GEO-CRADLE NEWSLETTER

ISSUE #9, January 2019

EVENTS | GEO-CRADLE @ | OUTCOMES

OUTREACH | GEO/COPERNICUS | CALENDAR

Dear Reader,

with this Newsletter the GEO-CRADLE project officially is closing, but the GEO-CRADLE network, which was established in the region of NAMEBA during the lifetime of the project, will not be closed. Our team, including myself and my colleagues, with the support of the Regional Coordinators, will continue to increase this network and our services in this Region!

More specific, GEO-CRADLE became a GEO Regional Initiative with the approval of the 2018 Work Programme Progress Report in Kyoto during the GEO WEEK 2018! This Initiative is a continuation and extension of the work of the GEO CRADLE Community Activity, which provided EO capacity building in the North Africa, Middle East, and Balkans (NAMEBA) region, now with potential to expand to the Black Sea. Also, on top of food security, energy, raw materials and climate change the Initiative will explore the incorporation of additional thematic areas such as disaster management and water resources management, in accordance to GEO priorities.The Initiative will capitalise, sustain and scale up the results mainly achieved during the implementation of the 3-year H2020 GEO-CRADLE project.

In addition to that, our activities will be continued towards the development of Copernicus and Eurogeoss Initiative in the regions through the involvment of our team in the EUROGEOSS Showcases project. The project will implement a coordinated and comprehensive EO data exploitation initiative through collaboration amongst the

European GEO Members and Participating Organizations, in order to accelerate the users' uptake of open EO data and information for the benefit of Europe. The general objectives are to set-up and promote a sustainable organization dedicated to users' uptake of European EO resources, building on Copernicus and GEOSS through the development of co-design pilots (i.e. application-oriented products, services or solutions) built on a user-centric approach and delivering economic, social and policy value to European citizens.

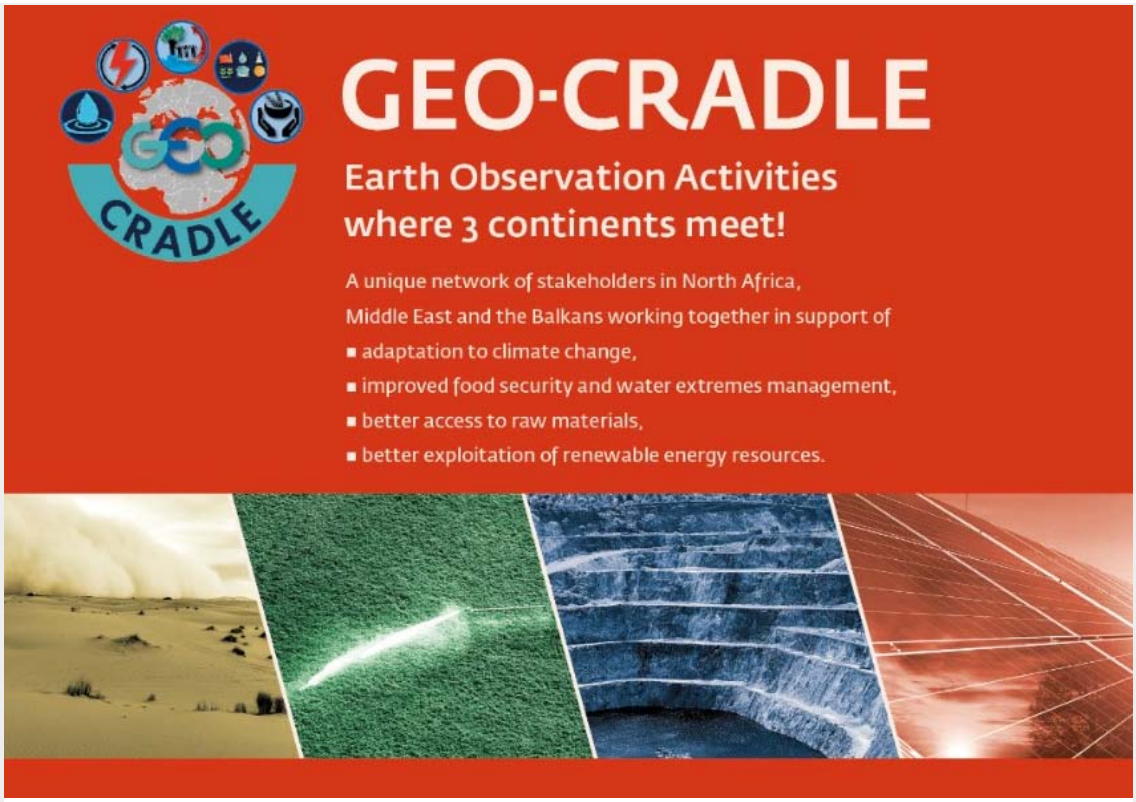
Moreover, the GEO-CRADLE's Liaison Office (Greek GEO Office), facilitated the procedure towards establishing in Albania a National GEO Office.

Finally, I would like to thank all the partners for their contribution in the implementation of the Project because without them it would not have been possible to make GEO-CRADE a successful Coordination and Support Action project!

This newsletter will continue to be launched presenting you the news of the GEO-CRADLE Initiative. So stay tuned and follow us!

Dr Haris Kontoes
Research Director of NOA
National Delegate of H2020 SPACE Program Committee - EC DG ENTR
National Delegate of the Copernicus Integrated GS (IGS) Task Force
National Contact Point for Data Sharing within GEO Member Governments
Member of the National Committee of International Union of Geodesy and Geophysics (IUGG)

GEO-CRADLE in a nutchell



GEO-CRADLE was launched as an EU H2020 Project with 25 partners from 3 continents, it was then upgraded to a GEO Community Activity, and it has recently been further upgraded to a GEO Initiative.

The project brought together key players representing the entire EO value chain and promoted the uptake and exploitation of EO activities in the three regions (NAMEBA), GEO-CRADLE during its life time enhanced the current knowledge of existing EO capacities in the region (through an ongoing Survey), facilitated the cooperation between EO stakeholders (through a Networking Platform and several Events),identified the gaps and the maturity level (through analysis) and boosted the Maturity of the different countries in the region, enabled the exchange of EO data (through a Regional Data Hub),showcased concrete ways of tackling regional challenges related to adaptation of climate change, improved food security & water extremes management, better access to raw materials and energy (through Feasibility Studies), and finally proposed a Roadmap for the implementation of GEO, GEOSS and Copernicus in the three regions.

The GEO-CRADLE Initiative will be 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 Climate Change, Disaster Risk Reduction and UN Strategic Development Goals.The GEO-CRADLE Initiative will include a geographic expansion to the Black Sea, a thematic expansion to the Disasters Management & Water Resources Management, and an advanced Operational Maturity for the operationalisation of services to the engaged users.

GEO-CRADLE events

GEO-CRADLE side event @ GEO WEEK 2018, 29/10/2018, Kyoto, Japan

GEO-CRADLE participated in the GEO Week 2018 which took place in Kyoto from 29th of October to 2nd of November 2018. Over 500 people from diverse geographies, sectors and technical areas came together from 29 October – 2 November 2018 in Kyoto, explored the efforts and opportunities for the use of Earth observations for the benefit of humankind, focusing on GEO's three priority areas: the Sendai Framework for Disaster Risk Reduction, the Paris Climate Agreement, and the UN Sustainable Development Goals.

GEO-CRADLE and EARSC organised a side event on "**Identifying, communicating and delivering the value of Earth Observations. A regional**

approach", which which took place on Monday 29/10/2018 at 08.30-12.30.

The agenda of the side event and the related presentations are available here.

The side event is also available at GEO Youtube channel.

GEO-CRADLE @

GEO-CRADLE at Horizon 2020 Regional Seminar, 22/01/2019, Fes, Morocco

The Union for the Mediterranean (UfM) and the European Commission (EC), in partnership with the Ministry of National Education, Vocational Training, Higher Education and Scientific Research of the Kingdom of Morocco and the Euromed University of Fes (UEMF), jointly organised a regional seminar on Horizon 2020 which was held on 22 January 2019 on the UEMF campus in Fes, Morocco.

The seminar aimed at reinforcing the cooperation in research and innovation (R&I) across the Mediterranean, and specially at **enhancing the joint participation of stakeholders from both Northern and Southern Mediterranean countries in the last calls for proposals of the Horizon 2020 programme of the European Union (EU).**

Horizon 2020 EU work programmes specifically targeted the Southern rim of the Mediterranean as a partner for cooperation. In this context, the seminar was addressed to representatives from academia, research institutes, industrial stakeholders, SMEs, NGOs and policy-makers from the 43 UfM countries.

Haris Kontoes participated in this event with an oral presentation in the session "**Lessons learnt and advice: Testimonies from Horizon 2020 project coordinators".**

Find more information here

GEO-CRADLE at Opening Session

of the MED 2018, Frascati, Italy, 11-12/12/2018

"The GEO-CRADLE Initiative: Coordination and Integration of EO Activities Accelerating the Development of Links with Copernicus & GEO/GEOSS" presented on Tuesday 11/12 by Alexia Tsouni, NOA, in the Opening Session of the MED 2018 user consultation meeting in ESA -ESRIN Frascati, Italy.

The aim of the meeting was to define a roadmap for a Mediterranean initiative within ESA's EO Science for Society Programme Element, encompassing topics such as atmosphere, oceanography, climate andland research and applications.

The Mediterranean Sea region is surrounded by 22 countries, which together share a coastline of 46000 km. About 250 million people resides in coastal hydrological basins and a 50% population growth was reported in 20 years at the end of the 90's.

Fragility and vulnerability of the Mediterranean system is well known and since the 70's international efforts are ongoing to protect it. In this context, Earth Observation (EO) represents an opportunity for innovative science, applications and information services to face some of these issues as well as a potential catalyser for innovation and growth in the region.

More info at: http://med2018.esa.int/index.php

GEO-CRADLE at EO4GEO Workshop, Patra, Greece, 4-6/12/2018

GEO-CRADLE participated in the EO4GEO Workshop which took place from 4-6 December 2018 in Patras, Greece.

The objective of the workshop was to present and discuss the observed gaps and mismatch between the GI and EO education and training offered by academic institutions and VET providers and the knowledge, skills and competencies required by the market, and in particular the downstream services market. In the gap and mismatch analysis, technological and societal trends are taken into account.

Therefore, one specific objective of the workshop was to discuss and agreed on how a long-term mechanism can be put in place that continuously monitors the gaps and mismatched taking into account those trends.

The workshop featured some invited speakers and provides an overview of the work done so far, but also left room for interactive discussions.

The GEO-CRADLE project coordinator participated in the woskop with an oral presentation on "**The GEO-CRADLE initiative: GEO and Copernicus Capacity Building in North Africa, Middle East, Balkans, and the Black Sea".**

The agenda of the workshop is available here.

GEO-CRADLE at Raw Materials Week, 12-16/11/2018, Brussels, Belgium

GEO-CRADLE participated in the Raw Materials Week which took place from 12-16 November 2018 in Brussels, Belgium.

Raw Materilas Week 2018, builT up on a series of events organised by the European Commission addressing the latest news on raw materials in the EU. It was a unique opportunity for the raw materials community to discuss and exchange on all relevant issues: policy, technology, international cooperation, framework conditions, knowledge base etc.

The 6th High Level Conference of the European Innovation Partnership on Raw Materials was the main event of the week taking place on 14 November 2018. The main topic of the conference was “Raw materials for low carbon and circular economy”, covering relevant issues including battery value chain, cascading of woody biomass, secondary raw materials for energy-intensive industries.

The GEO-CRADLE partner from IGME Mrs Marianth Stefouli participated in the event and presented the **Assessment of the Added-Value of Sentinel data for supporting mapping and monitoring of mining areas: The GeoCradle project.** The abstract of the oral presentation is available here.

GEO-CRADLE at COMECAP 2018, 15-17 October, Alexandroupolis, Greece

GEO-CRADLE participated in the COMECAP Conference 2018 which took place from 15-17 October 2018 in Alexandroupolis. COMECAP 2018 brought together researchers in the areas of Meteorology, Climatology and Atmospheric Physics, who presented methodologies, modeling tools and theoretical approaches which attracted scientists and researchers from the international scientific community.

GEO-CRADLE presented the SENSE pilot in the poster session Observational Techniques from the ground and space/Satellite Meteorology and Climatology:

"Panagiotis Kosmopoulos, Stelios Kazadzis, Charalampos Kontoes, Ioannis Papoutsis, Anestis Trypitsidis, Alexia Tsouni and Dimitris Vallianatos", Solar energy related EO data for Greece through the GEOSS portal, Poster.

GEO-CRADLE @ Romanian Space Agency Annual Conference 11-12 October 2018, Bucharest, Romania

The Regional Data Hub of Geo-Cradle and the Beyond EO Center data platforms in support to the data exploitation platform concept were presented in the Romanian Space Agency Annual Conference by Alexia Tsouni, National Observatory of Athens. Many thanks to the organisers for this conference, and to Eurisy for the oorganisation of the round table on data exploitation platforms.

GEO-CRADLE @ the INSPIRE Conference 2018
18-21 September 2018, Antwerp, The Netherlands

GEO-CRADLE participated in the INSPIRE Conference 2018, organized from 18 to

21 September in Antwerp, Belgium, by the European Commission, The Netherlands and Belgium.

Alexia Tsouni gave an oral presentation on **"Coordinating and Integrating EO Activities in North Africa, Middle East, and Balkans. Accelerating the Development of Links with GEO / GEOSS / Copernicus and INSPIRE initiatives"**.

More information is available here!

GEO-CRADLE at the EUROGEOSS Workshop 12-14 September 2018, Geneva, Switzerland

GEO-CRADLE participated in the EUROGEOSS Workshop which took place on 12-14 September 2018 at the University of Geneva and the Museum of Ethnography. The event was co-organised by the Swiss Federal Office for the Environment, the European Commission with the support of the University of Geneva.

Find more information here.

GEO-CRADLE at 14th International Symposium of Continuous Surface Mining, 23-26/9/2018, Thessaloniki, Greece

GEO-CRADLE participated in the 14th International Symposium of Continuous Surface Mining from 23 to 26/9/2018, Thessaloniki, Greece.

Our partner from Greek Institute of Geology and Mineral Exploration, Mrs Marianthi Stefouli, participated in the Symposium and gave an oral presentation on "**Assessment of the Added-Value of Sentinel-1&2 for Mapping and Monitoring Surface Mining"**.

The abstract of the presentation is available here.

GEO-CRADLE at the Soil Congress Symposium, 12-17 August 2018, Rio de Janeiro, Brazil

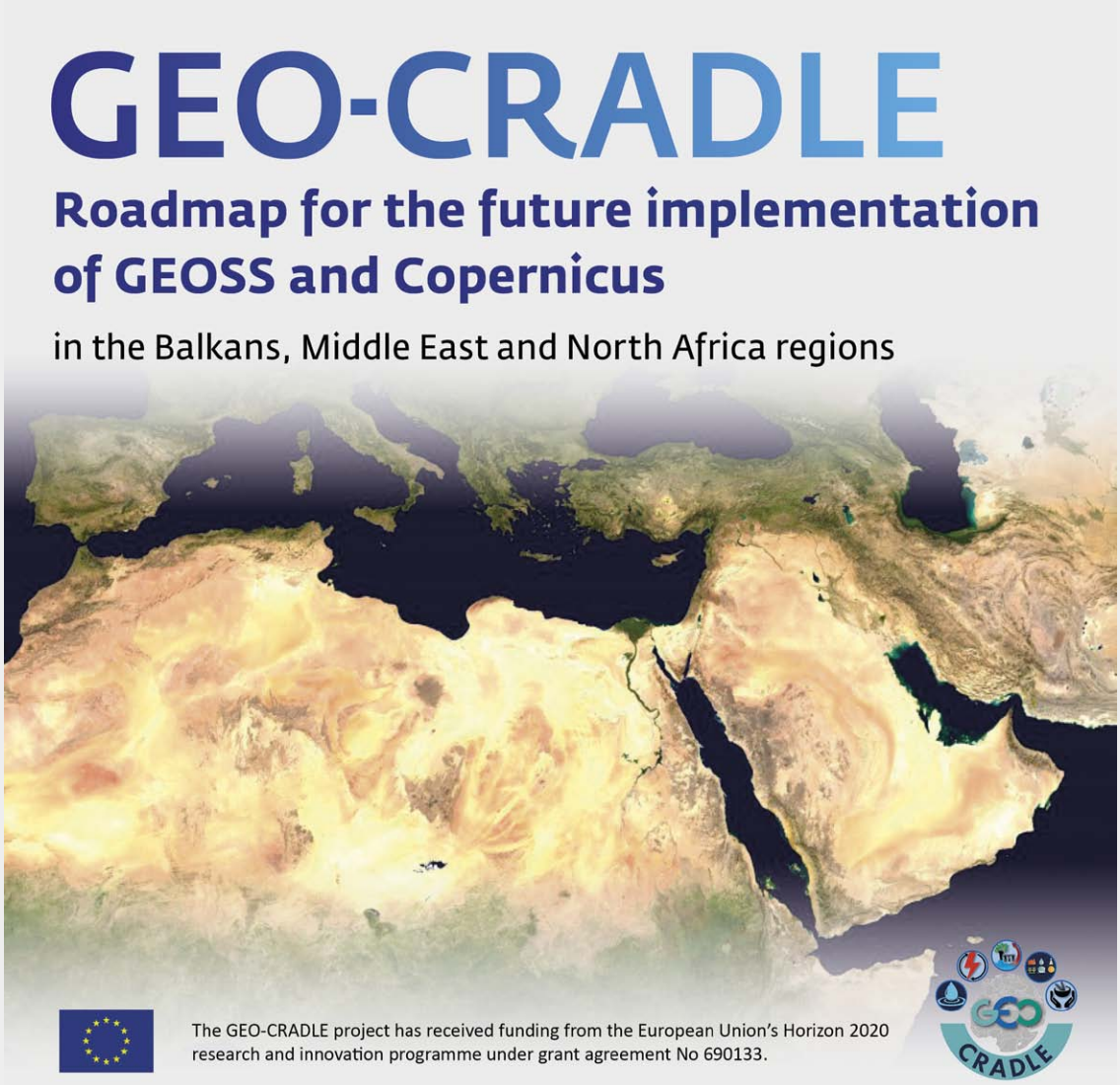
GEO-CRADLE partners participated in the Soil Congress Symposium which took place on August 12-17 2018 in Rio de Janeiro. Our GEO-CRADLE partner from TAU, Prof Eyal Ben-Dor organised a session entitled "**Remote Sensing Applied to Soil Science**".

Click here for more about the GEO-CRADLE Partners' participation.

Visit the official site.

OUTCOMES:

GEO-CRADLE Roadmap



In the past 3 years, GEO-CRADLE has been coordinating a multitude of different EO-related activities across the Balkans, Middle East and North Africa regions. This included multiple regional workshops, several analytical studies (e.g. gap analysis, maturity indicators, priorities against regional challenges, etc.) and a set of well-targeted efforts to address specific issues in the region (establishment of Regional Data Hub and networking platform, execution of feasibility studies). Thanks to all these activities, the partners of GEO-CRADLE had the unique opportunity to interact with many EO actors across the whole value chain and over the entire region. The wealth of information collected in this process, brings us today to a position in which we can more securely attempt to answer some key questions:

- **Where are we now?** What is the current state-of-play with regards to EO activities in the BAMENA region? What challenges is the region still facing? What is

the footprint of GEO, GEOSS, Copernicus and other international activities?

- **Where do we want to be?** What is the future we are trying to shape and what is the role of EO in it? Where do we want to direct investment to?
- **How can we get there?** Which actions shall we undertake as an EO community to support informed decision making in this region? Which collaborative activities shall we carry out to achieve the desired future we envisage?

Providing well-justified answers to these questions is the purpose of this roadmap. In that regard, we are attempting to envisage a future for EO activities in the NAMEBA region that whilst being ambitious is also realistic. Its primary focus is on the future implementation/uptake of GEO/GEOSS and Copernicus in the NAMEBA region. In that context, our aim and hope is that the final output of this effort will be truly actionable, i.e. enabling the involved actors to take meaningful action towards maximising the benefits of EO in the region. To that end, we have adopted a rather direct approach defining in very clear terms **who should be involved**, **what should they focus on, how shall they go about implementing these actions and in which timeframes (when).** These elements are combined in the form of an action plan that should be considered a "living" document. It is structured so that the different actions fall under five main categories: (i) Infrastructure and data exploitation, (ii) EO in support to policy implementation and decision-making, (iii) Ecosystem Capacity Building, (iv) EO Services Sustainability and (v) Uptake. For each of these categories we have taken into account potential "low-hanging fruit" or "quick wins" vs. longer-term perspectives.

All in all, we hope that this roadmap will pave the way for informed follow-up activities which will further promote multi-actor, cross-border and interdisciplinary collaboration among EO stakeholders in the NAMEBA region, and help deliver EO-based benefits to society and economy.

GEO-CRADLE Initiative

In the GEO XV Plenary Meeting in Kyoto, GEO-CRADLE became a Regional Initiave of GEOSS with the approval of the 2018 Work Programme Progress Report.

This Initiative is a continuation and extension of the work of the GEO CRADLE Community Activity, which provided EO capacity building in the North Africa, Middle East, and Balkans (NAMEBA) region, now with potential to expand to the Black Sea. The Initiative will capitalise, sustain and scale up the results mainly achieved during the implementation of the 3-year H2020 GEO-CRADLE project, as well as key outcomes of other relevant EU flagship projects and initiatives (e.g. NextGEOSS, ERAPLANET, EuroGEOSS), in support of the three GEOSS priorities, namely Climate Change, Disaster Risk Reduction and Sustainable Development Goals.

The initiative will follow three main dimensions:
Geographic: The Initiative will progressively embrace all Balkan countries, with potential to involve new areas (Black Sea) and maintain the involvement of Middle East (where major gaps in GEO memberships are encountered) and North Africa (in connection to AfriGEOSS).
Thematic: On top of food security, energy, raw materials and climate change the Initiative will explore the incorporation of additional thematic areas such as disaster management and water resources management, in accordance to GEO priorities. These are areas identified as key priorities in the region and also strongly tied to the SDGs.
Operational Maturity: In conjunction with the efforts being planned under EuroGEOSS, the initiative will seek stronger involvement of the private sector and a clear orientation towards the operationalisation of services to the various engaged users.

Find more information here.

The first GEO Office in the RoI of GEO-CRADLE was established in Albania

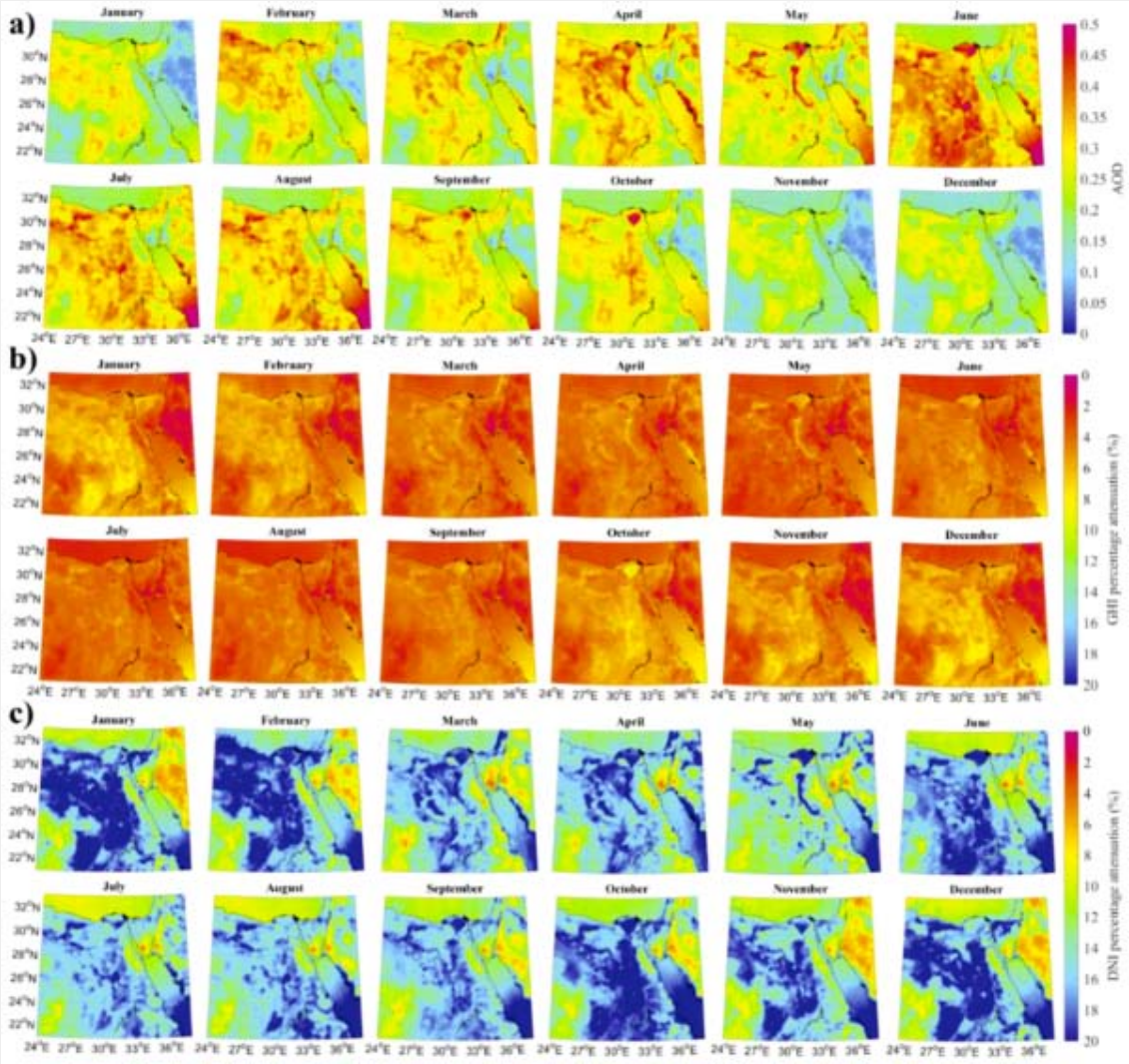
The Liaison Office of GEO-CRADLE (encompassing coordinated actions by the Project Coordinator, the Liaison Officer and the Regional Coordinators), undertook the duty of triggering and facilitating the creation of national GEO focal points, in a number of countries from the consortium, but also within the extended RoI.

A number of countries was selected with respect to their maturity and the existing access to their decision making centers, exploiting in most of the cases the opportunities for liaising during the regional GEO-CRADLE workshops. Specific instructions for first steps to be undertaken were communicated via the Liaison Office (Greek GEO Office), covering the necessary steps for the establishment of a GEO Office. Indicatively, we refer to the following countries that this interaction reached a quite mature stage and the process is still ongoing: Turkey, Tunisia, Egypt, Albania, Malta, Israel, UAE.

In November 2018, the first GEO Office in the RoI of GEO-CRADLE was established in Albania, as a result of the aforementioned activity of the project. The contact point has been designated at the State Authority for Geospatial Information (ASIG) by the Ministry for Europe and Foreign Affairs of Albania.

Currently, ASIG, with the assistance of GEO-CRADLE's Liaison Office (Greek GEO Office), will inform accordingly the GEO Secretariat and will hopefully become an active member of the different GEO Boards, to follow closely the evolution of GEO and coordinate GEO relevant activities at the national level.

A GEO-CRADLE article in Remote Sensing Magazine!



Earth observation based estimation and forecasting of particulate matter impact on solar energy in Egypt

Panagiotis G. Kosmopoulos ,Stelios Kazadzis, Hesham El-Askary, Michael Taylor, Antonis Gkikas, Emmanouil Proestakis, Charalampos Kontoes and Mohamed Mostafa El-Khayat

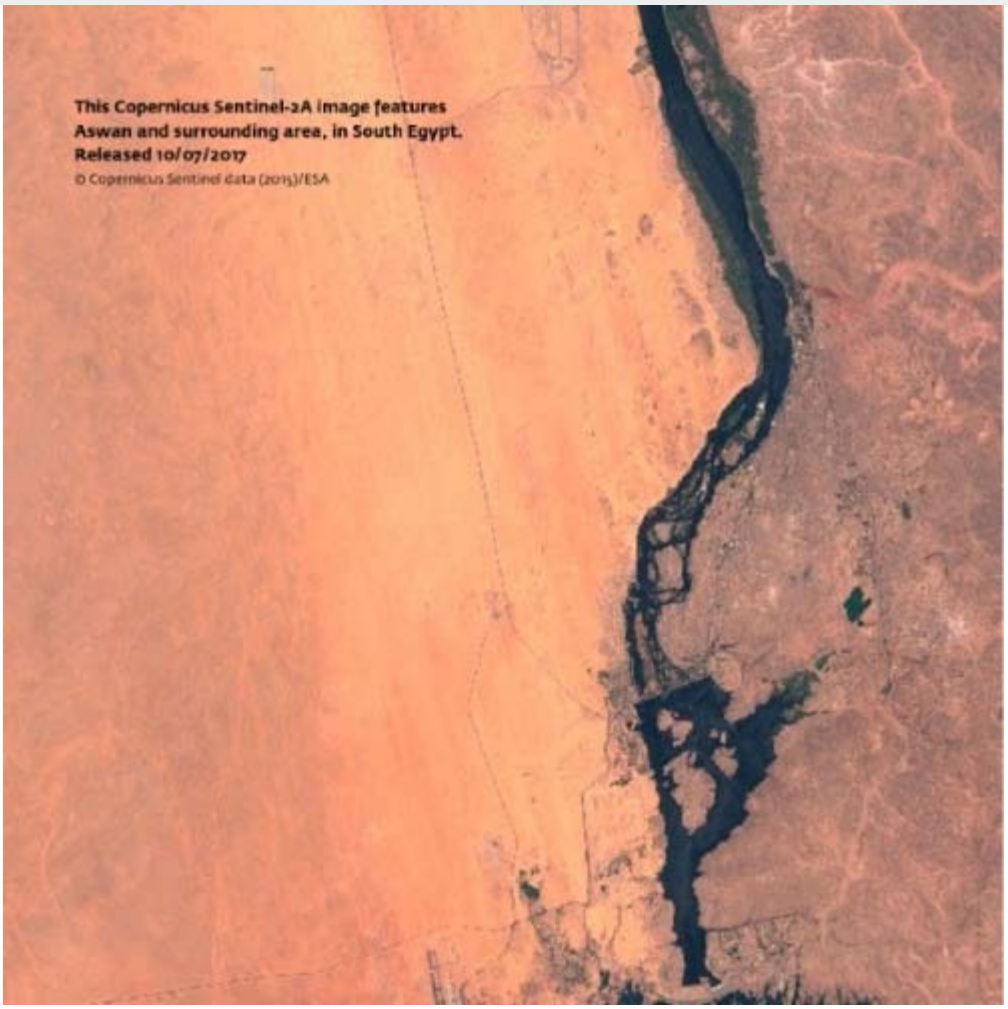
* Correspondence: pkosmo@meteo.noa.gr

[This study estimates the impact of dust aerosols on surface solar radiation and solar energy in Egypt based on Earth Observation (EO) related techniques. For this purpose, we exploited the synergy of monthly mean and daily post processed satellite remote sensing observations from theMODerate resolution Imaging Spectroradiometer (MODIS), radiative transfer model (RTM) simulations utilizing machine learning, in conjunction with 1-day forecasts from the Copernicus

Atmosphere Monitoring Service (CAMS). As cloudy conditions in this region are rare, aerosols in particular dust, are the most common sources of solar irradiance attenuation, causing performance issues in the photovoltaic (PV) and concentrated solar power (CSP) plant installations. The proposed EO-basedmethodology is based on the solar energy nowcasting system (SENSE) that quantifies the impact of aerosol and dust on solar energy potential by using the aerosol optical depth (AOD) in terms of climatological values and day-to-day monitoring and forecasting variability fromMODIS and CAMS, respectively. ..]

Read the full article here.

A solar atlas of Egypt @ The EU Research and Innovation Magazine



Europe's eyes in the sky are helping to solve energy, land-use problems in Africa

Article by by Aisling Irwin

[Scientists have created a solar atlas of Egypt, revealing where the sun's rays

shine most brilliantly and where dust storms obstruct its light. And in Niger, forecasters are guiding pastoralists towards grazing areas and water sources – and away from conflict with sedentary farmers.

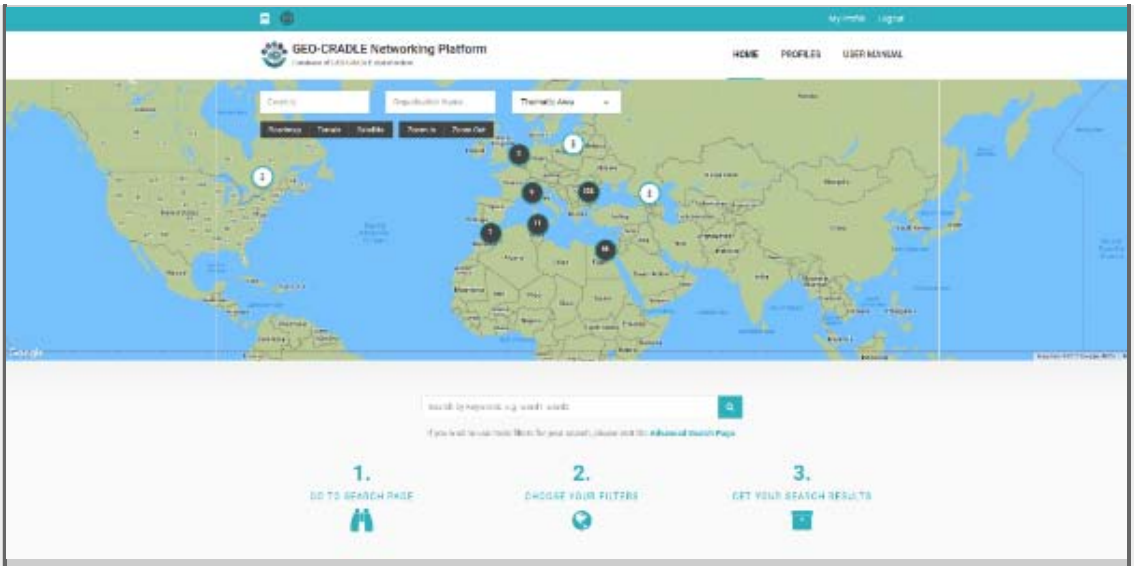
These are just a couple of many applications coming out of schemes to help less developed countries tap into openly available data pouring out of programmes such as the European Union's Copernicus Earth observation system, which supplies satellite, airborne and surface-based measurements and services. These schemes are enabling governments, private companies and research institutes to zero in on data that can be used to address pressing local and national problems.

Egypt is building what it hopes will be the biggest solar energy facility on the planet, Benban, and has plans to construct many more to tackle the energy crisis it faces as a result of a population explosion, says Professor Hesham El Askary, of Chapman University in California, US. He is one of two regional coordinators for a project called GEO-CRADLE, which spans the Middle East, the Balkans and North Africa.

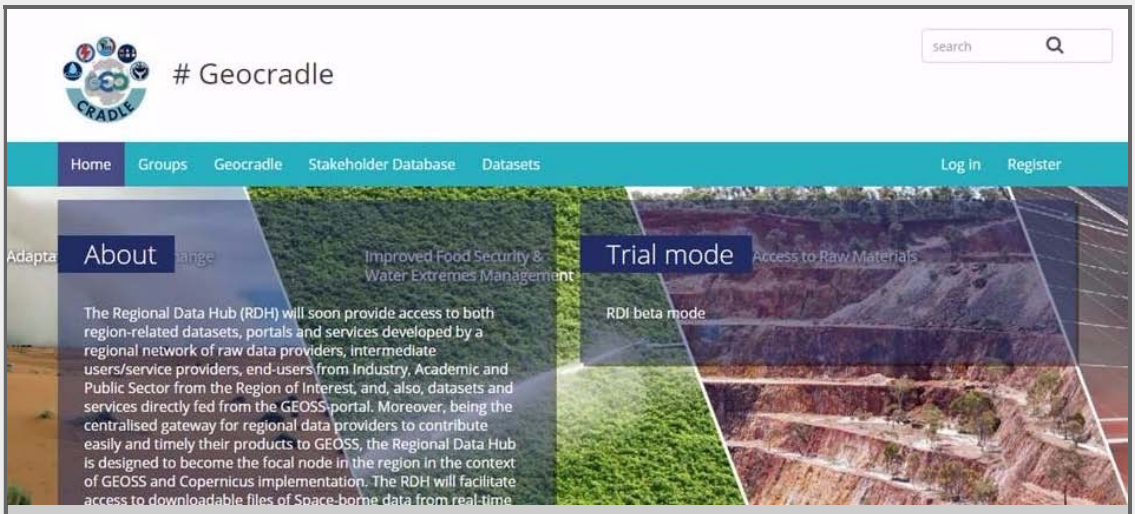
Egypt is rich in solar radiance – but also in dust, which reduces the amount of radiation that strikes the photovoltaic cells used to convert light to electricity in solar panels. Since building ground-monitoring stations is expensive, it has so far been difficult to make accurate feasibility studies for plants, says Prof. El Askary.
...]
Read the full article here.

OUTREACH:

! Give visibility to your data and to your company/organisation!

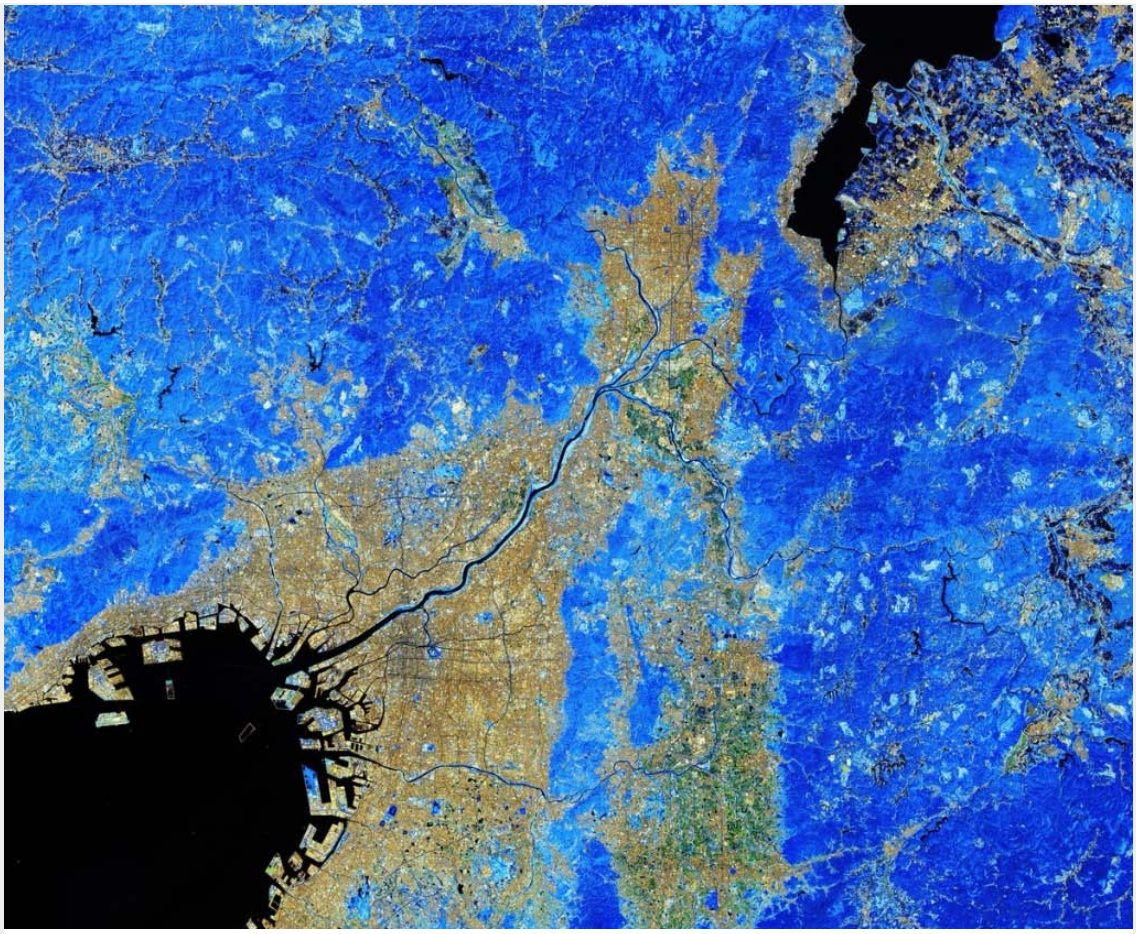


Register to the GEO-CRADLE Networking Platform!



Contribute to the GEO-CRADLE Regional Data Hub!

GEO & COPERNICUS News:



Kyoto and Osaka, 26 October 2018.

Upcoming Workshops & Conferences:

- Geospatial World Forum
- Earth Observations for Sustainable Development (Session ESSI1.16) at EGU General Assembly 2019
- 4th GEO Data Providers Workshop
- Australia to host 2019 GEO Ministerial Summit
- GISTAM 2019
- Gi4DM 2019 Conference: GeoInformation for Disaster Management

The GEO-CRADLE project has received funding from the European Union's Horizon 2020 (H2020) research and innovation programme under grant agreement No 690133.

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Project Homepage: www.geocradle.eu

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