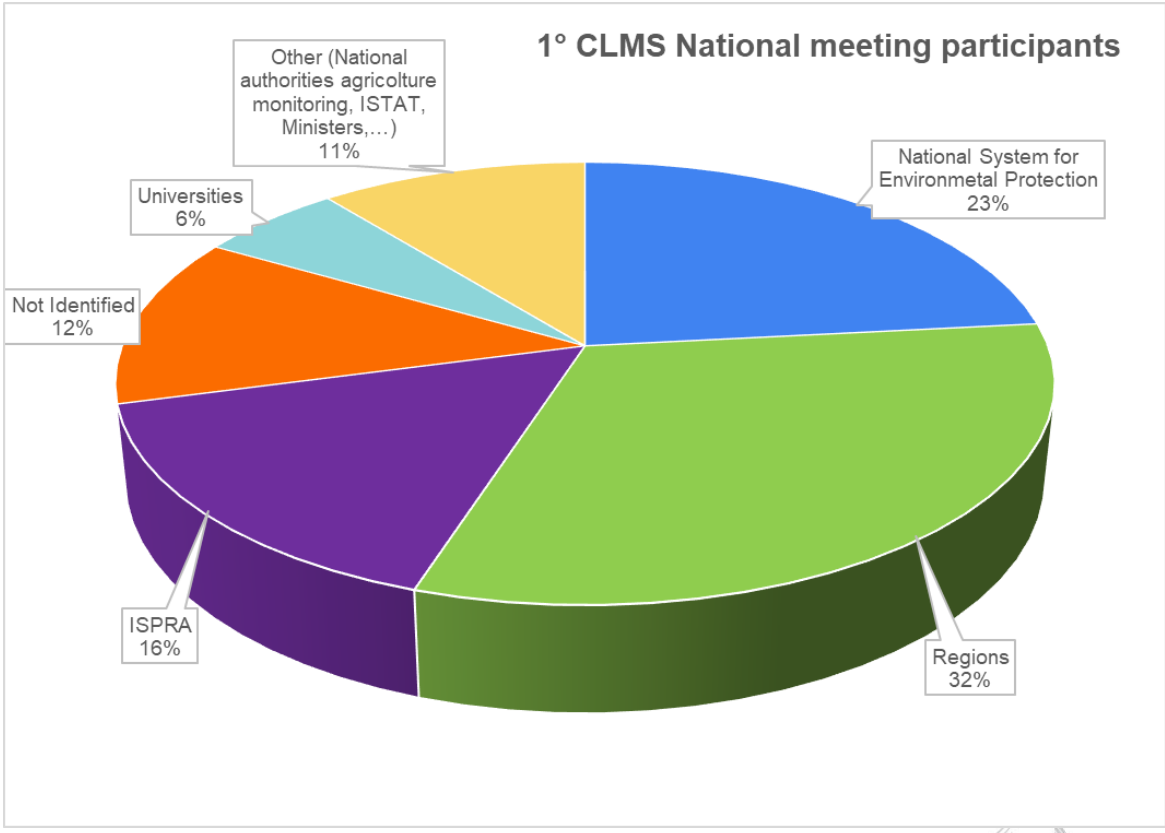
NCP: state of the art

NCP: mandatory modules

2025

27 February	**5 March**	17 March
FPCUP workshop (with NCP information)	1° CLMS National meeting (CLMS products overview)	WORKSHOP National Collaboration Across The Copernicus Service





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NCP: mandatory modules

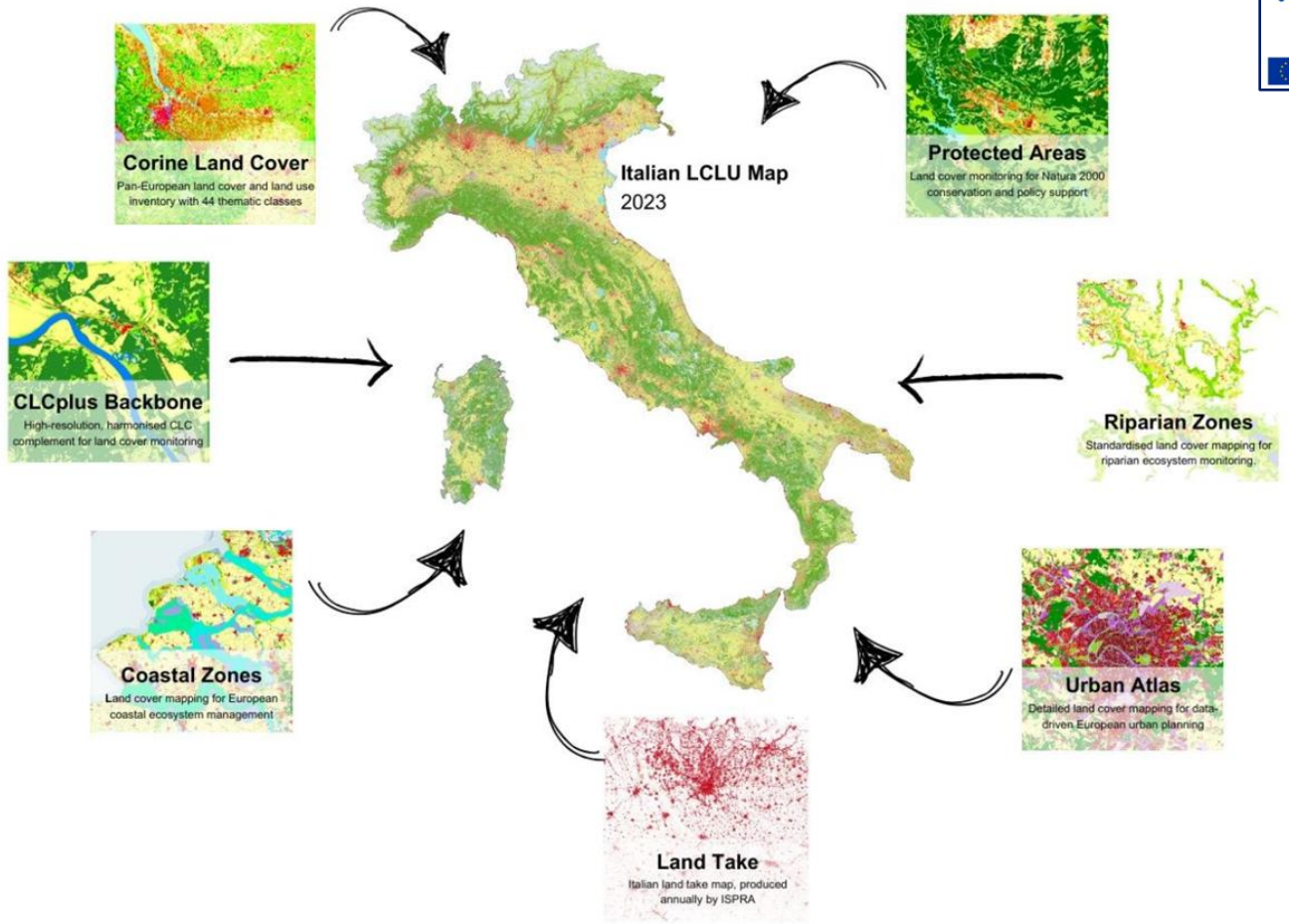
NCP implementation per modules

Mandatory

- Use case stories
  - Support the EEA
  - Max. two per country
- Organisation of CLMS meetings
  - Goal: Support natl-level dialogue
  - Min. two per country
- Support progress monitoring
- Final report

Optional

- Focus teams
- Training sessions
- Visiting Ph.D. students at the EEA
  - Number: Max two/year
  - Duration: 6 – 12 months
  - Hosting country covers all costs, except for IT
- Communication material



Development of CLMS-based use case story: National land cover map based on integrated CLMS and national and regional products

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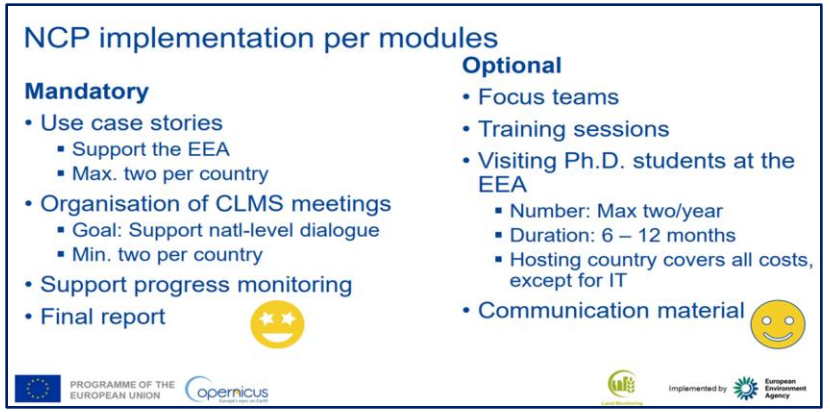
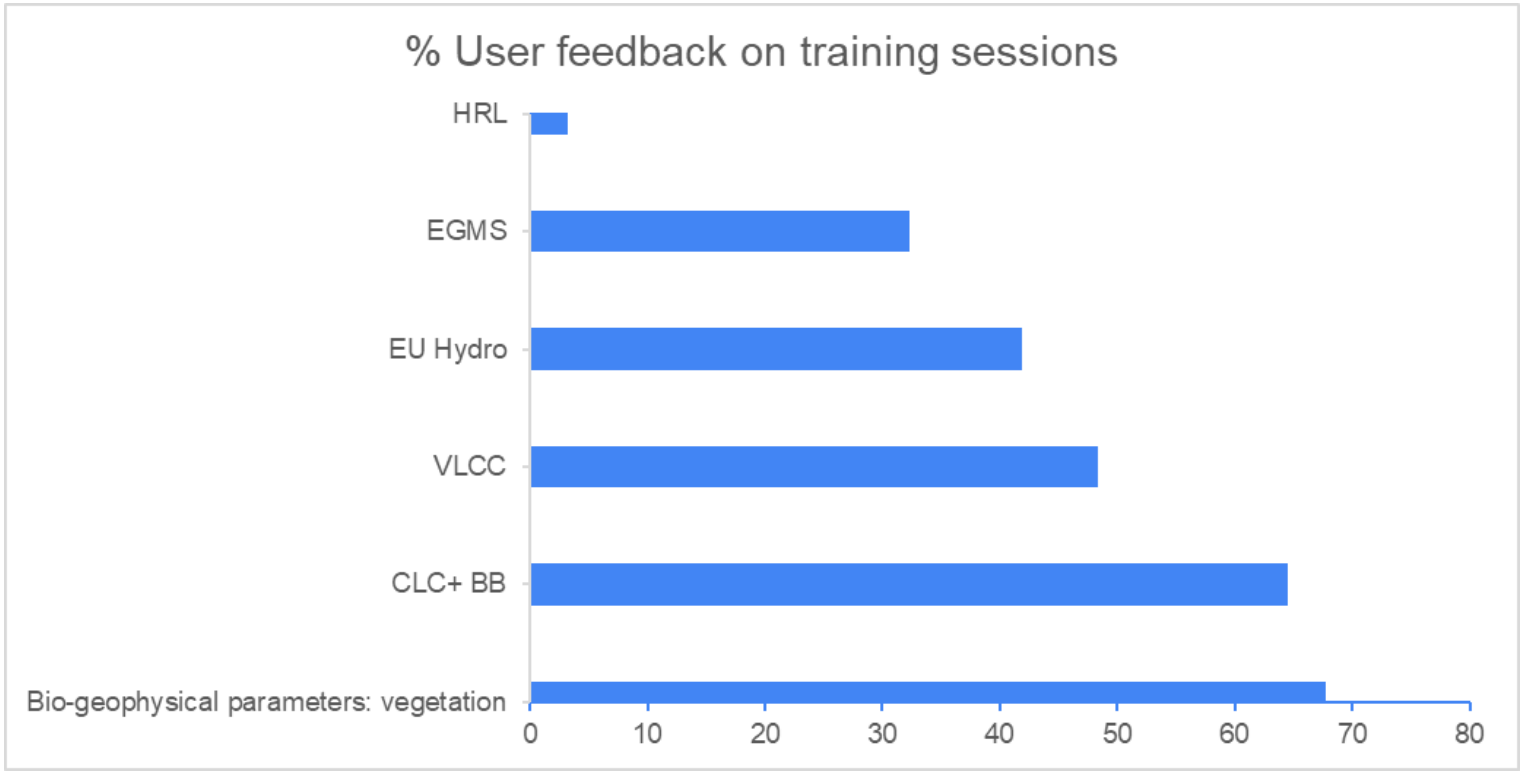
NCP: optional modules

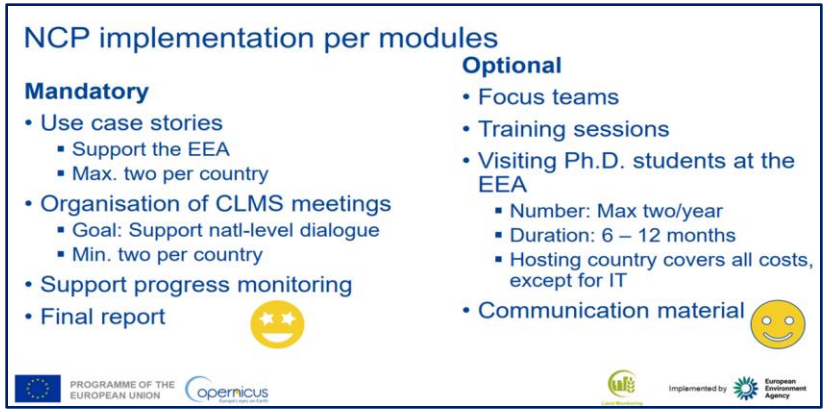
- **USER FEEDBACK TRAINING SESSIONS**





NCP: optional modules

Communication material: web pages



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NCP: optional modules

Communication material: social channel

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🌍 🚀 1° Meeting Nazionale del National Collaboration Programme per il Copernicus Land Monitoring Service 🌳

🗓️ Il 5 marzo 2025, dalle 10:00 alle 12:00, si terrà il primo workshop online dedicato agli Utenti Istituzionali #CLMS, che avranno occasione di approfondire l'uso dei dati e prodotti #Copernicus Land:

- ✅ Approfondimenti sui dati e prodotti CLMS
- ✅ Confronto diretto con esperti del settore
- ✅ Opportunità di networking e collaborazione

#CopernicusLand #EarthObservation #Innovation
Copernicus EEA ISPRA

Altri post

Forum Nazionale degli Utenti Copernicus
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👉 E' disponibile la documentazione del 1° Meeting Nazionale del National Collaboration Programme per il Copernicus Land Monitoring Service che si è tenuto lo scorso 5 marzo.

📍 Visita la pagina dedicata al NCL CLMS e visualizza la registrazione dell'evento e le presentazioni 📥
https://lnkd.in/ds7_UG4Z

#CopernicusLand
#EarthObservation
#Innovation
Copernicus EEA ISPRA

National Collaboration Programme

9 2 diffusioni post

Consiglia Commenta Diffondi il post Invia

NCP implementation per modules

Mandatory
- Use case stories
  - Support the EEA
  - Max. two per country
- Organisation of CLMS meetings
  - Goal: Support natl-level dialogue
  - Min. two per country
- Support progress monitoring
- Final report

Optional
- Focus teams
- Training sessions
- Visiting Ph.D. students at the EEA
  - Number: Max two/year
  - Duration: 6 – 12 months
  - Hosting country covers all costs, except for IT
- Communication material

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🌍 Azioni con le agenzie europee gestori dei Servizi Copernicus e l'hackathon SpazioCulturale - sfida per giovani talenti 🌍

💡 Stati Generali dell'Innovazione, coordinatore nazionale della Campagna delle #alldigitalweeks | All Digital nonché espressione del Forum Nazionale degli Utenti Copernicus per la comunità del Terzo Settore, insieme al Forum Nazionale e ad ISPRA, propongono questo interessante incontro come contributo al tema #adweeks2025: "Competenze digitali per l'occupazione, l'imprenditorialità e l'innovazione"

💡 Le azioni di coordinamento verso l'Europa vedono coinvolti il Copernicus ECMWF, per quanto attinente al Copernicus Atmosphere Monitoring Service (#CAMS) e al Copernicus Climate Change Service (#C3S), e l'European Environment Agency, per il Copernicus Land Monitoring Service (#CLMS), attraverso la sottoscrizione di Memorandum of Understanding e specifiche iniziative nazionali #NCPCAMS-IT #NCPC3S-IT #NCPCLMS-IT

💻 Tra le azioni di promozione rientra l'Hackathon SpazioCulturale, un laboratorio sotto forma di concorso di idee, organizzato dall'ECMWF, dal Forum Nazionale degli Utenti Copernicus e dall'ISPRA, con il supporto e la sponsorizzazione da parte di EU Project SD-WISHEES e-GEOS e Planetek Italia

🎙️ Interverranno Antonella Tornato Stefano Mariani e Ines Marinosci di ISPRA

📌 Evento online – L'appuntamento è domani, venerdì 4 aprile, ore 10:00 – 10:30 Per registrarsi: https://lnkd.in/dM8iw8iB

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NCP: optional modules and planning activities

- **FOCUS TEAMS** (tbd). Must the Focus teams be proposed by the country? Do you have suggestion?
- **PhD visit** (confirmed – the scientific proposal is being finalised for submission to IUSS Scientific Board, responsible for approving PhD students' visiting periods abroad)
- Analyse user feedback **training sessions** that will be organised by EEA (autumn 2025?)

NCP: administrative issue

Financial instruments (table 6.1, Annex I)

Task	Type of task	Duration of woarkload [days]	Funds/country [€]
1) NCP FP dialogue with EEA during NCP implementation	FP coordination task	13	9,100
2) Development of two CLMS-based use cases	Mandatory module	2	1,400
3) Organisation of at least two CLMS meetings	Mandatory module	18	12,600
4) Supporting monitoring of progress and impact (see Table 4.1)	Mandatory module	3	2,100
5) Submit final report to the EEA	Mandatory module	3	2,100

Internal administrative procedure is not easy……

- EEA has sent the *order form* and the *application form* for the reimbursement
- ISPRA has prepared a formal document with the description of activities/budget (Annex I) to be signed Director General
- ISPRA administrative offices have issued a positive feedback
- ISPRA is going to sign the *order form* and the *application form* for the reimbursement

Ines Marinosci & Antonella Tornato

ines.marinosci@isprambiente.it
antonella.tornato@isprambiente.it

ISPRA - Italian Institute for Environment Protection and Research

Land Monitoring Service

Thank you!

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National Collaboration Programme - Spain

2025 CLMS NCP - General Assembly

Samuel Parada Bustelo, IGN - Spain

May 22, 2025. Krakow - Poland

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NCPs – A general view

- Each NCP may have a different purpose depending on specific goals of the EU Agencies involved
- NCP CLMS (IGN): activities on dissemination of CLMS data and their integration with national datasets (e.g. Coastal Focus Team)

Spanish NCP – Motivation

- To contribute to the evolution of CLMS products through Spanish needs and expertise.
- To ensure the alignment between Spanish and CLMS data.
- To keep demonstrating the relevance of Spanish reference data for CLMS.
- To foster CLMS dissemination and user uptake among Spanish stakeholders.
- … and to take an active role in the CLMS community!

Spanish NCP – Setup and Launch Process

- Identification of the national point of contact: EIONET ‘Support to CLMS’ – IGN
- First contact with the EEA in 2023; initial ideas presented at the CLMS GA in June 2024
- User consultation launched
  - Engagement with national CUF representatives and Copernicus service coordinators
  - Involvement of EIONET NFP + Land, Copernicus Relays/Academies (Copernicus Ambassadors)
  - Outreach via email to ~80 experts from diverse fields (e.g. environment, climate change, coastal zones, cadastre, urban planning, academia, …)
- Definition of the Spanish NCP approach in September 2024
- Signature of the MoU between IGN/CNIG and EEA on October 7, 2024 (duration: 18 months)

Spanish NCP Proposal – Structure and scope

- **Mandatory modules**
  - Use cases ✅
  - Organization of national-level meetings (at least 2: kick off ✅ and closing ❌)
  - Final report (to be delivered ❌)
  - Supporting progress monitoring ✅

- **Optional modules**
  - Focus teams ✅
  - Training sessions ❌
  - ~~Visiting PhD students~~
  - ~~Communication material~~

•Only in case of clearly expressed user interest
•No direct funding available, which may limit the scope (e.g. number of participants, hours, materials, etc.)

1. Use Cases (mandatory)

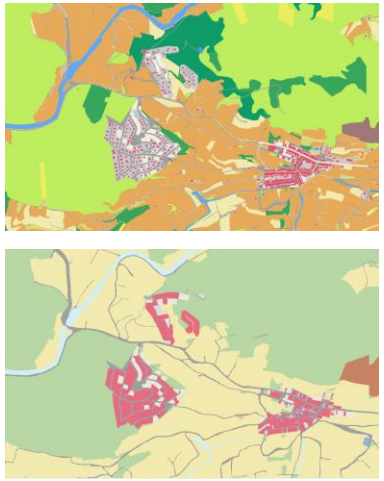
- Example of CLMS data usage in Spanish applications.
- The purpose is twofold:
  - Improvement of CLMS datasets through the use of Spanish national data (*bottom-up*)
  - Spanish applications using CLMS data or improving national datasets with CLMS inputs (*top-down*)
- 4 use cases identified, with the possibility of adding more if needed:
  - A short description (2 pages) prepared by the user
  - Use cases were already reported to the EEA, including a contact person per use case

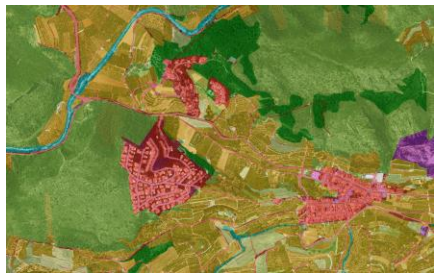
1. Use cases – Improving CLMS Products Using Spanish National LC/LU Data

- The IGN's high-resolution SIOSE database supports the refinement of CLMS products such as CORINE Land Cover.
- Using SIOSE geometries and thematic classes, omitted polygons (~25 ha) and classification errors can be detected (e.g., reclassification from class 323 to 312).
- A pilot project for CLC24 was developed, based on an enriched version of CLC18 using SIOSE AR 2017 data.

SIOSE LC

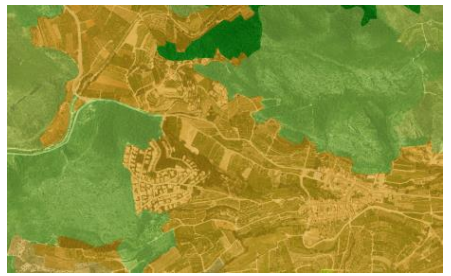
SIOSE LU



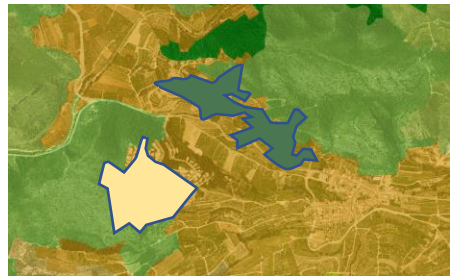


SIOSE translated to CLC nomenclature

&



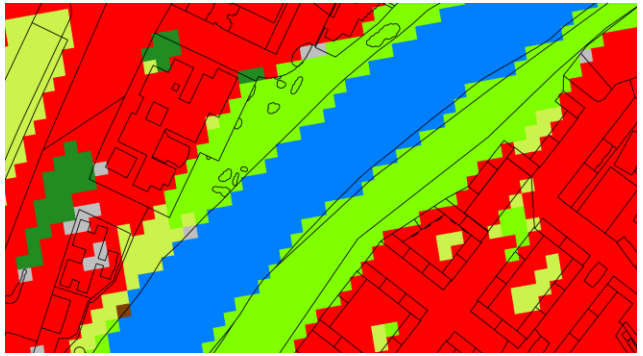
Traditional CLC



Enhanced CLC

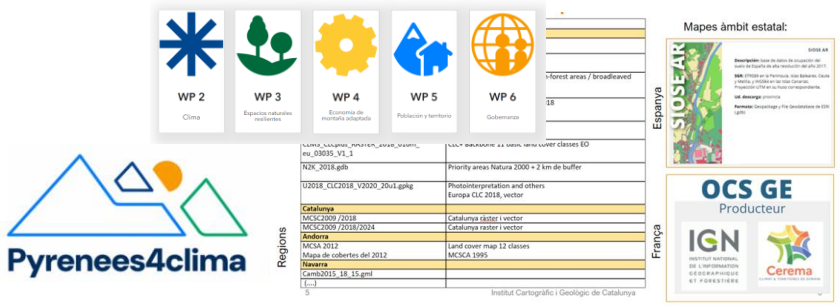
1. Use cases – Enhancing National Datasets using CLMS Data

- CLMS datasets (e.g., CLC+ Backbone, HRLs) can be used to enrich national geospatial information due to their higher temporal and thematic resolution.
- Example: detection of misclassified urban areas in SIOSE (e.g., water or open land), reclassified as green urban zones (ZAU) using CLC BB raster.
- A refinement workflow has been **implemented in the production of SIOSE AR 2020**, using HRLs IMD and TCD to correct misclassifications in green urban areas.

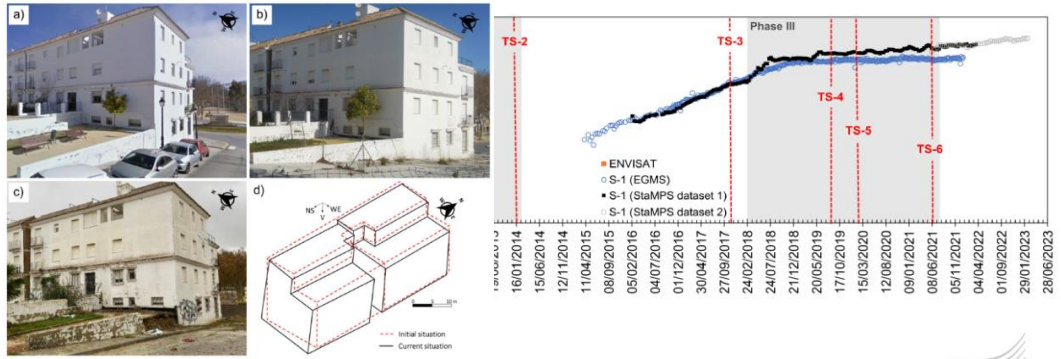


1. Use cases – applications of CLMS data

- **PYRENEES4CLIMA**
  - Project led by the Pyrenean Climate Change Observatory (OPCC-CTP), aiming to strengthen the resilience of the Pyrenees to climate change and foster actions aligned with European policy goals. The initiative involves institutions from Spain, France, and Andorra (including the *Institut Cartogràfic i Geològic de Catalunya*), and relies on cross-border datasets.



- **InSAR techniques for slow moving landslide after stabilization works**
  - Study conducted by the *Geological and Mining Institute of Spain, IGME* to assess the effectiveness of stabilization measures on a slow-moving landslide in Arcos de la Frontera (Cádiz). The analysis was based on Sentinel-1 InSAR data and results were compared with EGMS values.



2. Organization of National-Level Meetings

- Two CLMS meetings planned within the Spanish NCP framework (kick off and closing).
  - Organized in coordination with other Copernicus communities.
  - Topics may include: CLC (CLC+ instances & CLC2024), EGMS, in-situ, ... (open for further contributions).
- First physical meeting held on **10th December 2024** at IGN Headquarters (Madrid)
  - Main goal: to present the Spanish NCP and engage with national users.
  - Organized by IGN and the Spanish Remote Sensing Association (AET).
  - Attendance: EEA, ETC-DI, CUF-ES, Spanish Space Agency (AEE), Ministries, academia, …
  - Summary report submitted to EEA and featured on website

3. Supporting progress monitoring

- Monitoring the progress and impact of the NCP (in collaboration with EEA, ETC/DI, and participating countries).
- Key Performance Indicators (KPIs) will be completed by each country to assess outcomes.

4. Final report

- Comprehensive document summarizing all activities and results of the NCP
- Contribution to the development of the CLMS portfolio through feedback on current products and user needs.
- Assessing the implementation of the NCP: identifying impacts, drawing conclusions, lessons learnt, and reflections for future improvements.

Optional modules – Training sessions – Proposed topics

- **European Ground Motion Service (EGMS)**
  - Applications: landslides, mining, land management, infrastructure, …
  - Participants should become familiar with sub-products (ORTHO, CALIBRATED, BASIC) both in the online viewer and within a local GIS environment.
- **Bio-geophysical parameters**
  - Topics may include: soil moisture, land surface temperature, vegetation (with a focus on productivity), and water-related metrics.
- **Other topics?** Open to suggestions from the user community.
- **Audience:** Spanish experts can join sessions alongside participants from other countries. Training should not be limited to public institutions; also open to researchers and industry professionals.

Coastal Focus Team – Scope & Tasks

- **Main goal**: reactivation of a national focus team on coastal topics within the NCP framework, ensuring coordination across terrestrial and marine domains.
- **Focus team concept**: developed with the national coordinator of CMEMS (Puertos del Estado) and DG Coast and Sea (Environmental Ministry). Aims to consolidate coastal applications in Spain and contribute to a shared NCP Phase I document.
- Format and coordination:
  - Task coordinator + contributors
  - On-demand meetings and final deliverable
  - Coordinated by IGN, Puertos del Estado, DG Coast and Sea and supported by EEA and ETC
  - Involvement of different sectors: marine, land, environment, oceanography, transport, safety, academia...
- Topics proposed:
  - Identification of national coastal **use cases** and assessment of the Coastal Thematic Hub's relevance and alignment with Spanish priorities.
  - Management of the **maritime–terrestrial public domain** using national and Copernicus data.
  - Delivery of **training sessions** for Spanish coastal users (from ETC and/or EEA)
- Timeline: **May 2025,** first deliverable to be shared with ETC ahead of CLMS GA (20–22 May)
- Open question: Is there potential for cross-border cooperation with other national teams?

Coastal Focus Team – National Use Cases

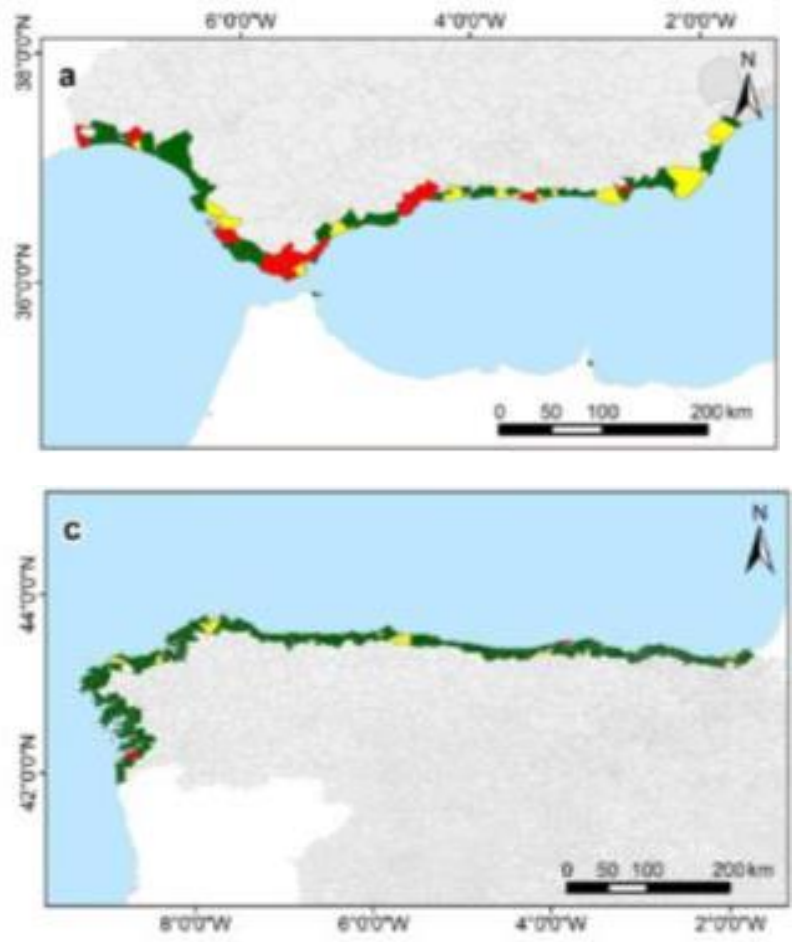
- The identification and documentation of coastal use cases is a key task of the Focus Team.
- These examples showcase the relevance of Copernicus data in addressing coastal challenges in Spain.
- All use cases have been compiled in a dedicated report shared with ETC and EEA.
- Total of 6 use cases from: MITECO, IGME, Puertos del Estado, IGN, INTECMAR, SOCIB

Monitoring coastal erosion due to sea level rise and human activities (DG Coast & Sea, MITECO)

- **Purpose**: to monitor and analyze coastal erosion driven by sea level rise and human pressures such as urbanization and maritime traffic, in order to support spatial planning and climate adaptation strategies.
- Key contributions of Copernicus data:
  - Enables **risk assessment** of erosion-prone areas
  - Identifies **vulnerable coastal zones**
  - Supports **prediction of future erosion trends** through long-term monitoring
  - Facilitates **decision-making** for coastal infrastructure and management
- Related EU policies: Integrated coastal zone management (ICZM)
- Copernicus services involved: CLMS, CMEMS, C3S, satellite data

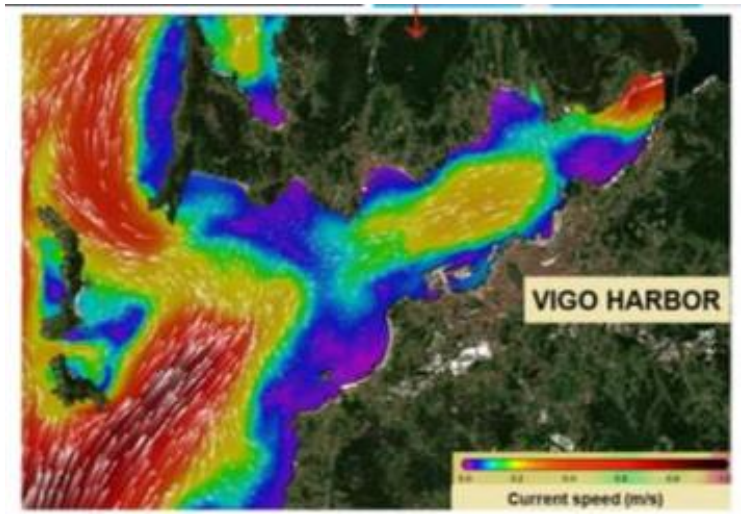
Assessing Socio-Economic Impacts of Ground Movements in Coastal Municipalities (IGME)

- **Purpose**: to evaluate the vulnerability of coastal municipalities in Spain to land subsidence and other ground movements, and to estimate potential socio-economic impacts on infrastructure and urban development.
- Key contributions of Copernicus data:
  - **EGMS InSAR** data provides consistent ground deformation measurements
  - Identifies **areas of high vulnerability**, especially in Andalusia and the Canary Islands
  - Supports the design of **risk mitigation strategies**
  - Enhances long-term **resilience planning** and infrastructure protection in coastal zones
- Related EU policies:
  - Climate Change Adaptation and Disaster Risk Reduction
  - Sustainable Urban Planning and Land Use
  - Critical Infrastructure Resilience
- Copernicus services involved: CLMS (EGMS component)



Enhancing Harbor Forecasting with the CLMS River Water Level Product (PdE)

- **Purpose**: To improve coastal ocean forecasting and harbor management by integrating freshwater discharge data (from rivers) into operational models, enhancing circulation predictions in port areas.
- Key contributions of Copernicus data:
  - The **River Water Level** product (derived from Sentinel-3 altimetry) improves **coastal circulation forecasts**
  - Supports **better port management** and **water quality monitoring**
  - Strengthens **risk mitigation** for events such as oil spills or extreme rainfall
- Related EU policies:
  - Marine Strategy Framework Directive (MSFD)
  - Maritime Spatial Planning (MSP)
  - Water Framework Directive (WFD)
- Copernicus services involved: CLMS, CMEMS

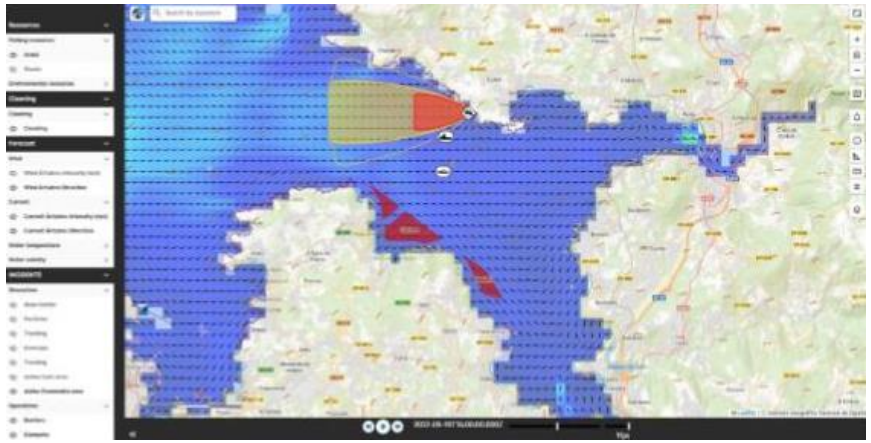


Monitoring Coastal Water Quality for Pollution Source Detection (IGN)

- **Purpose**: to improve the monitoring and management of coastal water quality by using Copernicus data to detect pollution sources, assess ecosystem health, and support environmental planning.
- Key contributions of Copernicus data:
  - Tracks key indicators: **chlorophyll-a**, **nutrient levels**, **salinity**, and **sea surface temperature**
  - Enables **real-time assessment** of pollution events and water quality
  - Supports **targeted environmental actions** and **ecosystem protection**
- Related EU policies:
  - Integrated Coastal Zone Management (ICZM)
  - Marine Strategy Framework Directive (MSFD)
  - Water Framework Directive (WFD)
- Copernicus services involved: CLMS, CMEMS

Ingestion of land resources in a Common Operational Picture tool for the Galician Contingency Plan against accidental marine pollution (INTECMAR)

- **Purpose**: to design a regional contingency plan that addresses risks such as flooding, erosion, and extreme coastal events by leveraging Copernicus data for preparedness and response.
- Key contributions of Copernicus data:
  - Supports **vulnerability mapping** and identification of high-risk areas
  - Enhances **early warning systems** and response protocols
  - Provides input for **impact forecasting** and simulation models
- Related EU policies:
  - Disaster Risk Reduction (DRR) strategies
  - EU Civil Protection Mechanism
  - Integrated Coastal Zone Management (ICZM)
  - Climate Change Adaptation frameworks
- Copernicus services involved: CLMS, CMEMS, CEMS



TIAMAT Marine Observatory for Adaptive Management in the Cabrera MPA (SOCIB)

- **Purpose**: to support adaptive and climate-resilient management of the **Cabrera Maritime-Terrestrial National Park** (MPA) through a dedicated marine observatory that integrates Copernicus Marine Service data for real-time monitoring, prediction, and decision support.
- Key contributions of Copernicus data:
  - Real-time and 10-day forecasts of **extreme ocean events** (e.g. marine heatwaves)
  - Long-term trend analysis of **climate change impacts** on marine ecosystems
  - Continuous monitoring of key indicators: **SST**, **salinity**, **chlorophyll-a**, **sea level**, **currents**, **wind**
  - Basis for the future **Digital Twin** of the Cabrera MPA (DTO-Cabrera), enabling predictive simulations and "what-if" scenario planning
- Related EU policies:
  - EU Biodiversity Strategy for 2030 (MPA 30x30 target)
  - Marine Strategy Framework Directive (MSFD)
  - EU Mission “Restore our Ocean and Waters by 2030”
  - EU Digital Strategy (DestinE)
- Copernicus services involved: CMEMS

The **TIAMAT Observatory Cabrera** facilitates the continuous monitoring of the marine environment in the Cabrera Archipelago Maritime-Terrestrial National Park in the Balearic Islands. This tool provides timely information about the ocean state and variability, through the automated monitoring and visualization of ocean variables and indicators, from daily to interannual scales.

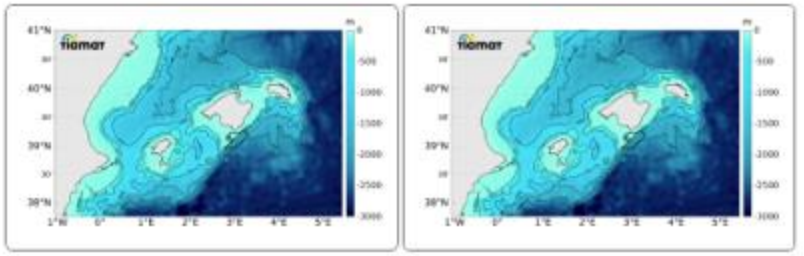
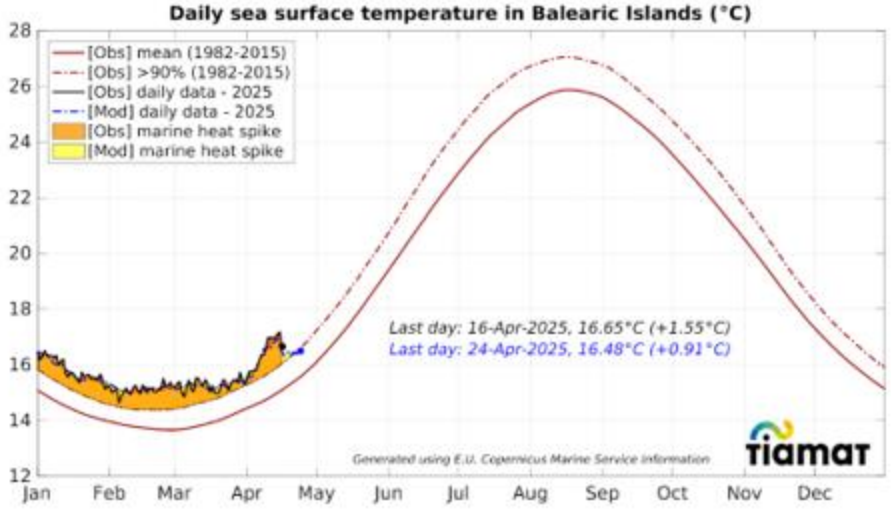


Figure 1: Bathymetry (in m) and delimitation of the Cabrera Archipelago Maritime-Terrestrial National Park in the region of the Balearic Islands (left) and the area of Cabrera (right).



Coastal Focus Team – Key Findings and Lessons Learnt

- Copernicus products are relevant for national coastal applications, but often **underused** due to limited awareness or technical capacity.
- **Combining Copernicus products with national/local datasets** significantly improves the accuracy and usability of derived products.
- National use cases show **high demand for multi-thematic data integration** (e.g. land, marine) and **cross-service synergies** (CLMS–CMEMS–C3S).
- Several use cases are currently theoretical but could be extended to operational applications if interest or institutional support emerges.
- Use cases are directly connected to relevant **EU policy frameworks**, showing the potential of Copernicus to support climate adaptation and marine conservation efforts.
- Capacity building remains crucial: there is **interest in targeted training** for public authorities, researchers, and industry.
- Recommendations include:
  - Ensure continuity and technical transparency of coastal products
  - Promote operational uptake via training, and better documentation
  - Foster cooperation between EU and national coastal observatories
  - **Consider designing CLMS products with broader thematic scope** or in more adaptable formats, to better support diverse applications.

Next Steps – Spanish NCP and Coastal Focus Team

- Spanish NCP
  - Finalization of the mandatory **final report** (early 2026)
  - Completion of **Key Performance Indicators (KPIs)** in coordination with EEA and ETC
  - Further dissemination of **CLMS use cases** across thematic communities (if needed)
  - Monitoring national feedback to **support the evolution of CLMS products**
- Coastal Focus team
  - Delivery of the **first consolidated document** (May 2025), shared with ETC and other NCPs ✅
  - Preparation of potential **training sessions for coastal users**
  - Possible identification of **cross-border synergies** and opportunities for collaboration

Land Monitoring Service

Thank you!

Copernicus EEA

land.copernicus.eu

Land Monitoring Service

Copernicus Land Monitoring Service

The Global Dimension

CLMS General Assembly NCP Day

Michel Massart, DG JRC

22 May 2025

PROGRAMME OF THE EUROPEAN UNION

Copernicus Europe's eyes on Earth

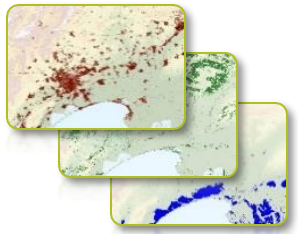
Implemented by European Environment Agency

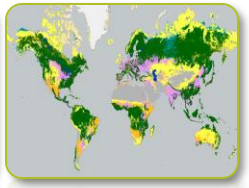
European Commission

CLMS overview

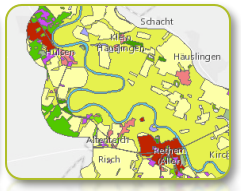
Satellite data

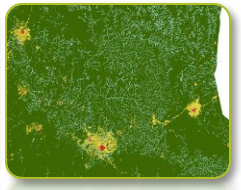

Land cover and land use mapping



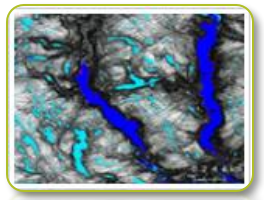
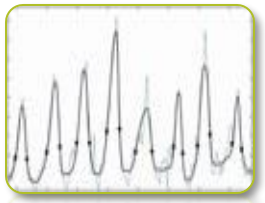


Priority area monitoring

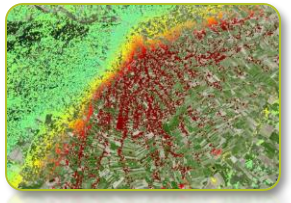
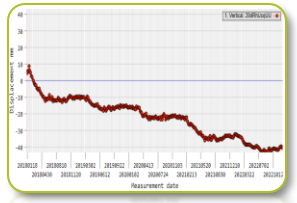


Bio-geophysical parameters

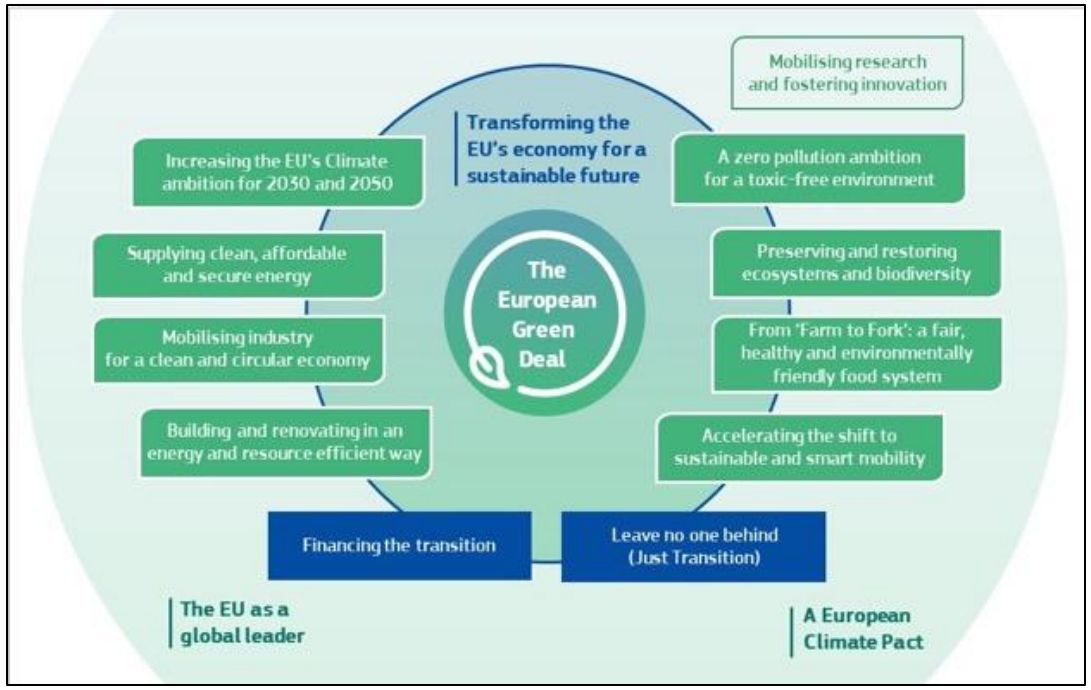




Reference and validation data

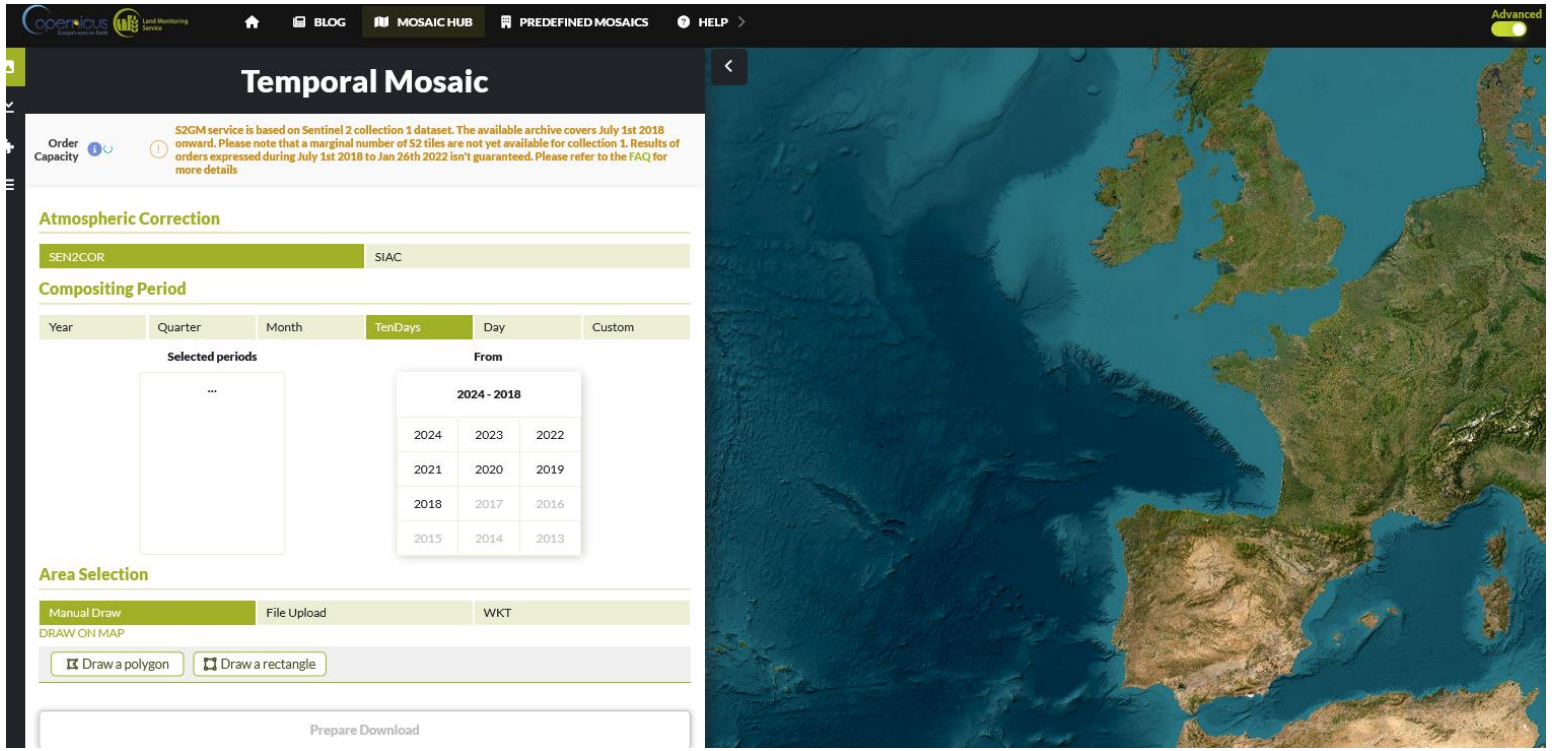

Ground motion monitoring

Policy context



Sentinel 2 Global Mosaics – S2GM



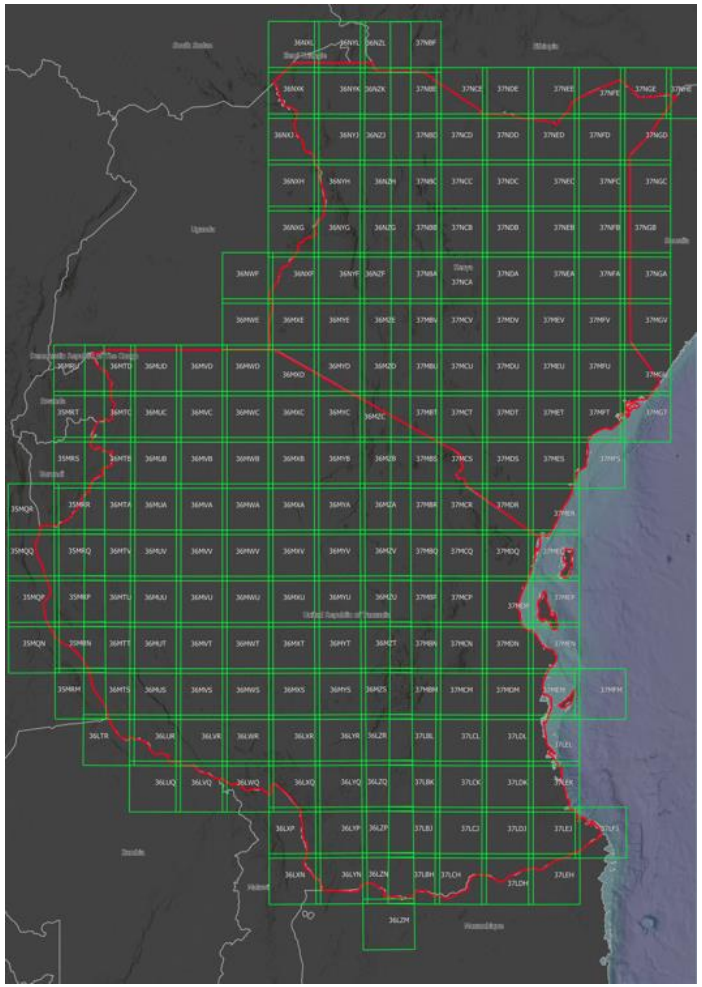
Provision of S2 Mosaics

- Cloud Mask ✅
- RGB = BrightEarth ✅
- NIR-RG = BrightEarth ✅
- Atm. Correction SIAC ✅
- BRDF Correction ✅
- Surface albedo ✅
- LAI/FAPAR – On Going

On demand component

Based on S2 Collection 1 to have same processor for stability products.

Sentinel 2 Global Mosaics – S2GM

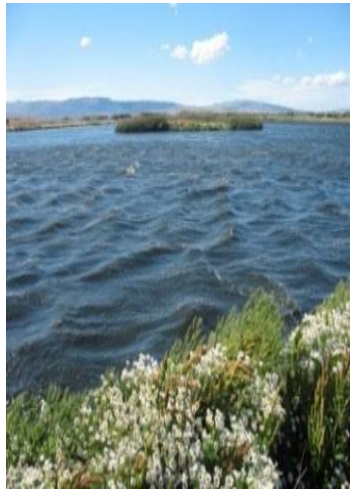


CLMS - Global Biophysical Variables Portfolio

Vegetation

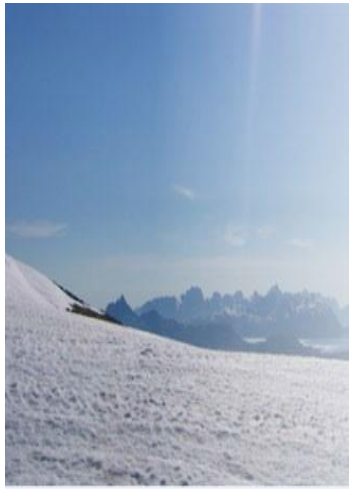
- NDVI
- Leaf Area Index
- Fraction of Absorbed Photo-Active Radiation
- Fraction of vegetation cover
- Burnt Areas
- Dry Matter Productivity
- Net Primary Production
- Land Surface Phenology

Water



- Water Bodies
- River and Lake Ice Extent
- River and Lake Water Level
- Lake Water Quality

Snow



- Snow Cover Extent
- Snow State
- Snow Water Equivalent

Reflect&Temp

- Land Surface Temperature
- Lake Water Surface Temperature

Soil moisture

- Surface Soil Moisture
- Soil Water Index

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PROGRAMME OF THE EUROPEAN UNION

Copernicus Europe's eyes on Earth

Land Monitoring

Implemented by European Environment Agency

European Commission

Global Biophysical Variables

From medium to high resolution

Theme	Variable	Spatial Resolution Moderate 50-100m
Vegetation	Land Cover	In production
Water	Lake Water Quality	Archive only
	Water Bodies	in production

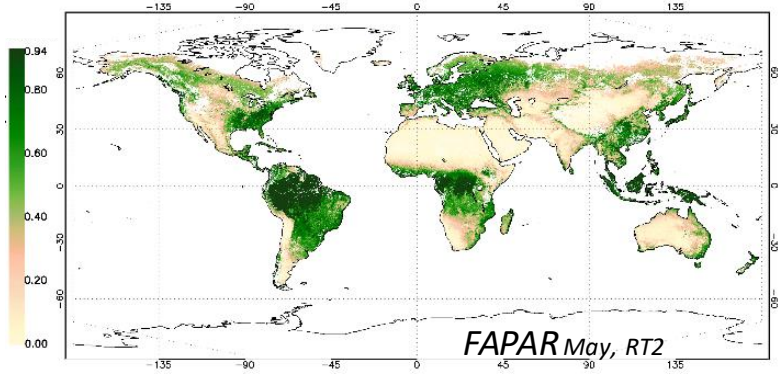
From coarse to medium resolution

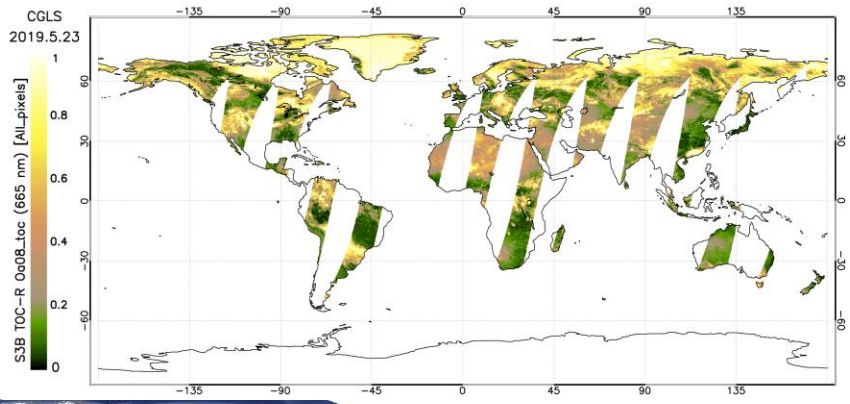
Theme	Variable	Spatial Resolution Coarse >=1km	 Medium 250m-500m
Vegetation	Fraction of photosynthetically active radiation absorbed by the vegetation	Archive only; Near-Real Time (NRT) to be resampled from 300m	In production
	Fraction of green vegetation cover	Archive only; NRT to be resampled from 300m	In production
	Leaf Area index	Archive only; NRT to be resampled from 300m	In production
	Normalized Difference Vegetation Index	Archive only; NRT to be resampled from 300m	In production
	Vegetation Condition Index	Archive only	
	Vegetation Productivity Index	Archive only	
	Dry Matter Productivity	Archive only; NRT to be resampled from 300m	In production
	Burnt Area	Archive only; NRT to be resampled from 300m	In production
	Soil Water Index	In production	
	Surface Soil Moisture	In production	
Energy	Land Surface Temperature	In production	
	Top Of Canopy Reflectance	In production	
	Surface Albedo	Archive only	
Water	Water Bodies	Archive only	In production
	Lake Surface Water Temperature	In production	
	Lake Water Quality	In production	In production
Cryosphere	Lake Ice Extent		In production
	Snow Cover Extent	In production	In production
	Snow Water Equivalent	In production	

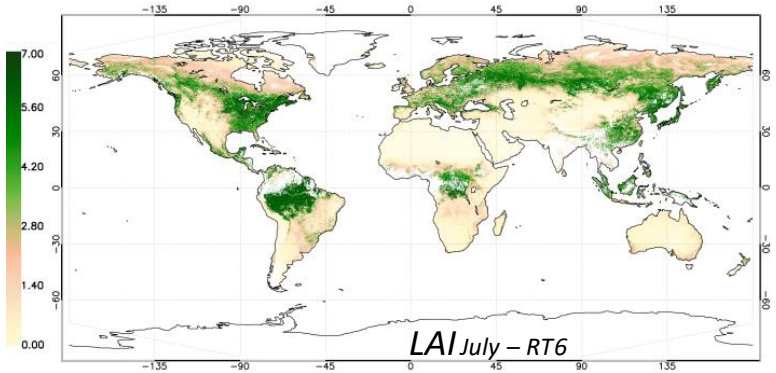
Non-gridded products

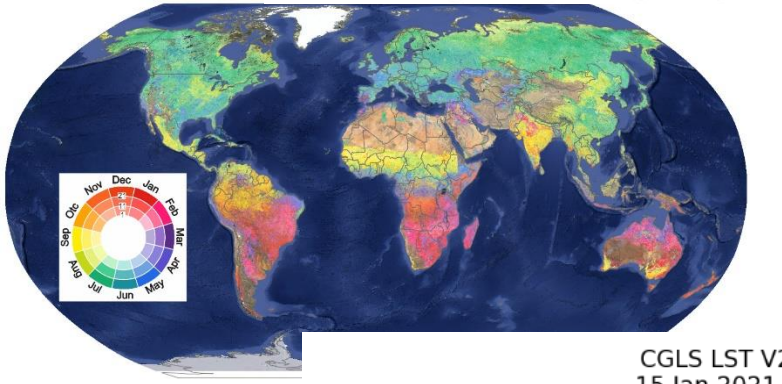
Theme	Variable	Rivers and Lakes
Water	Water Level	In production

Global Biophysical Variables



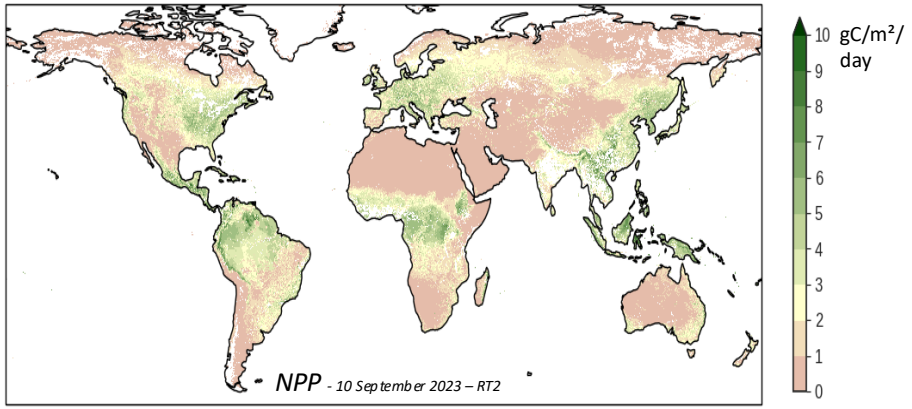


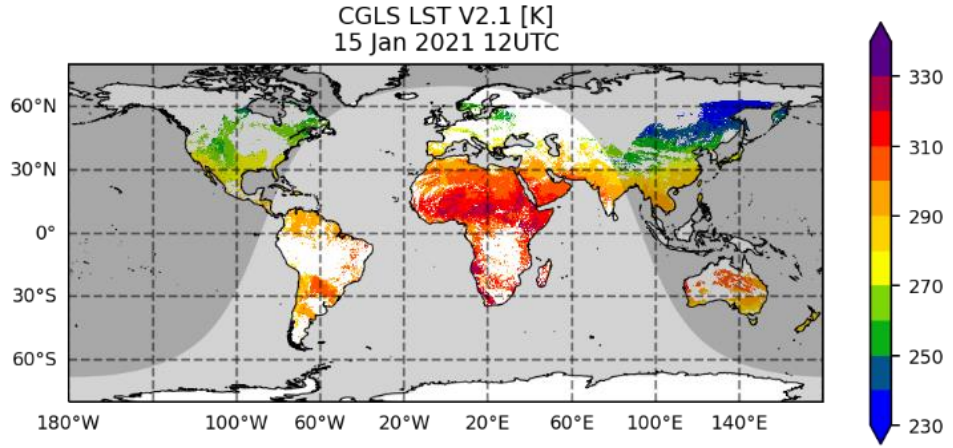




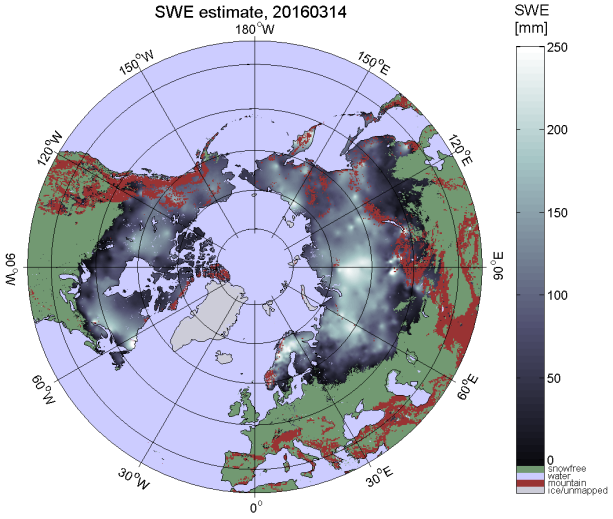
Date of th

Toc R, NDVI, LAI, FaPAR, Fcover, LST, Phenology, NPP, DMP …

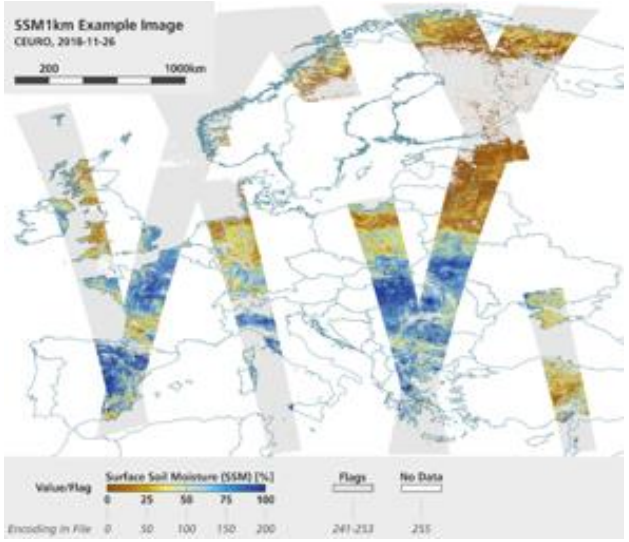


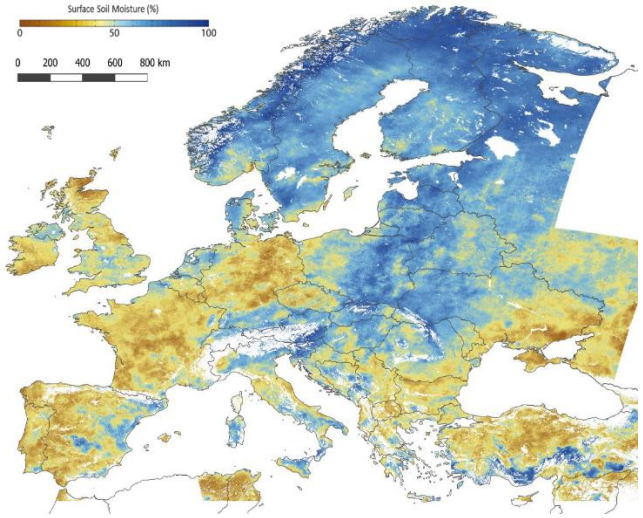


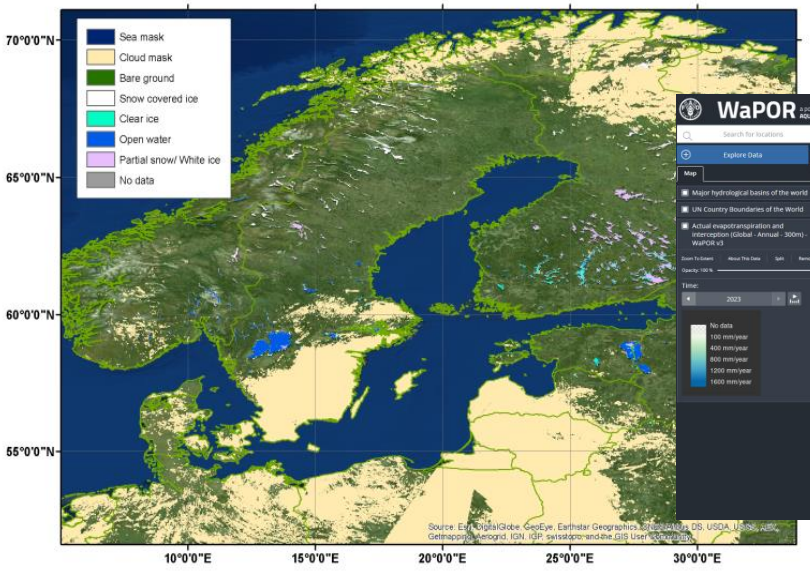
Global Biophysical Variables

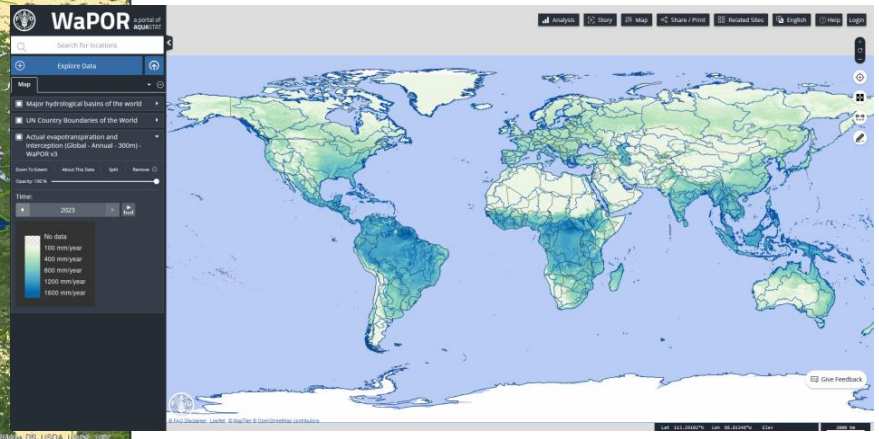


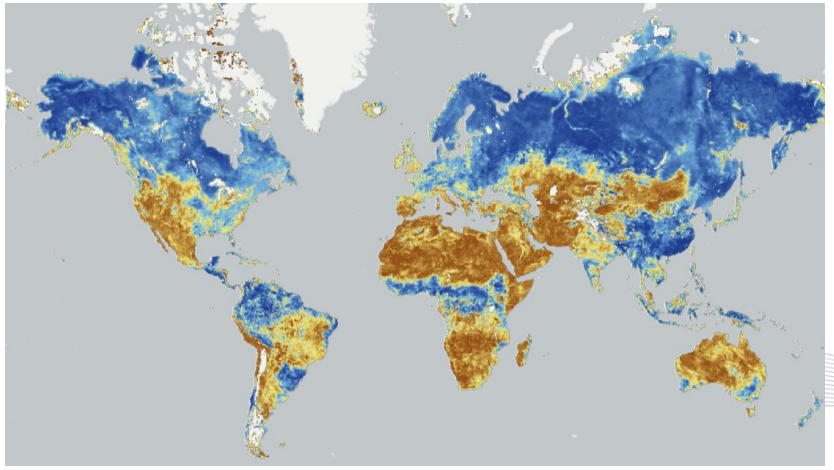
Lake Ice extent, Snow cover extent, Snow Water Equivalent, Soil Moisture, Soil Water Index, ETA …









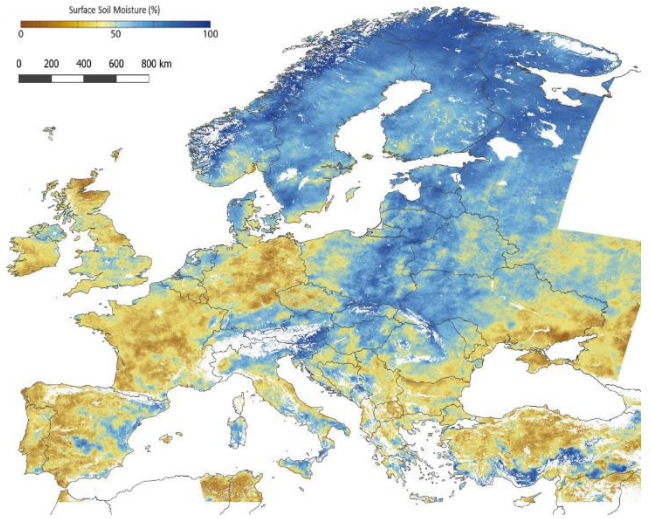


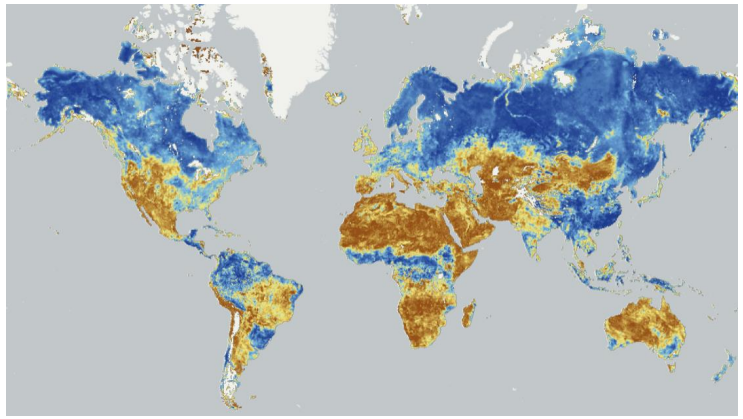
Soil Moisture

Ongoing methodology evolution including:

- Upgrade of the **Sentinel-1** pre-processing
- Integration of new Surface State Flag
- Integration of dynamic water body masking
- New radiative transfer model and vegetation modelling
- Extension of **1km** products coverage to the Globe

Delivery by end of 2025: reprocessing will follow



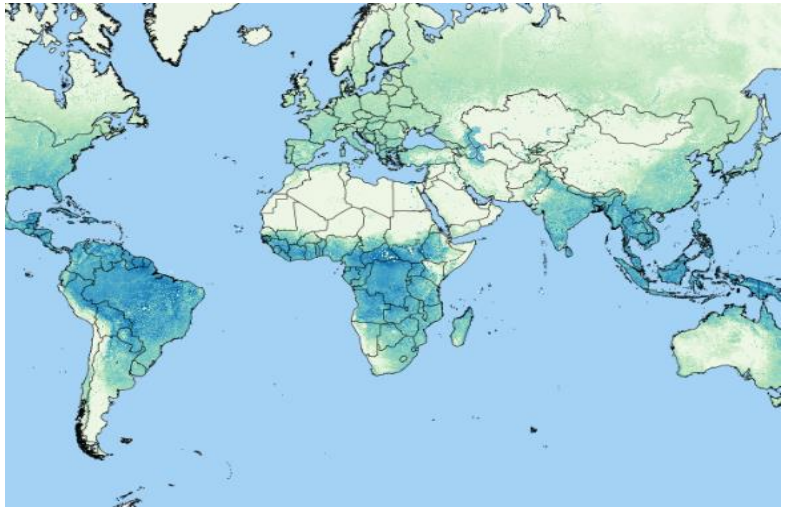


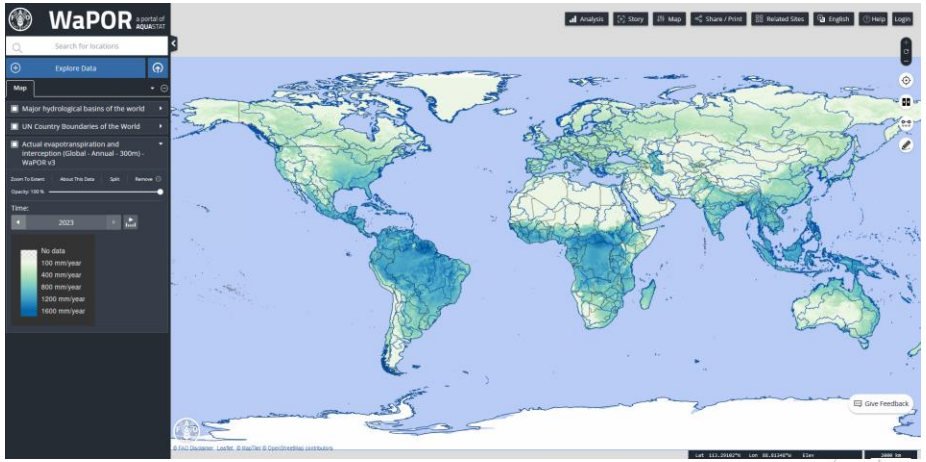
Evapo-Transpiration

ETA product will include

- 10-days Actual evapotranspiration, Soil evaporation and Canopy transpiration
- ETA is essential for **crop water use monitoring** and sustainable water resources management
- For **Sustainable Development Goal Indicator 6.4.1** – Water Use Efficiency for custodian agency **FAO**

Geometric Properties	
Spatial resolution	300 m
Geolocation precision	Better than 0.5 pixels
Coordinate position	Centre of the pixel
Geodetic datum	WGS84
Geographic projection	Regular latitude/longitude grid
Geographic coverage	Global
Temporal resolution	10-day period
Timeliness	Within 2 days after the end of each dekad
Uncertainty (RMSD)	10%

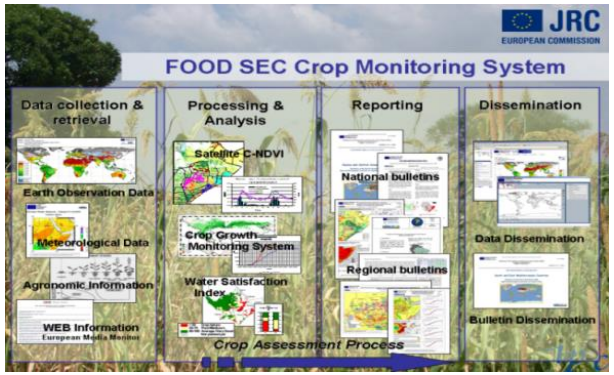


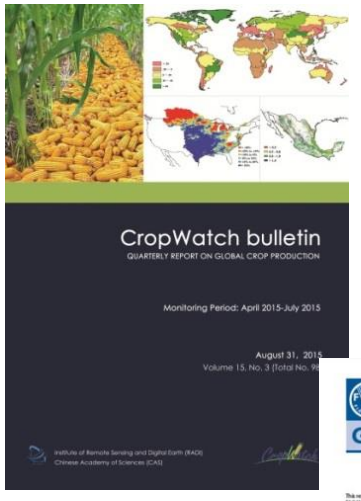


NRT products by end of 2025

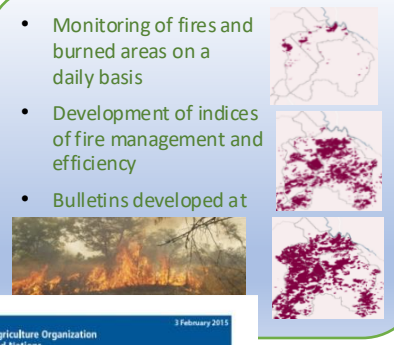
Application fields

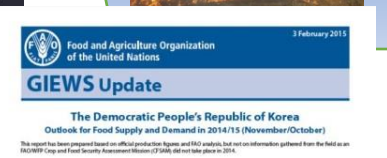
- Climate change
  - Carbon flux forecast
- Agriculture
  - Crop monitoring
  - Yield forecasting
  - Biomass conditions
- Monitoring extreme events
  - Droughts
  - Frost conditions
  - Heat waves
- Hydrology
  - Water management
  - River discharge

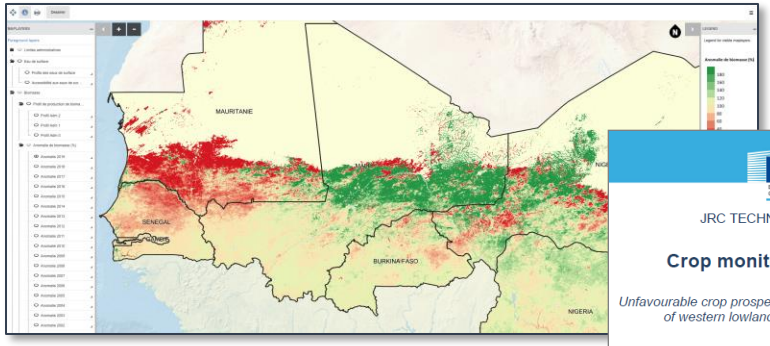


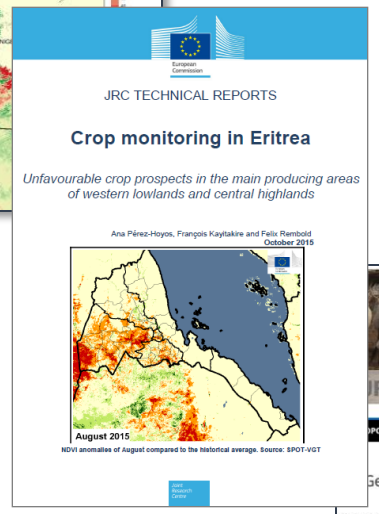


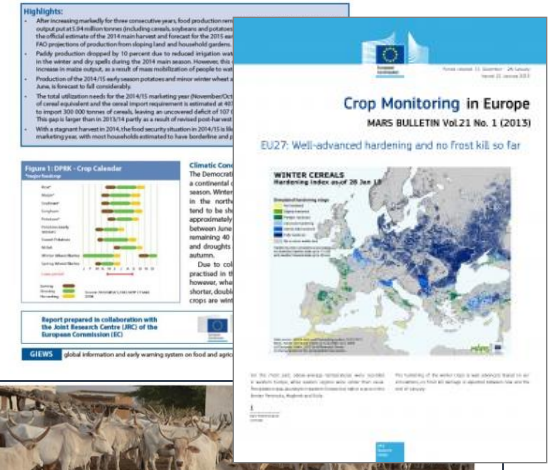
- Monitoring of fires and burned areas on a daily basis
- Development of indices of fire management and efficiency
- Bulletins developed at

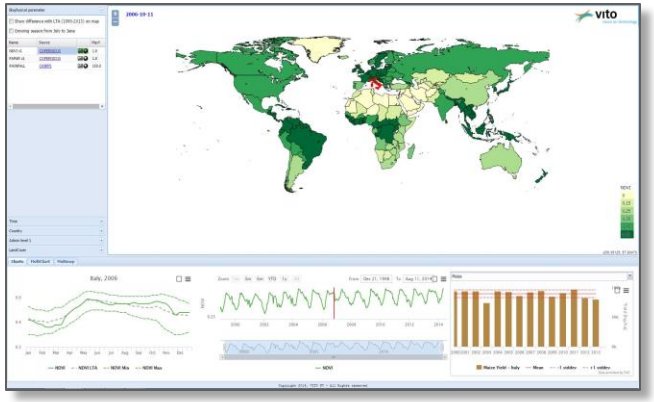


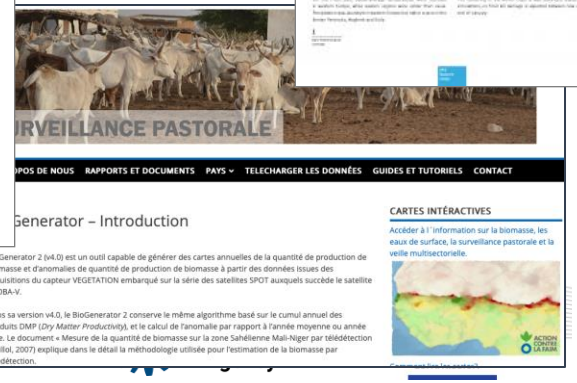










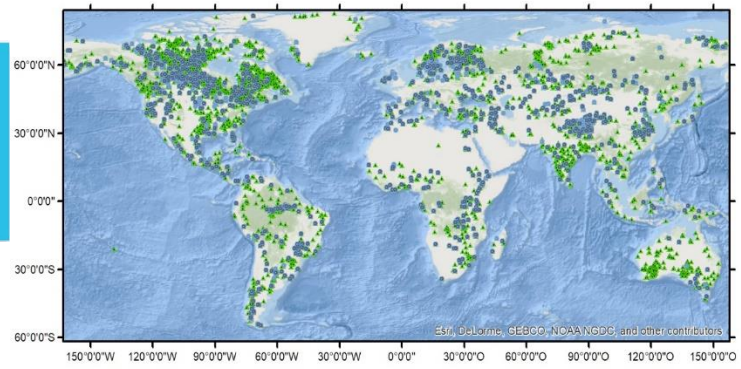


PROGRAMME OF THE EUROPEAN UNION

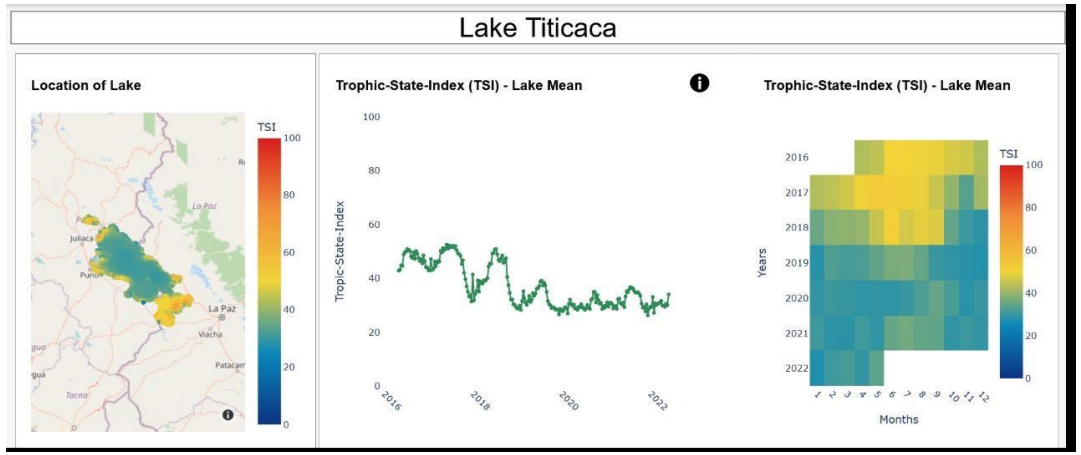
Copernicus Europe's eyes on Earth

Land Monitoring

Inland Water Quality



Water bodies location

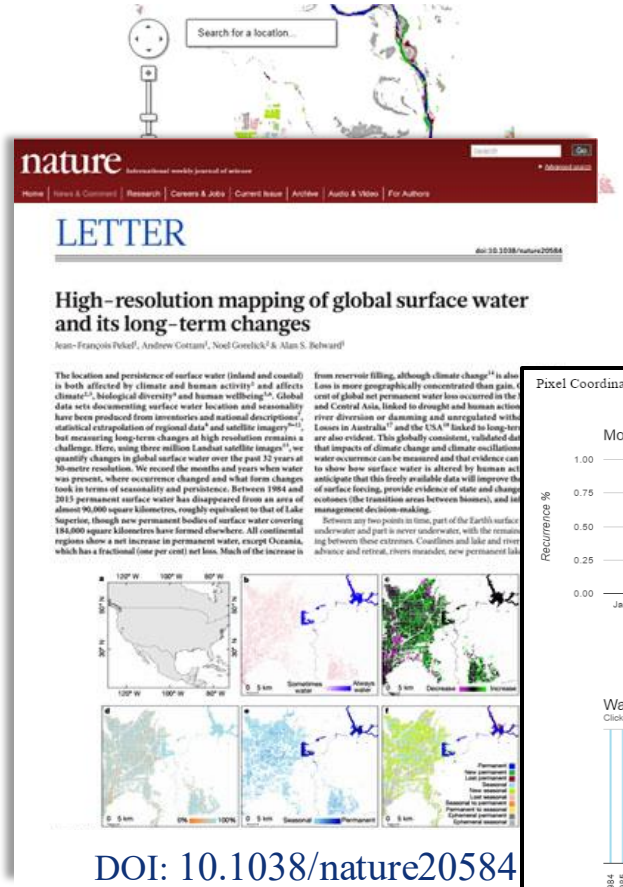


Brockmann Consult Dashboard

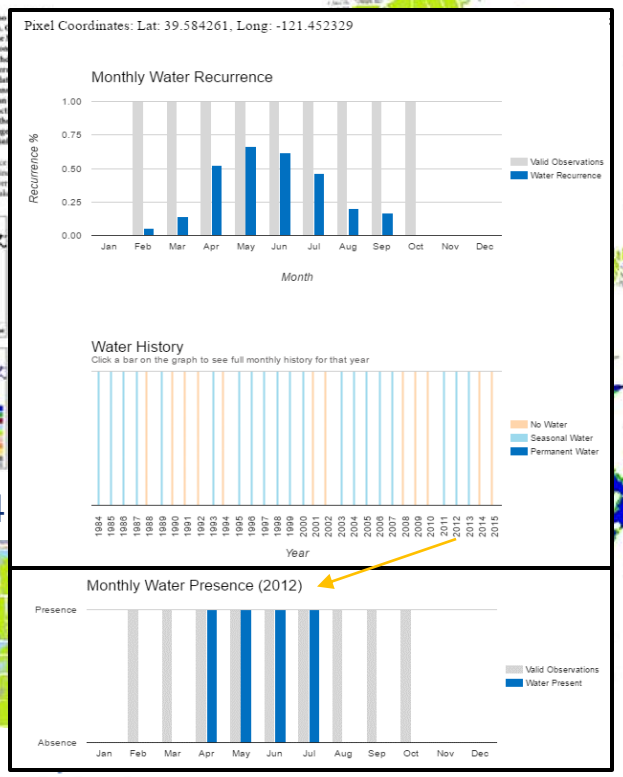
	Lake Water Quality 300m (LWQ-300m)	Lake Water Quality 100m (LWQ-100m)
Parameters	Lake Surface Reflectance Turbidity Trophic state (based on CHL) Chlorophyll Concentration Floating Cyanobacteria Index Total Suspended Matter	Lake Surface Reflectance Turbidity Trophic state (based on CHL) Chlorophyll Concentration Floating Cyanobacteria Index Total Suspended Matter
Spatial resolution	300m	100m
Extent	Global	Global
Coverage	Selected lakes/reservoirs/lagoons	Selected S-2 tiles in Europe and Africa
Number of Entity	4264	225 selected tiles
Temporal aggregation	10 days	10 days
Temporal frequency	10 days	10 days
Timeliness	3 days after last acquisition	4 days after last acquisition
Projection/Datum	Geographic lat/lon WGS-84	Geographic lat/lon WGS-84
Sensor	Sentinel-3 OLCI	Sentinel-2 MSI
File format	netCDF	netCDF
Status / Version	Operational / v1.4	Demonstration / v1.5

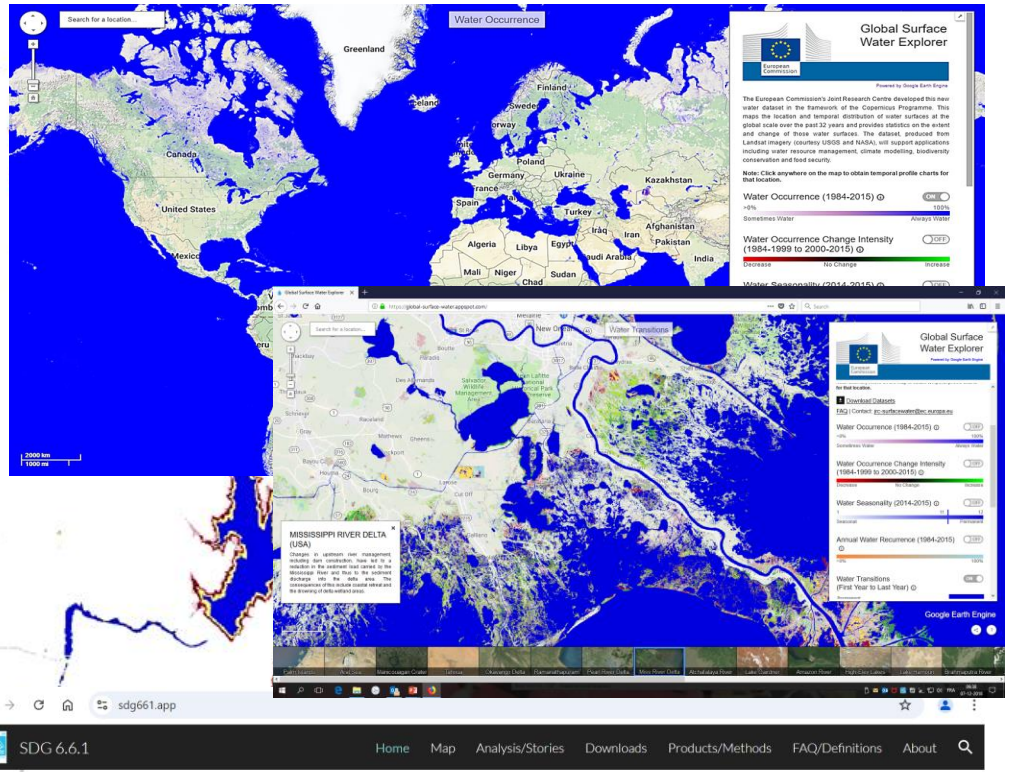
Water extent monitoring

Monitoring of changes in water bodies at high resolution in NRT

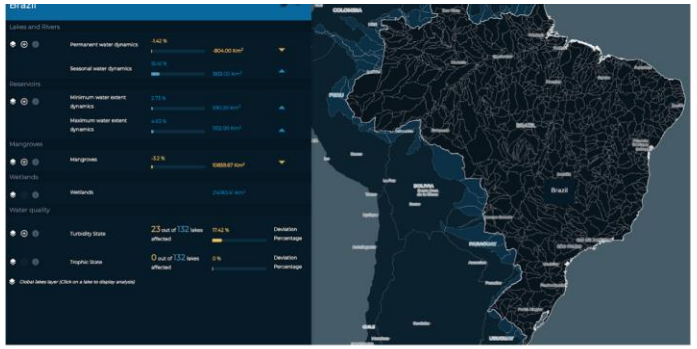


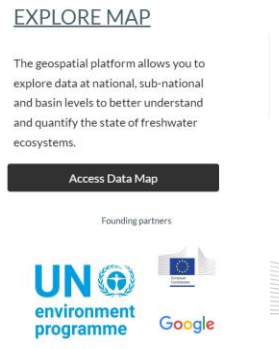
DOI: 10.1038/nature20584



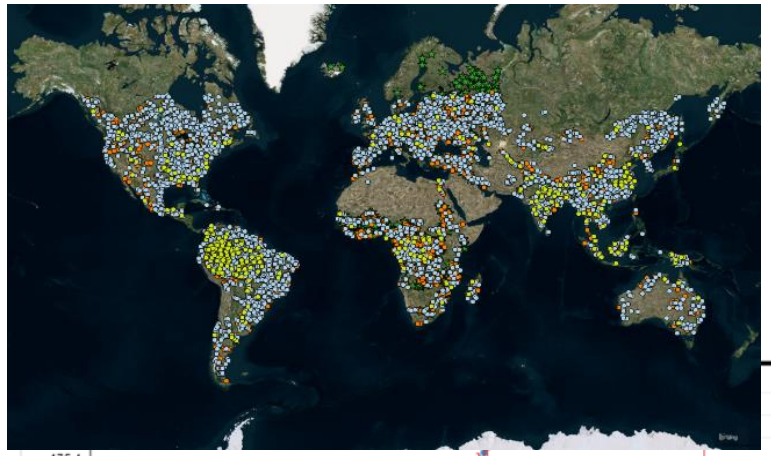


https://global-surface-water.appspot.com

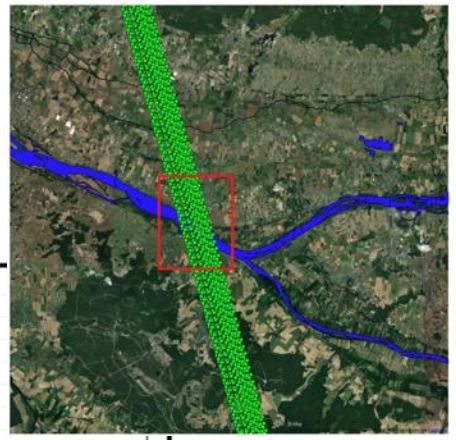


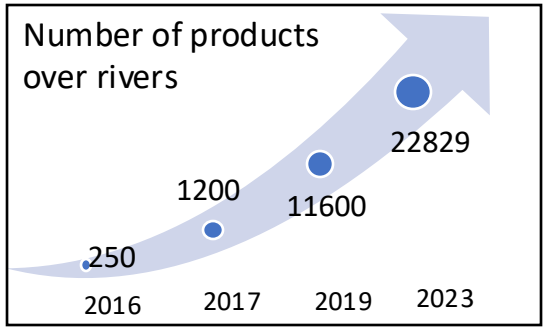


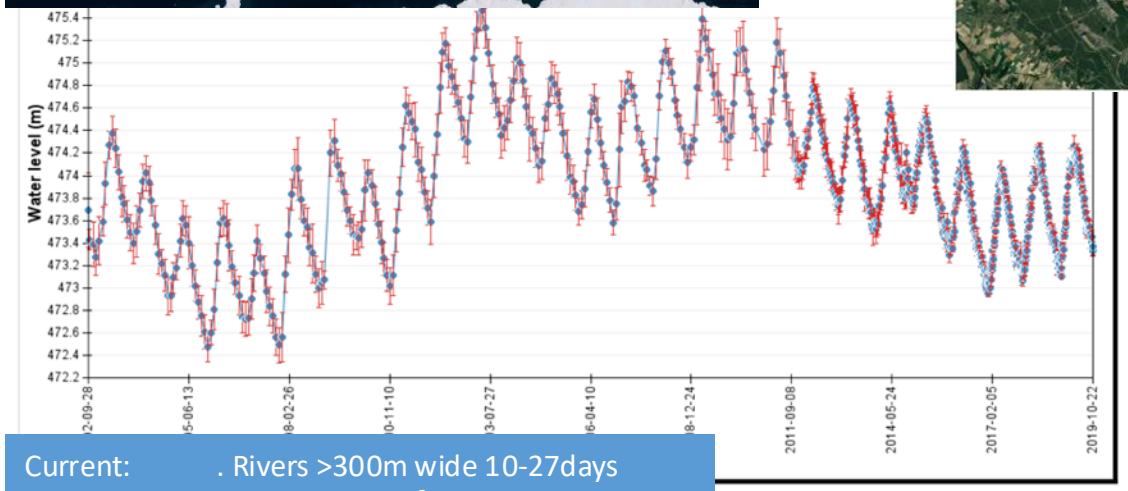
Inland Water Level

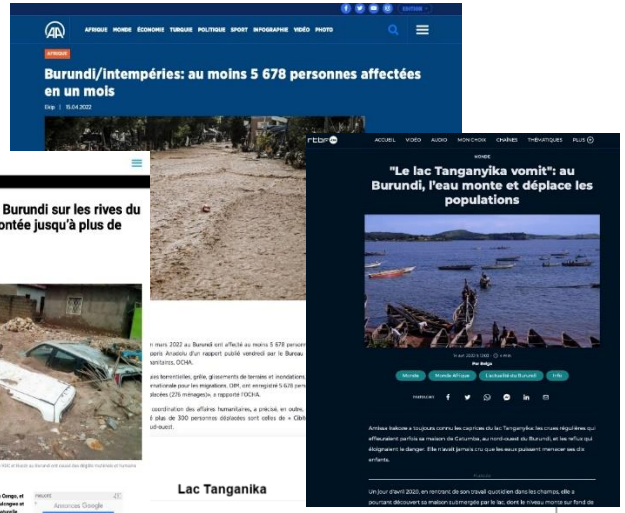


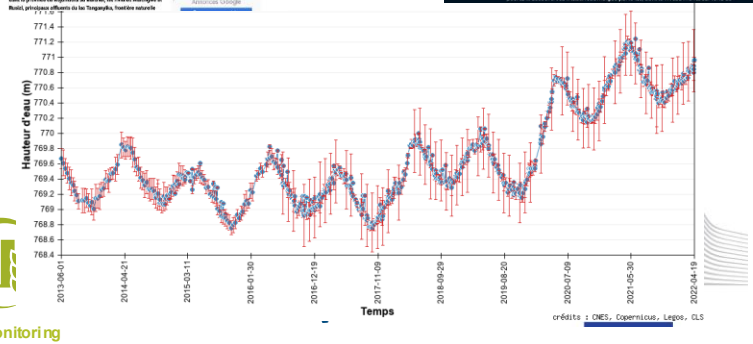
Monitoring of levels of lakes and rivers











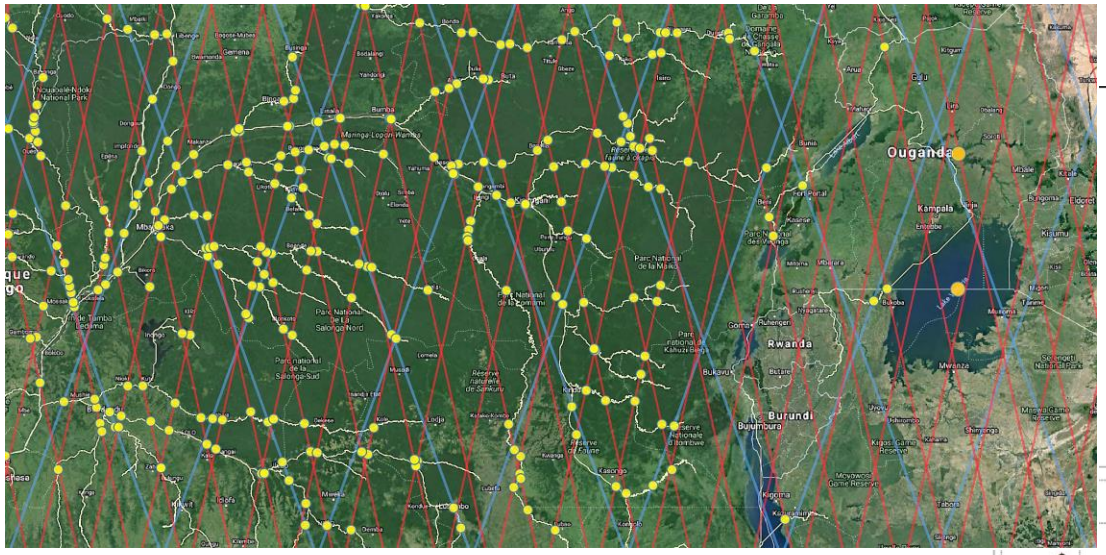
Current:
. Rivers >300m wide 10-27days
. Lakes >500Km^2 1-10 days
. J3, S3A&B SRAL, Sentinel 6

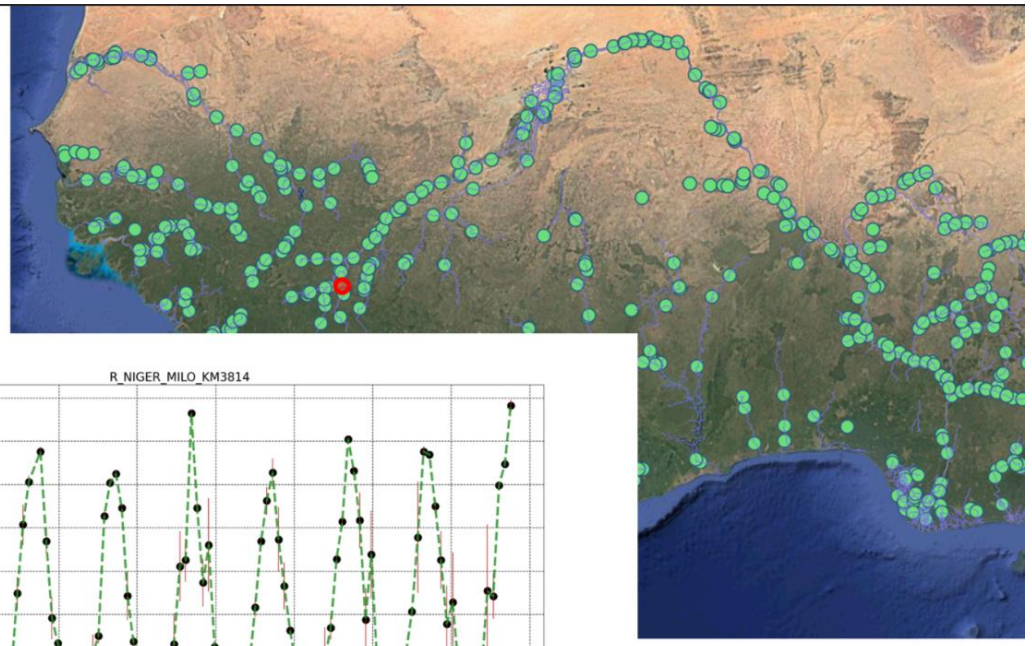
~23 000 Virtual Stations available
(+ 4750 possible with SWOT nadir)

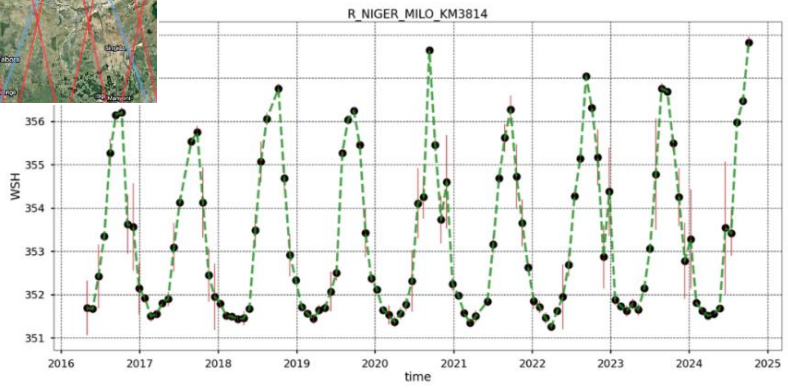
PROGRAMME OF THE EUROPEAN UNION

Land Monitoring

Inland Water Level - Navigation

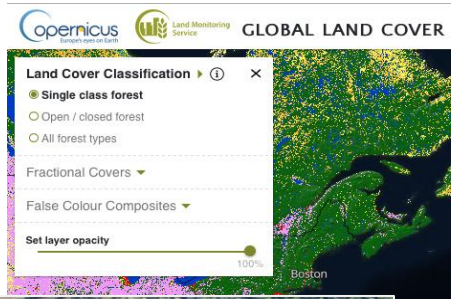


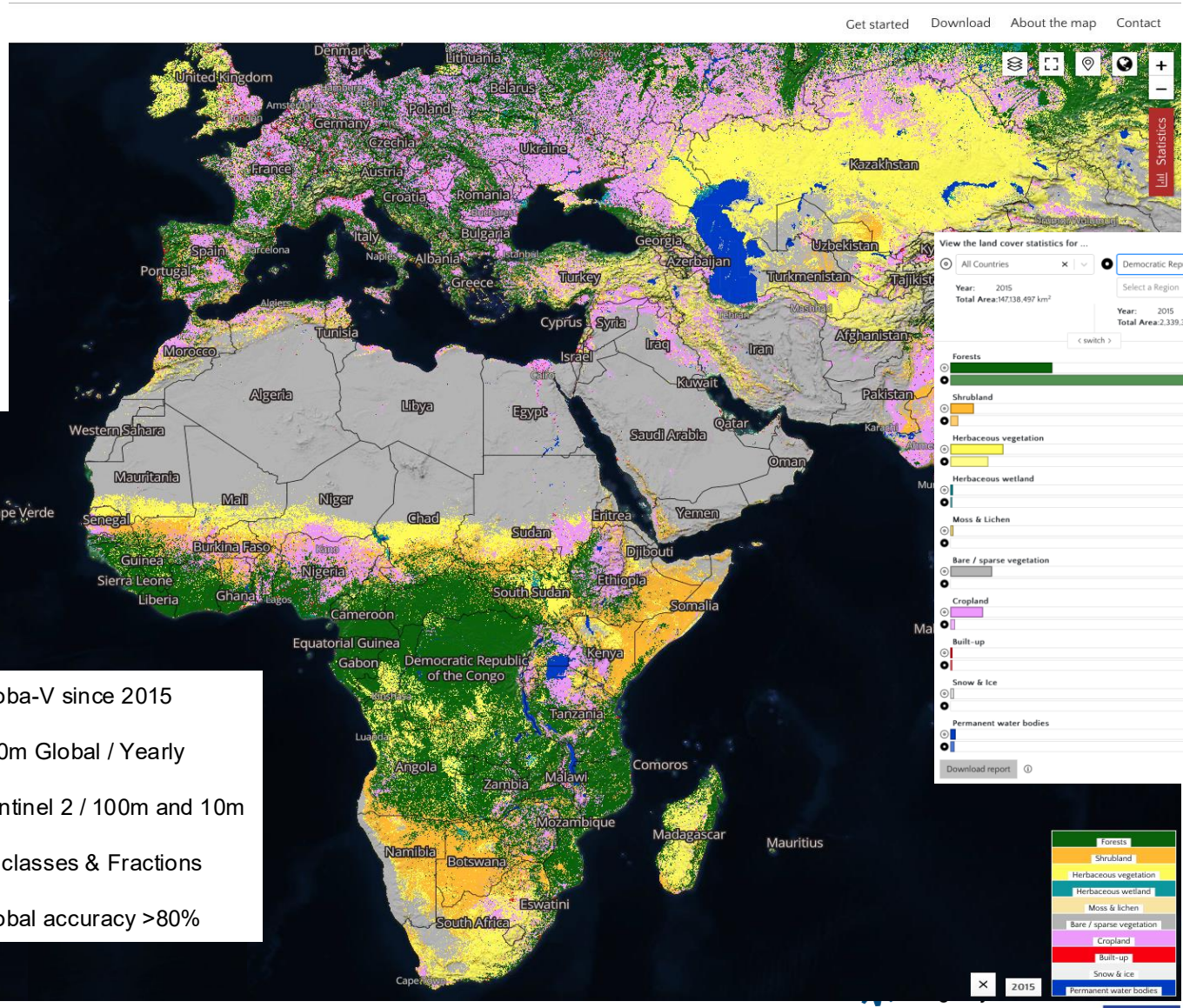




Ubangi River - Congo

Monitoring Global Land Cover & Changes





Proba-V since 2015

100m Global / Yearly

Sentinel 2 / 100m and 10m

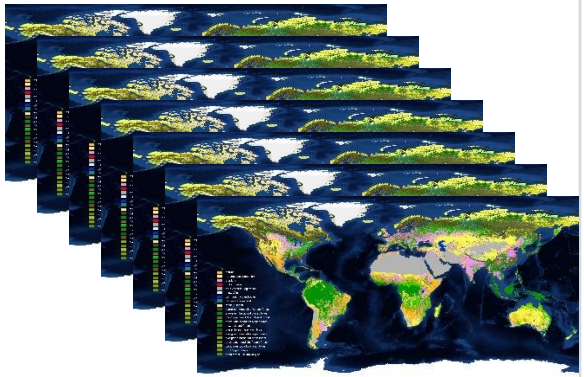
23 classes & Fractions

Global accuracy >80%

Dynamic Global Land Cover

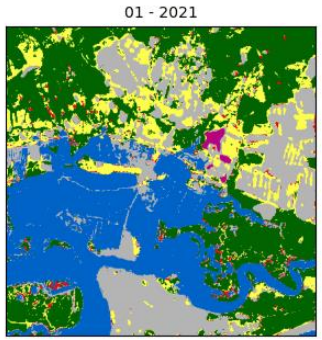
CONTINUE

- Continuation of 100m global LC
- Yearly updates (2020-2026)



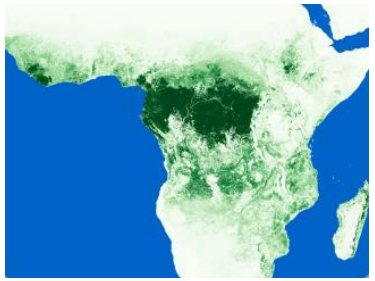
ENHANCE

- Spatial resolution: towards 10 m
- Temporal resolution: towards monthly and NRT
- Improved accuracy
- Consistent change mapping



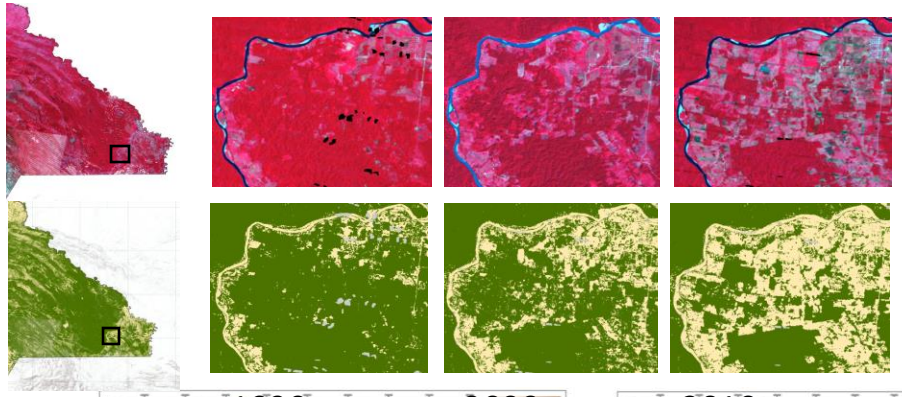
EXTEND

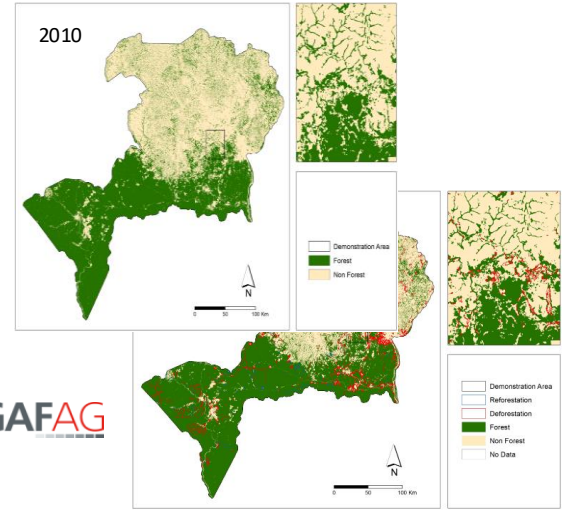
- Sub-annual products
- Specific Tropical Forest Products (TCD, TCPC)



Forest monitoring - Deforestation

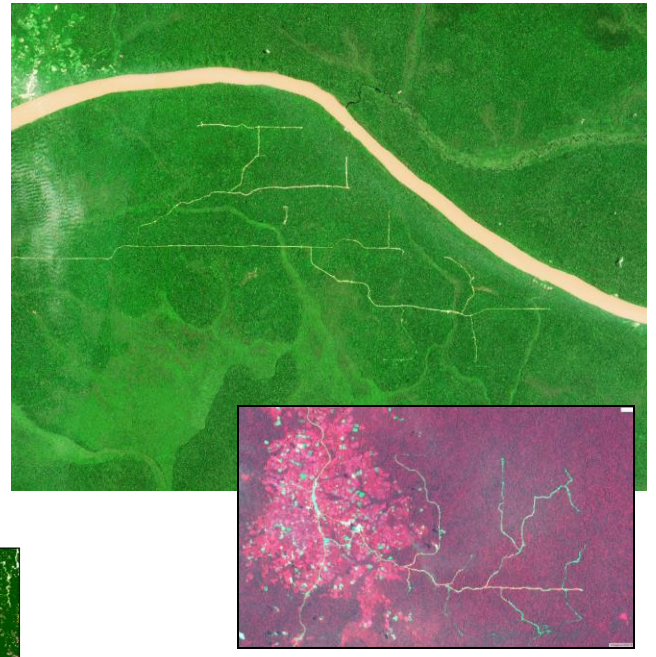
High and Very High Resolution Forest cover, Forest change and Biomass mapping (Mexico, Central African Republic, Borneo)

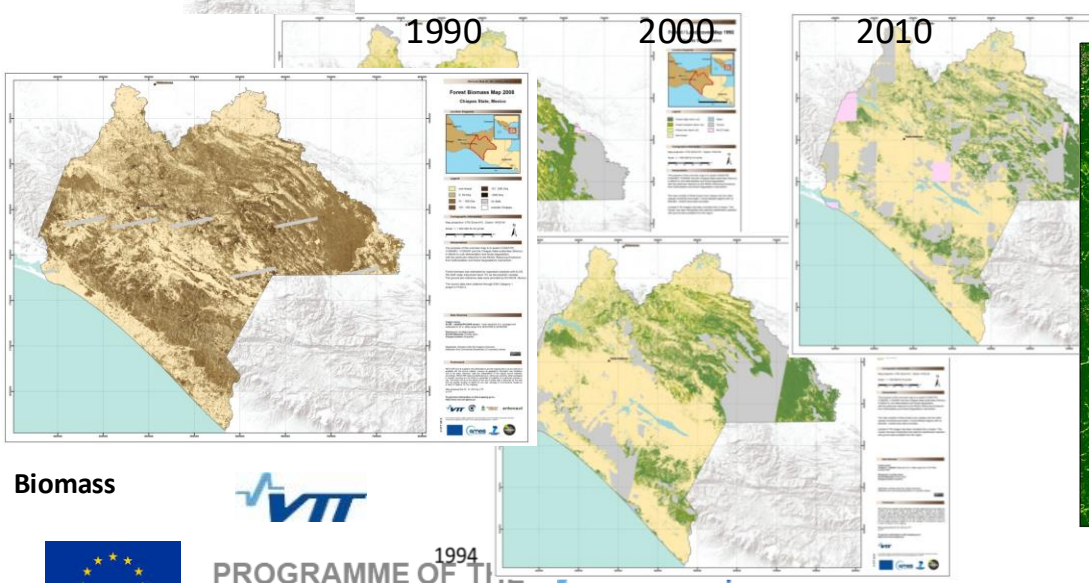




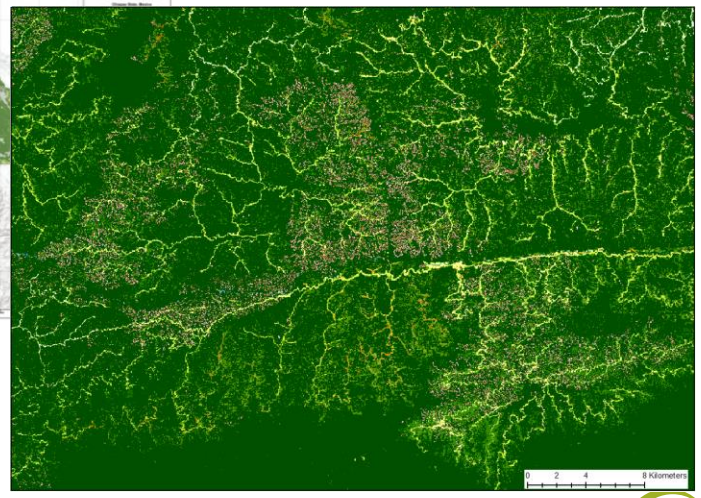
Logging Concessions Monitoring (DRC)

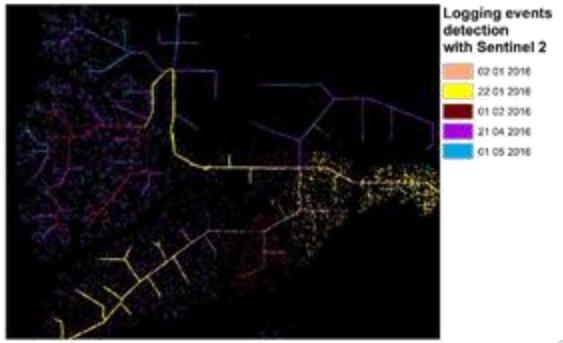
- Road Network





Biomass





PROGRAMME OF THE EUROPEAN UNION

opernicus Europe's eyes on Earth

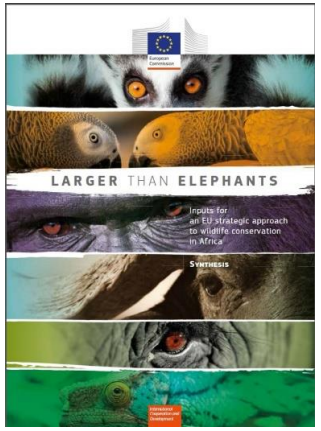
Land Monitoring

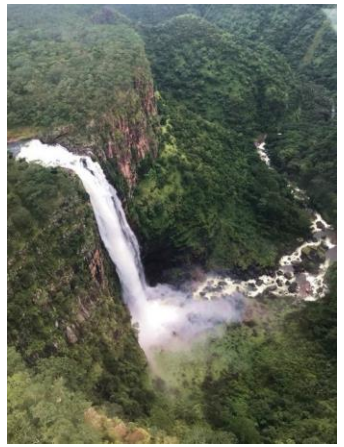
Implemented by European Environment Agency

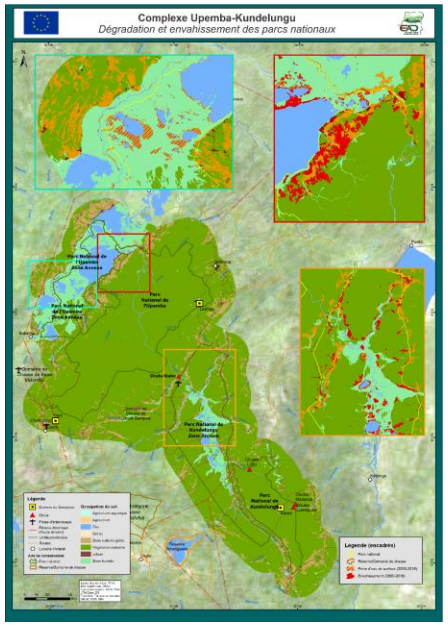
European Commission

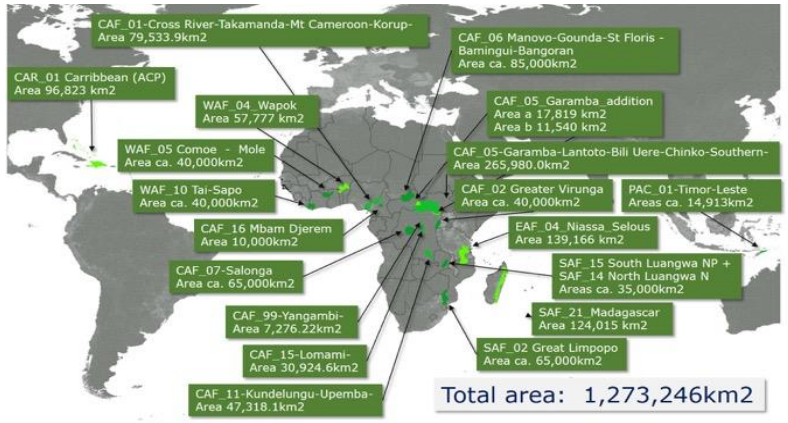
Global Hot Spot - Biodiversity

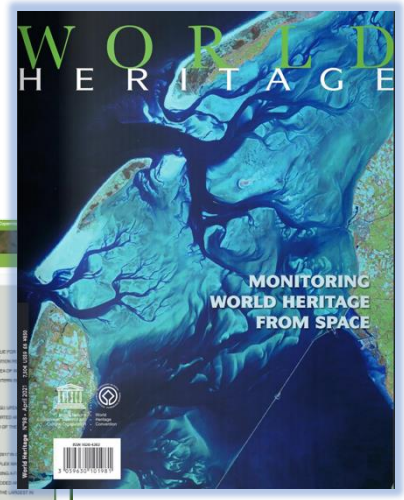
Provide detailed land cover information on specific areas of interest for EU outside the European Union, particularly in the domain of the sustainable management of natural resources.

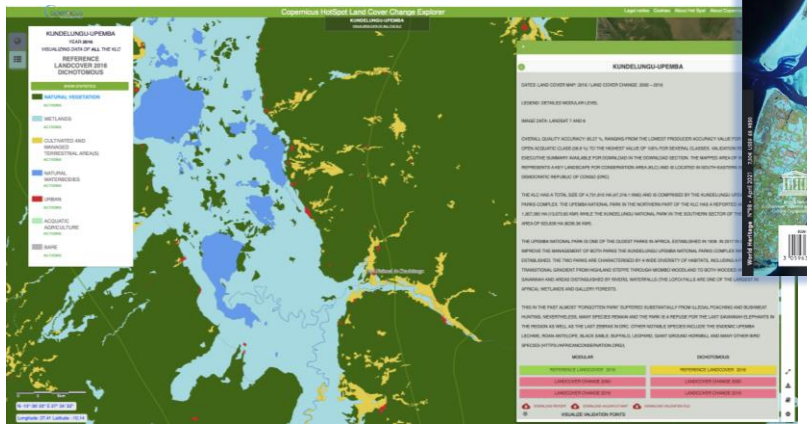


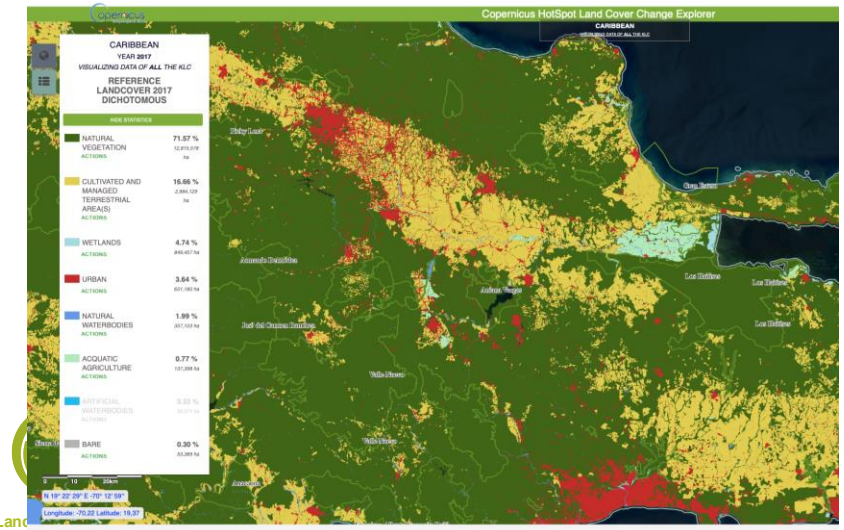






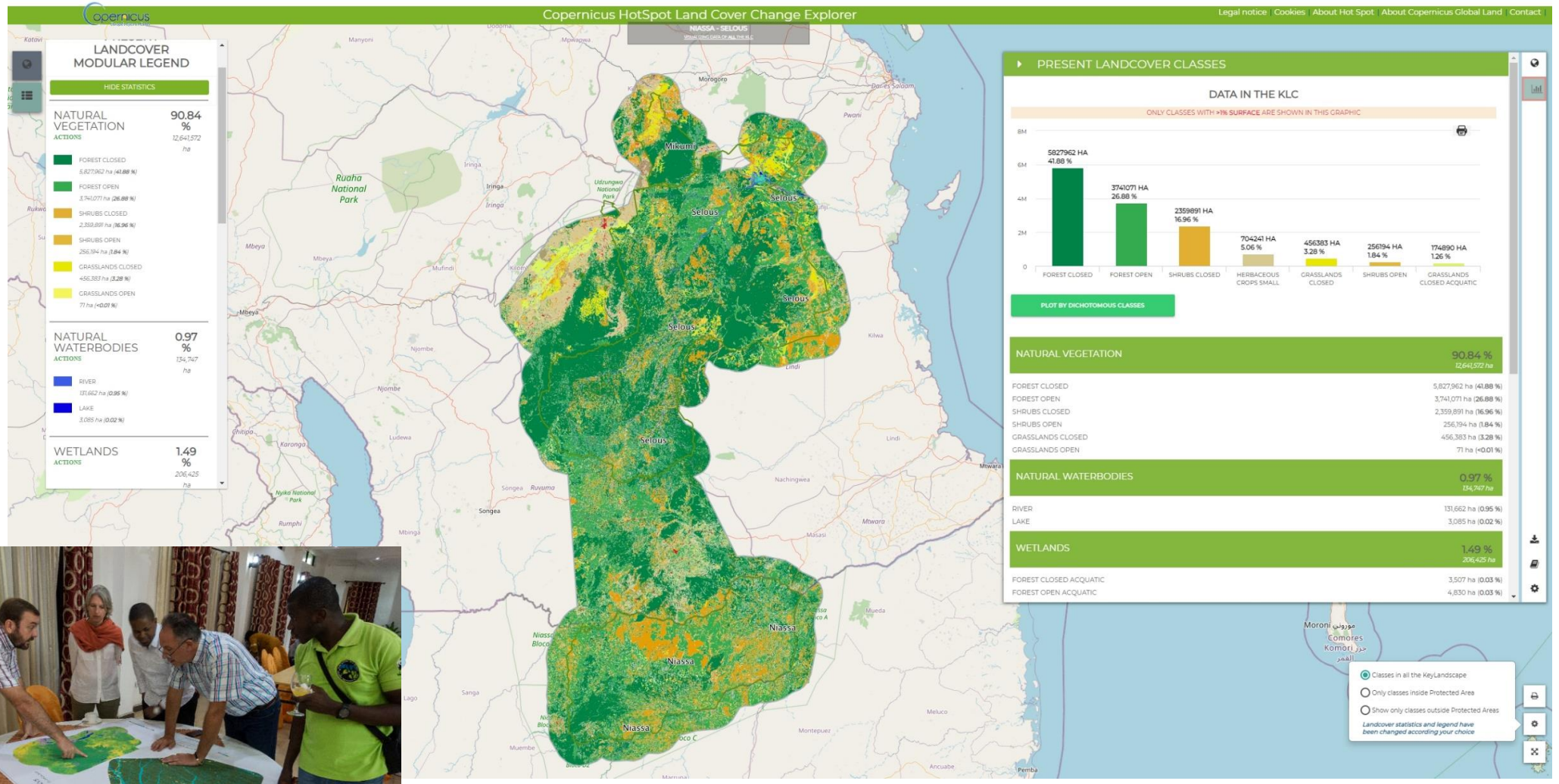






PROGRAMME OF THE EUROPEAN UNION

Land Cover Change Explorer



https://hsm.land.copernicus.eu/

Land Monitoring

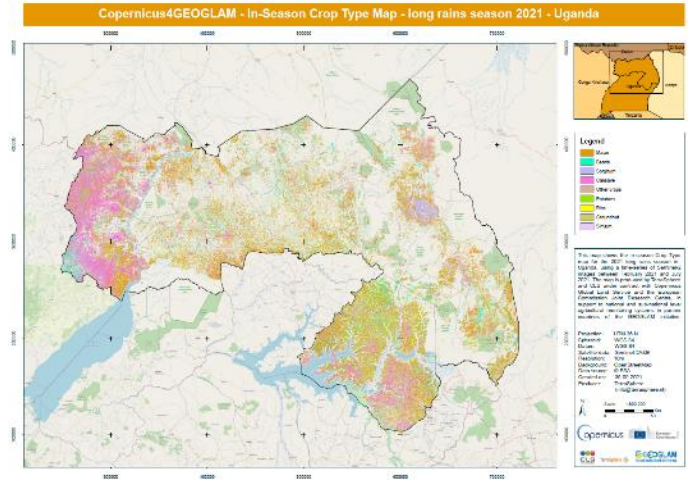
Implemented by European Environment Agency

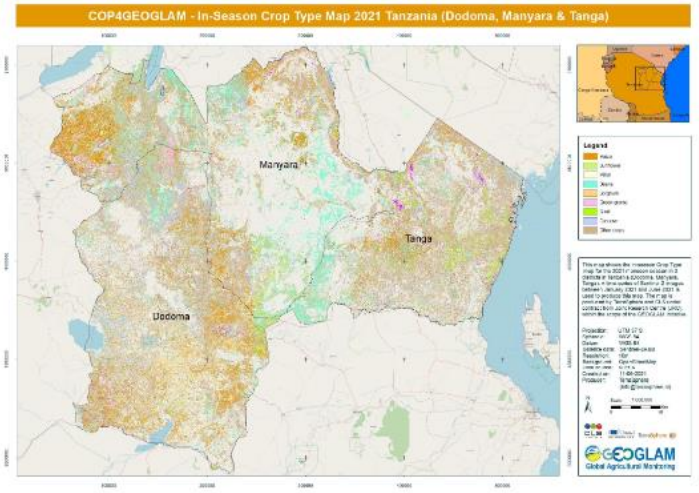
European Commission

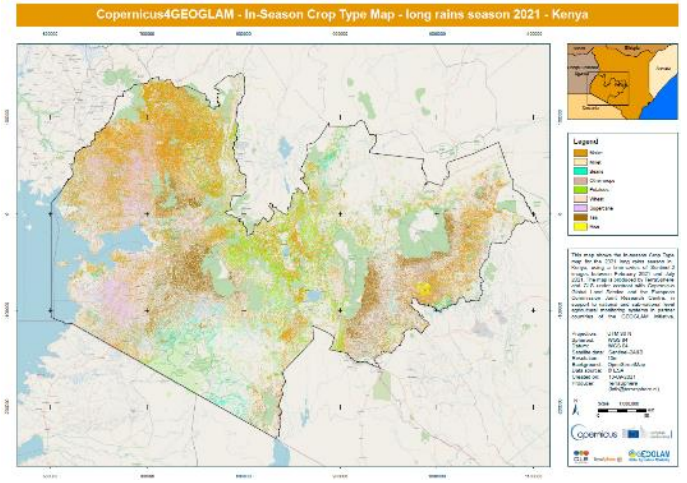
Global Hot Spot – Agriculture GEOGLAM

Countries covered so far and planned for future:

- Kenya and Tanzania (2020-2021 and 2022-2023)
- Uganda (2020-2021)
- Ivory Coast (2022-2023)
- Ongoing: Yemen, Cameroon, Mozambique







Copernicus International Partnership Hub

Objectives:

- Support External EU and UN policies / Planning, implementation, evaluation & impact
- Facilitate access and user uptake of Copernicus Service information at Country level

Stakeholders:

- EU in-country Delegations, Commission Desk Officers, Development Agencies, Country institutions and International Donors, International conventions

Scope:

- Follow the Hub structure: data viewer, use cases, help desk, news & events ..
- Provide the Copernicus service products “cropped/cut” per country
- Propose information dash board with country indicators
- Combine service products through simple geographical models …
- Prototype in some countries, dialogue with EU Delegations, specific thematic interest

Conclusions

- Support MS External Actions & National Development Agencies (GIZ, DANIDA, SIDA, AfD …)
  - Country Desk officers
  - In Country offices
- Support to development Strategy
- Project level
  - Project planning / Environmental impact assessment
  - Project implementation
  - Project impact evaluation
- Regular products / On Demand products
- International Partnership Hub facility

Land Monitoring Service

Thank you!

Copernicus EEA

land.copernicus.eu

Land Monitoring Service

Focus Team Coastal Applications

NCP GA

Christoph Schröder (UMA, ETC-DI)

Julián Delgado, Samuel Parada (IGN)

22/05/2025

PROGRAMME OF THE EUROPEAN UNION

Copernicus Europe's eyes on Earth

Implemented by European Environment Agency

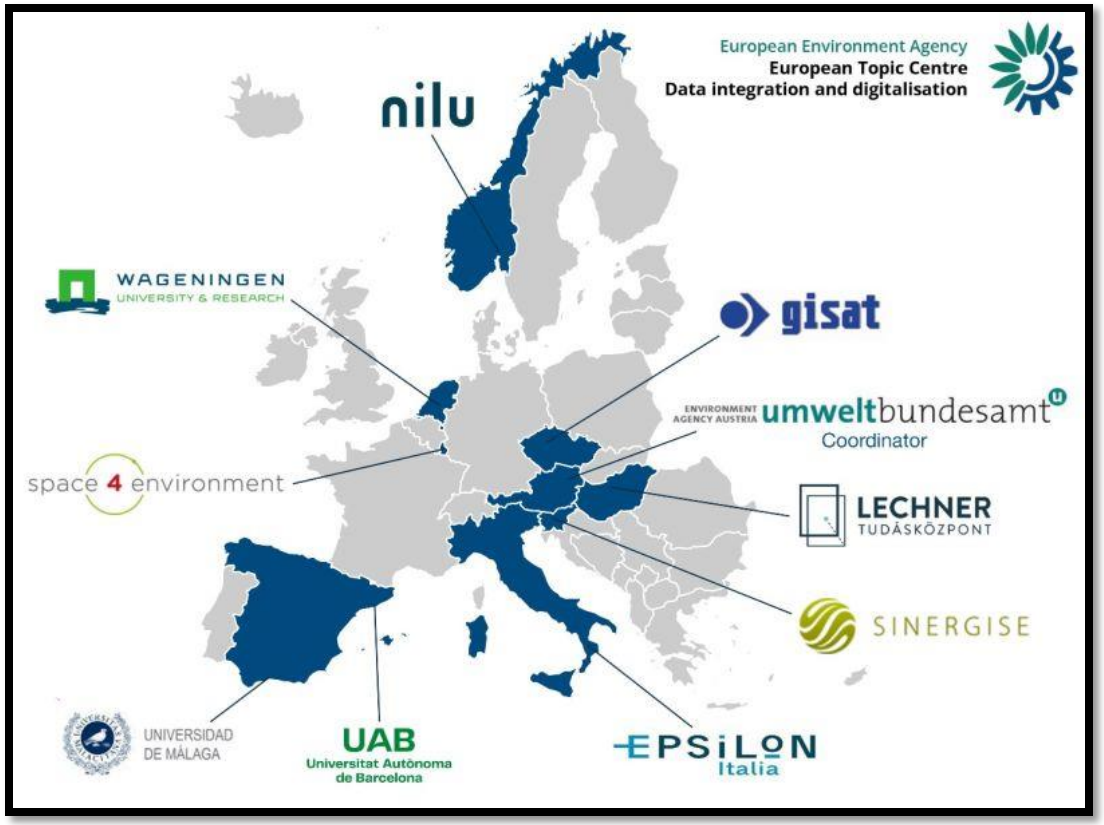
European Commission

Context – ETC/DI

The European Topic Centre for Data Integration and Digitisation (ETC/DI) is supporting the European Environment Agency (EEA) in

- the process of digitisation of the EEA, specifically
  - harmonisation and flows of information and data management,
  - the enhancement of the relevant capabilities of EIONET, the European Environment Information and Observation Network.

- the evolution of the Land Monitoring Service, in particular
  - study of new products validation and testing work
  - User Uptake (promotion, training)



Context – ETC/DI & NCP

The CLMS NCP: Mandatory modules

1. Organisation of national CLMS meetings
2. Development of at least 2 use case stories
3. Support progress monitoring
4. Final report

The CLMS NCP: Optional modules

1. Focus teams
2. Training sessions
3. Visiting Ph.D. students at the EEA
4. Communication material

The Focus Team concept

Country, bottom-up approach

1. Country comes forward with a thematic topic
2. Stakeholders at country level work on the topic
3. Outputs are shared and discussed with the NCP community

NCP wide approach

1. Topic of common interest is identified/proposed
2. NCP countries regularly meet to discuss the topic
3. Outputs are prepared

Results are shared with EEA, incl. recommendations for CLMS evolution

The Focus Team concept

Coastal applications in Spain

- Collects use cases
- Identifies data needs
- Raises current issues
- Reviews Coastal.Hub

Document:
State of the art of coastal applications in Spain, incl. recommendations for CLMS (& CMES) evolution

*Preparation of online meeting with FPs of NCP countries**

Presentation of outcomes to FPs of NCP countries*

Summary is shared with the country networks

DE EE IT NL

Country feedback is collected*

Consolidated document about the focal group topic*

Preparation of dedicated session at CLMS GA 2025*

The Focus Team concept

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Presentation of outcomes to FPs of NCP countries*

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DE EE IT NL

Country feedback is collected*

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Preparation of dedicated session at CLMS GA 2025*

Outputs achieved

6 use cases

- Monitoring **coastal erosion** due to sea level rise and human activities
- Potential Socio-Economic Impacts of **Land Movements** in Spain's Coastal Municipalities
- Effective **harbor management**: improving coastal ocean forecasting systems with the CLMS river water level product .
- **Coastal water quality control** for the detection of pollution sources
- **Ingestion of Land resources** in a Common Operational Picture tool for the Galician Contingency Plan against accidental marine pollution
- **Marine observatory of global change** in the Spanish National Parks network - Cabrera Maritime-Terrestrial National Park

Key results

- Summary of (operational) coastal applications with CLMS data
- Call for better cross-service integration
- Relevance of national data to enrich Copernicus products through, e.g. production chain contribution, validation processes, etc.
- Basis for exchanges with other countries to see how these use cases are relevant for and can be replicated in other countries, e.g.
  - ...
  - ...

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Thank you!

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NCP Communication support

NCP General Assembly 2025

Jennifer Grant & Hayden Waller

22 May 2025

PROGRAMME OF THE EUROPEAN UNION

Copernicus Europe's eyes on Earth

Implemented by European Environment Agency

European Commission

CLMS Communications team

Hayden Waller (EEA)

Writing & editing

Frida Hansson (EEA)

Social media & audiovisuals

Jennifer Grant (EEA)

Communications coordination

Sara Moraca (JRC)

Global Land communications

Strategy

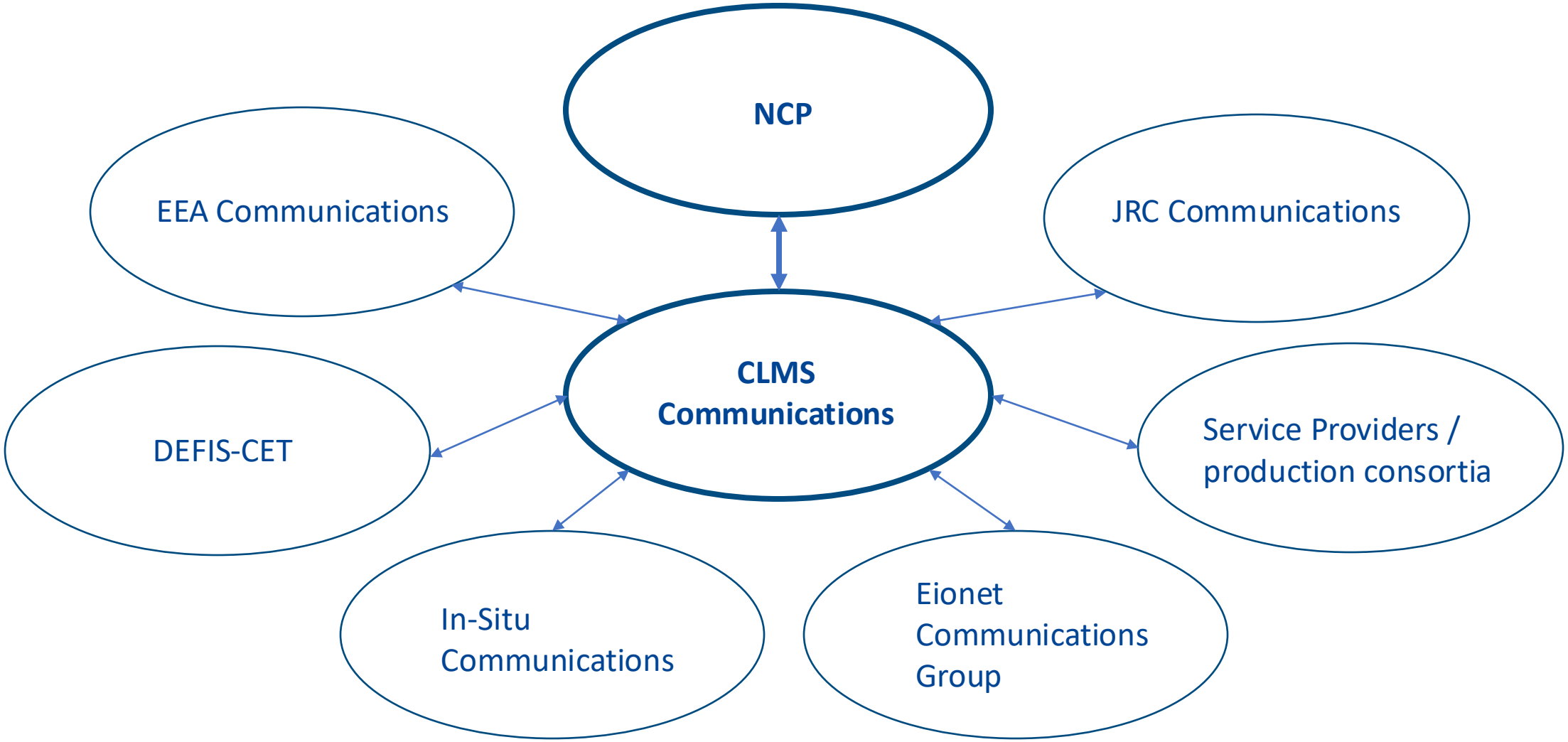
Communication and User Uptake Strategy for Copernicus at the EEA 2023-2028

Main goals:

1. **Increase visibility and brand recognition**
2. **Maximise user uptake**

- Basis for annual Communication and User Uptake work plans
- 2026-2027: Update Strategy for next phase of Copernicus (3.0)

Collaboration



CLMS NCP communications

NCP Communication activities: Countries are in the lead - CLMS can support

Countries	CLMS
	Provide general support (e.g. branding questions)
Inform CLMS about events, trainings	Multiply event/training promotion (e.g. web) (*language caveat*)
- Provide use cases - Translate & multiply use case stories (e.g. media)	- Write & publish use case stories
- Inform CLMS about relevant SoMe posts - Repost general NCP SoMe posts	- Repost national-level SoMe posts (*language caveat*) - General NCP SoMe posts
Suggestions/input for NCP webpages	Maintain NCP webpages

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Looking forward to working together!

Fill it out & share with your network!

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National Collaboration Programme

CLMS National Collaboration Programme GA-Outlook

Usue Donezar

22nd May 2025

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Key Take Home Messages

- The collaboration agreements, formalized in a Memorandum of Understanding also for Phase II
- Financial remuneration for mandatory modules (paid modules)
- User requirements will be addressed
- Goal is to create a collaboration network between EEA and countries, but also between countries
- Trainings for countries and support is available

Planned activities

- Development of supplementary documents
- Possible visit of German NCP FP to the EEA in Q4 2025 for joined collaboration
- Contract preparation for a PhD visit from Italy to EEA on going
- Planning of NCP GA in 2026

What is next?

End Phase I Q2 2026 → Signature MoU Phase II Q4 2025 – Q1 2026 → Implementation NCP Phase II Q2 2026 – Q3 2027

Join us in the next NCP Phase II

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Thank you for joining the NCP GA !

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