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GEO-CRADLE: Coordinating and integrating state-of-the-art Earth Observation Activities in the regions of North Africa, Middle East, and Balkans and Developing Links with GEO related initiatives towards GEOSS

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GEO-CRADLE Regional Workshop in Abu Dhabi, UAE
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MINUTES

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Objective & Outline:

GEO-CRADLE fosters regional cooperation and integration of monitoring capabilities, networks, and scientific skills in the direction of a roadmap for GEO and Copernicus implementation in North Africa, Middle East and Balkans. The United Arab Emirates (UAE) are part of the Middle East; therefore they belong in the region of interest of GEO-CRADLE.

GEO-CRADLE has proactively engaged and keeps engaging with the relevant regional stakeholders (data/service providers, decision makers, and SMEs) in a series of consultation activities including surveys, interviews, workshops and bilateral exchanges, in order to identify gaps and needs in relation to common regional challenges.

In the context of this effort, the objective of the GEO-CRADLE Regional Workshop, which took place on 2 February 2017 in Abu Dhabi, UAE, was to present to the regional stakeholders the project's objectives, current activities and expected outcomes, as well as to identify the EO capacities and discuss the relevant needs of UAE and the region, to seek solutions to enhance growth and innovation in the geo-information sector, Earth Observation (EO) market uptake and business performances, and finally to explore the possibilities for cooperation and future perspectives.

The event was jointly organised by GEO-CRADLE Project Coordinator NOA and the Geography and Urban Planning Department at the United Arab Emirates University (UAEU). It was attended by representatives of the UAEU, the UAE Space Agency, the Abu Dhabi City Municipality, private sector companies, as well as project partner TUBITAK.

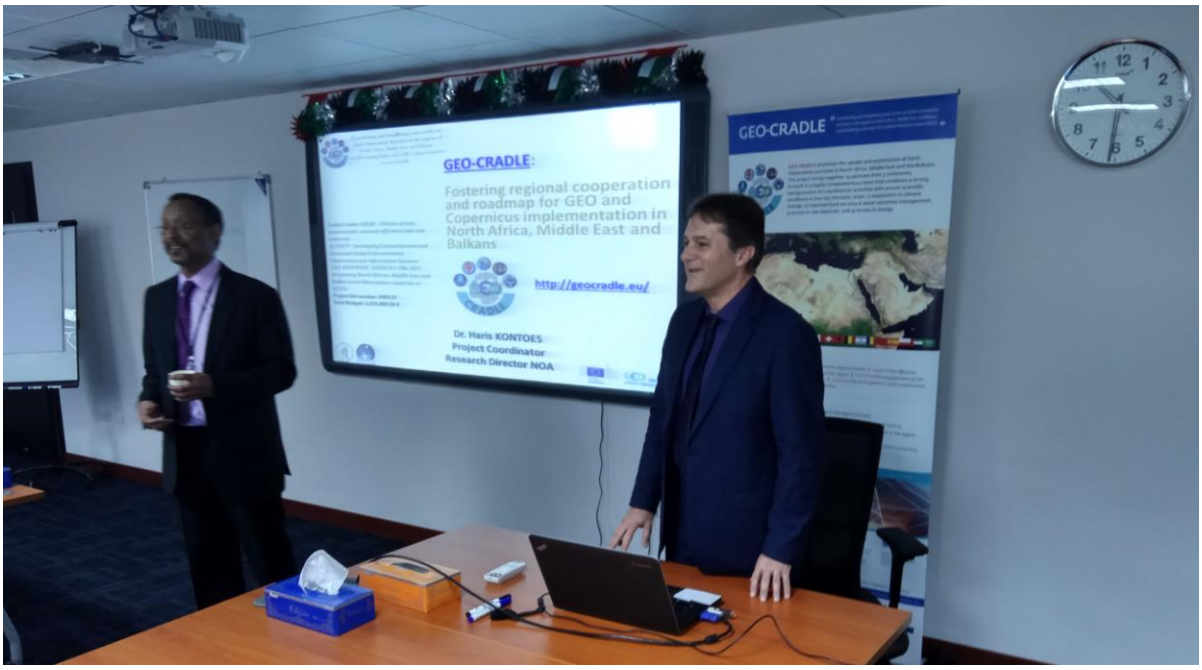
Welcome Speech

Speaker: **Dr Abdelgadir Abuelgasim** – United Arab Emirates University

Dr Abdelgadir Abuelgasim opened the meeting welcoming the participants and thanking GEO-CRADLE Project Coordinator Dr Haris Kontoes for the cooperation.

Dr Abuelgasim emphasized the strong interest of the UAEU in the GEO-CRADLE project, and stressed that that the purpose of this meeting was not just to have an information session, but to discuss concrete ways to address needs, to enhance EO market uptake and establish cooperation among different stakeholders in issues of common interest.

He wished a fruitful meeting and a productive day to all.



GEO-CRADLE contribution towards inventorying of capacities and user needs, gap analysis, maturity indicators and priorities, addressing regional challenges and implementing GEOSS & Copernicus

Speaker: **Dr Haris Kontoes** – GEO-CRADLE Project Coordinator

Dr Haris Kontoes thanked all the participants for their presence and UAEU for the kind invitation and hosting of the meeting. He specially thanked Dr Abuelgasim for his cooperation in organising this event.

Dr Kontoes highlighted that GEO-CRADLE is a project that aims at fostering regional cooperation and a roadmap for GEO and Copernicus implementation in North Africa, Middle East and the Balkans; therefore UAE is included in the area of interest too.

He referred to the consortium of the project, which allows covering the complete EO value chain, ensuring sufficient representation of the most important players in the Region of Interest (25 partners from 20 countries from 3 continents).

Dr Kontoes emphasized that GEO-CRADLE's mission is to set up a network for a wide range of EO data applications, based on the needs of society, public, research and commercial market. Thus the project seeks to identify common needs, create synergies (regional cooperation), and integrate capacities (monitoring capabilities and networks, as well as scientific skills); and finally to propose / set up large scale regional initiatives based on the Earth Observation (space based and in-situ) for addressing societal priorities in different thematic aspects.

The thematic areas of GEO-CRADLE are linked with the UN Sustainable Development Goals and are reflected in the following pilot activities, which are currently under way: 1) Adaptation to Climate Change, 2) Improved Food Security - Water Extremes Management, 3) Access to Raw Materials, and 4) Access to Energy.

Dr Kontoes continued with an overview of the Copernicus flagship EU Space Programme, explaining that it aims at developing European information services and EO market, based on satellite EO and in-situ data. He emphasized that Copernicus adopts a full, free and open data policy, and it is a tool for economic development and a driver for the digital economy. He also presented the infrastructure and the six cross-cutting thematic services of Copernicus: 1) Land, 2) Marine, 3) Atmosphere, 4) Climate, 5) Emergency, and 6) Security.

Dr Kontoes then referred to the GEO and its Global Earth Observation System of Systems (GEOSS), created to better integrate observing systems and share data by connecting existing infrastructures using common standards. He stressed that there are more than 200 million data resources in GEOSS that span all GEO's thematic areas, and underlined that GEO convenes expertise from across different disciplines, coordinates activities, promotes broad and open data polices, ensures global collaboration, identifies gaps, assesses maturity in relation to EO, and reduces duplication in the areas of: 1) Biodiversity and Ecosystem Sustainability, 2) Disaster Resilience, 3) Energy and Mineral Resources Management, 4) Food Security, 5) Infrastructure & Transportation Management, 6) Public Health Surveillance, 7) Sustainable Urban Development, 8) Water Resources Management.

Coming back to GEO-CRADLE, Dr Kontoes explained the project's overall approach and pillars, which include the Inventory of capacities and user needs in the RoI, the Gap Analysis, the Maturity Indicators and Priorities, the Pilots towards regional challenges, the Regional Contribution to GEOSS & Copernicus, and in parallel the Dissemination & Engagement and the Impact Analysis in the end.

Moreover Dr Kontoes presented the regional priorities definition workflow, as well as the demo version of the Regional Data Hub with connection to GEOSS & Regional Portals. He then analysed the refined scope of the four pilot activities.

Dr Kontoes concluded with summarising the GEO-CRADLE contribution: submit to the EC a roadmap for the future implementation of GEOSS, engage the countries and regional stakeholders, generate and sustain a network of stakeholders, deliver a prototype methodology and a detailed assessment on EO maturity per country, support the EO market uptake and internationalisation, and finally advance the role of the countries in GEO and Copernicus.

Access to Copernicus Data

Speaker: **Ms Alexia Tsouni** – GEO-CRADLE Project Coordination Team

Ms Alexia Tsouni presented the governance of Copernicus and stressed that it is driven by the users, with their strategic, technical and operational requirements. The data sources (Copernicus space and in-situ data) are used for service information (Copernicus services) and they provide value added services and applications to the users (downstream services "Copernicus Economy").

Ms Tsouni focused on the access to Copernicus data, through 10 European data access points (4 for satellite data and 6 for services data and information) and several national and private initiatives. Regarding the satellite data there is access to images in Near Real Time as well as access to archives.

Regarding the services data and information, there are added value products, indicators, models, archives, as well as Near Real Time and forecasts products. From the 4 data access points, the 2 are managed by ESA: Scientific Data Hub (SCI Hub) and Copernicus Space Component Data Access (CSCDA), and the other 2 are managed by EUMETSAT: EUMETCast and Copernicus Online Data Access (CODA). Ms Tsouni presented the features of each of them and their websites. As for the 6 thematic Copernicus services, 5 are under full, free and open access (Land, Marine, Atmosphere, Climate, Emergency), while 1 has restricted access (Security). The features of each of them and their websites were also presented.

Finally, Ms Tsouni referred to the national and private initiatives, including NOA Hellenic National Sentinel Data Mirror Site, and concluded with the Copernicus perspectives: 1) Imminent launch of a Data Access and Information Service, 2) Intention to procure parallel services from three suppliers: 3 platforms to provide equal access to the basic data and services run by 2 entrusted entities: EUMETSAT (1 platform) and ESA (2 platforms), and 3) Overall ensuring that Copernicus data is easily accessible and used.

Presentation of the GEO-CRADLE Survey of the regional Earth Observation capacities

Speaker: **Ms Alexia Tsouni** – GEO-CRADLE Project Coordination Team

Ms Tsouni explained the importance of the GEO-CRADLE survey in order to collect adequate and reliable responses with a good thematic and geographic coverage.

She noted that there were 240 responses so far, with the vast majority being from the Balkans, and most responses in the thematic areas of Food Security & Water Extremes and Climate Change. She encouraged the participants in the audience to take part in the survey and disseminate it to other relevant stakeholders and end-users as well.

Ms Tsouni underlined that the answers help GEO-CRADLE build a comprehensive picture of the Earth Observation capacities in the Balkans, North Africa and Middle East. Based on the survey results GEO-CRADLE supports the establishment of integrated EO services that meet regional priorities, and contributes to the implementation of GEOSS and Copernicus in the region.

She also emphasized that the participants join a large, regional network of stakeholders; gain access to important information and promote their capacities through the GEO-CRADLE portal and the Regional Data Hub; participate in concrete community activities (e.g. setting regional priorities, contributing to working groups) that pave the way towards a future regional GEO and/or Copernicus initiative; keep up-to-date with current collaboration and business opportunities in the region, networking events and EO-related news.

Ms Tsouni then presented the GEO-CRADLE online survey in detail, explaining each section:

- General Info: contact details;
- Activity Focus: your Organisation's role in the value chain, main thematic areas of activity, participation in EO-related projects, participation in Copernicus, participation in GEO/GEOSS SBA Tasks, collaboration with other EO actors;
- Capacities: space-borne capacities, ground-based/in-situ monitoring networks/facilities, modelling and computing processing capacities, EO data exploitation;
- National Activities: national funding for EO activities, national space policy/strategy, existence of national space agency, coordination of EO activities in the country, interaction between the EO community and decision makers in the country, organisation of EO dedicated workshops in the country;
- Engagement in GEO-CRADLE: contribution with your capacities to a regional initiative of GEO and/or Copernicus, provision of feedback for establishing a roadmap for the implementation of GEO and Copernicus in the region, participation in future GEO-CRADLE networking events and portal.

Open Discussion – Conclusions

Dr Kontoes facilitated an interesting open discussion which provided valuable knowledge on the identified EO capacities and skills, as well as the regional needs and challenges. This enriched GEO-CRADLE's findings in capacities recording, user needs analysis, maturity assessment and priorities setting. Besides, this is an ongoing process, whose results continuously update our view for the region, and will be included in the final roadmap.

UAE have an advanced technical infrastructure and a series of useful EO-based products and services offered to the public, the relevant stakeholders and end-users. Concerning the data policy, the access is not always free and open, but subject to some restrictions, depending on the user and the purpose.

The participants highlighted the fact that UAE face atmospheric / air quality challenges because of the dust. The representative of the UAE Space Agency said that they are very interested in dust modelling/simulation and the respective pilot activity of GEO-CRADLE.

The representative of the Abu Dhabi City Municipality informed about the efforts of the Municipality to make the City clean and green, and stressed the solar energy perspective. This was also confirmed by an SME representative. Both of them expressed their interest in the respective pilot activity of GEO-CRADLE.

The representatives of the UAEU underlined the need for more education, technical support and capacity building on EO data exploitation, combination with in-situ data and integration in models.

The private sector companies highlighted the importance of the open and free access to data, and the need to establish a National Spatial Data Infrastructure (NSDI).

There was a great dissemination of Copernicus and GEO, including the Copernicus Relays and the GEO offices, and the free and open access to data attracted a lot of attention. Participants were interested in the Scientific Data Hub as well as the upgraded NOA Hellenic National Sentinel Data Mirror Site as it covers their region.

The participants agreed to join the GEO-CRADLE Regional Networking Platform and follow the activities of the project, with dissemination to other relevant stakeholders in the country. Some of them expressed interest in participating in consultation phases, regional workshops and in the meeting where the pilots' outcomes will be presented, in order to provide feedback and exploit the results adapted to their own needs and interests.

During this important networking event new contacts were established and the mutual interest for future cooperation was expressed to address common needs, based on the opportunities which the European Union provides in terms of networking, capacity building, technology transfer and funding.

Dr Kontoes emphasized the importance of this meeting, which provided participants with a unique cross-sector networking opportunity, very useful in order to identify common needs, share capacities and create synergies between administration, academia and industry. He thanked UAEU for their warm hospitality and the participants for their presence and attention.