



Cross-cutting coordination of Copernicus access to In-Situ Data

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European Environment Agency



Learn more here:



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In situ

Copernicus' access to In Situ Data

Key user requirements cannot be met unless Copernicus has access to essential in situ data

Copernicus in situ data: observations, reference and ancillary data licensed or provided for use in Copernicus

All Copernicus Services require in situ data to produce and validate their products

The Copernicus Space Component requires in situ data for calibration and validation of Sentinel observations





In situ

Copernicus' access to In Situ Data

Where is in-situ data coming from?



- Predominately from national data owners and providers
- Organised in European or global networks, organisations, and European Research Infrastructures.





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EEA activities in Copernicus In Situ

Determine State of Play	CIS² https://insitu.copernicus.eu/state-of-play
Provide access to data	 https://corda.eea.europa.eu/
Engage with data providers	  https://insitu.copernicus.eu/data-access/agreements
Provide support and advice	 https://insitu.copernicus.eu/library/reports



More in
<https://insitu.copernicus.eu>



In situ

In Situ Data Requirements: Copernicus Land (example)

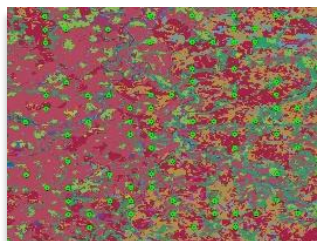
Detailed in situ data requirements



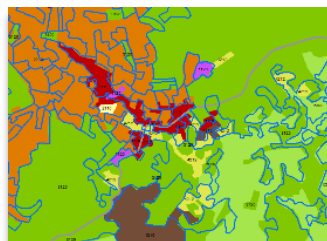
Orthoimagery



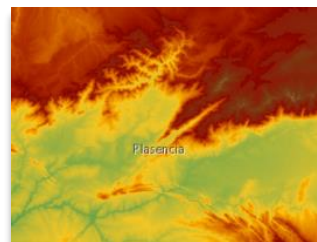
Transport network



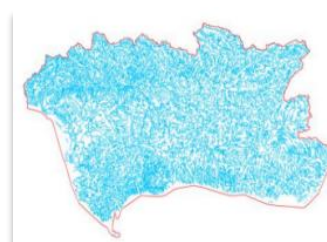
LUCAS



LU/LC maps



DEM



Hydrography

Why do we need access to in situ data?

1) Supporting the visual interpretation and feature delineation of land cover/land use objects through synergistic use of VHR satellite imagery and complementary national datasets.

2) Increasing the thematic accuracy (quality) of generated products and services.

3) Validation of products and internal quality control steps.

<https://insitu.copernicus.eu/state-of-play>



In situ

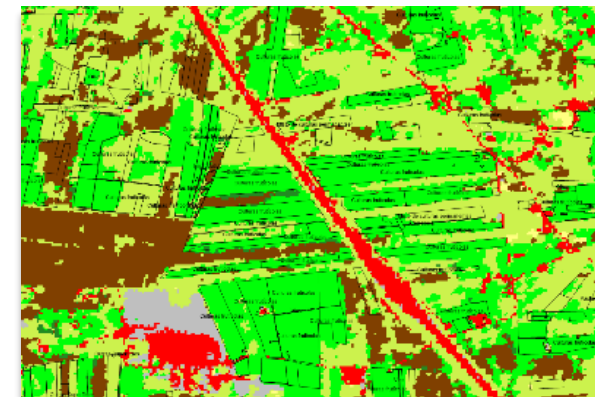
Use cases: Copernicus Land (example)



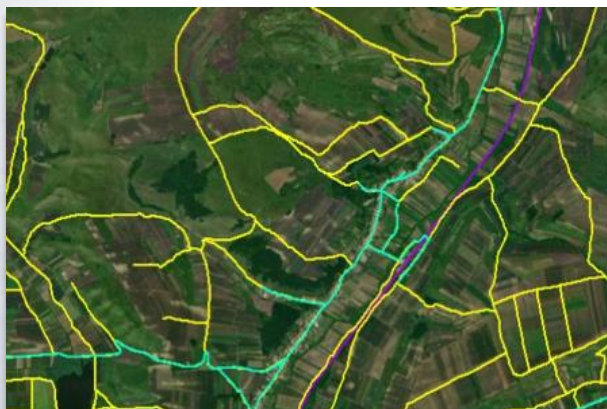
National Land Cover Land Use (LCLU) data (SIOSE), Spain in **N2K and Riparian Zones**



National Hydrological Data, Slovenia, in **CLC+ Backbone Vector**



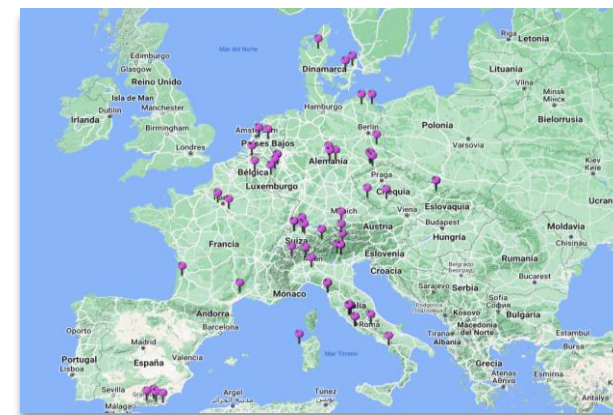
National LPIS data, Portugal, in **CLC+ Backbone Raster**



National transportation data, Romania, combined with OSM in **CLC+ Backbone Vector**



Synoptic Weather Station observations in **HR-Snow and Ice Monitoring**



FLUXNET ground data in **HR-Vegetation Phenology and Productivity**

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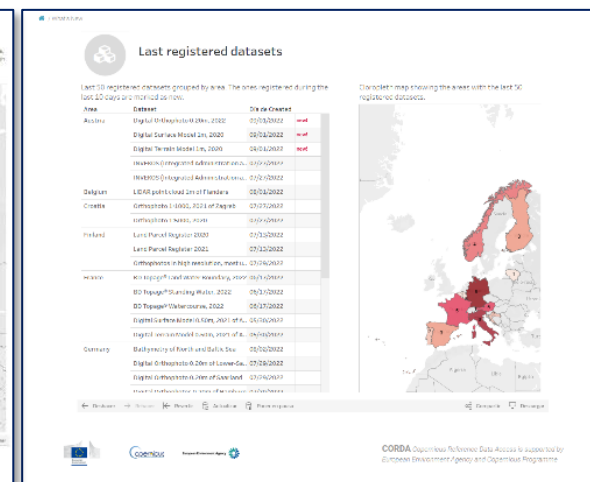
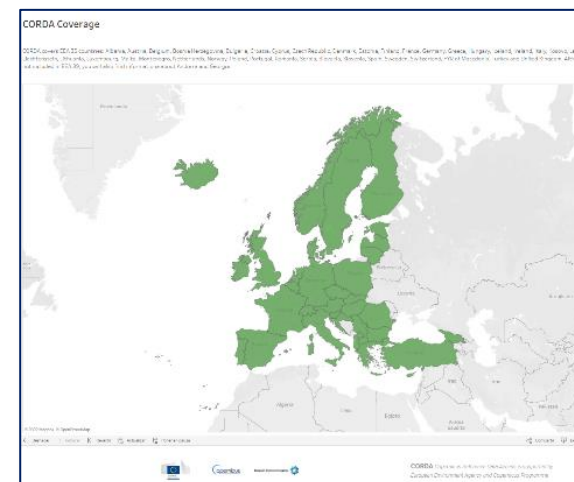
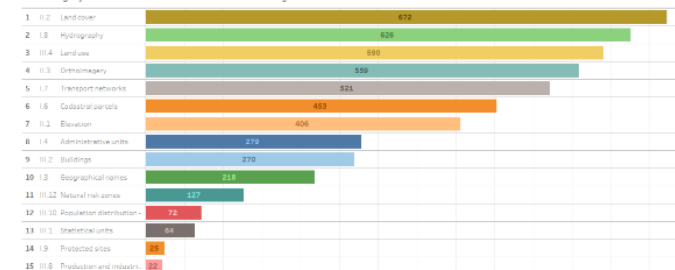
In situ

Access to data: CORDA

- Controlled and monitored gateway to geospatial data for Copernicus services
- **268 providers, 2000 datasets and 6000 services**
- Related to **13 INSPIRE themes**
- **Multi-country datasets** based on national information



Ranking by INSPIRE themes for Land Monitoring Services



<https://corda.eea.europa.eu>



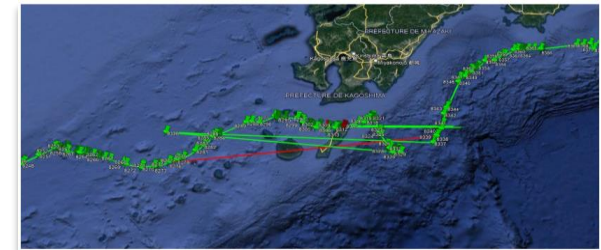
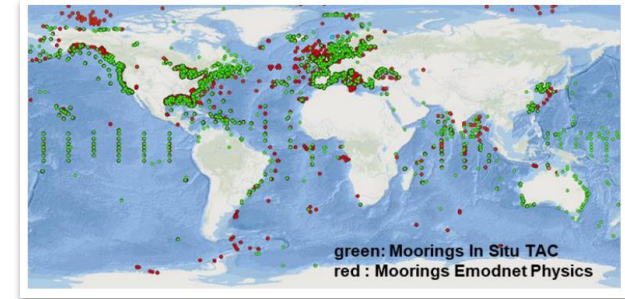




In situ

Access to data: observations

- **Homeless atmospheric data**
- **Hydrological in-situ data for the future**
- In situ coordination efforts towards the **Regional and Coastal Marine Services**
- **CO2 Monitoring & Verification Support (MVS)**
- **Arctic data**
- **Drifting buoys (C-RAID)**





In situ

Engaging with data providers: EuroGeographics

- NMCAs signing bilaterally Copernicus Services Agreements with EuroGeographics

- Annex I – Emergency Service
- Annex II – Land Service
- Annex III – Security Services

- One single license agreement** between EuroGeographics and EEA representing Copernicus

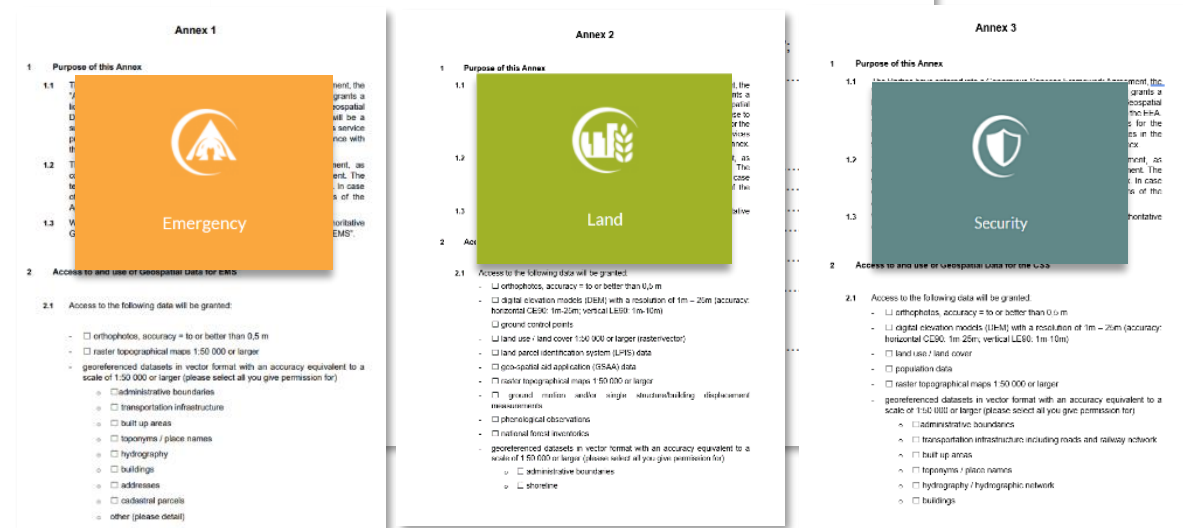
- Key instrument to increase use of data and strengthen cooperation** between NMCAs and Copernicus



Copernicus Services Framework Agreement

Between:

EuroGeographics AISBL, an international non-profit organisation under Belgian Law, with its registered office at address Rue du Nord, 76, 1000 Brussels, Belgium.
Registration N°833.607.112



European Environment Agency



European Commission





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Thank you for your
attention

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In situ

State of play – CIS², factsheets, reports

Requirement details

Edit requirement

Name	Chlorophyll
Note	
Dissemination	NRT Service
Quality Control Procedure	Automatic

Data details

Edit data

Delete data

Clone data

Name	Chlorophyll, Northwestern shelves
Note	
Update Frequency	Hourly
Area	North Atlantic, North West shelf

Product details

Edit product

Delete product

Name	ARCTIC_ANALYSIS_FORECAST_BIO_002_004
Acronym	
Description	Arctic Ocean Biogeochemistry Analysis and Forecast ; CHL PHYC ZOOC O2 N03 PO4 SI PP KD
Note	

Data provider network

Edit data provider

Edit network members

Delete data provider

Name	NOOS
Description	
Countries	Belgium Denmark France Germany Ireland Netherlands Norway Sweden United Kingdom
Members	Rijkswaterstaat Water, T... Belgian Institute of Nature... Météo-France Bundesamt... biologie des mers (ICBM)... Geestacht) Service hydrog... Koninklijk Nederlands Meteor... and Coastal Services; Coastal... Council (NERC) / National Oceanography Centre (NOC) Met Office Centre for Environment, Fisheries and Aquaculture Science Norwegian Meteorological Institute Institut Français de Recherche pour l'Exploitation de la Mer Swedish Meteorological and Hydrological Institute Danish Meteorological Institute Nansen Environmental and Remote Sensing Center
State	Draft
Created by	Erik Buch, erik.buch@eurogoos.eu



Fact Sheets



Reports

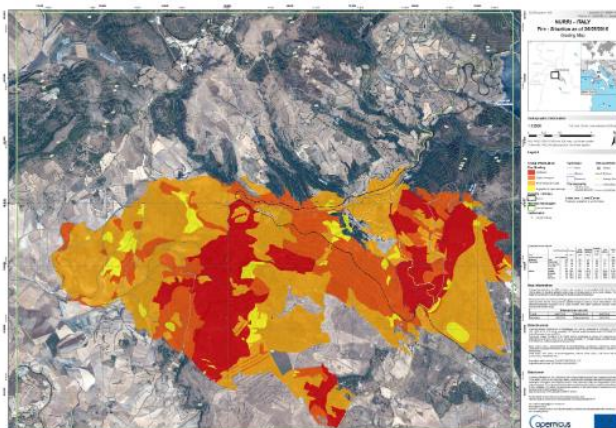
More in
<https://insitu.copernicus.eu>



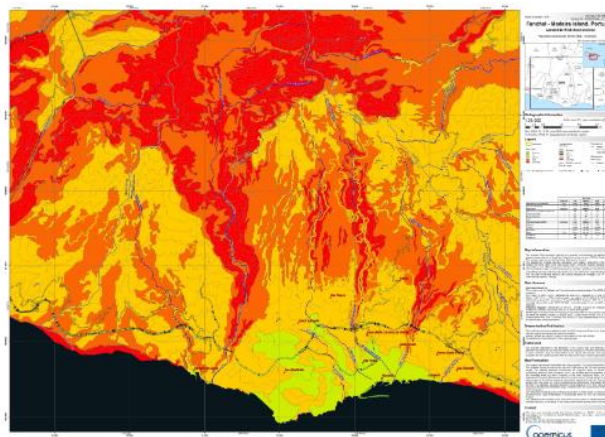
In situ

Some examples of in-situ data in CEMS

“The Copernicus EMS needs reliable mapping of transport networks, for example so that relief efforts can be targeted on the most important places.”



Forest fire Grading Map of the Nurri municipality in Sardinia. Copernicus Emergency Management Service (© 2016 European Union), [EMSR171] Nurri: Grading Map



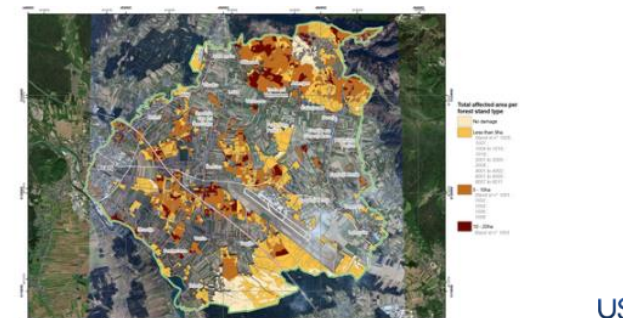
Landslide Risk Assessment Map showing population and assets at risk in Funchal, Madeira Island, Portugal. Copernicus Emergency Management Service (© 2016 European Union), [EMSR031] Funchal: Population and Assets at Risk Map - Landslide Risk Assessment (Details, Tile 2000)



Map showing the damaged buildings in Zagreb (Credit: Copernicus Emergency Management Service; extracted from the mapping product)



Map showing flooded areas at different points during the flood event (Credit: Copernicus Emergency Management Service; extracted from the mapping product)



Map showing the surface of affected areas per forest stand type (Credit: Copernicus Emergency Management Service; extracted from the mapping product)



In situ

Concluding remarks

- Copernicus relies heavily on the availability of **Member States' geospatial data** (e.g.: via CORDA)
- **CIS2, reports and factsheets** provides detailed info on requirements per product, their use, and their criticality;
- Stable and readily access is required to make timely products available to end users, especially in **emergency management**;
- It is essential that **national data providers** understand their data are important and positively impacts Copernicus product quality and usability;
- The **EEA cooperates with the services and data providers** to make this happen

