



**20 & 21 October 2014  
Athens, Greece**

## **2nd South-Eastern Europe GEO Workshop on Integrating Earth Observation Data and Services for monitoring the Environment, protecting the citizens and stimulating the regional economic growth**

**Experiences from EO-related projects  
in the Balkan region**

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University of Novi Sad, Serbia**



**BEOND**



**GEO GROUP ON  
EARTH OBSERVATIONS**

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- FP7 projects BalkanGEONet and OBSERVE
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- GEO Capacity Building Broker GEOCAB

## Up to 2013:

- ICT in Agriculture, Forestry, Environmental monitoring, Disaster management

## After smart specialization:

- ICT in Agriculture
- Image processing for remote sensing
- Wireless sensor networks
- Prototyping of electronics for EO
- Experienced in FP
- 2014 – clean room facility for LTCC

B.GN  
BALKAN  
GEO  
NET







**Nov 2010 – Oct 2013**

- Coordinated by **University of Novi Sad, Serbia**
- Identification of EO players in the Balkans
- Identification of EO-related regional projects
- **Identification of resources**
- **Creation of Permanent Networking Facility**
- Gap analysis
- **Roadmaps and scenarios**
- **Recommendations**
- Dissemination



**Nov 2010 – Oct 2012**

- Coordinated by **Aristotle University of Thessaloniki, Greece**
- Identification of EO players in the Balkans
- Identification of EO-related regional projects
- Gap analysis
- Dissemination

# FP7 Projects BalkanGEONet and OBSERVE



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# FP7 Projects BalkanGEONet and OBSERVE



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GEO  
NET



OBSERVE



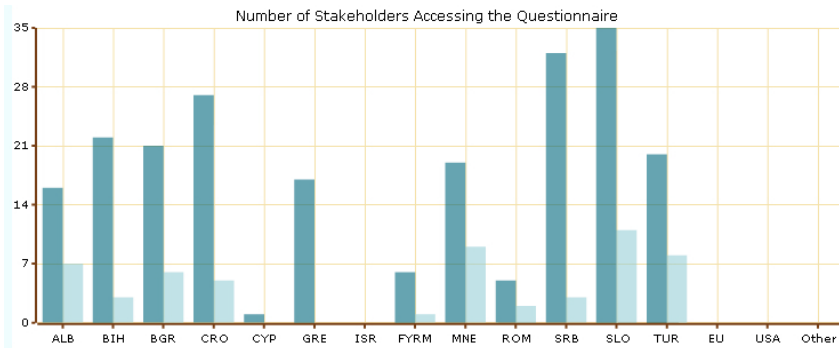
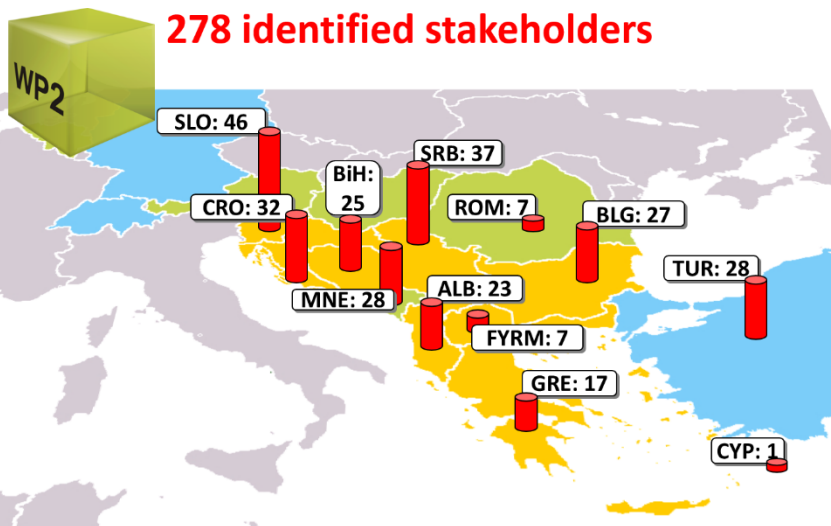
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EARTH OBSERVATIONS

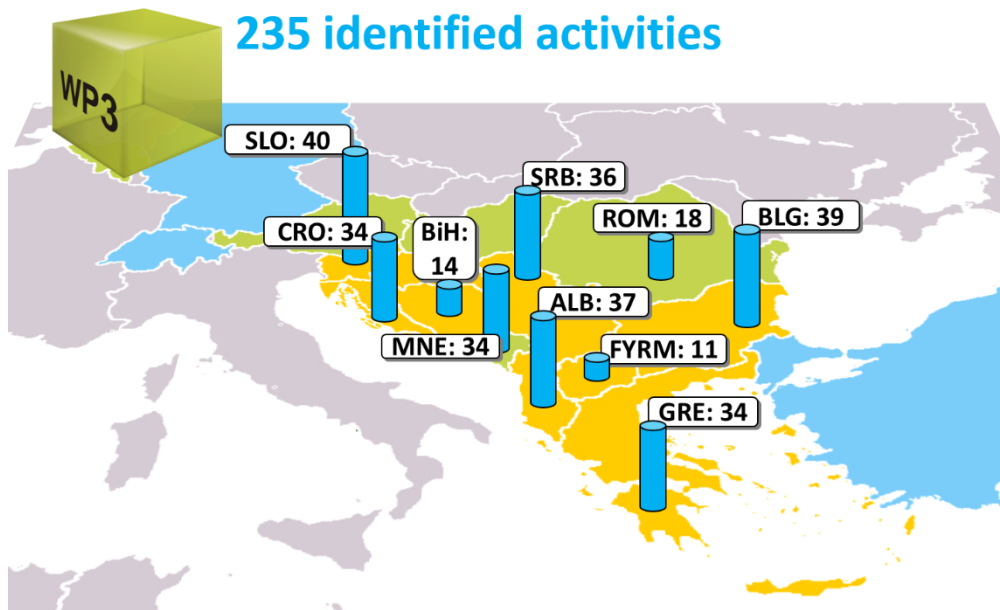
## Assessing EO Communities

**278 identified stakeholders**

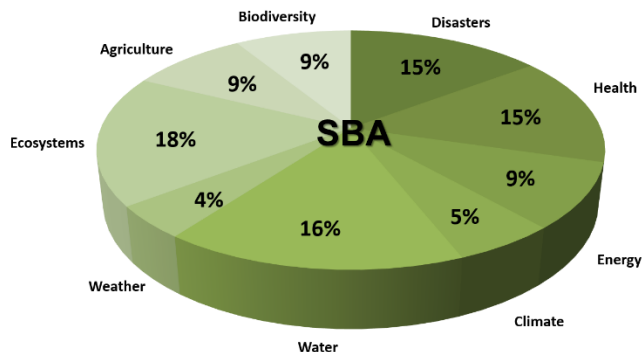


## Integrating outcomes of EO Activities

**235 identified activities**



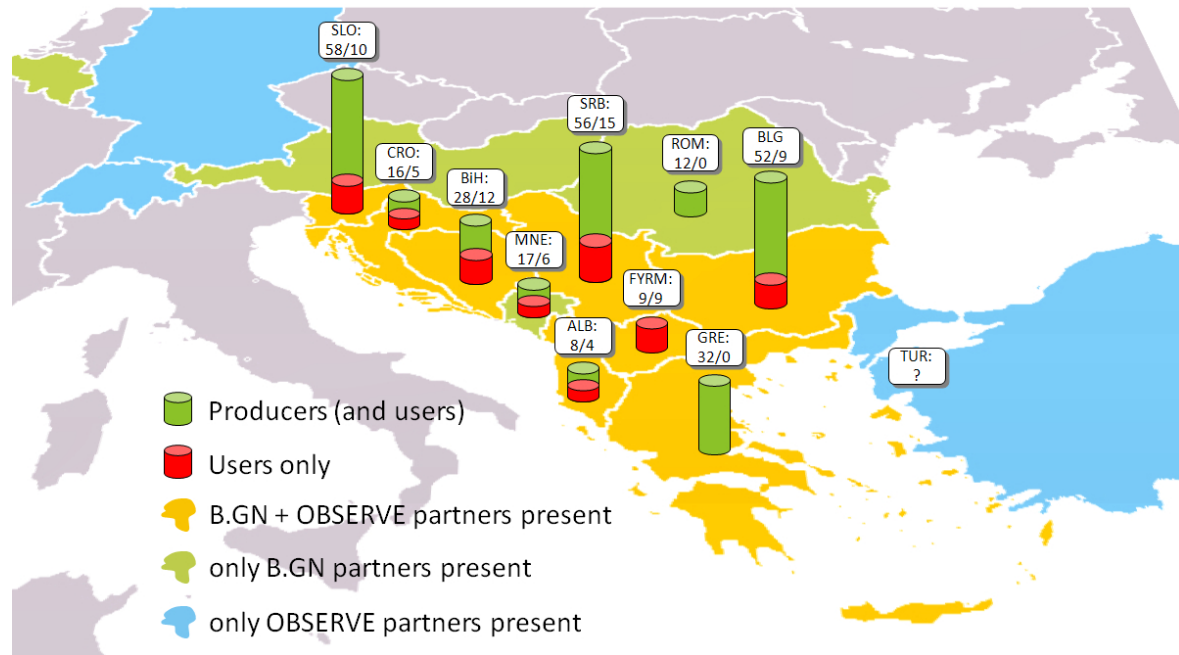
## GEOSS Societal Benefit Areas Covered





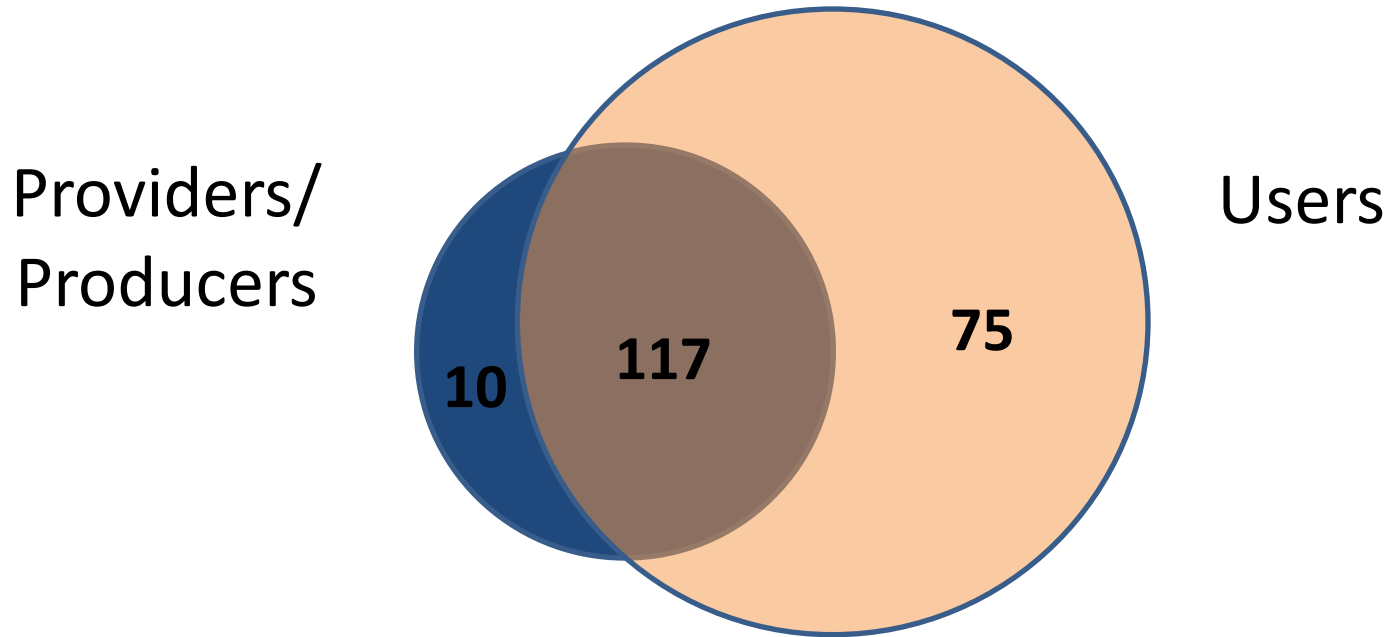
## Issues:

- Some countries approached the selection very carefully (Greece), while some applied zero filtering (Montenegro)
- Information gaps
- Lack of understanding GEO and GEOSS concepts among stakeholders
- Internet vs. door-to-door survey (356 --> 278)



## Gap analysis:

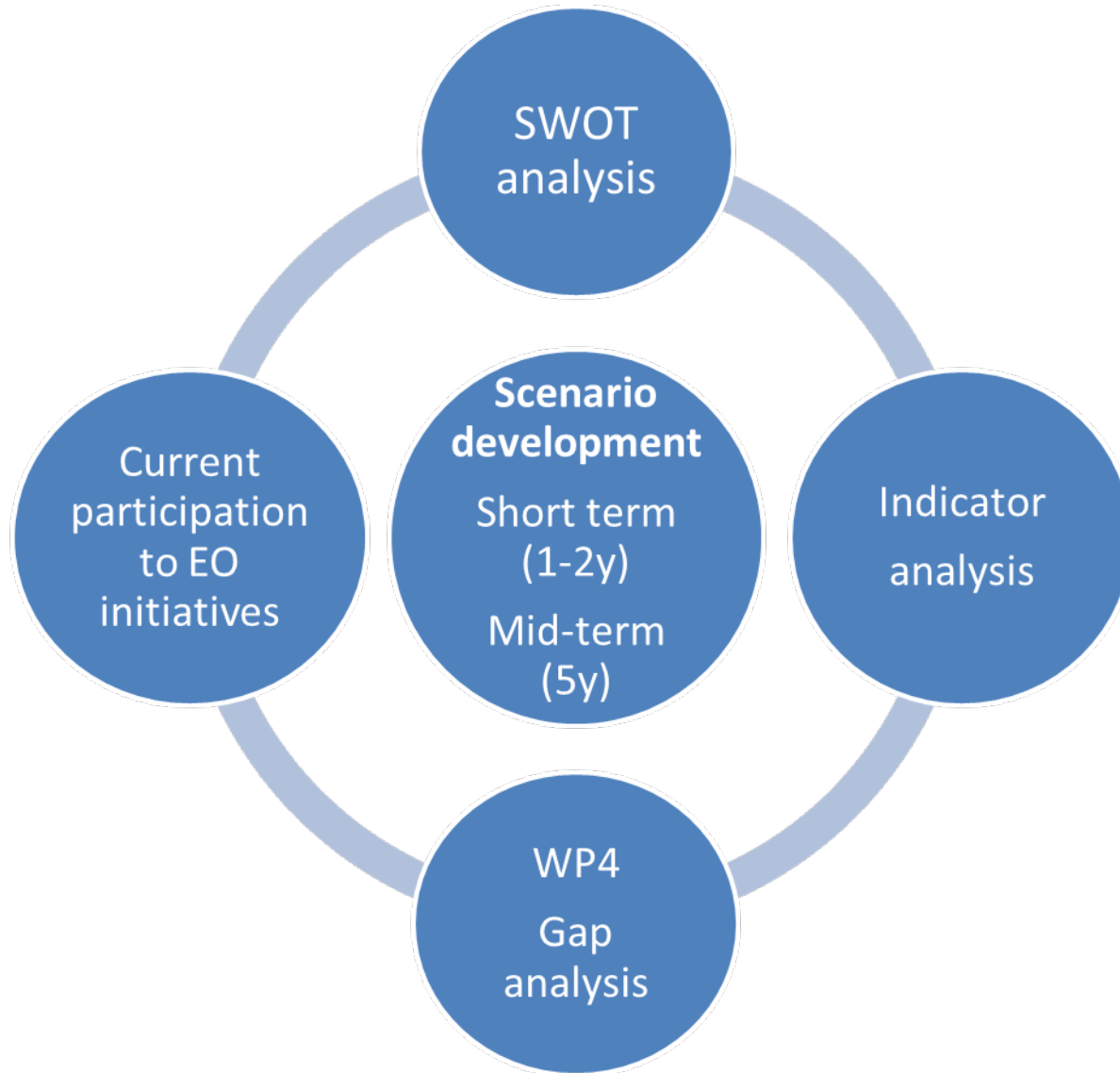
- Assessment of degree of international integration of relevant institutions and observation networks are important structural aspects.
- Structural gap analysis complemented by geographic, observational and domain (SBA) focused analyses.
- In line with the GEO Working Plan and GEO tasks



**Gap: Self-targeting EO data production**  
-> typical for bottom-up approach

## Gap analysis for the Balkan region

1. EO communities at a disparate level of development. The differences seem to be larger between different EO fields than between countries.
2. Two major problems:
  - fragmentation of communities
  - lack of awareness of the larger EO picture
3. While GEO shows best results in small economies when a "top-down" approach at the national level is used, all Balkan countries exhibit "bottom-up" approaches in addressing the Earth observation issues
4. Initiatives originating in the scientific community target the same community instead of the general population
  - Disaster management is a general exception to this rule
5. Duplicated data collection in many areas of EO application -> high cost of data
6. A lot of data producers disagree with the free data access (source of income for institutions + state monopolies on collection of certain data sets)
7. Major concerns among data users:
  - Poor utilization of existing standards for data collection, storage and sharing
  - Lack of data quality information
8. Access to EO information important for SMEs and economy strengthening
9. Necessary to raise awareness in the community about GEO and GEOSS



## Indicator analysis

### Level of integration

- Funding initiatives
- Level of compliance with EU standards
- Implementation of national SDI
- Level of conformation with INSPIRE



### Data

- Existing national datasets
- EO data providers
- Participation in research programmes
- SDI
- Cost of data

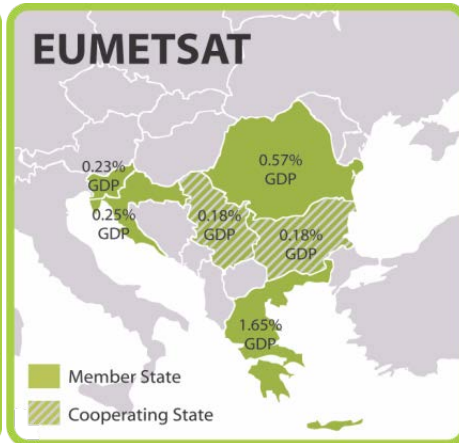


### Capacities

- Participation in research programmes
- Level on interoperability
- National budget allocation for EO
- Increase of investment in EO activities
- Educational programmes and trainings
- Various EO data processing capability



## Participation in EO initiatives



## Identified challenges:

### 1. GEO member countries

- Lack of clearly defined national EO policy
- Weak interoperability among the organizations involved in EO related activities.
- Low institutional and/or public awareness about EO activities

### 2. Non-GEO member countries

- Lack of clearly defined national EO policy.
- Very poor coordination between the organization.
- Low institutional and/or public awareness about EO activities.
- Lack or limited amount of national funding allocation.
- Lack of increase of investment into EO related activities.
- Poor or zero level of conformation with INSPIRE Directive.
- Lack of permanent educational programs.
- Lower number of EO related projects wrt. GEO countries.



## Example 1: Scenario development for Serbia

- Strong tradition in in-situ monitoring & expertise in geodetic data collection
- Could play a key role in the region and provide best practice to others, *if empowered in:*

### Short term (1-2 years)

- National level:
  - Define a cooperation model for share and use of EO data ✘
  - Vertical communication among institutions ...
- Participation to EO initiatives:
  - Membership to ESA ✘
  - Follow INSPIRE directive ✓

### Mid-term (5 years)

- Full integration to EU ?...
- Become a regional pole ...
- Transfer of expertise and knowledge ✓

## Example 2: Scenario development for Greece

- Has the capacity to become a regional leader in EO, *if empowered in:*

### Short term (1-2 years)

- National level:
  - Capitalize existing knowledge
  - Determine national strategy towards EO
- Take advantage of participation to initiatives:
  - GMES – acquire Sentinels data

### Mid-term (5 years)

- Increase participation to ESA, enlarge private sector

## Conclusions:

1. BalkanGEONet results provide a good insight into the region.
2. BalkanGEONet methodology for development of scenario and recommendations:
  - Possibility of generalisation to any region,
  - Applicable on various scales,
  - Modifiable through selection of additional indicators.
3. Life-long-learning programs in EO very much needed!
4. Capacity building will be the key driving force of the EO in the region
5. EO backed up with adequate data sharing policy can have a significant positive impact to economy

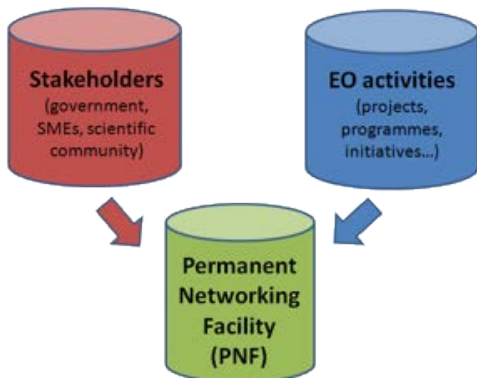
## Capacity building:

1. Four live and online trainings on EO issues

<http://www.balkangeo.net>

2. Permanent Networking Facility

<http://pnf.unist.hr>



The screenshot shows the homepage of the Permanent Networking Facility (PNF). The header features the PNF logo (a stylized globe) and the text 'Permanent Networking Facility'. To the right, there is a search bar with the text 'Search directory for Earth observation activities in the Balkans' and logos for the European Union and the 7th Framework Programme. Below the header is a navigation menu with links: 'About PNF', 'Search PNF database', 'Insert your data', 'About GEO and GEOSS', 'BalkanGEONet project', 'Contact', and 'Login'. The main content area is titled 'Permanent Networking Facility' and contains a paragraph of text: 'Inclusion of all Balkan countries into GEO and their contribution to GEOSS is of great importance, since only a comprehensive EO framework can lead to better understanding and more intelligent utilization of the environmental resources, increased quality of life and faster economic development. The importance and benefits from participation in global EO initiatives have already been recognized by several Balkan countries.' Below this is another paragraph: 'Permanent Networking Facility (PNF) is "the Balkan Earth observation directory", with tools for easy and user-friendly partner and expertise search. Initially PNF included data acquired during the identification of EO players and activities in the Balkan region in the frame of the FP7 project BalkanGEONet. Today it is open to all users and its database is extended through a continuous voluntary inputs by EO stakeholders.' A third paragraph states: 'PNF aims to strengthen the collaboration between data providers and users in the region. Expected EO players are: (1) EO-data providers at all levels (national, county, city) such as state'. To the right of the text is a map of the Balkan region with several locations marked: 'Split, Croatia' and 'Backup system Novi Sad, Serbia'. Below the map are images of server racks.



**Jun 2013 – May 2015**

Fostering sustainability and uptake of research results through Networking activities in Black Sea & Mediterranean areas

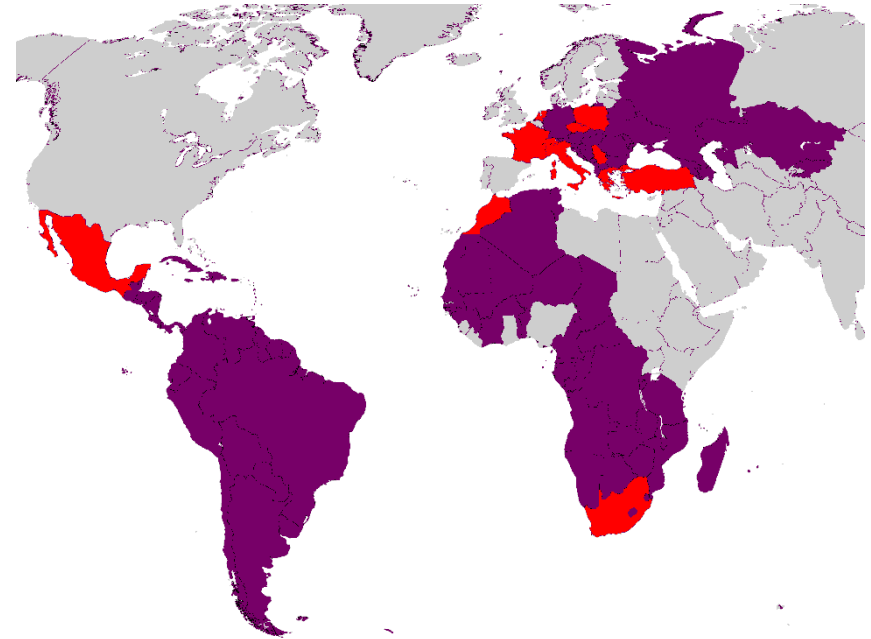
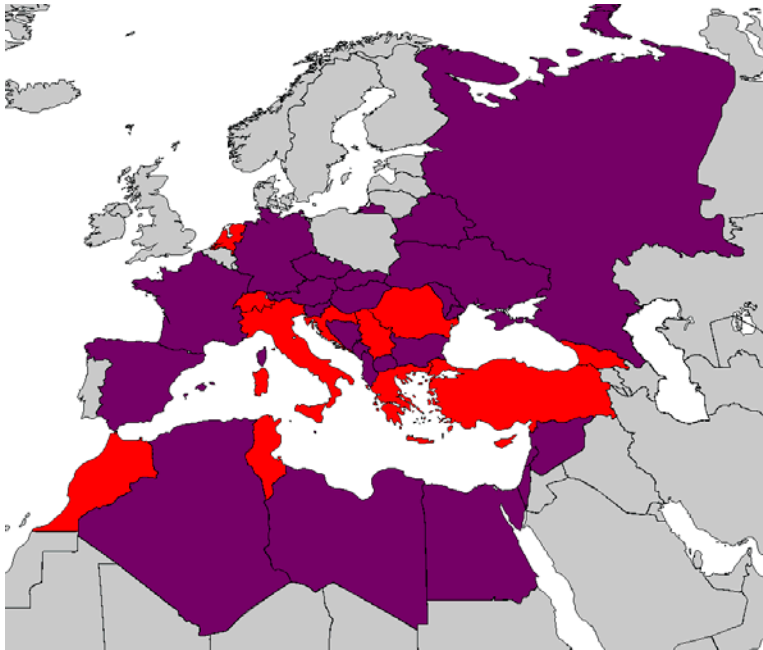
- Coordinated by **Aristotle University of Thessaloniki, Greece**
- ENV.2013.6.5-4: Knowledge platforms, networking and uptake of research results for strengthened international R&I cooperation
- 1 mil EUR
- FP7, CSA



**Jun 2013 – May 2015**

Earth observation for Economic Empowerment

- Coordinated by **University of Geneva, Switzerland**
- ENV-2013-6.5-2: Mobilising environmental knowledge for policy and society
- 1 mil EUR
- FP7, CSA



 Target area  Project partners



### Project goals

- Create portfolio of existing prominent results
- CB through data integration and interoperability
- Assess projects results and their applications in Mediterranean & Black Sea regions
- Establish EO network covering the M & BS
- Foster cooperation between the EO networks
- Bridge research agendas with EU priorities for 2020
- Develop marketing toolkits for sustainable uptake of research results
- Create and maintain thematic nodes of stakeholder communities



### Project goals

- Create conditions for sustainable economic development
- Increased use of EO products and services for environmental applications
- Effective use of EO for decision-making

- 
- EO promotion
  - Studies on marketing of EO
  - Success stories showcase applications of EO
  - Development of marketing toolkits

## Search directory for EO activities in Europe and Africa

<http://pnf.unist.hr>

- Expertise search
- Activities search
- GEOSS components search
- New type of GEOSS resource
- Voluntary inputs by users
- No fees, no registration





## Search for partners and expertise



Search for EO Players

Name:

Town:

Country:  Select country ▼

Region:  Select region ▼

Type: Select organization type ▼

Sector: Select sector ▼

[Find EO Players](#)



**Search for projects and  
funding opportunities**



Search for EO activities

Title or acronym:

Keyword(s):

Country:   ▼

Region:   ▼

Activity type:  ▼

Activity purpose:  ▼

[Find EO Activities](#)



# Advanced Version of the Permanent Networking Facility (PNF)

**Search for registered and non-registered GEOSS components including Capacity Building**



Search for EO components

Name:

Keyword(s):

Component type:

Country:

Region:

Accessibility:

Sharing principle:

Consistency:

Technology:

Formats:

Compatibility:

Social benefit areas:

<input type="checkbox"/> Disasters	<input type="checkbox"/> Health	<input type="checkbox"/> Energy
<input type="checkbox"/> Climate	<input type="checkbox"/> Water	<input type="checkbox"/> Weather
<input type="checkbox"/> Ecosystems	<input type="checkbox"/> Agriculture	<input type="checkbox"/> Biodiversity

[Find EO Components](#)



# GEO Capacity Building Broker (GEOCAB)

## Benefits:

- Easy extension to any region (e.g. ASEAN)
- Mediation in standards, creation of OpenSearch, CSW points
- Global visibility through GEOSS
- Straightforward discovery of Capacity Building resources



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<http://www.balkangeo.net>



<http://www.iason-fp7.eu>



<http://www.eopower.eu>

**Thank you for  
your attention!**



<http://pfn.unist.hr>