



Project 33807 (MYGEOSS)  
Deliverable D 3.2

## **MYGEOSS – Lessons Learned v.2**

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## **1. Introduction and Scope**

This report presents the lesson learned from the project related to the period between M12-M23. Lessons learned are derived from the third call for innovative apps of MYGEOSS and the activity of apps development performed internally at the European Commission Joint Research Centre (JRC).

## **2. The third MYGEOSS call for innovative apps.**

The third call for innovative apps was launched on 15 March 2016. The call aimed at the development of innovative applications (mobile or web-based) using openly available or crowd-generated data in different domains addressing citizens' needs. The pool of open data for use included, but was not limited to, the Data Collection of Open Resources for Everyone (GEOSS Data-CORE) made available by the Group on Earth Observations (GEO) through the Global Earth Observation System of Systems (GEOSS), as well as open data from EU-funded projects.

The call focused on developing applications of European relevance able to provide users with quantitative or qualitative information on the changing environment, e.g. change detection in climate, biodiversity, water bodies, coastal areas, built environment, green areas, forestry, agricultural land and crops, and atmospheric composition. Other areas of application were also considered provided that they addressed broad environmental or social themes across geographic scales.

The call closed on April 8th with 66 applications received from 15 countries: 41% of proposal from Small and Medium-Sized Enterprises (SMEs), 38% from Universities and research centres and 21% by individuals.

An international panel of experts evaluated the proposals received using as criteria: the relevance for use in Europe, the ease of use of the apps for non-expert users, the innovative characteristics of the proposed application, the contribution to environmental or social objectives including active citizen participation in data collection and analysis. It was mandatory that the data used for the proposed applications were available under the conditions of full and open access with no restrictions for reuse except attribution of the source. If data used was not part of the GEOSS Data-CORE, data from EU-funded projects, or other openly available or crowd-generated data that comply with the sharing and use conditions of the GEOSS Data-CORE, it was the responsibility of the participants to ensure that such data was in fact provided under the conditions of full and open access.

Thirteen applications were retained from the selection process and were awarded small contracts by the JRC that is leading the project.

As for the previous calls of MYGEOSS the contract required three main deliverables:

1. A Data a Management Plan to ensure that the data used or collected by the app is full and open access and that the GEOSS Data Management principles have been considered (data should be discoverable, accessible, usable, documented, reserved and curated as far as possible).
2. The first public release of the app with the related documentation and code (available at: <http://digitalearthlab.jrc.ec.europa.eu/app/57752> ).
3. A final report reflecting on the lessons learned during the development of the app including organisational, legal, and data-related issues, and recommendations for the European Commission helpful for MYGEOSS subsequent activities, and for future programmes aiming at the exploitation of GEOSS and other environmental open data.

The outcome of the analysis of the final reports of the first call of MYGEOSS is include in Deliverable D3.1 “MYGEOSS Lessons learned v1” of the project. Lesson learned and recommendation collected at the end of the second call are described in Deliverable D0.3 Activity Report 2.

### 3. Lesson learned from the participants

Table1 and Table2 present the lesson learned and the recommendation collected at the end of the third call for innovative apps.

Table 1 clusters the key lessons learned by the 13 projects. The number on the right column indicates the number of projects expressing that topic. We have kept a light clustering and tried to use as much as possible the words provided by the participants to reflect the variety of comments received even within a similar topic.

Table 1. MYGEOSS Call 3: Lessons learned

<b>About data</b>	<b># projects</b>
Increased awareness of data policy e.g. open data vs. proprietary	5
Increase awareness of the difficulties to find open data related to a particular topic (problem of missing data in different countries), or to find data provided using API or a format machine readable	3
Increase awareness of the difficulties to combine different datasets with different licenses in different location.	2
Opportunity to understand and communicate the legal implications of accepting an EU Public License	1
Increased knowledge of crowdsource / open data and the need of validation process and verification to check data quality collected/ used	3
<b>About GEOSS</b>	
Increased awareness of GEOSS, the GEO web portal and GEOSS Data CORE	3

<b>About new skills</b>	
Opportunity to develop new skills related to mobile/web app development	3
Opportunity to develop/extend innovative ideas	2
Awareness of the need to focus on good design in order to display data and communicate it to the public	1
Awareness of the process of publishing app in the main app stores (Apple stores/ Google play)	1
The project is a valuable opportunity to learn about and work with a technological solution to a social and environmental problem.	1
Presenting scientific results to scientist together with a list of conditions and assumptions that allow a correct interpretation of the data is something different from presenting this data to the public.	1
MYGEOSS has given me a taste of what it is like to be an entrepreneur	1
MYGEOSS has given me the opportunity to understand how underrepresented female gender is.	1

**Table 2. MYGEOSS Call 3: Recommendations**

	<b>Recommendations</b>	<b>Projects mentions</b>
	<b>About data</b>	
1	EU should encourage and support countries to publish Open Data. Some countries put many efforts but some others do not follow.	1
2	Prepare a guidebook for the project that explain better the contract requirements, the goals and the restriction of the project especially for what concerns the EUPL license.	2
	<b>About GEOSS</b>	
3	Improve GEOSS portal, its search functionalities and the way in which results are returned to the users. Make it possible for users to rate the content and add remarks, feedback	3
	<b>About process</b>	
4	Link present and future applicants to develop a community and share solutions and ideas	3
5	More support from the EU for the applications as for example their promotion at scientific and not events.	2
6	More time -and a deliverable- should be dedicated to the definition of a basin of users -in case of none and the definition of a specific plan on how to involve them. Proponents shall clearly define who are/would be the potential users of the app, to quantify them, and to draft a plan explaining which strategies will be put in place to reach/engage these users.	2
7	Extend time to develop app, fix bugs and solve issues	1
8	Guide project groups in methods of creating industry-relevant solutions, including the use of participatory design methods	2

9	More support by providing web hosting services to develop apps and storage services	1
10	Support and some budgets for the dissemination and engagement plans in order to ensure higher impacts	1
11	Support female entrepreneurs in EU project	1
12	Open evaluation process. It can be interesting for further citizen science calls to ask volunteers to evaluate if a project has performed correctly and must be funded or not.	1
13	<b>About follow up</b>	
14	A follow up project (additional founding) that allows the most successful projects to further develop their apps would be great	2
15	Change the programme in a multi-phase programme split in two phases. First phase: Selects a large number of project and provides small funding. Second phase selects a small number of projects and provide some more funding but more important advice, supervision and visibility.	1

## 4. Summary of lesson learned from MYGEOSS 3<sup>rd</sup> call

### About Data

To summarise the lessons learned from the third call for innovative ideas, MYGEOSS has contributed to raising awareness about data management, data licensing, and the persistent difficulties in handling open data. The most common problems are that the terms and conditions are not clearly labelled in data that is supposedly open, and even if they are they vary between datasets making integration difficult. This frequently affects the usability of data as reported in some projects:

*“The main reason preventing the use of the other existing data on migration is their license. In some cases there is no clear statement of the license”*

*“we found that it is not always easy to find the license specifications of the datasets (which sometimes are hidden or not clearly shown) as well as understand the real “openness” of the datasets.”*

In addition, the participants found issues of lack of data for particular geographical areas or topics, inappropriate resolution (i.e. national-level data instead of local-level one), or poor formats making re-use difficult. E.g.

*“a lot of information was contained in data files format like pdf, or even worst jpg, which are hard to use”.*

Introducing the requirement to develop a Data Management Plan as first deliverable of the projects has proved very beneficial to make the participants think about the data that they were going to use, and verify upstream the conditions of use. This

increased awareness about good data management is an important outcome of the project.

Moreover, the exploitation of open data available online or collected using social networks has increased the awareness of the need of a validation process to check the quality of data used.

### **About GEOSS**

Through MYGEOSS, the participants have been made aware of GEOSS, and its geoportal as confirmed by a number of recommendations to improve and enhance it and the resources discoverable through it:

*“While browsing through the extensive GEOSS you can get a lot of results. However it is hard to find the dataset that can really help you in your project.”.. or.. “Searches in the GEOSS--Portal led to too many results. Going through all of them and picking only relevant was too time consuming.”*

Additional comments about open data published by the Commission or European agencies: *“regarding open data which are released from the European Commission (e.g. those belonging to the GEOSS Data Core), a specific functionality should be implemented which allows users of those data to provide feedback about their quality or fitness-for-use. This can also help in keeping track of how much and for which purposes data are used.”*

### **About Users**

As emerged from some recommendations and directly experimented by the JRC during the internal development of its apps, the process of designing and developing a mobile/web app is not only a matter of technology but requires focusing on a more complex design that include the management of data flow and the involvement of end users. The long-term effectiveness and sustainability of apps depends largely on how to engage users and keep them motivated/rewarded for their contributions. There are multiple strategies to do so, including gaming, reward schemes etc. but no single magic bullet.

In the same way as the preparation of Data Management Plans has focused the minds of the participants on the licensing issues, it is very important to clearly define the target of users that will use the app, to draft a strategy to involve them, to design a data flow for the management of data collected using the app and to identify process to check the quality of data collected. Some final reports suggest supporting more these stages of design in future calls.

A particular lesson learned by the JRC in developing its apps, which are more closely linked to existing environmental policies and processes (on Invasive Alien Species, biodiversity and nature protection, and air quality), is that developing the app is the easy part. What is more difficult and time consuming is to ensure that the data collected by the public feeds into the established data flows and contribute effectively to environmental monitoring and evaluation. Users/contributors need to

see that their data is used and makes a difference or they will not engage in the long term. To do so, however, needs to involve all the existing stakeholders such as government/environmental protection agencies at local, regional, and national levels, to make sure they value and respond positively to the inputs coming from the public, and do not feel challenged or by-passed. This needs cultural and organizational change in many instances, and is a long process, moving at much slower pace than technological change. Taking this into account, requires also to manage carefully the expectations of users, who often expect immediate feedback to their inputs, and of public officials who are often polarized between over-enthusiasts and over-skeptical.

### **About follow-up**

The participants have made some very useful recommendations about possible follow up projects including the introduction of a 2-stage process, in which innovative ideas are encouraged to develop prototypes, and then the more successful are funded further to get to a more mature stage. It was also recommended to give more time for the development and testing, focus more on user identification and participatory design.

During the final project meeting, as well as the Citizen GEOSS workshop in Mexico City, the broader question of sustainability of projects was discussed in terms of user engagement and rewarding, but also of the funding needed to scale-up and have an impact. For this reason, at the final meeting of MYGEOSS in Brussels we had a session explicitly dedicated to available funding instruments for innovation and scaling-up. These are crucial issues, but it should also be kept in mind that the primary objective of MYGEOSS was to raise awareness of GEOSS and open data rather than support the development of start-ups. Therefore, a follow-up project needs to consider those recommendations that are consistent with its main purpose.

## **5. Comparison with lessons learned in previous MYGEOSS calls.**

The lessons learned and recommendations from the 3<sup>rd</sup> Call analysed in this report have many points of similarity with those of the previous two calls in March and September 2015. In particular, the issues of data licensing and improvements needed to the GEOSS portal to find useful data from the GEOSS Data CORE are very similar. On the benefits side, all participants identified the opportunity to develop their ideas, learn about GEOSS, and about data management as main benefits of the project.

There are however also some differences:

- 1) The GEO web portal has received a major upgrade in October 2016 so that the participants of the third call focused less on recommending improvements to the interface, and more on improvements on how the data



is organised and made available. Earlier participants in MYGEOSS focused more on the interface issue, for good reasons.

- 2) Participants in the first call made several comments about contractual issues in MYGEOSS and about EU public licenses which were not clear to them. We implemented the recommendations made in the first call to have a kick off meeting with all the project to clarify both of these main issues, and as a result we were successful in addressing them.
- 3) With the second and third call we changed the application process by introducing a set of mandatory questions which proved useful in making applicants to think in a more structured manner about their proposal. This improved the overall quality of the proposals received, and resulted also in more focused recommendations, particularly with respect to process and follow-up

## **6. Concluding remarks.**

MYGEOSS has contributed to raise the awareness of GEOSS, the GEOSS Data CORE and good data management, including the many “flavours” of open data among European SMEs and researchers. It has been a collective process of learning for the participants but also for the colleagues at JRC who have been implementing the project. We implemented earlier recommendations, and the project became stronger as a result. We collected very positive comments about the project, such as:

*“MYGEOSS has been a simple approach to promote the use of open data...The large number of participants underlined its success and demonstrated that great solutions can be built also with small budgets”.*

*MYGEOSS is a great European example demonstrating that releasing open data can create creative products and societal and economic benefits; this is easier achieved through open data than the traditional approach of data sales”*

*“The most important value of MYGEOSS for us was to get the courage to apply and then set up our own company to develop the app”.*

We are grateful for the comments, and recommendations received, and hopefully, there will be an opportunity to take the overall feedback and recommendations forward in future projects.