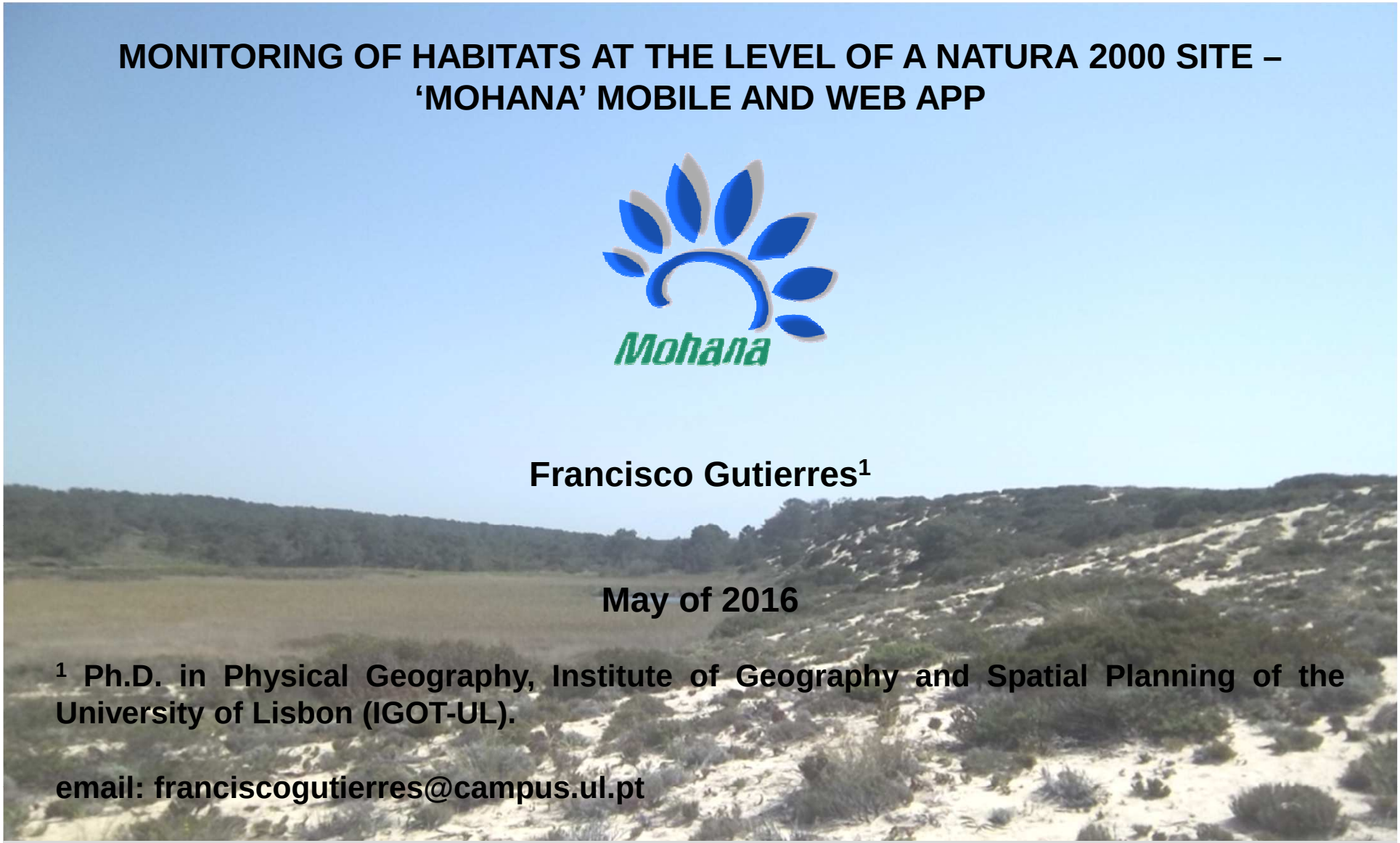
MONITORING OF HABITATS AT THE LEVEL OF A NATURA 2000 SITE – 'MOHANA' MOBILE AND WEB APP



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May of 2016

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II CONFERÊNCIA NACIONAL DE GEODECISÃO 12 13 maio 2016 Politécnico de Setúbal ESCOLA SUPERIOR DE TECNOLOGIA DO BARREIRO

LISBOA UNIVERSIDADE DE LISBOA

CEG

European Commission

MYGEOSS APPS FOR YOUR ENVIRONMENT

INSPIRE Infrastructure for Spatial Information in Europe

1. Context, grounds for, and objectives of the project

Motivation: Nowadays, the Web offers new ways to make available information to users. This creates new ways and tools that can be used to make available natural habitats and of wild flora and fauna species information's and promotion of their conservation status, management and restoration (established under the article 17 of the Directive 92/43/EEC – commonly known as the Habitats Directive).

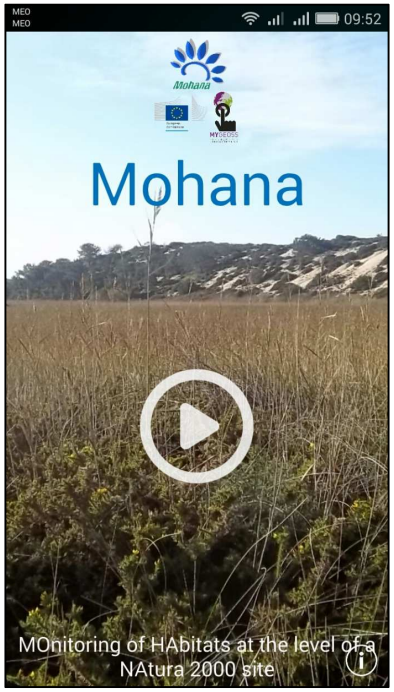
The main objective this application is to develop a Web application for the Site of Community Importance (SCI) in Europe. This web application uses dynamic maps and user-generated content features, which are focused on make available useful information for the community and stakeholders and the promotion of Nature Conservation and support European monitoring and conservation programs.

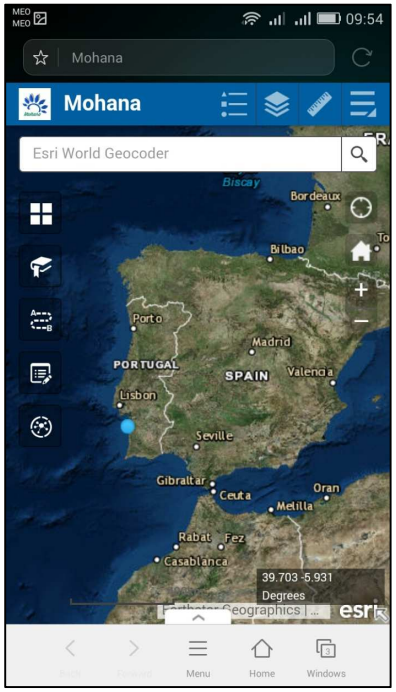
NATURA 2000

1. Context, grounds for, and objectives of the project

Scope of the app: Is recognized the need to manage the natural habitats to maintain their favorable conservation status.

The app aims to provide tools and data which enables the conservation of biodiversity to be integrated into the management of Natura 2000 spaces.





1. History of collaborations and joint projects

Research framework:

- **PhD thesis**: "Structure and dynamics of habitats and landscape of Sado Estuary and Comporta/Galé Natura 2000 Sites - A contribution to sustainable land management and ecological restoration". Institute of Geography and Territorial Planning of The University of Lisbon (IGOT-UL) (Author: Francisco Gutierres. Year: 2014).
- Collaboration with **ITC** and **ALTERRA** under the **Euregio project** – evaluation of habitat monitoring schemes in cross borders 'Netherlands-Germany' (2012) (Within the scope of the mentioned PhD Thesis).
- Collaboration with **University of Madrid** – Environmental diagnosis al local scale: integrating biodiversity conservation in management of Natura 2000 forest spaces (2013) (Within the scope of the mentioned PhD Thesis).

UNIVERSITY OF TWENTE. ITC FACULTY OF GEO-INFORMATION SCIENCE AND EARTH OBSERVATION

ALTERRA WAGENINGEN UR

UNIVERSIDAD POLITÉCNICA MADRID

POLITÉCNICA

1. History of collaborations and joint projects

Participation in European-related projects:

- **Land cover/use statistics (LUCAS) project** (funded by the European Comission DG EUROSTAT).

Participation in GRANT for 2012 and 2015 – “LUCAS project - Pilote study on the provision of harmonized land use/cover statistics by means of data integration through Geographical Information Technology (Synergies between LUCAS and the national systems)” (Project Technical Coordinator since 2013).

- Collaborator in **European Coastal Database** (http://euroveg.org/eva-database) (since 2013).

LUCAS
Land use/cover statistics
eurostat

European Vegetation Survey

1. History of collaborations and joint projects

Participation in national initiatives:

- **iGEO - Mentes Criativas** for the development of app for mobile devices - development of the web app prototype “Mohana” (2015). (http://www.igeo.pt/).

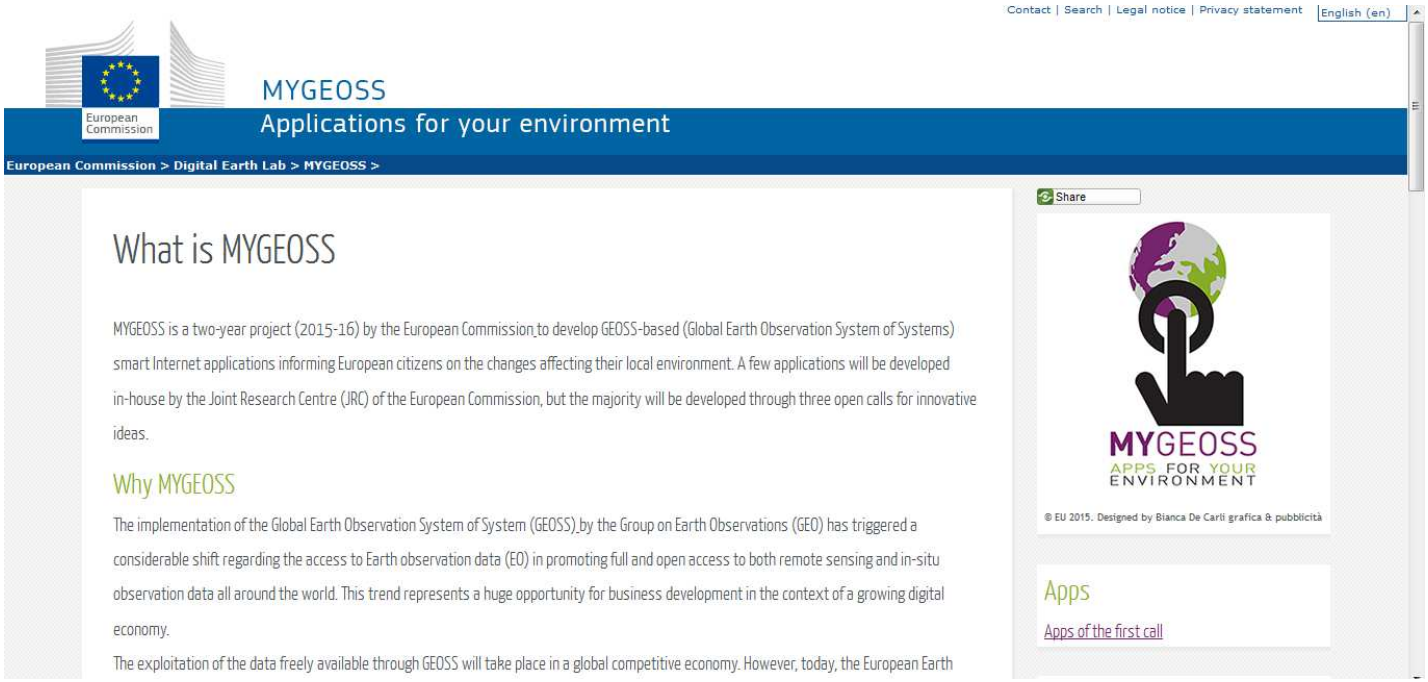
d.gTerritório iGEO INFORMAÇÃO GEOGRÁFICA

INSPIRE · Infrastructure for Spatial Information in Europe

1. History of collaborations and joint projects

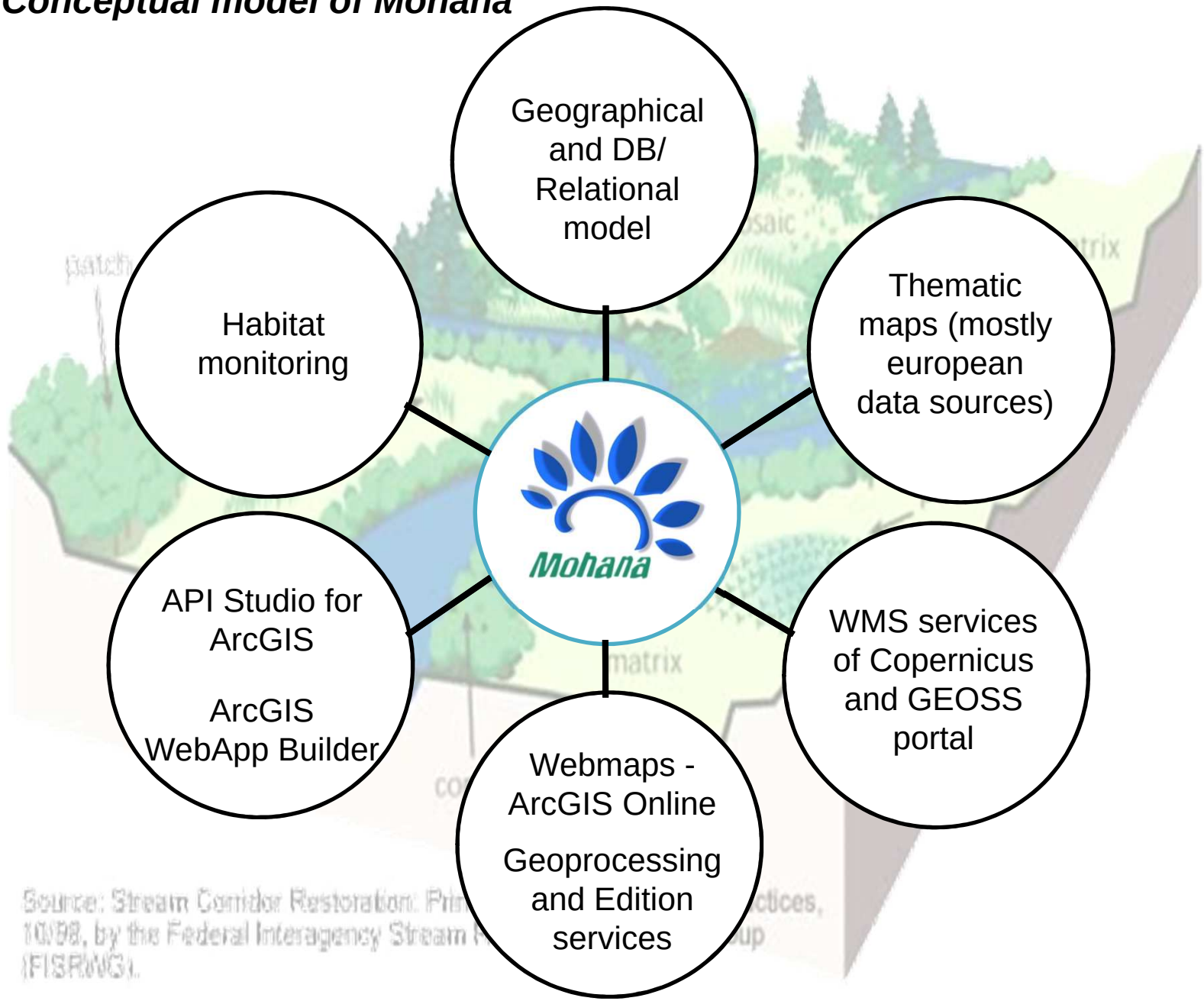
Participation in european initiatives:

- **MYGEOSS - Apps for your environment** - development of the native mobile and web app "Mohana" (2016). (http://digitalearthlab.jrc.ec.europa.eu/mygeoss/).



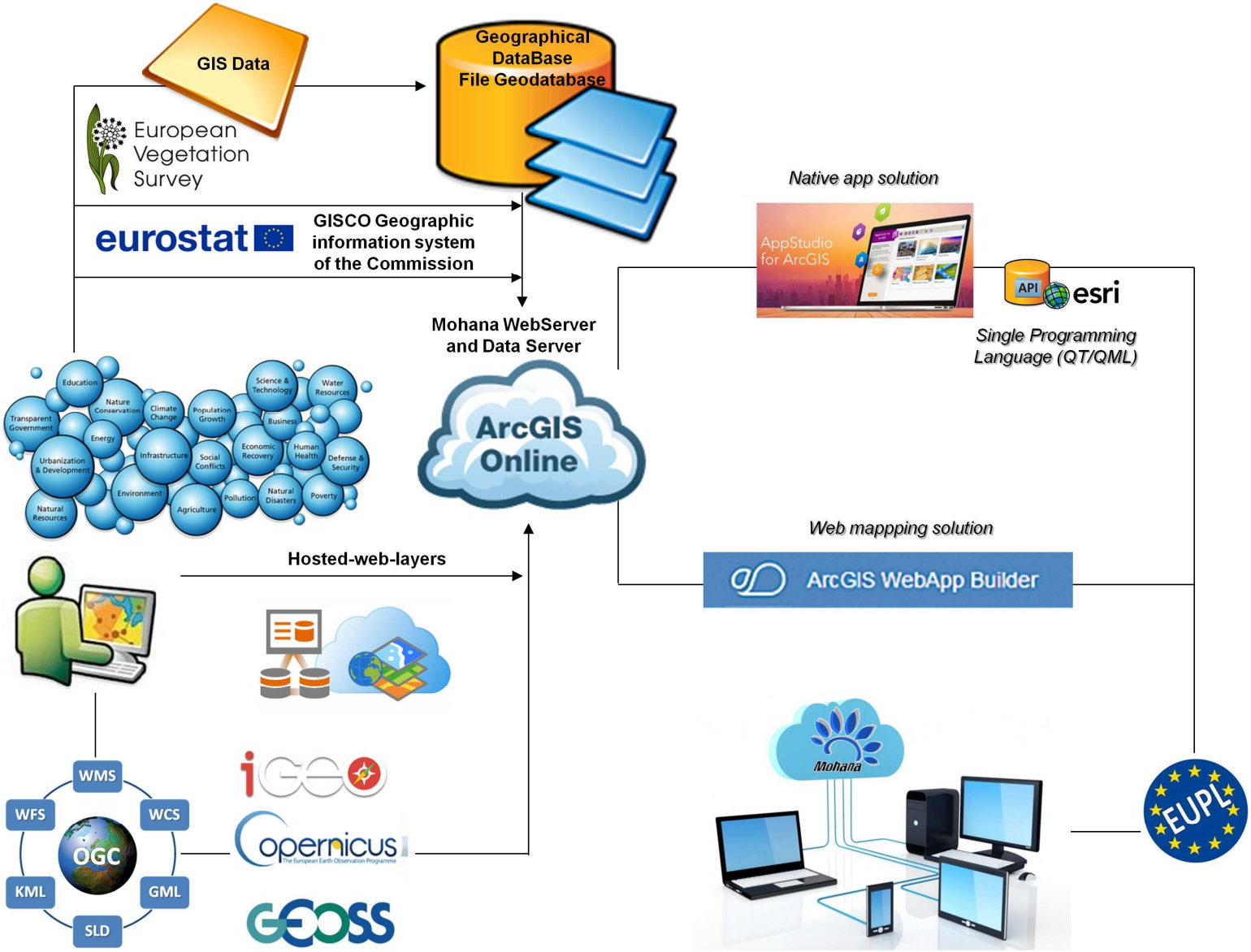
2. System architecture

Conceptual model of Mohana



2. System architecture

Mohana (MYGEOSS solution)



2. System architecture

Mohana data Sources

❑ *'Eurostat' data layers*

- *LUCAS in-situ data for 2012*
- *EuroGlobalMap - Administrative boundaries*

❑ *'Copernicus Land Monitoring Services data layers*

- *Pan-European / CORINE Land Cover*
- *Pan-European / High Resolution Layers*
- *Local / Urban Atlas*
- *Local / Natura 2000 (N2K)*
- *In-situ / DEM & Derived products*

❑ *GEOSS Core Data*

- *Natura 2000 Site boundaries*

❑ *'RAMSAR' data layers*

- *RAMSAR sites*

❑ *Flora and Vegetation data layers*

- *Coastal Database under the European Vegetation Survey (http://euroveg.org/eva-database)*
- *Flora-On: occurrence data of the flora of mainland Portugal*

2. System architecture

Mohana data Sources

❑ *GIS volunteer data:*

• *Hosted feature layers (accessed and edited by users through ArcGIS Online) according INSPIRE Data specifications:*

- ➢ *D2.8.III. 18 Data Specification on Habitats and Biotopes*
- ➢ *D2.8.III.19 Data Specification on Species Distribution*

The information collected from the user (e.g. Mohana - GeoForm) will follow the national legislation with respect to data protection.

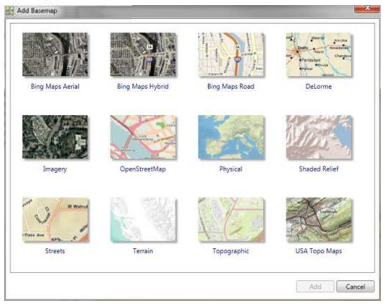
❑ *National Data Sources :*

• *Land Use and Land Cover Map of Portugal Mainland (COS) (WMS iGEO)*

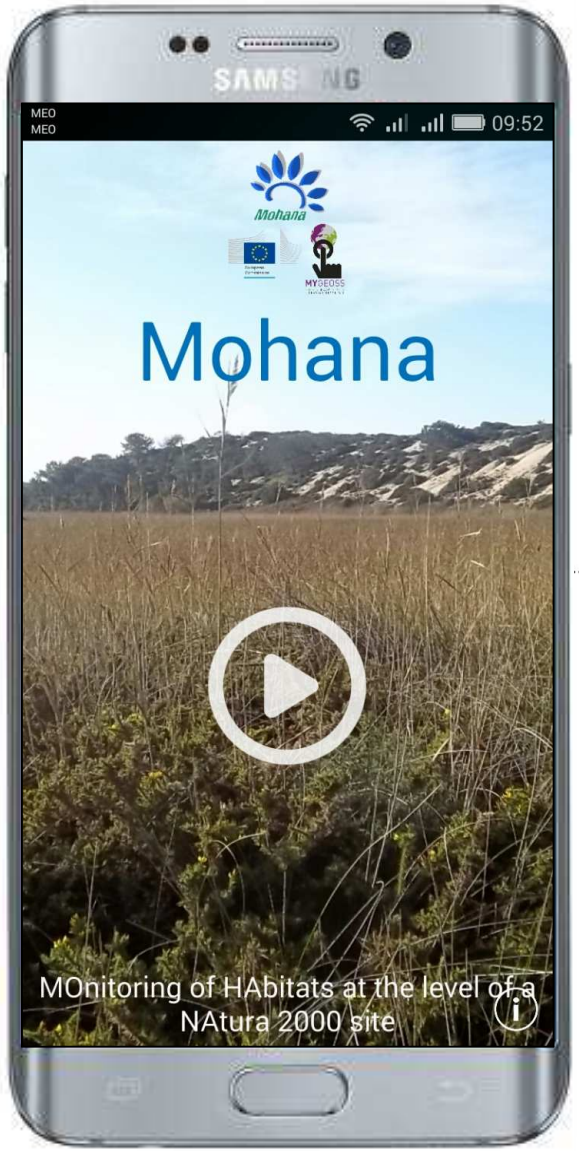
• *National Forest Inventory (NFI)*

• *Coastal beaches dataset (SNIRH)*

❑ *ESRI base Maps*



3. Functionalities – Native app



Multi-Platform: Android, iOS, MacOS, Linux (64 bit), Windows X86 and X64

Report a **GeoForm** according **INSPIRE Data specifications:**

- D2.8.III. 18 Data Specification on Habitats and Biotopes
- D2.8.III.19 Data Specification on Species Distribution

Take a Photo

Add location

3. Functionalities – Native app

Report tool

Capture and location functionalities

Start·app·button¶

i"·(information)·button¶

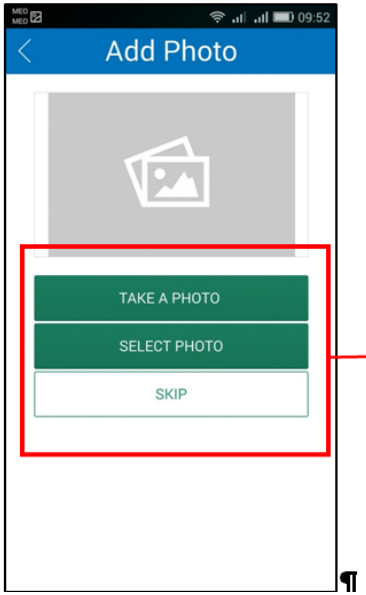
Report·start·button¶

Web·app·URL¶

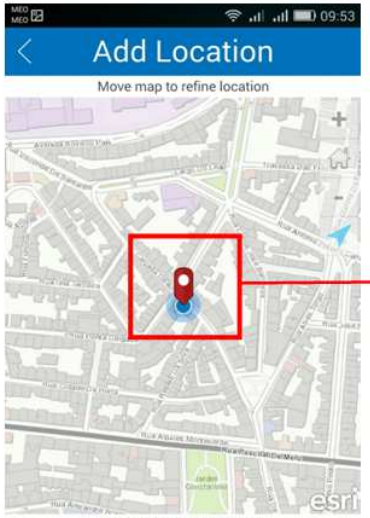
3. Functionalities – Native app

Report tool

Capture and location functionalities



collectPhoto buttons (Take a photo, select photo from the device or skip)



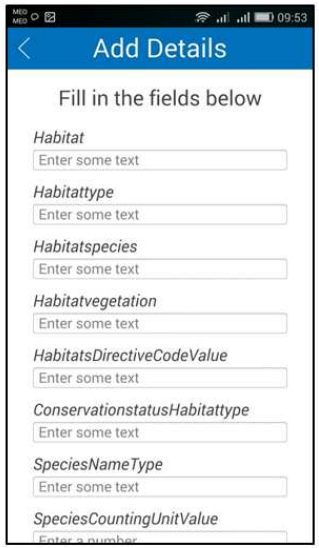
Add location button

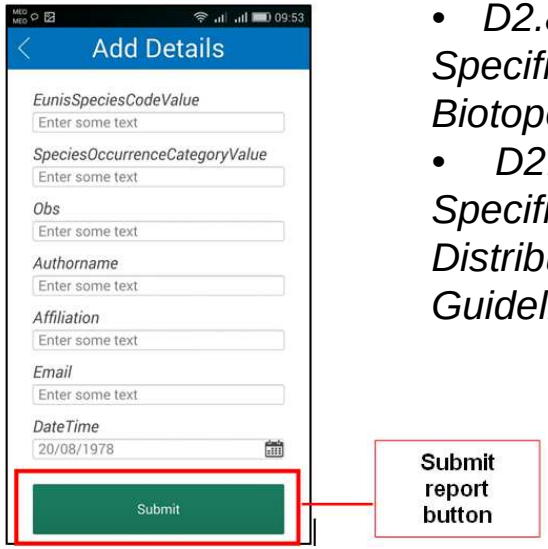
Access to Report information (Mohana GeoForm)

3. Functionalities – Native app

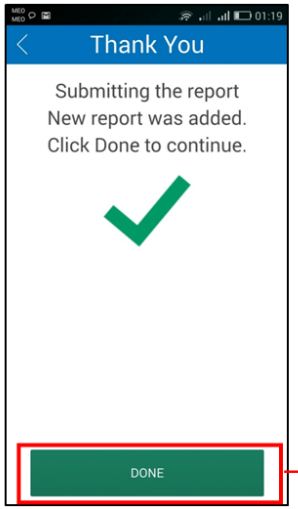
Report tool

Mohana GeoForm





- *D2.8.III. 18 INSPIRE Data Specification on Habitats and Biotopes – Technical Guidelines;*
- *D2.8.III.19 INSPIRE Data Specification on Species Distribution – Technical Guidelines.*



3. Functionalities – Web mapping app

Swipe tool

Spatial Analyst and Edition tools

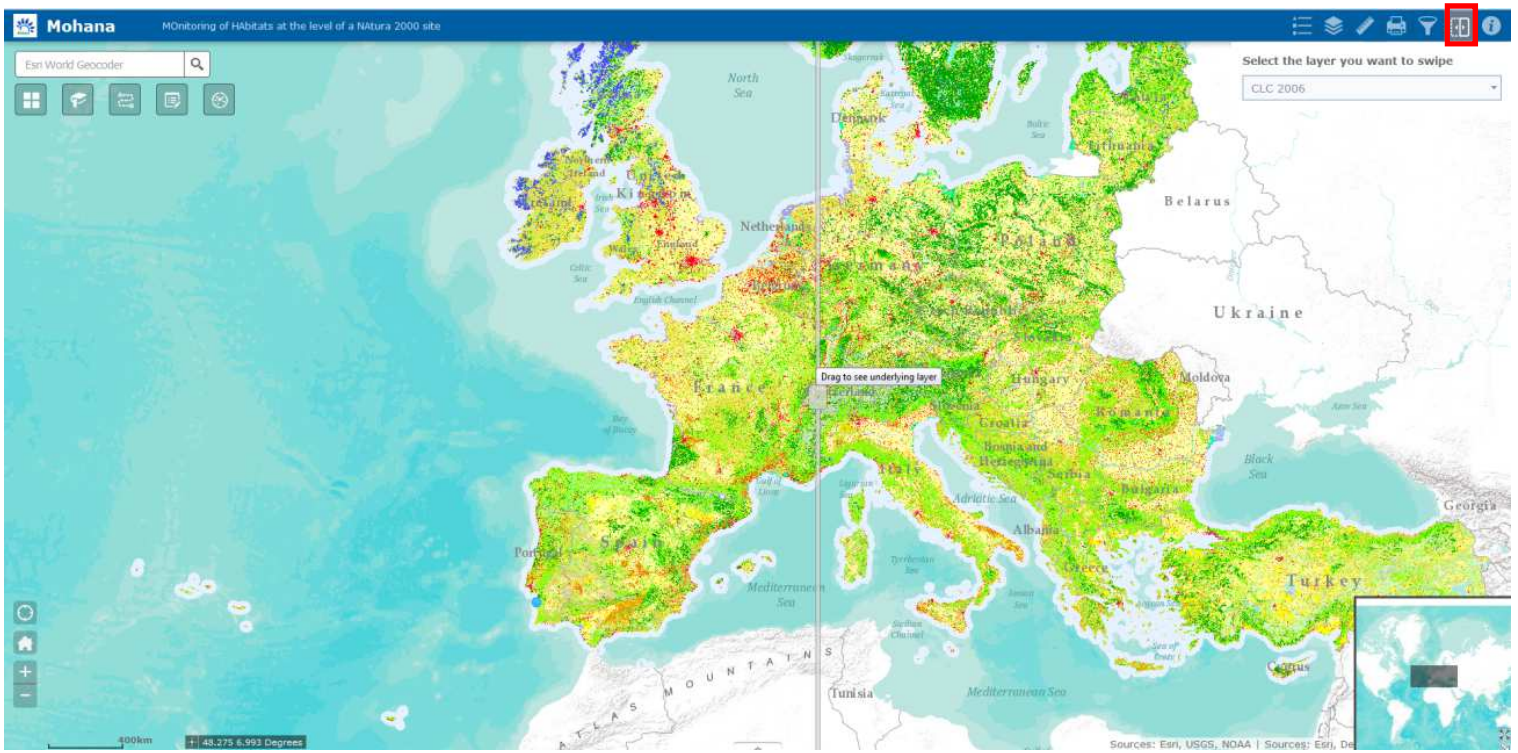
Query, visualization, Bookmark and measurements tools

Routing tools

3. Functionalities – Web mapping app

Swipe tool

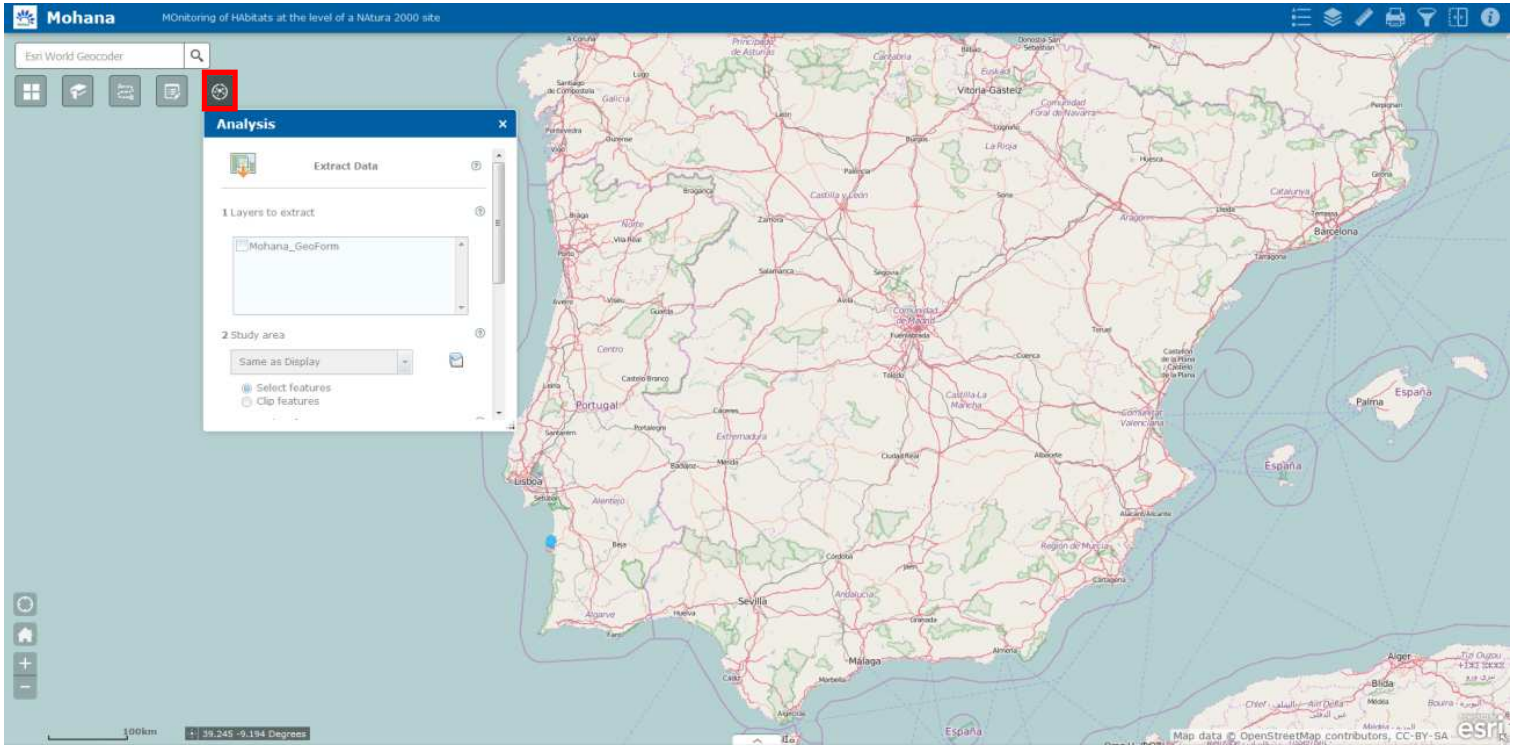
Widget



3. Functionalities – Web mapping app

Analysis (Extract Data) tool

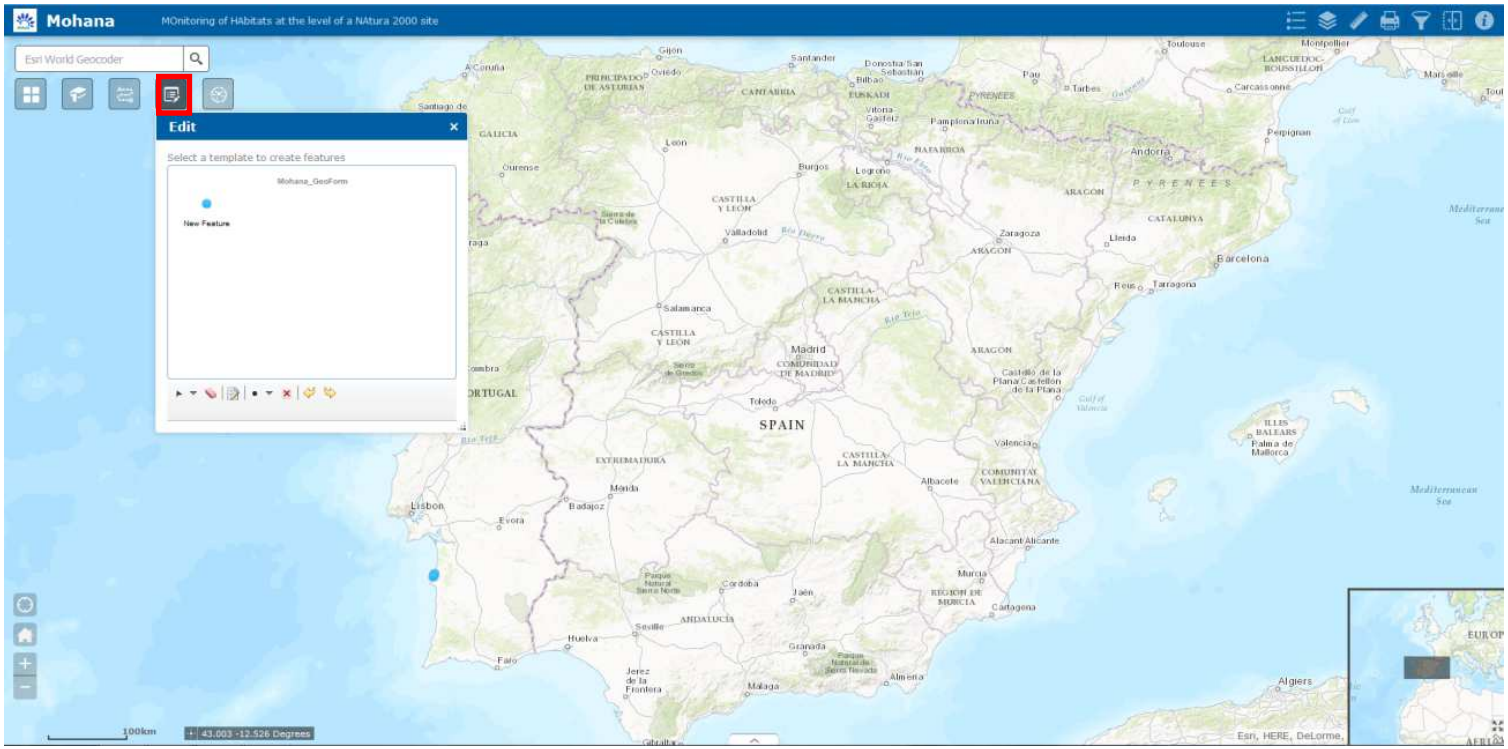
Widget



3. Functionalities – Web mapping app

Edit tool

Widget



3. Functionalities – Web mapping app

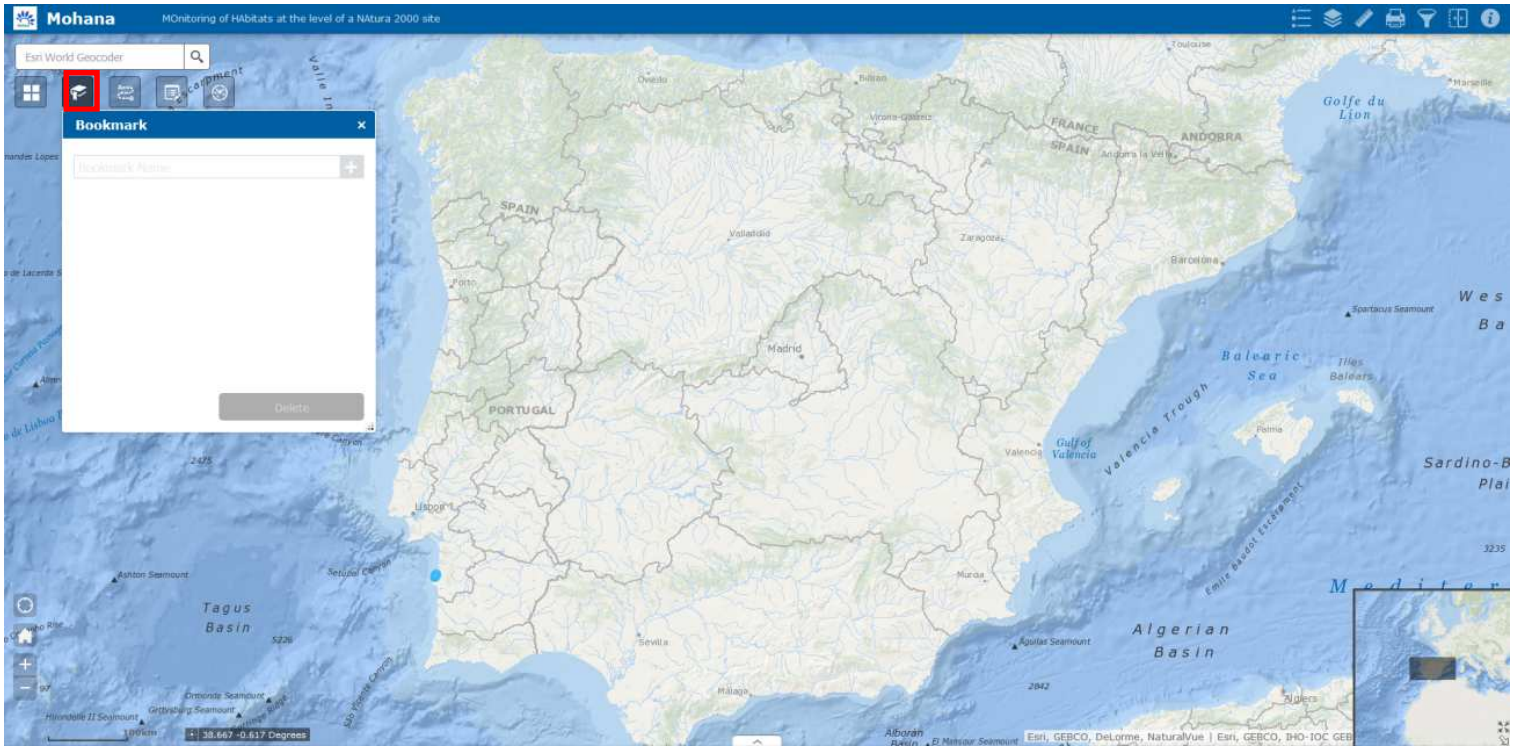
Query tool

Widget

3. Functionalities – Web mapping app

Bookmark tool

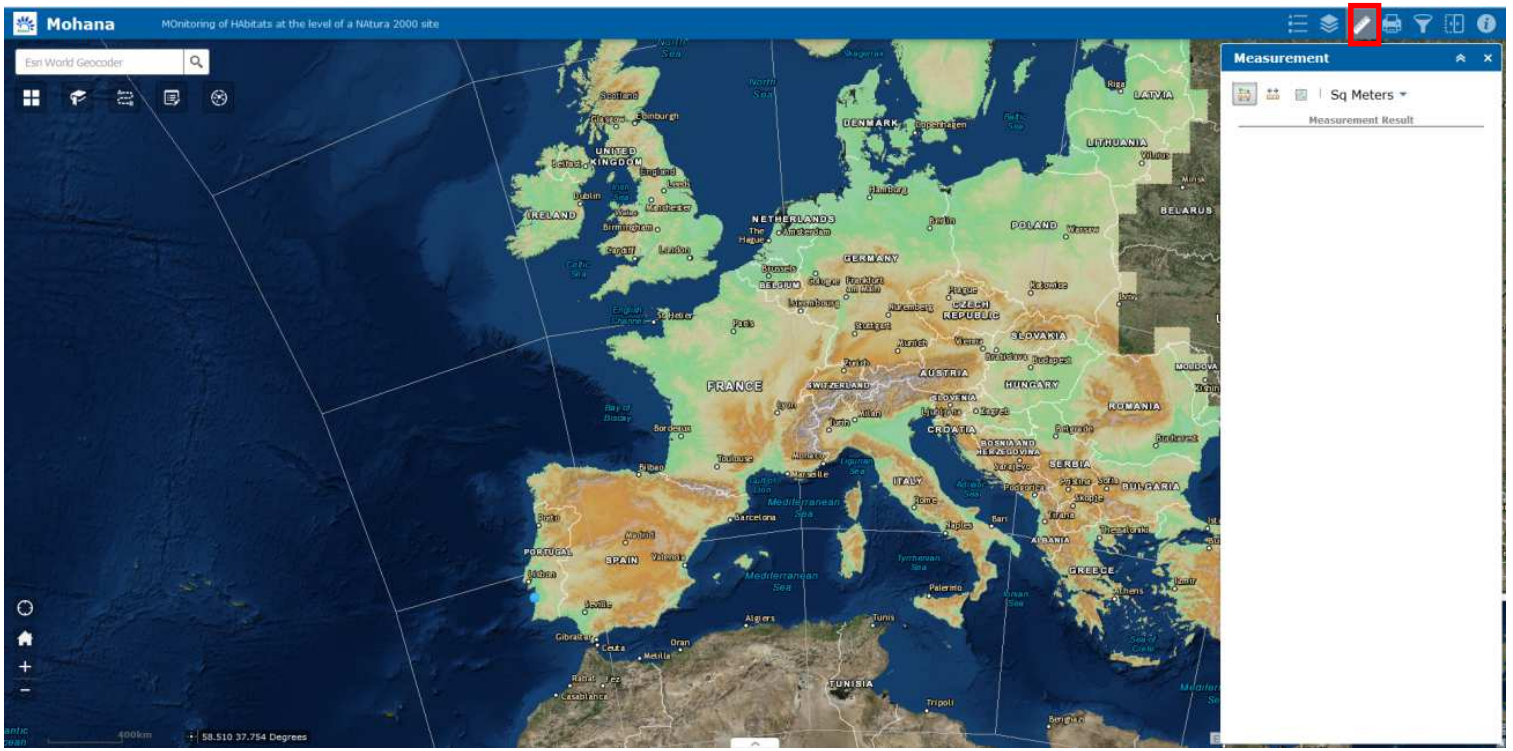
Widget



3. Functionalities – Web mapping app

Measurement tool

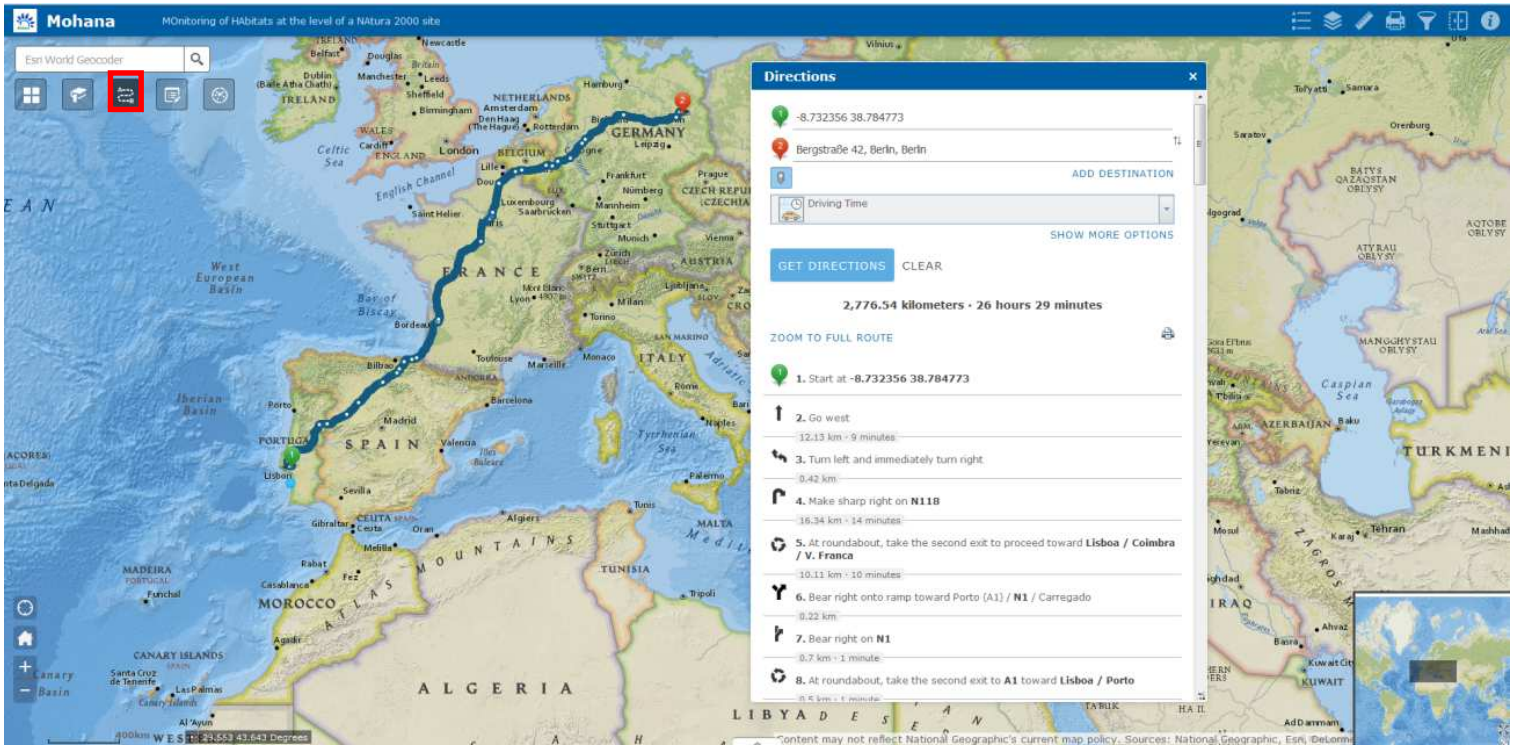
Widget



3. Functionalities – Web mapping app

Directions (Routing tool)

Widget



4. Final remarks

- The methodological approach for native and web app version assures full integration with the Natura 2000 habitats, Land Use and Land Cover (LULC) and in-situ data collection (considering a Privacy Statement) on natural habitats with more frequent updating cycles;
- All the data sets (Open Data based on Geospatial Standards: OGC and ISO/TC211) are integrated into the ArcGIS Online organization of the University of Lisbon. All members of the organization and general users can view the Mohana web page to see information about the project, share opinions with other members and access links to quickly find the organization's content and groups.

Universidade de Lisboa

esri

4. Final remarks

- Furthermore, with this tool and data to be collected by the scientific community and general users intends to actively contribute to the EU biodiversity strategy to 2020, to European Statistical System (ESS) (GISCO/LUCAS – Eurostat), Joint Research Center (JRC) strategies (e.g. Mapping and Assessment of ecosystems & their services (>MAES)" and "Knowledge Innovation Programme (KIP) - Integrate natural capital and ecosystem services into accounting and reporting systems" providing a tool that can be used and replicated by all MS since it is based on European data under a free and open data policy.

eurostat

2011-2020 United Nations Decade on Biodiversity

opernicus The European Earth Observation Programme

NATURA 2000

JOINT RESEARCH CENTRE

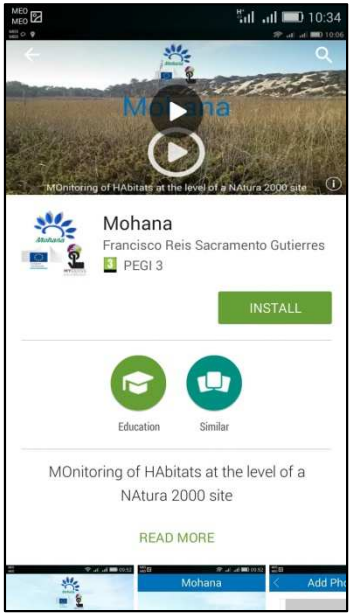
European Environment Agency

4. Final remarks

Installation

- Google Play store:

https://play.google.com/store/apps/details?id=com.esri.appb92f27d0cdf34b6bbc7df0f71947e4c4



- Mohana web page:

https://dl.dropboxusercontent.com/u/28033913/MohanaMYGEOSS/index.html

MONITORING OF HABITATS AT THE LEVEL OF A NATURA 2000 SITE – 'MOHANA' MOBILE AND WEB APP

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May of 2016

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THANK YOU FOR YOUR ATTENTION.

Acknowledgements: