

## WP23\_25: GEO Capacity Building in North Africa, Middle East, Balkans and Black Sea Region

1300,225

### Basic Information

#### Full title of the Initiative

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

#### Short Title or Acronym

GEO-CRADLE

#### Current category in the 2020-2022 GWP

GEO Initiative

#### Proposed category in the 2023-2025 GWP

GEO Initiative

### Points of Contact

First Name	Last/Family Name	Email
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### Purpose

#### Objective

GEO Capacity Building in North Africa, Middle East, Balkans, Black Sea sustaining the key outputs of GEO-CRADLE and scaling-up their reach in terms of geographic coverage and operational maturity

#### Please provide a short description of the Initiative

From its very conception and throughout its implementation, GEO-CRADLE has been in accordance with and driven by the strategic priorities laid out in the GEO Strategic Plan 2016-2025 regarding the implementation of GEOSS and with the Copernicus Regulation defining the actions towards Copernicus uptake. Following the 34 months of its activities, as well as the follow-up activities and new field up to date (e.g. e-shape Pilots 3.1, 6.4, 6.2, 6.3, 6.1, 2.4 & 1st EIC Horizon Prize on Early Warning for Epidemics, EXCELSIOR H2020 Teaming Phase 2 Project), it is now possible to demonstrate its value and underline its contribution to the achievement of GEO/GEOSS and EuroGEO goals in the region, as well as to argue for the need to maintain the existing GEO-CRADLE coordination and networking mechanism alive and further scaled up for the benefit of EU GEO supported initiatives and Copernicus. Moreover, the GEO-CRADLE Initiative provides further impetus on the GEO-CRADLE pilots and offers an opportunity to extend the relevant GEO-CRADLE services, as well as, where relevant, the services from other projects and Initiatives, beyond the geographic and thematic coverage initially

considered by GEO-CRADLE, in support of the three GEO priorities, namely Climate Change, Disaster Risk Reduction and Sustainable Development Goals.

### **Why is this Initiative needed?**

The scope of the Initiative is strongly motivated by the need to capitalise, sustain and scale up the results mainly achieved during the implementation of the 34-month H2020 GEO-CRADLE project (02/2016-11/2018) as well as the follow-up activities up to now (e.g. e-shape, Early Warning System for Mosquito Borne Diseases - EYWA), also promoting, where is relevant, key outcomes of other EU Flagship projects and Initiatives (e.g. EuroGEO, AfriGEO, NextGEOSS, ERAPLANET, GEOGLAM, GEO-VENER). In that regard, the details of the GEO-CRADLE Initiative are strongly informed by the lessons learned during that period, and by the outcomes of various exchanges between the project and key stakeholders (most prominently GEO Secretariat, EC DG RTD and DG GROW, ESA, JRC and several regional, national and local actors in the countries within the RoI).

### **What evidence is there to support this need?**

1) Follow-up of GEO-CRADLE pilot 4 - SENSE: e-shape Pilot 3.1 (<https://e-shape.eu/index.php/showcases/pilot3-1-nextsense-solar-energy-nowcasting-and-short-term-forecasting-system>); 2) Follow-up of GEO-CRADLE pilot 2 - IFS-WEM: e-shape Pilots 6.4 (<https://e-shape.eu/index.php/showcases/pilot6-4-resagri-resilient-sustainable-ecosystems-including-agriculture-food>) & 6.2 (<https://e-shape.eu/index.php/showcases/pilot6-2-geoss-for-disasters-in-urban-environment>); 3) Follow-up of GEO-CRADLE pilot 3 - ARM: e-shape Pilot 6.3 (<https://e-shape.eu/index.php/showcases/pilot6-3-assessing-geo-hazard-vulnerability-of-cities-critical-infrastructures>); 4) Follow-up of GEO-CRADLE pilot 1 - ACC: e-shape Pilot 6.1 (<https://e-shape.eu/index.php/showcases/pilot6-1-ao4d-ash-ao-data-for-detection-discrimination-distribution-4d-of-volcanic-ash>); 5) New field: e-shape Pilot 2.4 (<https://e-shape.eu/index.php/showcases/pilot-2-4-eywa-early-warning-system-for-mosquito-borne-diseases>) & 1st EIC Horizon Prize on Early Warning for Epidemics (<http://beyond-eocenter.eu/index.php/web-services/eywa>); 6) EXCELSIOR H2020 Teaming Phase 2 Project (<https://excelsior2020.eu/>)

### **Is this Initiative open to participation by representatives of any GEO Member, Participating Organization, and GEO Associate?**

Yes

### **Are you aware of other projects or initiatives at a global or regional scale (both in GEO and externally) that provide similar products or services?**

No

**Please identify the most important actual and/or intended outputs (products, services, etc.) produced by the Initiative, along with their intended and/or actual users. This list does not need to be comprehensive but should identify the outputs which are most used and are expected to have the greatest potential impact.**

<b>Output</b>	<b>Status</b>	<b>Users</b>	<b>Additional info</b>
e-shape Pilot 3.1   nextSENSE: solar energy nowcasting & short-term forecasting system	In development	Power transmission operators and Distributors, (The Public Power Corporation Renewables S.A. (PPCR), the National Independent Power Transmission Operator S.A. (IPTO) of Greece), Environmental and Energy Ministries (The Ministry of Electricity and Renewable Energy of Egypt), Large and small scale solar PV parks and concentrated solar plants, Policy Makers, Industry	<a href="https://e-shape.eu/index.php/showcases/pilot3-1-nextsense-solar-energy-nowcasting-and-short-term-forecasting-system">https://e-shape.eu/index.php/showcases/pilot3-1-nextsense-solar-energy-nowcasting-and-short-term-forecasting-system</a>
e-shape Pilot 6.4   ReSAgri - Resilient & Sustainable ecosystems including Agriculture & food	In development	Interamerican SA GAIA EPICHEIREIN GR Association of farmers Numerous Farmers Cooperatives GRNET	<a href="https://e-shape.eu/index.php/showcases/pilot6-4-resagri-resilient-sustainable-ecosystems-including-agriculture-food">https://e-shape.eu/index.php/showcases/pilot6-4-resagri-resilient-sustainable-ecosystems-including-agriculture-food</a>
e-shape Pilot 6.2   GEOSS for Disasters in Urban Environment	In development	Civil Protection Agencies, hydro-meteorological predictions agencies, disaster risk reduction institutions	<a href="https://e-shape.eu/index.php/showcases/pilot6-2-geo-ss-for-disasters-in-urban-environment">https://e-shape.eu/index.php/showcases/pilot6-2-geo-ss-for-disasters-in-urban-environment</a>
e-shape Pilot 6.3   Assessing Geo-hazard vulnerability of Cities & Critical Infrastructures	In development	Urban planners and managers, Policy Makers, Industry and engineering companies, Insurance companies, Civil protection authorities, Urban citizens, EU Entities, Member States	<a href="https://e-shape.eu/index.php/showcases/pilot6-3-assessing-geo-hazard-vulnerability-of-cities-critical-infrastructures">https://e-shape.eu/index.php/showcases/pilot6-3-assessing-geo-hazard-vulnerability-of-cities-critical-infrastructures</a>
e-shape Pilot 6.1   EO4D_ASH - EO Data for Detection, Discrimination & Distribution (4D) of Volcanic ash	In development	VAACs, aviation industry at large	<a href="https://e-shape.eu/index.php/showcases/pilot6-1-EO4d-ash-EO-data-for-detection-discrimination-distribution-4d-of-volcanic-ash">https://e-shape.eu/index.php/showcases/pilot6-1-EO4d-ash-EO-data-for-detection-discrimination-distribution-4d-of-volcanic-ash</a>
e-shape Pilot 2.4   EYWA - Early Warning System for Mosquito-Borne Diseases	In development	All relevant communities that are involved in the control of Vector Borne Diseases: Public health authorities vector control companies citizen scientists researchers	<a href="https://e-shape.eu/index.php/showcases/pilot-2-4-eywa-early-warning-system-for-mosquito-borne-diseases">https://e-shape.eu/index.php/showcases/pilot-2-4-eywa-early-warning-system-for-mosquito-borne-diseases</a>
Early Warning System for Mosquito Borne Diseases	In development	EYWA GIS Platform is a niche state-of-the-art tool, in the hands of the	<a href="http://beyond-eocenter.eu/index.php/web-services/eywa">http://beyond-eocenter.eu/index.php/web-services/eywa</a>

		<p>National Health Organizations and Public Authorities, which publishes knowledge derived from collected data and models in regards to the mosquito population and forecasted risks for mosquito – borne disease outbreaks. Therefore, EYWA is a conducive tool to enhance decision making towards the prevention of outbreaks and mitigation of their impact on local, regional and global scale. Additionally, the platform is a key lever for organizations involved in mosquito elimination efforts, facilitating the optimal management of the huge combating resources and capacities deployed seasonally (field inspectors, analysts and vehicles, spraying helicopters and drones, thousands of mosquito breeding sites), saving hundreds of millions of Euros for the operations, by indicating targeted actions for implementation.</p>	
EXCELSIOR H2020 Teaming Phase 2 Project	Planned	<a href="https://excelsior2020.eu/the-project/networks-organisations/">https://excelsior2020.eu/the-project/networks-organisations/</a>	<a href="https://excelsior2020.eu/">https://excelsior2020.eu/</a>

**If needed, please provide additional comments or explanation to accompany the outputs table**

- no answer given -

**What kinds of decisions are the outputs of this Initiative primarily intended to support?**

Multi: please check the link per output in the table above

**How will these decisions benefit from the outputs of this Initiative?**

Multi: please check the link per output in the table above

**What kinds of impacts (for example, reduced loss of life, monetary savings, conservation of biodiversity, etc.) are anticipated as a result of the use of the outputs of this Initiative?**

Multi: please check the link per output in the table above

**Has this Initiative been asked to provide specific information (for example, reports, data, services) on an ongoing basis to an international convention, organization, or other multilateral body?**

Yes

**Please identify the requesting organization.**

UN-SPIDER, GEO WG Disaster Risk Reduction, GEO WG Capacity Development

**Describe the nature of the request.**

UN-SPIDER: Technical Advisory Missions in our role as Regional Support Office (<https://www.un-spider.org/network/regional-support-offices/greece-regional-support-office>), e.g. to Tunisia from 4 to 6 March 2020 (<https://www.un-spider.org/advisory-support/advisory-missions/tunisia-technical-advisory-mission>) & GEO WGs: Active participation and contribution in both internal meetings and public events

**Please provide supporting documentation of the request.**

- no supporting documents provided -

## Technical Synopsis

**Please provide a brief description of the methods used by the Initiative to produce its (actual or planned) outputs.**

The GEO-CRADLE project has been collecting and inventorying a large number of data, i.e. capacities and profiles of Earth Observation stakeholders in the Region of Interest (Balkans, Middle East and North Africa). Moreover, in the framework of its four feasibility studies, the project integrated regional EO capacities in response to given regional challenges, for which a number of datasets were integrated and produced. These, together with other existing datasets made available by regional stakeholders, are now openly and freely accessible through the GEO-CRADLE Regional Data Hub. These are followed-up and enriched, expanded also with the new area of interest (Black Sea) and the new thematics in support of CC, DRR and SDGs, such as health (EYWA - Early Warning System for Mosquito-Borne Diseases).

**If you would like to provide further details on the technical methods, you may upload one or more documents here.**

- no supporting documents provided -

**Are there any significant scientific or technical challenges that need to be resolved by the Initiative during the 2023-2025 period?**

Yes

**Please describe these challenges and the steps being taken to solve them.**

Multi: please check the link per output in the table above

**Does the Initiative expect to complete any key new outputs, improvements to existing outputs, or improvements to the methods of producing outputs, in the 2023-2025 period?**

Yes

**Please describe these new outputs or improvements.**

Multi: please check the link per output in the table above. In addition, FPCUP is exploited for the implementation of the GEO-CRADLE Initiative.

**Please identify the key tasks that must be implemented to ensure delivery of these changes, with target dates for completion.**

Task	Task description	Expected completion (month/year)
Uptake of EO services and data to regional needs	Black Sea	Q1 2023
Regional Workshop for Evros Delta Flooding	Greece-Bulgaria-Turkey	Q2 2023

## Resources

**Have all resources required to implement the Initiative's planned work in the 2023-2025 period been secured?**

**Please list all financial and non-financial contributions to the Initiative (other than in-kind, voluntary participation by individual contributors) having a value of more than USD 50,000.**

Contributing Organization	GEO Status	Type of Resource	Value	Currency
NOA	Greece	Financial	50000 (part of the 1st EIC Horizon Prize on Early Warning for Epidemics <a href="http://beyond-eocenter.eu/index.php/web-services/eywa">http://beyond-eocenter.eu/index.php/web-services/eywa</a> )	Euros
NOA	Greece	Equipment	200000	Euros

## Lessons from the 2020-2022 Period

**Were all planned activities for the 2020-2022 period implemented as expected?**

Yes

**Were there any key challenges faced by the Initiative in the 2020-2022 period?**

Yes

**Please describe.**

COVID-19 & the war in Ukraine were obstacles to our capacity building efforts. Mitigation measures included remote work and tele-conferences instead of in-situ activities.

**Were there any impacts or changes to operations due to COVID-19?**

Yes

**Please describe.**

COVID-19 was an obstacle to our capacity building efforts. Mitigation measures included remote work and tele-conferences instead of in-situ activities.

**Please describe the key changes proposed for the 2023-2025 period, for example, new projects, new areas of focus, or adjustments to the activity governance.**

Ukraine, Serbia, Albania and Cyprus are areas of focus, as well as MENA region and North Africa.

**Does the Initiative have outputs (products, services, etc.) available to users now, even if only on a pilot or testing basis?**

Yes

**Please provide any available information describing this usage (for example, user statistics, results of user testing) and/or feedback from users (for example, user comments, evaluations).**

<http://beyond-eocenter.eu/index.php/web-services/eywa>

<https://e-shape.eu/index.php/showcases/pilot3-1-nextsense-solar-energy-nowcasting-and-short-term-forecasting-system>

<https://e-shape.eu/index.php/showcases/pilot6-4-resagri-resilient-sustainable-ecosystems-including-agriculture-food>

<https://e-shape.eu/index.php/showcases/pilot6-2-geoss-for-disasters-in-urban-environment>

<https://e-shape.eu/index.php/showcases/pilot6-3-assessing-geo-hazard-vulnerability-of-cities-critical-infrastructures>

<https://e-shape.eu/index.php/showcases/pilot6-1-ao4d-ash-ao-data-for-detection-discrimination-distribution-4d-of-volcanic-ash>

<https://e-shape.eu/index.php/showcases/pilot-2-4-eywa-early-warning-system-for-mosquito-borne-diseases>

<http://beyond-eocenter.eu/index.php/web-services/eywa>

<https://excelsior2020.eu/>

**Please provide supporting documentation if available.**

- no supporting documents provided -

**Do you have evidence of any impacts that have occurred in part as a result of using the outputs of the Initiative (for example, policy decisions taken, behaviour changes by users, risks mitigated)?**

- no answer given -

**Have there been any internal or external reviews or evaluations of the Initiative since 2019?**

No

**Please indicate any GEO Work Programme activities with which you have ongoing collaboration.**

- AFRIGEO - African Group on Earth Observations
- EO4HEALTH - Earth Observations for Health
- EUROGEO - European Group on Earth Observations
- GEOGLAM - GEO Global Agricultural Monitoring
- GEO Secretariat Operations - GEO Secretariat Operations
- GEO-VENER - GEO Vision for Energy
- GSNL - Geohazard Supersites and Natural Laboratories

- GEOSS Data, Information and Knowledge Resources - GEOSS Data, Information and Knowledge Resources
- GEOSS Infrastructure Development - GEOSS Infrastructure Development
- NEXT-EOS - Next Generation Earth Observation Services

**Please indicate any additional GEO Work Programme activities with which you would like to establish new collaborations.**

- EO4SDG - Earth Observations for the Sustainable Development Goals
- GLOFAS - Global Flood Awareness System
- GFRM - Global Flood Risk Monitoring

## Stakeholder Engagement and Capacity Building

**Are there specific countries or organizations that your Initiative would like to engage?**

Yes

**Please list these countries, regions or organizations.**

North Africa, Middle East, Balkans and Black Sea Region

**What are your plans to engage them?**

Regional Coordination and Liaison with Copernicus, EuroGEO, AfriGEO, ESA, GEO, UN initiatives (e.g. UNSPIDER) and NSOs.

Continued animation of Networking Activity (Maintenance of the Networking Platform) and Capacity Building Actions (Organisation of selected workshops promoting EuroGEO and Copernicus, eg. FPCUP)

Operationalisation of Pilots (upscale and exploitation of Pilots Services promoted through key initiatives and projects e.g. e-shape, Excelsior)

Enhancement of the Regional Data Hub ( Maintenance and Linkage of regional datasets to GEOSS Platform)  
Impact Maximisation (Communication, Dissemination and Impact Assessment)

**Does your Initiative engage users in the work of the Initiative (for example, consultation, testing, co-design)?**

Yes

**Please briefly describe the Initiative's approach to engaging users.**

[http://geocradle.eu/wp-content/uploads/2016/07/D5.7-Roadmap-for-future-implementation\\_v13.pdf](http://geocradle.eu/wp-content/uploads/2016/07/D5.7-Roadmap-for-future-implementation_v13.pdf)

**Does the Initiative have a user engagement strategy or similar kind of document?**

Yes

**Please upload it.**

- d57\_roadmap\_for\_future\_implementation\_v13.pdf ([link](#))

**Are there categories of users that are not represented at this time, but you would like to engage?**

No

**Does the Initiative have a documented capacity development strategy?**

Yes

**Please upload it.**

- d57\_roadmap\_for\_future\_implementation\_v13.pdf ([link](#))

**Are there any commercial sector organizations participating in this Initiative?**

Yes

**Please list the commercial sector organizations.**

Organization name	GEO Member/PO/...	Country in which the organization is based	City in which the organization is based
Interamerican Private Insurance Company	Greece	Greece	Athens
CORTEVA Agriscience Hellas	Greece	Greece	Athens
Thesto & Orhomenos farmers' cooperatives	Greece	Greece	Athens

**Are there opportunities for commercial sector uptake of the outputs of the Initiative?**

Yes

**Please describe these opportunities.**

[http://geocradle.eu/wp-content/uploads/2016/07/D5.7-Roadmap-for-future-implementation\\_v13.pdf](http://geocradle.eu/wp-content/uploads/2016/07/D5.7-Roadmap-for-future-implementation_v13.pdf)

**Is there already commercial uptake occurring?**

Yes

**Please describe the nature of this uptake and the relevant commercial sector organizations.**

e-shape Pilot 6.4 (<https://e-shape.eu/index.php/showcases/pilot6-4-resagri-resilient-sustainable-ecosystems-including-agriculture-food>): Interamerican Private Insurance Company, CORTEVA Agriscience Hellas, Thesto & Orhomenos farmers' cooperatives.

e-shape Pilot 3.1 (<https://e-shape.eu/index.php/showcases/pilot3-1-nextsense-solar-energy-nowcasting-and-short-term-forecasting-system>): the Public Power Corporation Renewables S.A. (PPCR), the National Independent Power Transmission Operator S.A. (IPTO) of Greece.

**Are there opportunities for further commercial sector participation in the Initiative?**

Yes

**Please describe these opportunities.**

[http://geocradle.eu/wp-content/uploads/2016/07/D5.7-Roadmap-for-future-implementation\\_v13.pdf](http://geocradle.eu/wp-content/uploads/2016/07/D5.7-Roadmap-for-future-implementation_v13.pdf)

**Does the Initiative have a plan for commercial sector engagement?**

Yes

**Please describe this plan or upload the relevant document.**

[http://geocradle.eu/wp-content/uploads/2016/07/D5.7-Roadmap-for-future-implementation\\_v13.pdf](http://geocradle.eu/wp-content/uploads/2016/07/D5.7-Roadmap-for-future-implementation_v13.pdf)

- no supporting documents provided -

## Governance

**Please describe the roles of each of the key leadership positions, as well as any team structures involved in day-to-day management.**

Dr Haris KONTOES

Research Director of NOA

BEYOND Center for Earth Observation Research and Satellite Remote Sensing ([www.beyond-eocenter.eu](http://www.beyond-eocenter.eu))

Regional Support Office of UN SPIDER for DRR

EUROGEO Action Group for Epidemics

National Contact Point for Data Sharing within GEO Member Governments

Member of the National Committee of International Union of Geodesy and Geophysics (IUGG)

Institute for Astronomy & Astrophysics, Space Applications and Remote Sensing

National Observatory of Athens

**Is there a steering committee or other governance bodies that advise the Initiative but are not involved in day-to-day management?**

No

**What methods does the Initiative use to communicate with its participants?**

- Email / e-newsletters
- Website
- Regular events
- Other

**Please describe.**

Social media

**Please describe the key risks that could delay or obstruct the completion of the planned activities and outputs of the Initiative, along with any actions taken to mitigate these risks.**

Description of the hazard	Description of the possible impacts	Scale of impact	Likelihood of occurrence	Mitigation measures
COVID-19	obstacles to our capacity building efforts	Limited	Possible	remote work and tele-conferences instead of in-situ activities
the war in Ukraine	obstacles to our capacity building efforts	Limited	Very likely	remote work and tele-conferences instead of in-situ activities

**What methods are used by the Initiative to monitor its effectiveness?**

- Informal discussions with users / beneficiaries
- Website statistics
- Consultations or events

**Would the Initiative be interested in assistance from the GEO Secretariat for developing an impact plan?**

Yes

## How are the results of the monitoring and evaluation activities shared with participants and the wider GEO community?

Reporting (e.g. for GEO)

## Are any monitoring or evaluation activities required by funders/contributors?

No

## Participants

### Please list the active individual participants in the Initiative

First name	Last name	Email address	Member	Org
Haris	Kontoes	kontoes@noa.gr	Greece	NOA - National Observatory of Arthens
Alexia	Tsouni	alexiatsoni@noa.gr	Greece	NOA - National Observatory of Arthens

## Other information

### Please provide any other comments or information that was not included in the previous sections, but you would like to appear in the Implementation Plan.

UN-SPIDER Regional Support Office: Technical Advisory Missions, e.g. to Tunisia from 4 to 6 March 2020 (<https://www.un-spider.org/advisory-support/advisory-missions/tunisia-technical-advisory-mission>)

FPCUP-GEO-CRADLE Past Actions:

FPCUP Webinar to the Tunis Scientific Academy Zoom 22/02/2021

EuroGEO Workshop 2021 21/09/2021

From space to earth - Renewable and environmental energy sources Greece 05/10/2021

Capacity building and Earth observation in the Balkans Region: the showcase of the GEO-CRADLE Initiative Albania 09/05/2022

Copernicus: Services for the environment and citizens Albania 10/05/2022

Workshop on Sustainable Agriculture Albania 12/05/2022

FPCUP-GEO-CRADLE Future Actions:

41st EARSeL Symposium Cyprus 13-16/09/2022

Building an active user dialogue Balkans, Middle East and North Africa Q4 2022

Uptake of EO services and data to regional needs Black Sea Q1 2023

Regional Workshop for Evros Delta Flooding Greece-Bulgaria-Turkey Q2 2023

Upcoming action following invitation by NATO HQ Supreme Allied Commander Transformation Strategic Plans and Policy Directorate: Study Day on "MENA: Space Capabilities and Security Challenges Applications to Disaster Management", 12 May 2022, Naples, Italy

- no supporting documents provided -

## Co-Editor Management

## List of co-editors for this initiative

- no answer given -