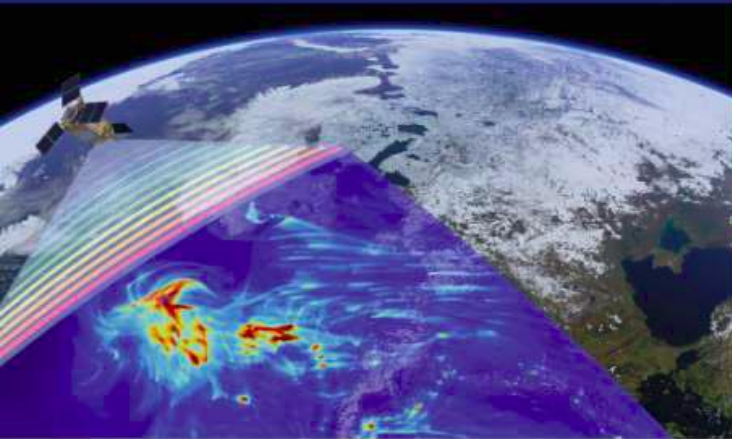


COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



**PALACE OF THE PARLIAMENT
BUCHAREST, ROMANIA**

www.rosa.ro/copernicus-conference

UNDER THE AUSPICES OF:



MINISTERUL CERCETĂRII ȘI INOVĂRII



100
ROMANIA



ESA



Galileo



The Regional Data Hub of
GEO-CRADLE and the
BEYOND Data Platforms
in support to the data
exploitation platform
concept

Alexia Tsouni

National Observatory of
Athens



Bucharest, 11/10/2018



BEYOND

Why data exploitation platforms?

The continuous provision of **useful, accurate and timely information** through coordinated and sustained **Earth Observation** together with INSPIRE data, Copernicus, and GCI information

is a **key enabler**

for **informed decision making**, in response to regional challenges and towards the achievement of the **UN SDGs** and the implementation of relevant **EU Directives**.



The BEYOND contribution

<http://beyond-eocenter.eu/>

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



HOME ABOUT US THEMATIC AREAS WEB SERVICES PROJECTS INFRASTRUCTURE NEWS / EVENTS

A world map interface for disaster monitoring. The map shows several disaster locations marked with colored circles and pins. A green circle with the number '3' is located in the Atlantic Ocean. An orange circle with the number '2979' is located in the Mediterranean Sea. A blue circle with the number '15' is located in the Balkans. Pins are placed in the Middle East, South Asia, and East Asia. Below the map is a search bar with the following elements: 'Select Country:' followed by a dropdown menu, 'Select Disaster Type:' followed by a dropdown menu, and a green 'Reset Search Criteria' button. To the right of the search bar are two icons: a magnifying glass and a speech bubble.

The BEYOND Center of Excellence develops research and provides EO-based disaster management services addressing priorities and needs from South Eastern Europe to worldwide. The Center's creation was supported by EU FP7-REGPOT-2012-2013-1 and costed 2,3 Meuros.



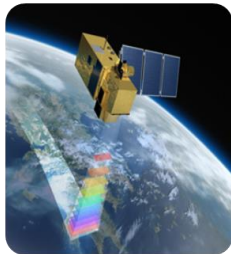
The BEYOND contribution

State-of-the-art systems

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

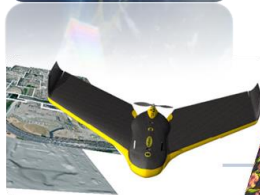
Monitoring Systems



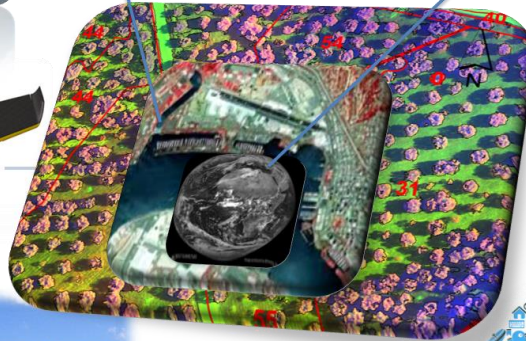
Polar orbit satellites
X-/L-band Station
Sentinel Mirror Site



Geostationary orbit satellites
MSG Seviri



UAVs



in-situ



In-situ platforms & networks



The BEYOND contribution State-of-the-art systems

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



BEYOND SATELLITE ACQUISITION FACILITIES 3RD PARTY MISSIONS

Polar orbit satellites, X-/L-band - 300TB Archive, Operation 24/7
EOS AQUA, SUOMI NPP, NOAA/AVHRR, METOP, FY.



The BEYOND contribution

State-of-the-art systems

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

Operates two **MSG acquisition stations of DVB-S & DVB-S2 systems**

Exploit high throughput provided with the new EUMETCast Europe service, based on using the EUTELSAT 10A

part of EUMETSAT's network



BEYOND GEOSYNCHRONOUS SATELLITE ACQUISITION FACILITIES 3RD PARTY MISSIONS

3 geostationary satellites MSG1-2-3
Data collection per 5 minutes



BEYOND



GEO GROUP ON
EARTH OBSERVATIONS

Copernicus

The BEYOND contribution State-of-the-art systems

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

Hellenic National Sentinel Data Mirror Site / ESA-NOA Agreement



COPERNICUS AND ITS SENTINELS

European Earth Observation Programme Copernicus: observing our planet for a safer world

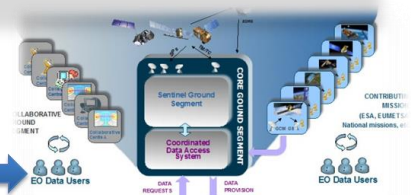
General Usage Processing Toolbox Overview and Description Tool

View the Sentinel Processing Toolbox User Manual

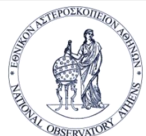
BEYOND
Hellenic National Sentinel Data Mirror Site Team
NOA Outreach Staff: Konstantinos Tsipras, President of NOA
Scientific Coordinator: Dr. Haris Koumbas, Research Director
Workflow Manager: HSC, Theodoros Vasilakis, Research Associate
Development: HSC, Vasilakis, Haris, Research Associate
Creator: HSC, Vasilakis, Papapanagos, Research Associate

National Observatory of Athens

<http://sentinels.space.noa.gr>



Distributes 150-200 GB/day
Operates non-stop 24/7
Powered by the GRNET/GEANT
Network Speed 150-200 Mbps
250 Users in South-East Europe



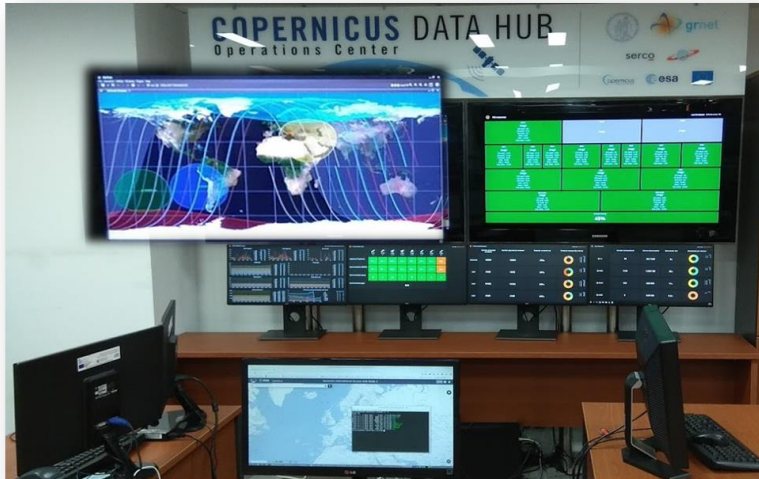
The BEYOND contribution

State-of-the-art systems

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

International Sentinel DataHub



COPERNICUS DATA HUB
Operations Center



Distributes 55 TB/day
Operates non-stop 24/7/365
Powered by GRNET/GEANT
Network Speed 500-700 Mbps



BEYOND



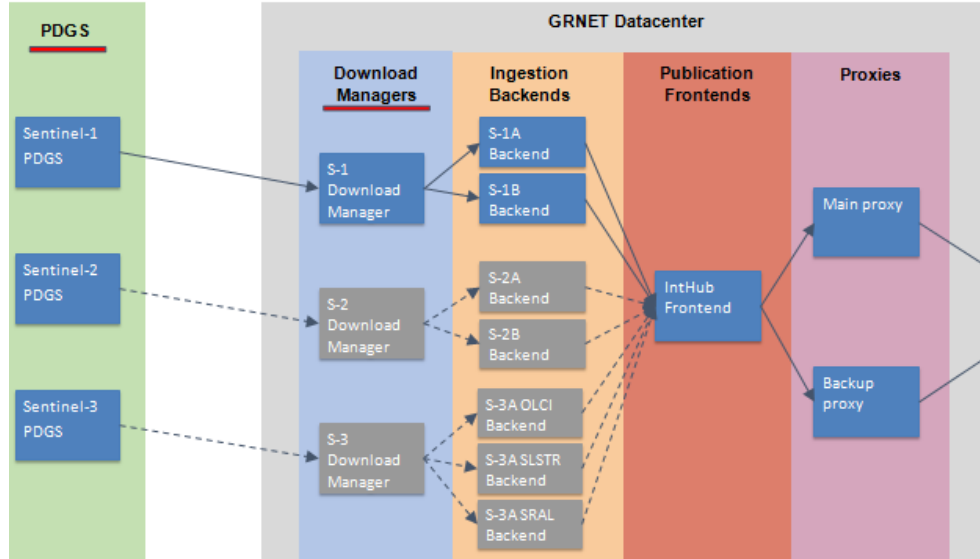
GOO GROUP ON
EARTH OBSERVATIONS

Copernicus

The BEYOND contribution State-of-the-art systems

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



58 Virtual Machines:

- ~1 TB RAM
- ~530 virtual CPUs
- ~4.5 TB disk storage



A 550 TB network filesystem for storing
> 500 thousand Sentinel products at any time

- INTHUB #1
- COLHUB #3
- DIASHUB #3
- AfricaCastHub
- S-5p PreOps Hub
- S-5p Expert Users Hub
- TMPHUB #1
- HNSDMS

COPERNICUS DATA HUB
Operations Center



BEYOND



GOO GROUP ON
EARTH OBSERVATIONS

Copernicus

The BEYOND contribution

State-of-the-art services

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

- InSar based Crust deformation mapping
- Small scale deformation rates - PS SAR Processing
- Landslide modeling
- Earthquake modeling
- Volcanic/Lava modeling
- Soil/Coastal Erosion models

GeoHub Services

- Fire spread modeling
- Fire risk analysis
- EO Active Fire Mapping
- EO Burn Scar Mapping (Rapid/Seasonal)

FireHub Services



AirHub Services

- Dust circulation modeling
- Smoke dispersion modeling
- Toxic gases dispersion modeling (industrial accidents)

FloodHub Services

- EO based Flood Mapping
- Flood Modeling
- Hydraulic Modeling



BEYOND



GO GROUP ON EARTH OBSERVATIONS

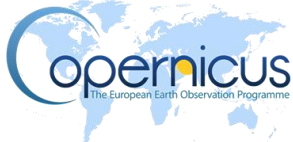
Copernicus

The BEYOND contribution State-of-the-art services

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

The role of the BEYOND EO Center of Excellence in the European EO Programme Copernicus for emergency management worldwide: Prevention - Preparedness - Risk Assessment - Response - Mitigation



Regulation (EU) No 377/2014 - Copernicus

Copernicus Work Programme

Sendai Framework (UN)

for Disaster Risk Reduction 2015-2030

COPERNICUS
Emergency Management Service

Home | What is Copernicus | EMS - Mapping | EMS - Early Warning System | News

LATEST NEWS - 2017-03-08 | [EHSN030] Post-disaster situation analyses of flood and landslides in Lima, Peru

EMS - MAPPING

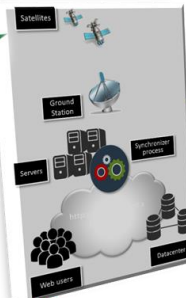
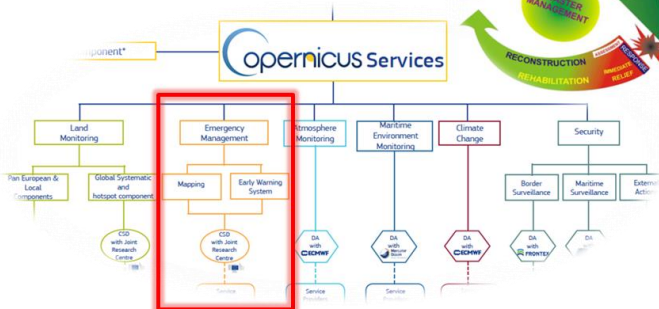
- Service Overview
- Who can use the service
- How to use the service
- Products: Rapid Mapping
- Products: Risk and Recovery
- Quality control / Feedback
- User Guide

RAPID MAPPING

- List of Activations

List of EMS Risk and Recovery Mapping Activations

Title	Event Type	Event Date (UTC)	Affected Countries
Contains	Drought, Epidemic, Extreme temperature, Hurricane/typhoon, Mass movement	Start date E.g. 2017-10-08 End date E.g. 2017-10-08	Algeria, Albania, Australia, Austria, Bangladesh, Belgium, Bermuda
Act. Status	Act -		Select multiple countries with Ctrl/Cmd
Apply	Reset		
Act. Code	Title	Country/Terr.	Feed
EHSND43	Tsunami risk assessment in Southern Italy	Italy	
EHSND41	Forest fire risk assessment in Croatia	Croatia	
EHSND40	Nation-wide asset mapping Finland	Finland	



FireHub

GeoHub

AirHub

FloodHub



BEYOND



GOO GROUP ON
EARTH OBSERVATIONS

Copernicus

The BEYOND contribution State-of-the-art services

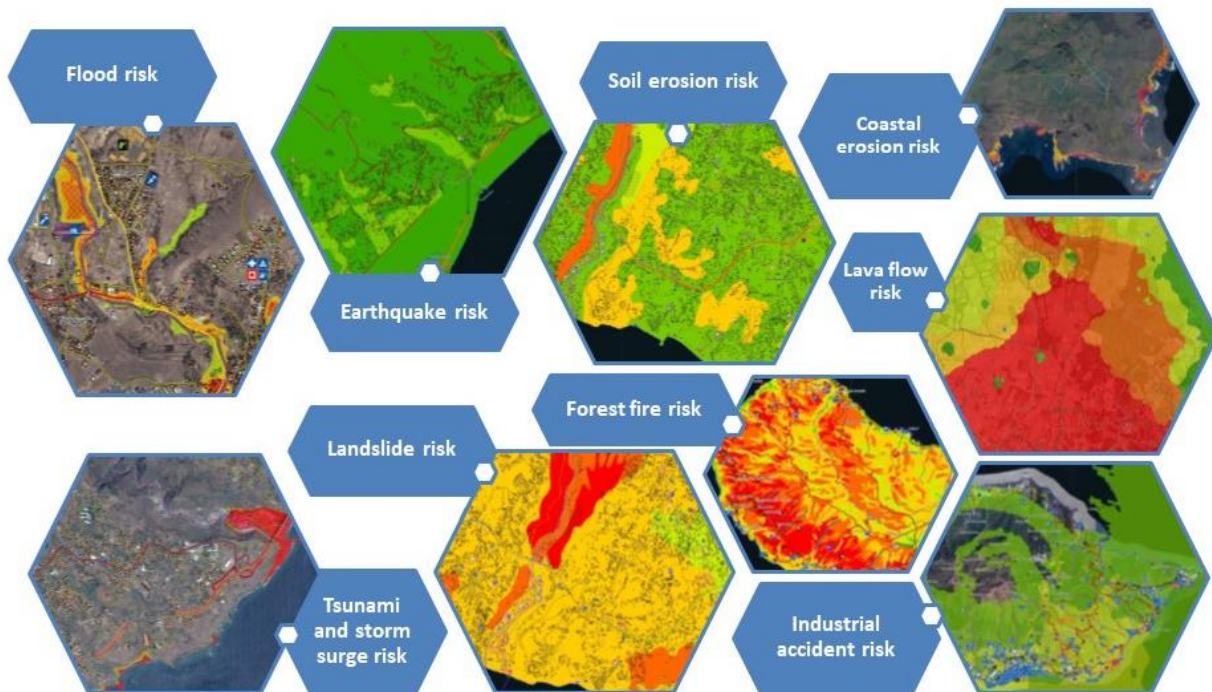
COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

COPERNICUS EMERGENCY MANAGEMENT SERVICE



COPERNICUS EMERGENCY MANAGEMENT SERVICE



GEO-CRADLE coordinates and integrates state-of-the-art EO activities in the regions of **North Africa, Middle East, and Balkans** (NAMEBA) and develops links with GEO related initiatives towards GEOSS, contributing amongst others to:



GEO-CRADLE brings together **key players** representing the **entire EO value chain** and promotes the uptake and exploitation of innovative EO activities in NAMEBA through:

- ✓ **Cooperation**
- ✓ **Awareness raising**
- ✓ **Capacity building**
- ✓ **Open data sharing principles**
- ✓ **Interoperability**

<http://geocradle.eu>

The **GEO-CRADLE** project has received funding from the European Union's **Horizon 2020** research and innovation programme under grant agreement No 690133



GEO-CRADLE thematic areas vs



COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



Adaptation to Climate Change (ACC)

13 CLIMATE ACTION



3 GOOD HEALTH AND WELL-BEING



11 SUSTAINABLE CITIES AND COMMUNITIES



15 LIFE ON LAND



Improved Food Security – Water Extremes Management (IFS-WEM)

2 ZERO HUNGER



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Access to Raw Materials (ARM)

1 NO POVERTY



2 ZERO HUNGER



Access to Solar Energy (SENSE)

7 AFFORDABLE AND CLEAN ENERGY



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

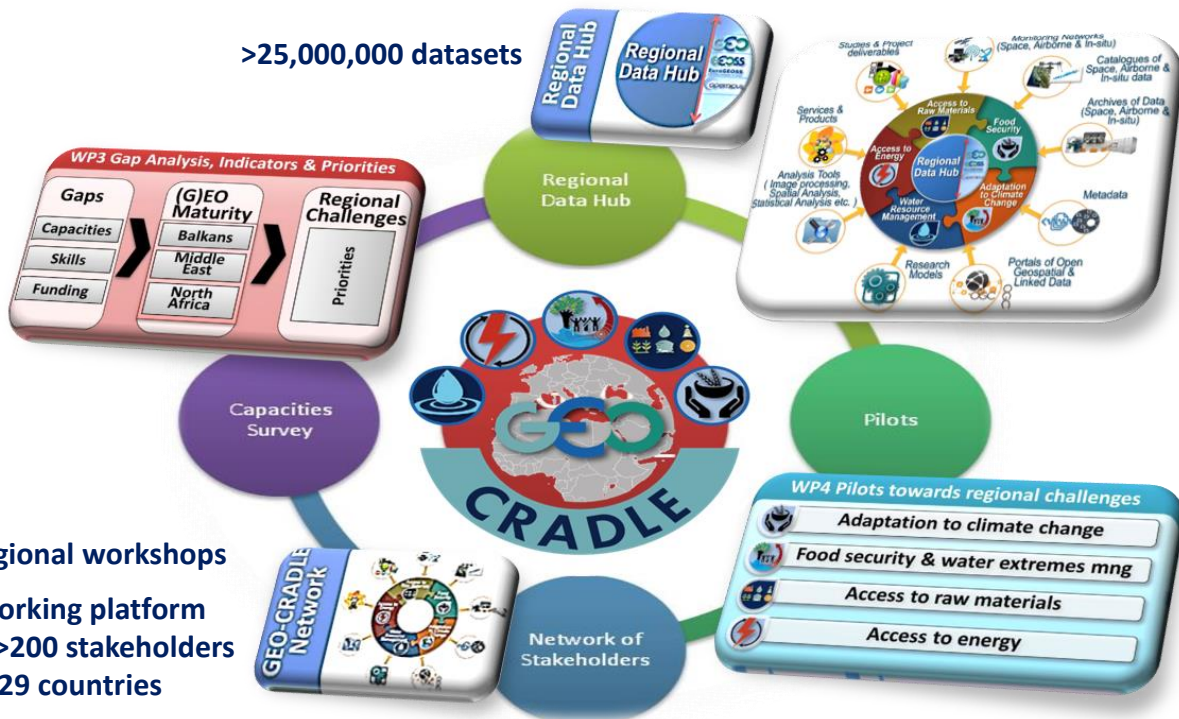


The GEO-CRADLE outputs

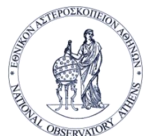
COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

>25,000,000 datasets



16 regional workshops
 Networking platform
 with >200 stakeholders
 from 29 countries



The GEO-CRADLE portal

<http://geocradle.eu>

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



Search



About GEO-CRADLE

Team

Activities

Regional Capacities

Outreach

Resources

Tools

News & Events

English

GEO-CRADLE Project

Coordinating and integrating Earth Observation activities



Pilot Activities

Follow our pilot activities in four thematic areas:



Survey & Networking Platform

Take part in our



DataHub

Access, search and share Earth Observation Data for the three regions.



Funding Opportunities

Explore the available funding opportunities and the benefit of



The GEO-CRADLE Regional Data Hub

<http://datahub.geocradle.eu/>

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



Geocradle

Home Groups Datasets News

Log in



[About](#)

The Regional Data Hub (RDH) provides access to both region-related datasets, portals and services developed by a regional network of raw data providers, intermediate users/service providers, end-users from Industry, Academic and Public Sector from the Region of Interest, and, also, datasets and services directly fed from the GEOSS-portal. Moreover, being the centralised gateway for regional data providers to contribute easily and timely their products to GEOSS, the Regional Data Hub is designed to become the focal node in the region in the context of GEOSS and Copernicus implementation. The RDH facilitates access to downloadable files of Space-borne data from real-time EO satellite missions acquisitions: data from Airborne campaigns performed in the region; In-situ data; and Models such as Atmospheric and Climate.

Stable service and full interoperability with GCI and GEO DAB APIs, as well as connection with data available through the project pilots.

[Find](#)



Data



Innovation



Involvement



Growth



BE  OND



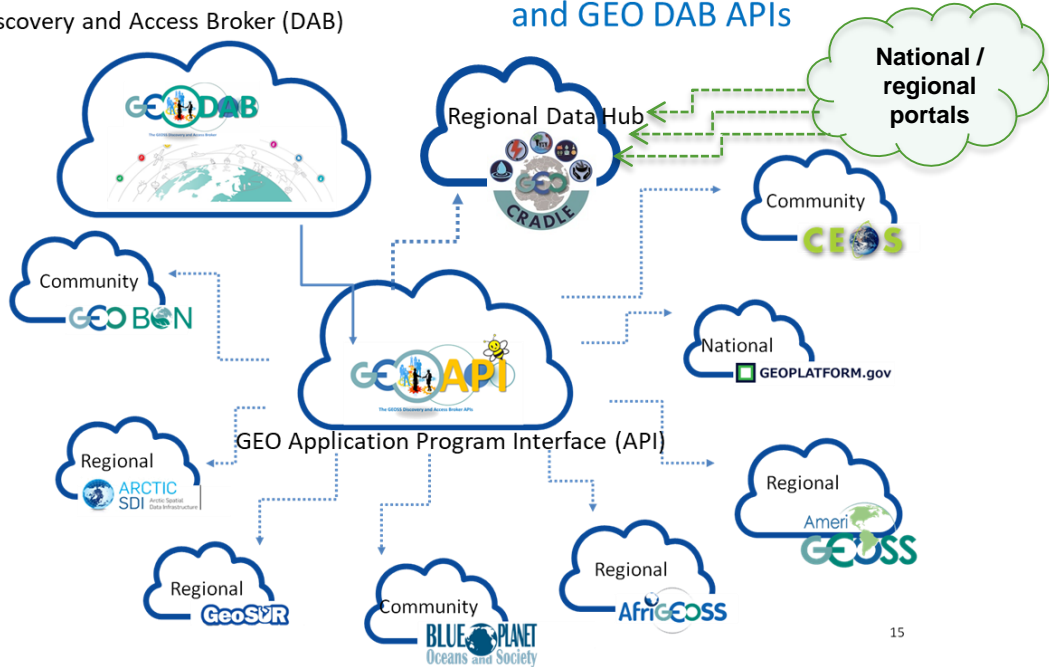
GEO GROUP ON EARTH OBSERVATIONS

Copernicus

The GEO-CRADLE Regional Data Hub Users / GEO Portals

National, regional or thematic community portals,
leveraging GEOSS Common Infrastructure (GCI) resources
and GEO DAB APIs

GEO Discovery and Access Broker (DAB)



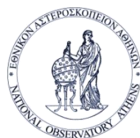
GROUP ON
EARTH OBSERVATIONS



The GEO-CRADLE Regional Data Hub

Design and operation

- ✓ The GEO-CRADLE RDH is designed and operates as the **focal node in the region in the context of GEOSS and Copernicus implementation.**
- It is an **open data web management tool / portal** (developed using web technologies such as PHP, HTML5, JavaScript, CSS, etc.) that provides **access to region-related datasets and services, directly fed from GCI, and at the same time being the central gateway for regional data providers to contribute easily and timely their products to GEOSS.**
- It advances the current state of the art by **integrating DKAN**, which is a complementary implementation of CKAN (Comprehensive Knowledge Archive Network) over Drupal/PHP, **with the GEO DAB APIs.** DKAN CMS (Content Management System) is an **open-source data management platform** that treats data as content, facilitating the subsequent publication, management, and maintenance of these, no matter the administration team, its size and level of technical expertise.



- ✓ Several **achievements** were accomplished for the RDH to be able to provide its users the functionalities described above:
- **Search in multiple sources** (although by default DKAN looks up for datasets and resources in a single local database).
 - **Search for datasets in remote resources** (integration of the GEO DAB APIs in the DKAN environment).
 - **Display the remote datasets and resources on-the-fly and with high performance** (using a rendering cache mechanism which also implements an Adaptive Time-to-Live consistency mechanism to periodically check the consistency of the cached rendering structures with the original data to assure that users do not receive stale data).
 - **Cleaning data mechanism** (cleans identical or duplicate data, discovers missing information for data, discovers URL that have changed or that are not working anymore, discards data with invalid URL schemes, etc.)
 - **Preview mechanism** (to preview data of various formats and services, such as CSV files, Web Map Services, Zip files, etc.)

An integrated Search and Display mechanism that offers the users unified, centralized and user-friendly interface.



The GEO-CRADLE Regional Data Hub

Search examples

**COPERNICUS &
SPACE APPLICATIONS**

11-12 October 2018 | Bucharest, Romania

(1)
Select the
"Datasets" section

(2)
Apply free text
(e.g. climate)



The GEO-CRADLE Regional Data Hub Search examples

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



Geocradle

Home Groups **Datasets** News Log in Register

Home / climate / Dataset

Page breadcrumb which depicts user's applied filters according to their appliance order

Content Types

- Dataset
- Tags
- Format
- Publisher

Global Earth Observation System of Systems (GEOSS) (5021)

Related Portals and Sites (23)

PILOT 1: Adaptation to Climate Change (ACC) (1)

Author

License

Datasets

5045 results

Search

climate

Apply

Datasets as search results

Search Facets that allow the users to further filter the search results



DEAR-Clima

PILOT 1: Adaptation to Climate Change (ACC)

The DEAR-Clima (Data Extraction Application for Regional Climate) is a user friendly interactive web application tool that visualizes and provides time series of essential climate variables and climate indices based on high

2 Resource(s)



The Satellite Application Facility on Climate Monitoring (CM SAF)

Related Portals and Sites

The Satellite Application Facility on Climate Monitoring generates, archives and distributes widely recognised high-quality satellite-derived products and services for climate monitoring in operational mode.

1 Resource(s)



FAO - FFEM Database

Related Portals and Sites

The database of the regional project "Maximize the production of goods and services of Mediterranean forest ecosystems in the context of global changes" funded by the French Global Environment Facility (FFEM) has been



The GEO-CRADLE Regional Data Hub

Search examples

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

Full Page View of the Dataset

Geocradle

Home Groups Datasets News Log in Register

View Revisions

DEAR-Clima

Dataset's Title

The DEAR-Clima (Data Extension Application for Regional Climate) is a user friendly interactive web application that visualises and provides time series of essential climate variables and climate indices based on high horizontal resolution Regional Climate Model (RCM) simulations from the Coordinated Regional Downscaling Experiment (CORDEX) research program. Reliable and user friendly open access of future climate change data from high resolution RCM projections is essential to support decision makers, stakeholders, intermediary users and end-users for climate change impacts, mitigation and adaptation. The RCM data processed in this web application tool have a high spatial resolution (0.11°) over the European domain and cover a time period from 1950 to 2100. The historical period of each experiment refers to 1950-2020, while the future period is 2020-2100 under the influence of three Representative Concentration Pathways (RCPs) adopted by the IPCC for its 5th Assessment Report (AR5): rcp26, rcp45 and rcp85. The simulation experiments are a product of various RCMs driven by several Global Climate Models (GCMs).

Dataset's Description

Data and Resources

- DEAR-Clima Application Resource**
The development of this web application tool was funded by the GEO-CRADLE... [Go to resource](#)
- EURO-CORDEX DATA**
The CORDEX regional climate model (RCM) simulations for the European domain... [Go to resource](#)

Climate change Regional climate RCMs CORDEX Future Projections Scenarios Data visualization
Climate Variables Climate Indices Visualizations

Dataset Info

These fields are compatible with DCAT, an RDF vocabulary designed to facilitate interoperability between data catalogs published on the Web.

Field	Value
Publisher	PILOT 1: Adaptation to Climate Change (ACC)
Modified Date	2017-11-23
Release Date	2017-11-23
Frequency	Daily
Identifier	654b4bed-f37f-4158-a0f5-3ed46ef5cd03
Homepage URL	http://meteo.gov.au/ngr/3836/
Spatial / Geographical Coverage Area	POLYGON ((32 27, -22 72, -45 72, 45 27))
Spatial / Geographical Coverage Location	The domain covers the greater area of Europe including the Mediterranean and a part of N.Africa.
Temporal Coverage	Sunday, January 1, 1950 - 00:00 to Thursday, December 31, 2099 - 00:00
Language	English (United Kingdom)
License	Open Data Commons Open Database License (ODBL)
Author	Athanasios Tziroglou, Demetris Akridas, Prodromos Zanis
Contact Name	Athanasios Tziroglou
Contact Email	ClimateProjectionApp@gmail.com
Public Access Level	Public

Related Content:

CORDEX: Coordinated Regional Downscaling Experiment

Dataset's Data Extent

Dataset's License widget

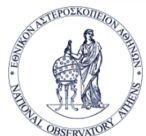
Other Access widget (Provides JSON & RDF view of the Dataset)

Social widget (The user can instantly share the dataset through various social media platforms)

Dataset's tags (Provide links that initiate searches with these tags)

Dataset's Links to its Resources

Dataset's Additional Information



The GEO-CRADLE Regional Data Hub Data & Data Providers

**COPERNICUS &
SPACE APPLICATIONS**

11-12 October 2018 | Bucharest, Romania

DATA

Regions of Interest

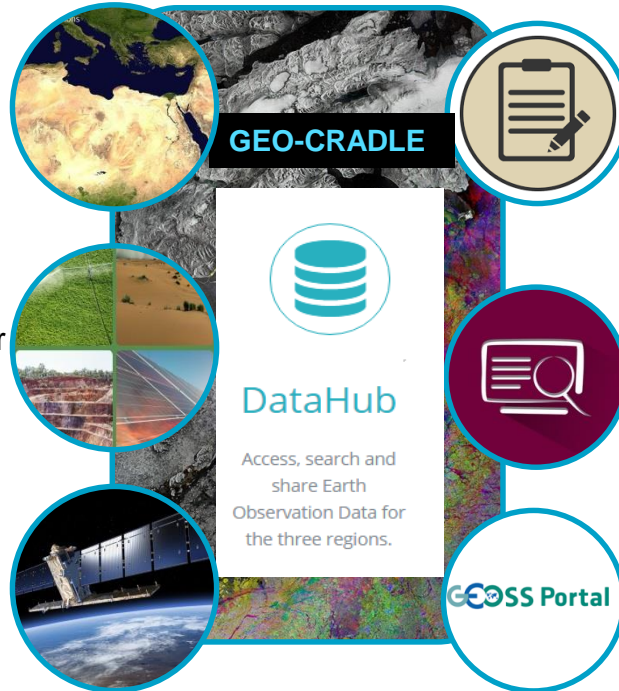
- Balkans
- Middle East
- North Africa

Thematic Areas

- Climate Change
- Food Security & Water
Extremes
- Raw Materials
- Energy

EO Data Categories

- Space borne
- Ground based
- Modelling



DATA PROVIDERS

GEO-CRADLE Survey

- 10 national portals and sites

**National portals
in total: 42**

Desk Research

- 32 national portals and sites
- 12 continental and global portals and sites

GEOSS Portal

- 25,216,989 datasets

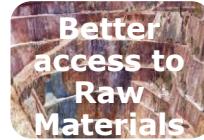


The GEO-CRADLE Regional Data Hub

National sites and portals in numbers

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



Total Number of Portals per Rol (unique)



Balkans

16

17

8

3

23



Middle East

6

8

1

2

18



North Africa

0

1

0

0

1

Total Number of Portals per Thematic Area

22

26

9

5

Total number of portals and sites: 42



The GEO-CRADLE Regional Data Hub Prioritised Portals

**COPERNICUS &
SPACE APPLICATIONS**

11-12 October 2018 | Bucharest, Romania

a/a	Portals	Brokered by GEOSS
1.	Danube Reference Data and Services Infrastructure (DRDSI)	Done
2.	Eusoils	In progress
3.	Albania - GEOportal	Pending
4.	Montenegro - GEOportal	Pending
5.	Croatia - GEOportal	Pending
6.	Moldova - National geospatial data of Moldova	In progress
7.	FYROM – Soil information system	Pending
8.	Bosnia & Herzegovina - GEOportal	Pending
9.	REP of SRPSKA - GEOportal	Pending
10.	Slovenia- Portal and Forest Data Viewer	Done
11.	Cyprus - Geoportal	In progress
12.	Cyprus - Air quality	In progress
13.	United Arab Emirates - Abu Dhabi Geospatial Portal and Map Viewer	Pending
14.	Poland - Central geological Db	Pending



The GEO-CRADLE Regional Data Hub INSPIRE-compliant example

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



search

Geocradle

Home Groups Datasets News Log in

Home / Datasets / Slovenian GeoPortal

[View](#) [Revisions](#)

Slovenian GeoPortal

Geoportal of spatial information is the central portal for access to the infrastructure for spatial information and is intended to permit access to spatial data sets and services related to spatial data and other information and services related to infrastructure for spatial information. Managed geo-spatial information for the national point of contact.

Data and Resources

Surveying and Mapping Authority of the Republic of Slovenia - GeoPortal
Go to resource

[Slovenia](#) [Climate change](#) [Food security](#) [Ontology](#) [Culture](#) [Water](#)

Dataset info

i These fields are compatible with DCAI, an RDF vocabulary designed to facilitate interoperability between data catalogs published on the Web.

Field	Value
Publisher	Related Portals and Sites
Modified Date	2017-07-26
Release Date	2017-07-25
Homepage URL	http://www.gov.si/en/
Identifier	a3a86863-82f6-40c1-ab7c-519168a858b5
Spatial / Geographical Coverage Area	POLYGON ((15.62255899375 45.775186183521, 15.46875 45.35986533396, 14.622802734375 45.490945692627, 13.309936523438 45.457000041329, 13.304443399375 46.278631221561, 13.502197265625 46.581518465658, 15.451762871875 46.274802314667, 16.408081054688 46.894689285549, 16.622314453125 46.483264729156, 15.908203125 46.111325657298])
Spatial / Geographical Coverage Location	Slovenia
Language	English (United Kingdom) Slovenian (Slovenia)
License	Open Data Commons Open Database License (ODbL)
Contact Name	The Surveying and Mapping Authority of the Republic of Slovenia
Contact Email	gsirma.gov[at]gov.si
Public Access Level	Public

Dataset Extent

License

Open Data Commons Open Database License (ODbL)

Other Access

The information on this page (the dataset metadata) is also available in these formats:

JSON
RDF

via the SKAN API

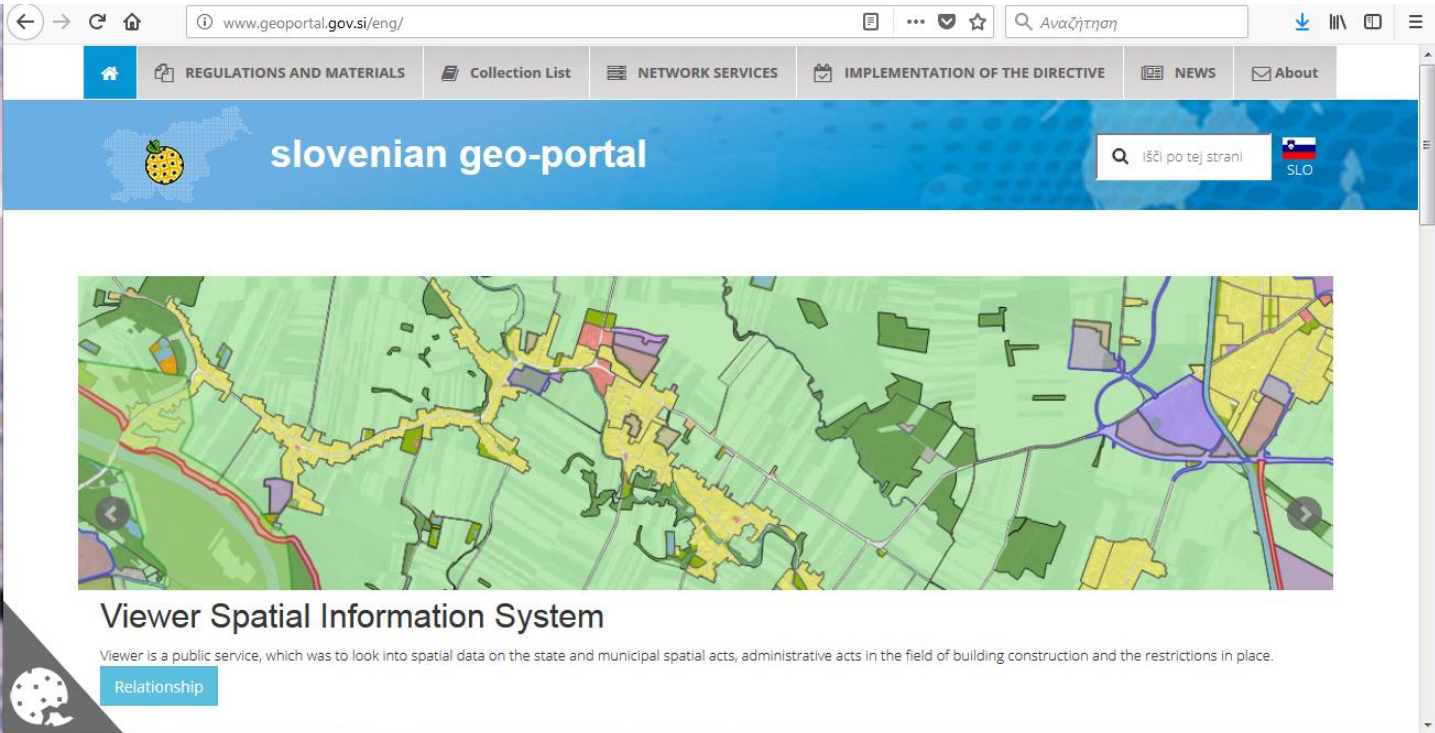
Social



The GEO-CRADLE Regional Data Hub INSPIRE-compliant example

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



The screenshot shows the Slovenian Geo-portal website. At the top, there is a navigation menu with items: REGULATIONS AND MATERIALS, Collection List, NETWORK SERVICES, IMPLEMENTATION OF THE DIRECTIVE, NEWS, and About. Below the menu is a blue header with the text "slovenian geo-portal" and a search bar containing "išči po tej strani" and a Slovenian flag icon. The main content area features a map with various colored overlays (yellow, purple, green, red) representing spatial data. Below the map, the text "Viewer Spatial Information System" is displayed, followed by a description: "Viewer is a public service, which was to look into spatial data on the state and municipal spatial acts, administrative acts in the field of building construction and the restrictions in place." A "Relationship" button is visible below the text.



BEOND



GEO GROUP ON
EARTH OBSERVATIONS

Copernicus

The GEO-CRADLE Regional Data Hub

Pilot activities

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

[About GEO-CRADLE](#)[Team](#)[Activities](#)[Regional Capacities](#)[Outreach](#)[Resources](#)[Tools](#)[News & Events](#)[English](#)

GEO-CRADLE Project

Coordinating and integrating Earth Observation activities



Pilot Activities

Follow our pilot activities in four thematic areas:



Survey & Networking Platform

Take part in our



DataHub

Access, search and share Earth Observation Data for the three regions.



Funding Opportunities

Explore the available funding opportunities and the benefit of



The GEO-CRADLE Regional Data Hub

Pilot activities

**COPERNICUS &
SPACE APPLICATIONS**

11-12 October 2018 | Bucharest, Romania



Search



About GEO-CRADLE

Team

Activities

Regional Capacities

Outreach

Resources

Tools

News & Events

English

Geo-Cradle Portal > Regional Capacities > Feasibility Studies – Pilots

Feasibility Studies – Pilots

PILOT 1: ACC

PILOT 2: IFS-WEM

PILOT 3: ARM

PILOT 4: SENSE

- 1) Adaptation to Climate Change
- 2) Improved Food Security – Water Extremes Management
- 3) Access to Raw Materials
- 4) Access to Solar Energy

**FREE AND OPEN
ACCESS TO ALL
PILOTS'
DATASETS AND
SERVICES**



BEYOND



GEO GROUP ON
EARTH OBSERVATIONS

Copernicus

The GEO-CRADLE Regional Data Hub Pilot 1: Adaptation to Climate Change

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

DEAR-Clima

Home

Domain

Experiments

Scenarios

Variables

Application

About

Contact

Welcome

The Data Extraction Application for Regional Climate (DEAR-Clima) is a user friendly interactive web application tool that visualizes and provides time series of essential climate variables and climate indices based on high horizontal resolution Regional Climate Model (RCM) simulations from the Coordinated Regional Downscaling Experiment (CORDEX) research program. Reliable and user friendly open access of future climate change data from high resolution RCM projections is essential to support decision makers, stakeholders, intermediary users and end-users for climate change impacts, mitigation and adaptation. The RCM data processed in this web application tool have a high spatial resolution (0.11°) over the european domain and cover a time period from 1950 to 2100. The historical period of each experiment refers to 1950-2004, while the future period is 2006-2100 under the influence of three Representative Concentration Pathways (RCPs) adopted by the IPCC for its fifth Assessment Report (AR5); rcp26, rcp45 and rcp85. The simulation experiments are a product of various RCMs driven by several Global Climate Models (GCMs).

The development of this web application tool was funded by the GEO-CRADLE project that aims to coordinate and integrate state-of-the-art Earth Observation activities in the regions of North Africa, Middle East, and Balkans and develop links with GEO related initiatives towards GEOSS. The server is located at the [Department of Meteorology and Climatology](#), School of Geology, Aristotle University of Thessaloniki, Greece.

[Go to Application](#)

<http://meteo3.geo.auth.gr:3838>



BE  OND



GEO GROUP ON
EARTH OBSERVATIONS

Copernicus

The GEO-CRADLE Regional Data Hub

Pilot 1: Adaptation to Climate Change

**COPERNICUS &
SPACE APPLICATIONS**

11-12 October 2018 | Bucharest, Romania

DEAR-Clima [Home](#) [Domain](#) [Experiments](#) [Scenarios](#) [Variables](#) [Application](#) [About](#) [Contact](#)

Guidelines

Subscribe

Input [Plot](#) [Plot \(\$\Delta T\$ \)](#) [Graphical Options](#)

1. Temporal & Variable Selection

Temporal Selection ⁱ

Yearly

Variable

Temperature (2m)

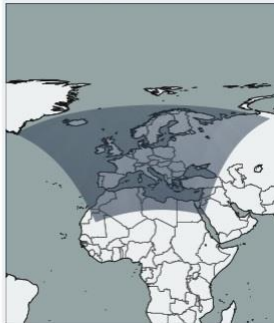
2. Grid Selection

Insert Coordinates

Select on Map

Selected Longitude: 28.5668245366239
Selected Latitude: 40.615259680776

Selection Map



Display Map



3. Initiate Processing

Process



BE  OND



GEO GROUP ON
EARTH OBSERVATIONS

Copernicus

The GEO-CRADLE Regional Data Hub

Pilot 1: Adaptation to Climate Change

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

DEAR-Clima [Home](#) [Domain](#) [Experiments](#) [Scenarios](#) [Variables](#) [Application](#) [About](#) [Contact](#)

Guidelines

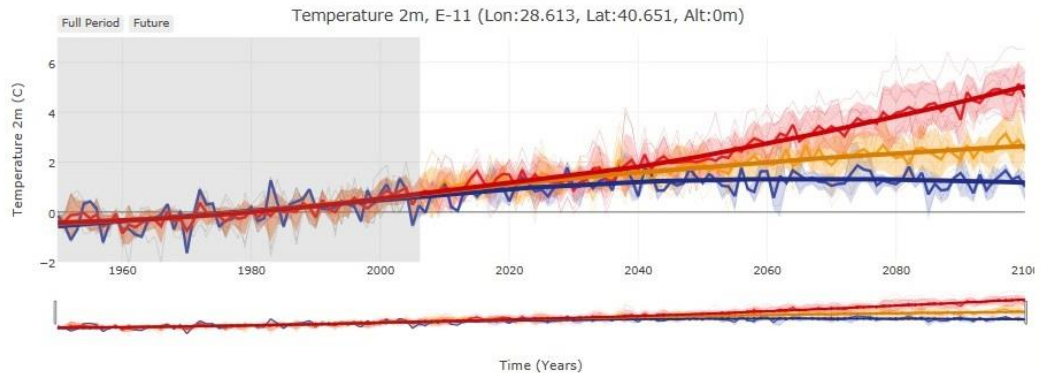
Subscribe

[Input](#) [Plot](#) **Plot (ΔT)** [Graphical Options](#)

Download

[.csv \(\$\Delta T\$ \)](#)

Hints: Drag-and-drop to zoom into a specific period. Return back to the initial stage by double clicking anywhere in the plot area. Change the displayed features using the Graphical Options panel. The ΔT plot is calculated by subtracting the mean value of the historical period 1960-1990 from all the values of the historical, rcp26, rcp45 and rcp85 experiments.



BE  OND



GEO GROUP ON
EARTH OBSERVATIONS

Copernicus

The GEO-CRADLE Regional Data Hub Pilot 1: Adaptation to Climate Change

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

PRETECT

About ▾ School ▾ Data ▾ Latest forecasts News ▾ 

The PRE-TECT campaign

Revealing the secrets of desert dust

1st – 30th April, 2017



Organized by the
National Observatory of Athens



The goal

PRE-TECT is an atmospheric experiment organized by the National Observatory of Athens in the framework of the ACTRIS. The experiment will take place from 1st to 30th April 2017, aiming to advance desert dust characterization from remote sensing measurements. It will employ advanced inversion techniques developed in the framework of ACTRIS, focusing on aerosol absorption and aiming to fulfil the objectives of the ACTRIS JRA1 activity ("Improving the accuracy of aerosol light absorption determinations"). The specific aim of the campaign is to validate the remote sensing retrievals against surface and airborne in-situ measurements. The campaign is framed by a number of parallel activities. [Learn more.](#)

<http://pre-TECT.space.noa.gr>



BE  OND



GEO GROUP ON
EARTH OBSERVATIONS

Copernicus

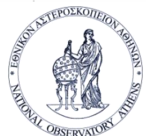
The GEO-CRADLE Regional Data Hub

Pilot 1: Adaptation to Climate Change

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania


Select date						
17	18	19	20	21	22	23
AERONET	AERONET	AERONET	AERONET	AERONET	CAMS cross-section:	AERONET
CAMS cross-section:	CAMS cross-section:	CAMS cross-section:	CAMS cross-section:	CAMS cross-section:	CAMS maps	CAMS cross-section:
CAMS maps	CAMS maps	CAMS maps	CAMS maps	CAMS maps	CAPS PM _{ss}	CAMS maps
CAPS PM _{ss}	CAPS PM _{ss}	CAPS PM _{ss}	CAPS PM _{ss}	CAPS PM _{ss}	Cloud radar	CAPS PM _{ss}
Cloud radar	Cloud radar	Cloud radar	Cloud radar	Cloud radar	Dust forecast	Cloud radar
DREAM-NMM-ECM	DREAM-NMM-ECM	DREAM-NMM-ECM	DREAM-NMM-ECM	DREAM-NMM-ECM	Dust forecast (MSG :	DREAM-NMM-ECM
Dust forecast	Dust forecast	Dust forecast	Dust forecast	Dust forecast	Dust forecast at Skin	Dust forecast
Dust forecast (MSG :	Dust forecast (MSG :	Dust forecast (MSG :	Dust forecast (MSG :	Dust forecast (MSG :	FLEXPART	Dust forecast (MSG :
Dust forecast at Skin	Dust forecast at Skin	Dust forecast at Skin	Dust forecast at Skin	Dust forecast at Skin	HALO	Dust forecast at Skin
FLEXPART	FLEXPART	FLEXPART	FLEXPART	FLEXPART	Microwave Radiome	FLEXPART
HALO	HALO	HALO	HALO	HALO	MSG-Dust	HALO
Microwave Radiome	Microwave Radiome	Microwave Radiome	Microwave Radiome	Microwave Radiome	PollyXT	Microwave Radiome
MSG-Dust	MSG-Dust	MSG-Dust	MSG-Dust	MSG-Dust	PollyXT classifier	MSG-Dust
PollyXT	PollyXT	PollyXT	PollyXT	PollyXT	PREDE POM-01	PollyXT
PollyXT classifier	PollyXT classifier	PollyXT classifier	PollyXT classifier	PollyXT classifier	PSR observations	PollyXT classifier
PREDE POM-01	PREDE POM-01	PREDE POM-01	PREDE POM-01	PREDE POM-01	Pyranometer GHI & I	PREDE POM-01
PSR observations	PSR observations	PSR observations	PSR observations	PSR observations	Sea salt forecast	PSR observations
Pyranometer GHI & I	Pyranometer GHI & I	Pyranometer GHI & I	Pyranometer GHI & I	Pyranometer GHI & I	SENSE	Pyranometer GHI & I
Sea salt forecast	Sea salt forecast	Sea salt forecast	Sea salt forecast	Sea salt forecast	Smoke forecast	Sea salt forecast
SENSE	SENSE	SENSE	SENSE	SENSE	WRF overview	SENSE
Smoke forecast	Smoke forecast	Smoke forecast	Smoke forecast	Smoke forecast	WRF WIND(...)	Smoke forecast
WRF overview	WRF overview	WRF overview	WRF overview	WRF overview		WRF overview
WRF WIND(...)	WRF WIND(...)	WRF WIND(...)	WRF WIND(...)	WRF WIND(...)		WRF WIND(...)



The GEO-CRADLE Regional Data Hub

Pilot 1: Adaptation to Climate Change

21

- AERONET 
- CAMS cross-section
- CAMS maps
- CAPS PM_{ss}a
- Cloud radar
- DREAM-NMM-ECM
- Dust forecast
- Dust forecast (MSG)
- Dust forecast at Skin
- FLEXPART
- HALO
- Microwave Radiomet
- MSG-Dust
- PollyXT
- PollyXT classifier
- PREDE POM-01
- PSR observations
- Pyranometer GHI & I
- Sea salt forecast
- SENSE
- Smoke forecast
- WRF overview
- WRF WIND(...)

AERONET

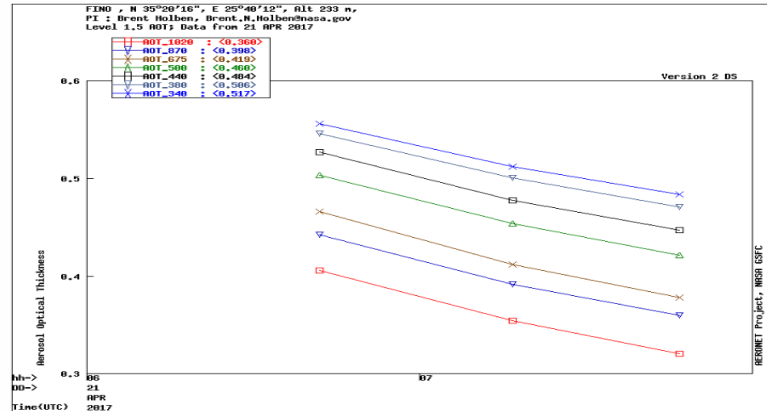
Uploaded on 2017-04-21 17:15:28

Start time	April 21, 2017, midnight	Duration	1 day
Stop time	April 22, 2017, midnight	Instrument	CIMEL sunphotometer

← Previous

Next →

Related graphs



Graph 1: Aerosol optical depth

Aerosol optical depth by AERONET sun-photometer



The GEO-CRADLE Regional Data Hub Pilot 1: Adaptation to Climate Change

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

21

- AERONET
- CAMS cross-sections
- CAMS maps
- CAPS PM_{ss}a
- Cloud radar
- DREAM-NMM-RTM
- Dust forecast
- Dust forecast (MSG)
- Dust forecast at Skin
- FLEXPART
- HALO
- Microwave Radiometer
- MSG-Dust
- PollyXT
- PollyXT classifier
- PREDE POM-01
- PSR observations
- Pyranometer GHI & I
- Sea salt forecast
- SENSE
- Smoke forecast
- WRF overview
- WRF WIND(...)



Cloud radar

Uploaded on 2017-04-22 13:11:12

Start time April 21, 2017, midnight **Duration** 1 day

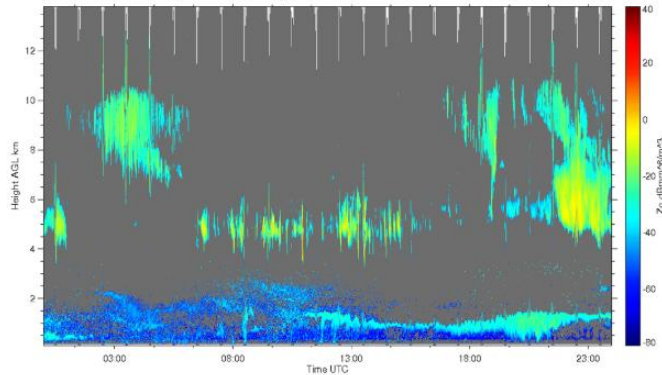
Stop time April 22, 2017, midnight **Instrument** Doppler Cloud Radar MIRA-35

← Previous

Next →

Related graphs

Equivalent Radar Reflectivity Factor Z_e of all Targets 00:00 21.04.2017 – 23:59 21.04.2017 Finokalia, Crete, Greece



Cloud and
aerosol
properties



The GEO-CRADLE Regional Data Hub

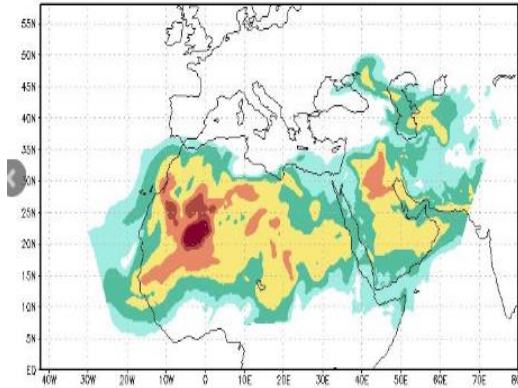
Pilot 1: Adaptation to Climate Change

21

- AERONET
- CAMS cross-sections
- CAMS maps
- CAPS PM_{ss}a
- Cloud radar
- DREAM-NMM-ECMWF
- Dust forecast
- Dust forecast (MSG)
- Dust forecast at Skin
- FLEXPART
- HALO
- Microwave Radiometer
- MSG-Dust
- PollyXT
- PollyXT classifier
- PREDE POM-01
- PSR observations
- Pyranometer GHI & I
- Sea salt forecast
- SENSE
- Smoke forecast
- WRF overview
- WRF WIND(...)

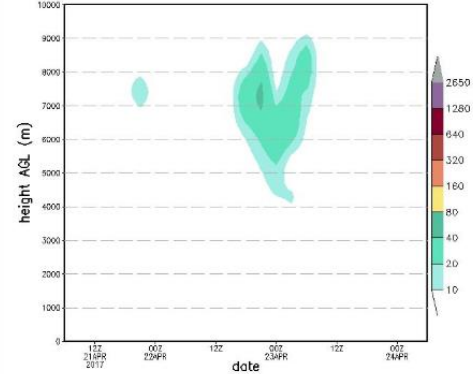


IAASARS/NOA NMME-DREAM MSG Assimilation Run
AOD 23APR2017 03UTC



NMME-DREAM Total dust concentration [ug/m³]

Station = FINOKALIA



Horizontal and vertical dust forecasts
with satellite assimilation



The GEO-CRADLE Regional Data Hub

Pilot a1: Adaptation to Climate Change

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

21

- AERONET
- CAMS cross-sections
- CAMS maps
- CAPS PM_{ss}a
- Cloud radar
- DREAM-NMM-ECMWF
- Dust forecast
- Dust forecast (MSG)
- Dust forecast at Skin
- FLEXPART
- HALO
- Microwave Radiometer
- MSG-Dust
- PollyXT
- PollyXT classification**
- PREDE POM-01
- PSR observations
- Pyranometer GHI & I
- Sea salt forecast
- SENSE
- Smoke forecast
- WRF overview
- WRF WIND(...)



PollyXT classification

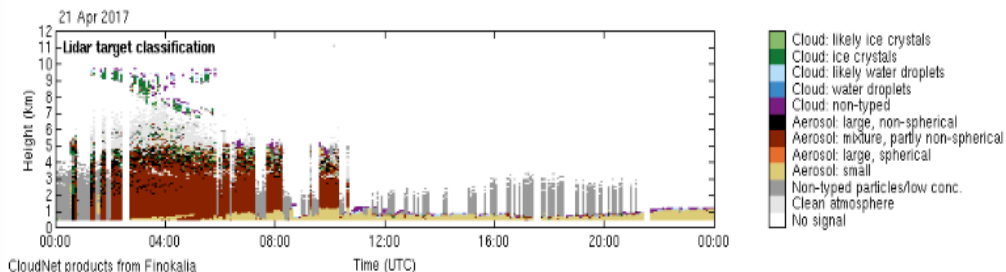
Uploaded on 2017-04-24 16:27:56

Start time	April 21, 2017, midnight	Duration	1 day
Stop time	April 22, 2017, midnight	Instrument	PollyXT lidar

← Previous

Next →

Related graphs



Graph 1: Multiwavelength aerosol classification - 2017-04-21

Aerosol Classification by the PollyXT Lidar

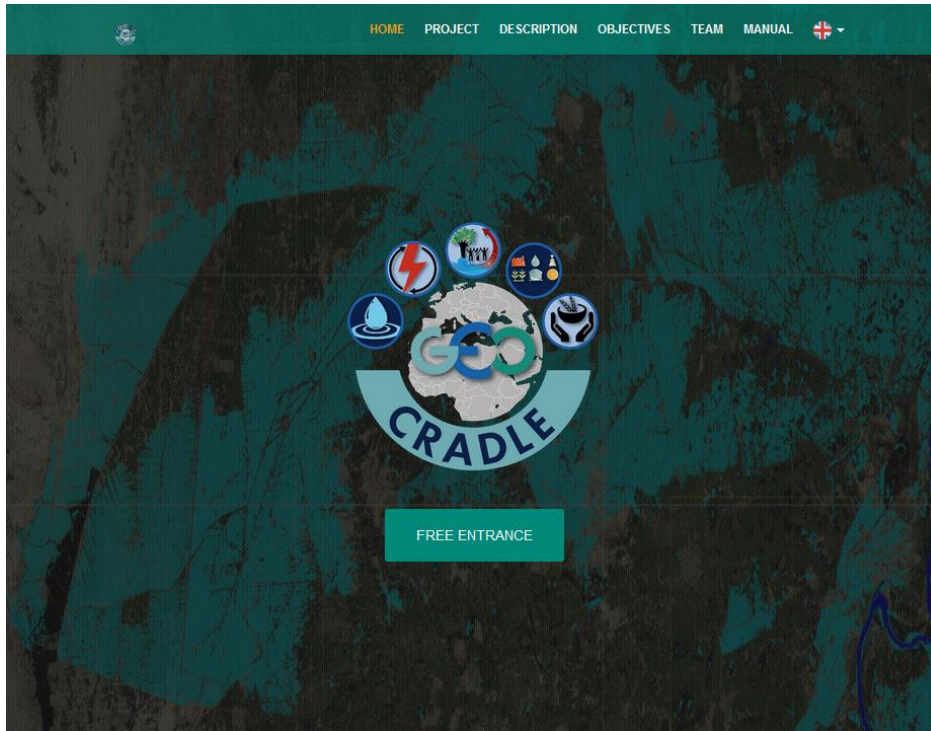


The GEO-CRADLE Regional Data Hub

Pilot 2: Improved Food Security-Water Extremes Mgmt

**COPERNICUS &
SPACE APPLICATIONS**

11-12 October 2018 | Bucharest, Romania



Click on
FREE ENTRANCE
and hit Dewetra
on the left pane to
enter the main platform



<http://geo-cradle.mydewetra.org>



BE *ON* OND



GEO GROUP ON
EARTH OBSERVATIONS

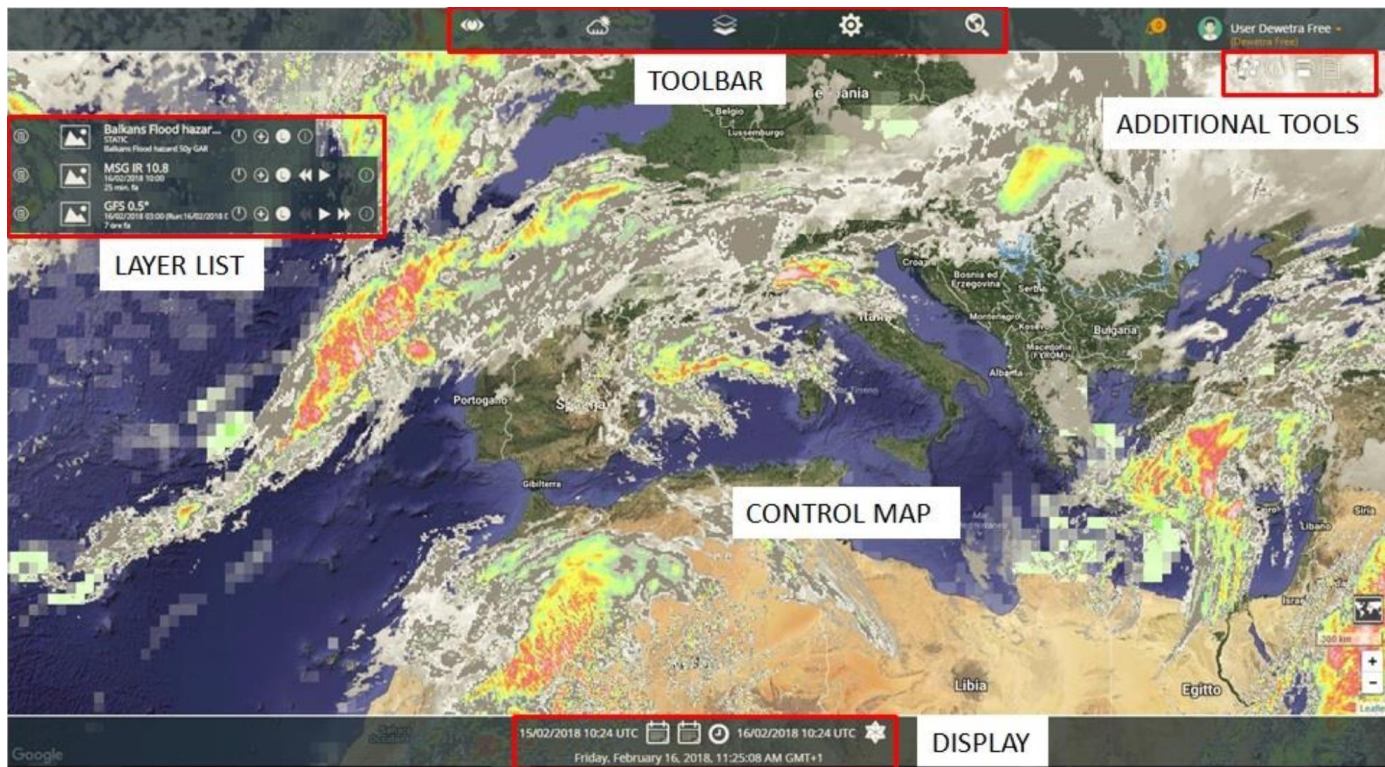
Copernicus

The GEO-CRADLE Regional Data Hub

Pilot 2: Improved Food Security-Water Extremes Mgmt

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

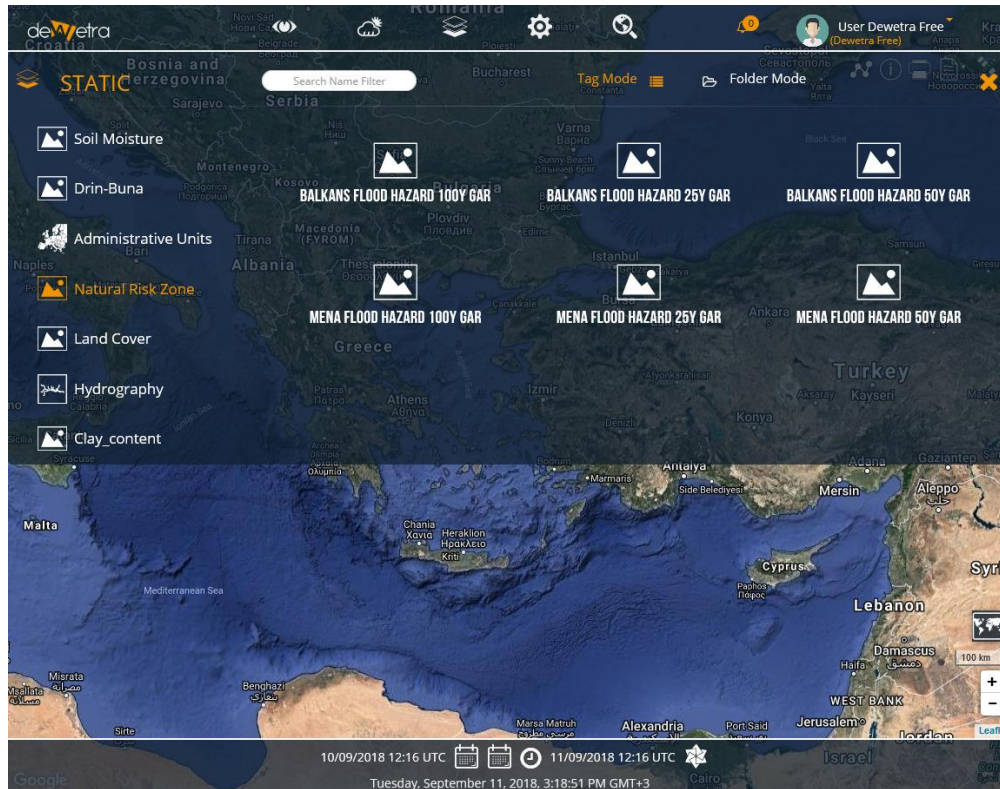


The GEO-CRADLE Regional Data Hub

Pilot 2: Improved Food Security-Water Extremes Mgmt

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



STATIC Layer contains data that does not change frequently, needed to design a comprehensive risk scenario such as the exposures or the hazard maps.

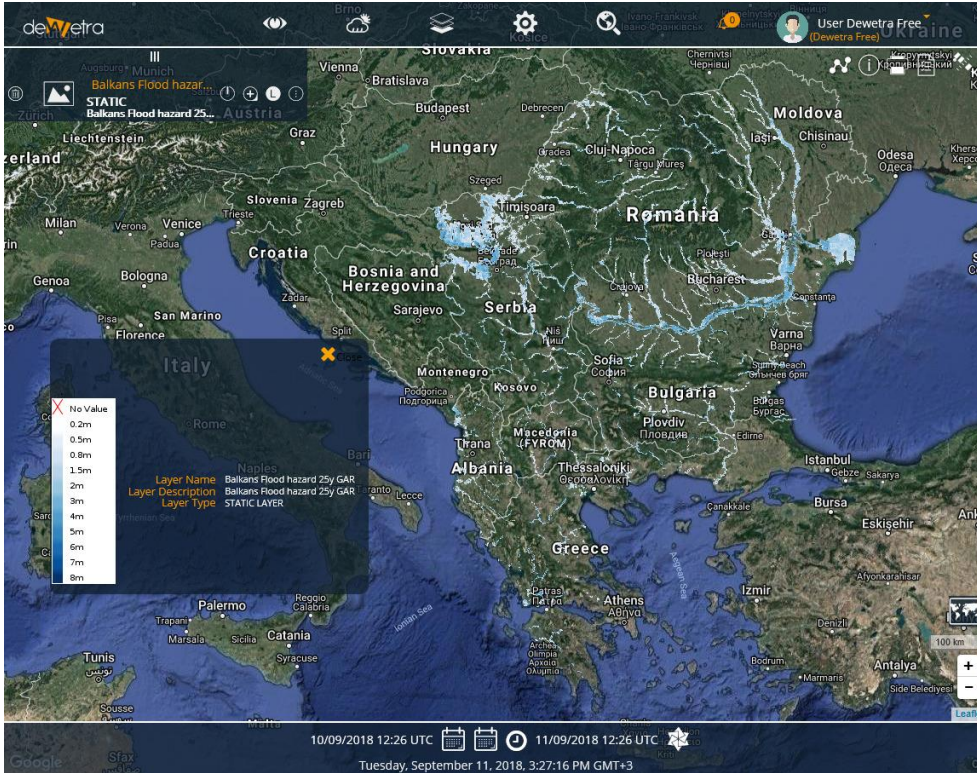


The GEO-CRADLE Regional Data Hub

Pilot 2: Improved Food Security-Water Extremes Mgmt

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



Balkans –
25y Flood Hazard –
Press L to get the
legend

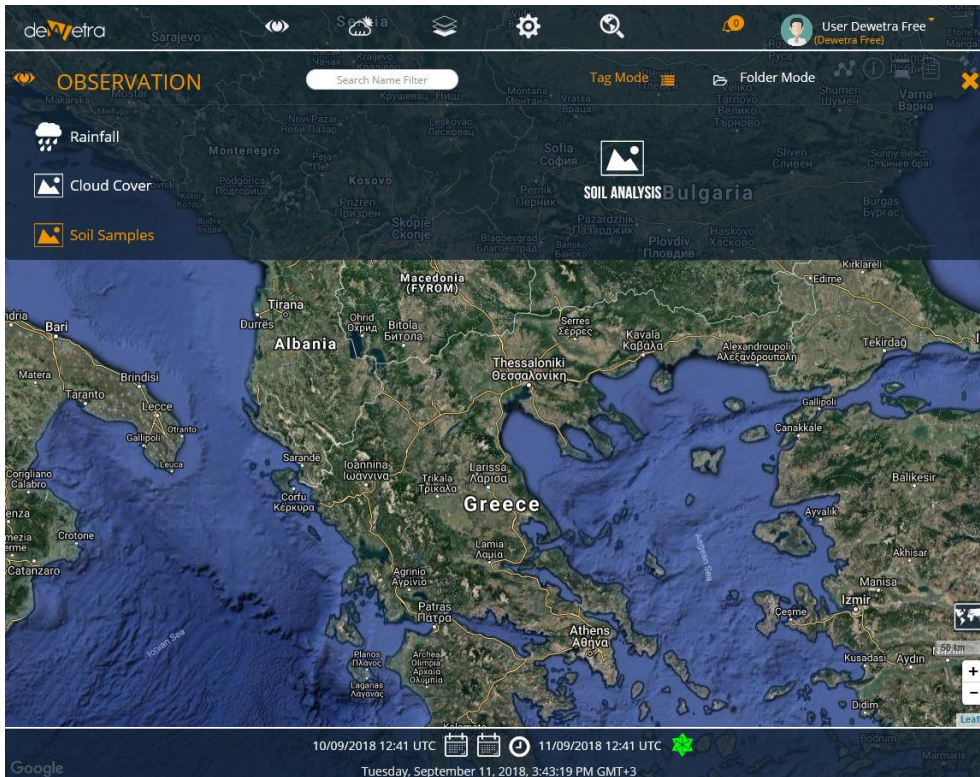


The GEO-CRADLE Regional Data Hub

Pilot 2: Improved Food Security-Water Extremes Mgmt

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



OBSERVATION Layer

Soil Samples

SOIL ANALYSIS

- Click on soil analysis
- Zoom to a region containing soil samples (e.g. North Eastern Greece)

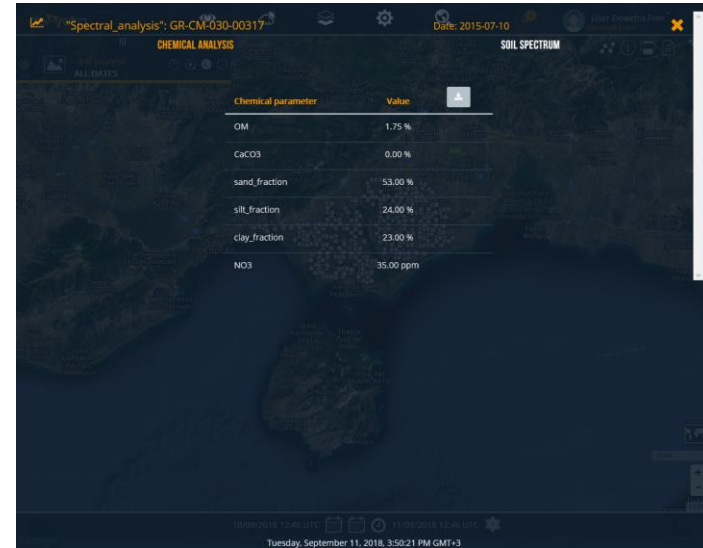


The GEO-CRADLE Regional Data Hub

Pilot 2: Improved Food Security-Water Extremes Mgmt

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



- Click on a point and visualize the spectrum / chemical results (which can be downloaded)



The GEO-CRADLE Regional Data Hub

Pilot 2: Improved Food Security-Water Extremes Mgmt

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

Home / Datasets / Regional Soil Spectral Library

View Revisions



PILOT 2: Improved Food Security - Water Extremes Management (IFS)

Food security depends on many aspects such as water abundance and extremes (flooding and drought), vegetation stresses, yield monitoring, soil quality monitoring and sustainability. Plants need...

Data Extent



License

Open Data Commons Open Database License (ODbL)

Other Access

The information on this page (the dataset metadata) is also available in these formats.

Regional Soil Spectral Library

Regional Soil Spectral Library



Part of pilot 2 - Improved Food Security and Water Extremes Management

The importance of soils is ubiquitously recognized; they provide essential services such as food production, prevention of land degradation, water quality, and they act as carbon sinks. It has been thus recognized that a spatio-temporal monitoring of soil quality and soil properties is necessary. One of the most important technologies used to monitor soils is soil spectroscopy which utilizes the spectral information of soil samples to derive their properties. For the successful upscaling (i.e. use of Earth Observation tools) of soil spectroscopy it is important to create detailed soil spectral libraries on the ground, which assist in the validation of the sensors as well as development of soil models.

The Regional Soil Spectral Library

The current dataset contains a regional vis-NIR (350-2500 nm) soil spectral library of the region. It contains metadata regarding the soils sampled, their key properties, and their spectral signature. The spectral signatures were obtained using a standardization protocol. The dataset encompasses the following countries and soil properties:

Country	Samples	SOM	Texture	CaCO3	pH	NO3	EC	CEC
Albania	107	107	107	X	X	X	X	X
Bulgaria	105	105	105	X	105	X	X	105
Cyprus	96	96	94	96	96	X	93	X
Egypt	10	6	X	4	6	X	6	X
FYROM	124	124	124	X	124	X	X	X
Greece	928	928	928	928	X	928	X	X
Israel	221	106	193	150	137	X	141	X
Serbia	63	63	63	63	63	63	X	X
Turkey	100	94	98	100	100	X	100	X
All	1754	1629	1712	1341	631	991	334	105

Form of the datasets

To assist future researchers using this soil spectral library, the datasets are provided in the following formats:

- Per country SSLs in .csv format
- Complete GEO-CRADLE SSL in .csv format

The documentation describing what each column represents may be found in D4.6.

Data and Resources

- SSL Albania**
This SSL was established by the Institute for Nature Conservation in Albania... [Download](#)
 - SSL Bulgaria**
This SSL was established by the Space Research and Technology Institute [...] [Download](#)
 - SSL Cyprus**
This SSL was established by the Cyprus University of Technology (CUT). [Download](#)
 - SSL Egypt**
This SSL was established by the Centre for Environment and Development for... [Download](#)
 - SSL FYROM**
This SSL was established by the St. Cyril and Methodius University (USCM)... [Download](#)
 - SSL Greece**
This SSL was established by the Inter-Balkan Environment Center (i-BEC). [Download](#)
 - SSL Israel**
This SSL was established by the Tel-Aviv University (TAU). [Download](#)
 - SSL Serbia**
This SSL was established by the Institute of Physics Belgrade (IPB). [Download](#)
 - SSL Turkey**
This SSL was established by the Space Technologies Research Institute [...] [Download](#)
 - SSL GEO-CRADLE**
This dataset contains the complete GEO-CRADLE SSL (i.e. all of the countries)... [Download](#)
- [Download All](#)

<http://datahub.geocradle.eu/dataset/regional-soil-spectral-library>



The GEO-CRADLE Regional Data Hub Pilot 3: Access to Raw Materials

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



<http://www.europe-geology.eu/map-viewer>

Onshore | Marine | Minerals | Geohazards | Energy | Soil | Groundwater | All Maps | Metadata | About EGDI

EGDI is
EuroGeoSurveys'
European
Geological
Data
Infrastructure



« EGDI - All maps

EGDI

This map shows all available data sets registered in EGDI.
Go to [The Portal](#) for more details or choose a thematic map here.

- Mineral Resources
- Geological Maps
- Geological Map 1:1M
- Geological Map 1:5M
- Geological Map 1:100k
- Hydrogeological Map
- Geochemistry
- Marine Geology
- Southern Permian Basin Atlas
- Geohazards
- Boreholes

Go to location...
Zoom N North
500 km
EPSG:3034 EPSG:4326



BE *BE*OND

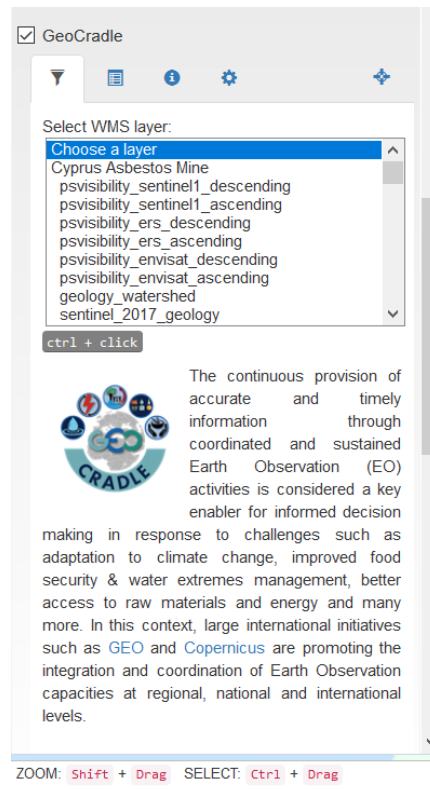
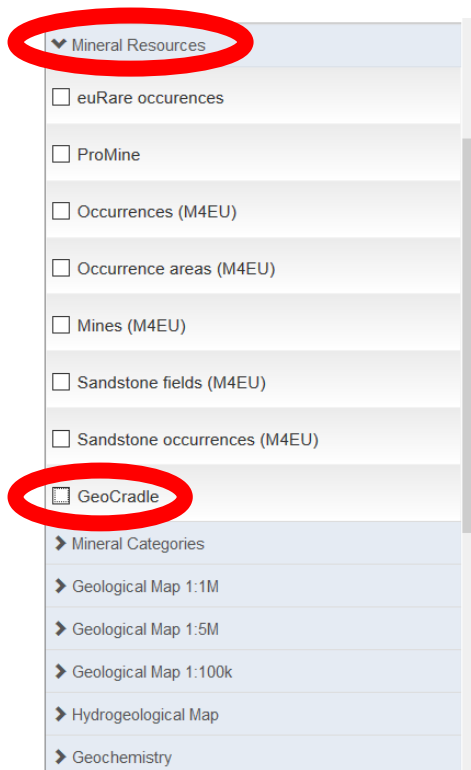


GEO GROUP ON
EARTH OBSERVATIONS

Copernicus

The GEO-CRADLE Regional Data Hub

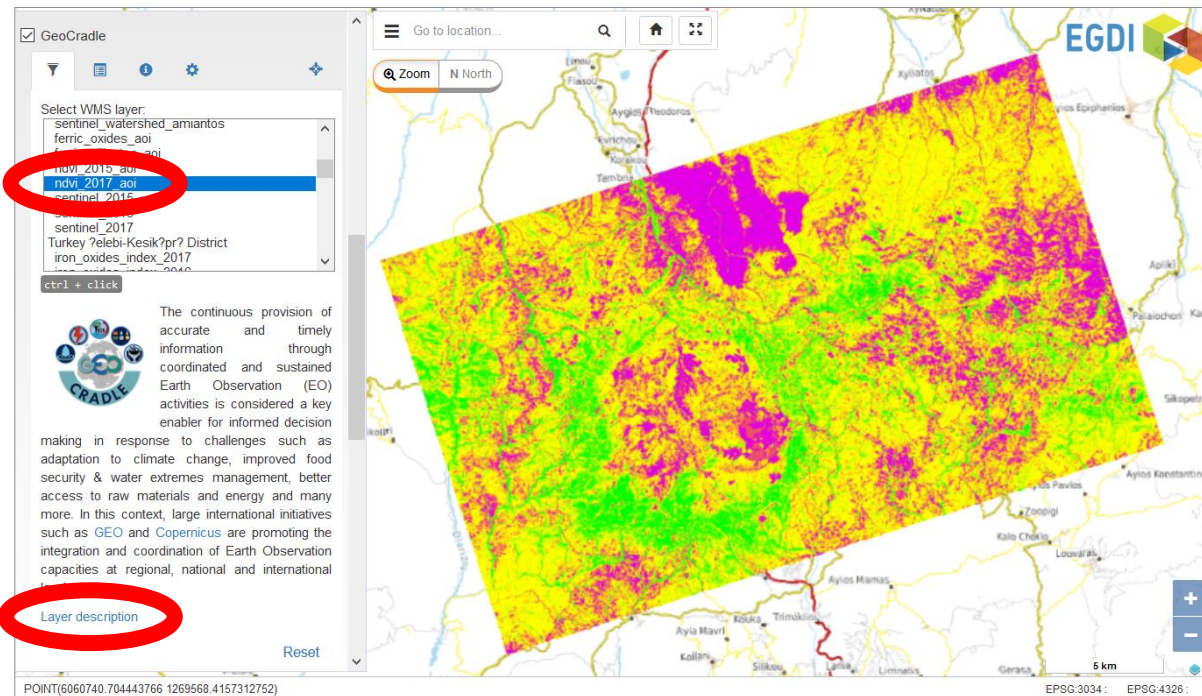
Pilot 3: Access to Raw Materials



The GEO-CRADLE Regional Data Hub Pilot 3: Access to Raw Materials

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania



Normalized difference vegetation index (NDVI) calculated from Sentinel-2 image from 2017. The index was calculated based on the formula: $((NIR-RED)/((NIR+RED)))$, where individual components correspond to the spectral band of the satellite.



BEYOND



GEO GROUP ON
EARTH OBSERVATIONS

Copernicus

The GEO-CRADLE Regional Data Hub Pilot 3: Access to Raw Materials

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

The screenshot displays the GeoCradle web application interface. On the left, a 'Select WMS layer:' dropdown menu is open, with 'lineament_map' selected and circled in red. Below the menu, a 'Layer description' section is visible, also circled in red, containing text about Earth Observation (EO) activities and a 'Reset' button. The main map area shows a topographic map of a region with a green and yellow color scheme, overlaid with a red lineament map. The map includes a scale bar (0-30 km) and zoom controls. The GeoCradle logo is visible in the top right corner of the map area.

Lineament map extracted from 5 different techniques (DEM, Directional Filters, Principal Component Analysis, False Color Composite and Rationing) based on Landsat-8 image and SRTM.



BEYOND



GEO GROUP ON
EARTH OBSERVATIONS

Copernicus

The GEO-CRADLE Regional Data Hub

Pilot 4: Access to Solar Energy

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

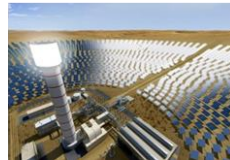
Application developed in support to the Ministry of Electricity & Renewable Energy of Egypt

Provides the solar power information in climatological basis for the Global Horizontal irradiance (GHI) and the Direct Normal Irradiance (DNI)

GHI applies to PhotoVoltaic (PV) installations



DNI applies to Concentrated Solar Power (CSP) plants



Solar Atlas for Egypt

HOME CLIMATOLOGY 1 CLIMATOLOGY 2 REAL-TIME

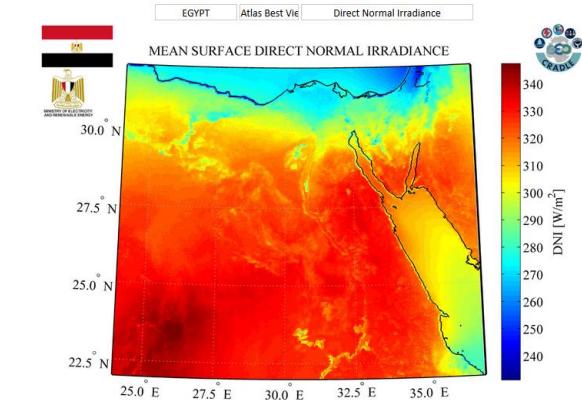
SOLAR ATLAS - CLIMATOLOGY 1

The mean monthly solar energy maps are based on a 15-year climatology of the Direct Normal and Global Horizontal Irradiances (DNI and GHI respectively), while the spatial resolution is almost 5 km. The solar atlas maps were produced for Egypt and for specific locations (greater area of Alexandria, Cairo, Luxor and Aswan). The climatological radiation data are from the EUMETSAT's Satellite Application Facility on Climate Monitoring (CM SAF).

Select the Month, Parameter and Region for the Mean Monthly Atlas maps (Means of 15 years, 1999-2013) of Egypt and sub-regions.

Select Parameters

Month	<input type="text" value="Select Month"/>	Atlas Best View
Parameters	<input type="text" value="Select Parameter"/>	Direct Normal Irradiance
Region	<input type="text" value="Select Region"/>	EGYPT



<http://cedarekmp.net/solaratlas/web2>



BEYOND



GO GROUP ON EARTH OBSERVATIONS

Copernicus

The GEO-CRADLE Regional Data Hub

Pilot 4: Access to Solar Energy

**COPERNICUS &
SPACE APPLICATIONS**

11-12 October 2018 | Bucharest, Romania

Solar Atlas for Greece

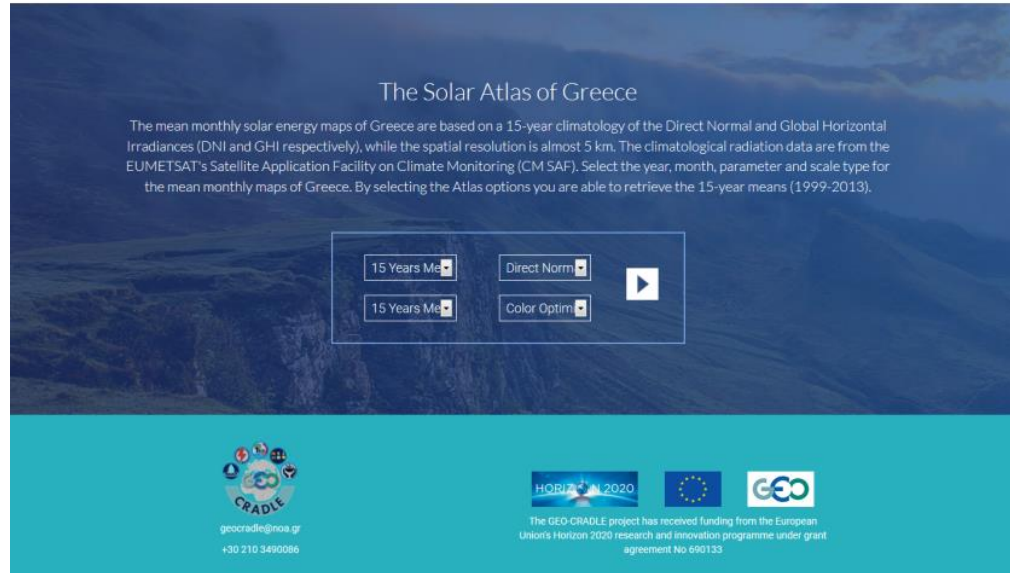
A static applications based on an analytical database of climatological solar energy maps of Greece (GHI, DNI).

The user is able to choose additionally fixed or color optimized scale.

Such applications provided for the first time for Greece through the Geo-Cradle project and are able to provide useful information about the solar energy potential for potential solar farm installations.

 Regional Datahub





PILOT 4: Access to Energy (SENSE)



The Solar Atlas of Greece

The mean monthly solar energy maps of Greece are based on a 15-year climatology of the Direct Normal and Global Horizontal Irradiances (DNI and GHI respectively), while the spatial resolution is almost 5 km. The climatological radiation data are from the EUMETSAT's Satellite Application Facility on Climate Monitoring (CM SAF). Select the year, month, parameter and scale type for the mean monthly maps of Greece. By selecting the Atlas options you are able to retrieve the 15-year means (1999-2013).

15 Years Me Direct Norm
15 Years Me Color Optim

The GEO-CRADLE project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 690133

<http://datahub.geocradle.eu/solar>



BEYOND



**GEO GROUP ON
EARTH OBSERVATIONS**

Copernicus

The GEO-CRADLE Regional Data Hub

Pilot 4: Access to Solar Energy

COPERNICUS & SPACE APPLICATIONS

11-12 October 2018 | Bucharest, Romania

The Solar Energy Nowcasting System (SENSE) was applied for a scientific campaign in Crete (PRE-TECT).

Through this portal the user is able to retrieve the produced maps of Crete in high spectral, spatial and temporal resolution (1 nm, 0.05 x 0.05 degrees, 15 min).

The aerosol and cloud impacts were simulated through data input from the Copernicus Atmosphere Monitoring Service (CAMS) and the Meteosat Second Generation (MSG).

PRETECT About ▾ School ▾ Data ▾ Latest forecasts News ▾

Data

HOME DATA SENSE

SENSE

Uploaded on 2017-03-30 18:27:00

Start time	March 30, 2017, midnight	Duration	1 day
Stop time	March 31, 2017, midnight	Model	Solar Energy Nowcasting System (SENSE)

[← Previous](#)

Related graphs

SURFACE TOTAL SOLAR IRRADIANCE:
30/03/2017 08:30

Graph 1.21: Surface total solar irradiance - 2017-03-30 08:30

Quick links

Parallel measurements

- WRF WIND (Mar 30th, 2017)
- WRF WIND (Mar 30th, 2017)
- WRF WIND (Mar 30th, 2017)
- WRF WIND (Mar 30th, 2017)
- WRF WIND (Mar 30th, 2017)
- WRF WIND (Mar 30th, 2017)
- WRF WIND (Mar 30th, 2017)
- WRF WIND (Mar 30th, 2017)
- WRF WIND (Mar 30th, 2017)
- WRF WIND (Mar 30th, 2017)

<http://pre-TECT.space.noa.gr/instruments/25>



BEYOND



GO GROUP ON EARTH OBSERVATIONS

Copernicus

The GEO-CRADLE Regional Data Hub

Pilot 4: Access to Solar Energy

Dynamic application with background databases of solar power, energy and Photosynthetically Active Radiation (PAR) for Greece, Cyprus and Egypt.

The user is able to download the selected area data in the form of json files.

The solar power describes the "strength" of the irradiance (W/m^2).

The solar energy calculates the potential energy production by a PV or CSP system (kWh/m^2)

The PAR quantifies the energy that supports photosynthesis.

PAR Atlas for Greece, Cyprus, Egypt



Step 1: Select Country

Cyprus

Step 2: Select Year

2000

Step 3: Select Month

April

Step 4: Select Type of Data

Direct Normal Irradianc

View Solar Map

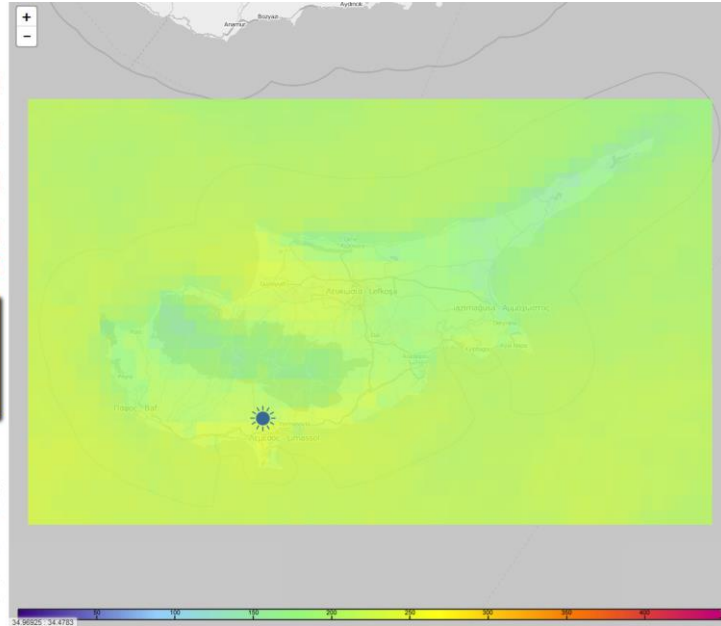
Power: 209 W/m²
Mean Power: 263.08 W/m²
Energy: 150.48 kWh/m²
Annual Energy: 2208.97 kWh/m²
Download Selected Area Data



This service has been implemented in the framework of Solar Energy Nowcasting SysEM (SENSE) pilot of the GEO-CRADLE project.

The initial solar radiation database was renewed by the EUMETSAT's CM SAF.

For more information please contact Shihui Kizakis (PI of SENSE from PMOD/WRC) and Panagiotis Kosmopoulos (Developer of SENSE from NOAA).



<http://beyond-eocenter.eu/solarapp>



BEYOND



GROUP ON EARTH OBSERVATIONS

Copernicus

GEO Capacity Building in North Africa, Middle East, Balkans, and Black Sea

A **continuation** and **extension** of the work of the **GEO CRADLE** which will capitalise, sustain and scale-up its results, as well as key outcomes of other relevant EU flagship projects and initiatives (e.g. GEOGLAM, NextGEOSS, ERAPLANET, EuroGEOSS, AfriGEOSS, GEO-VENER, EO4SDG), in support of the **3 GEOSS priorities**, namely **CC**, **DRR** and **SDGs**.

Geographic extension



Thematic extension



Operational Maturity



thank you!



<http://geocradle.eu>



FOLLOW OUR ACTIVITIES | Twitter @geocradle | Facebook Geo-Cradle | Website geocradle.eu

BE  OND

<http://www.beyond-eocenter.eu/>