



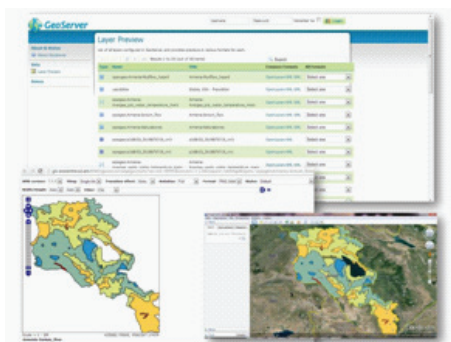
## SUCCESS STORY

### ARMENIAN ENVIRONMENTAL SPATIAL DATA INFRASTRUCTURE & GEO MEMBERSHIP

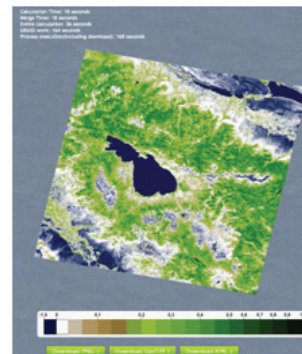
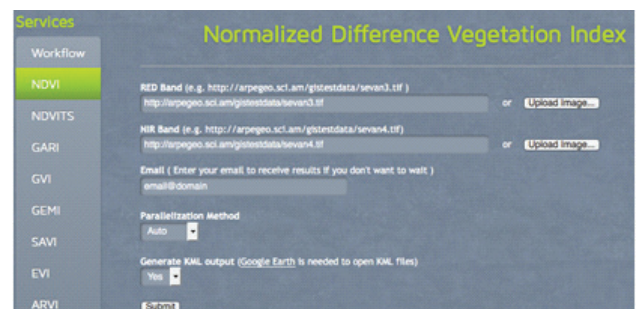
Armenia, situated in the South-Caucasus region, is facing many environmental issues that need to be addressed efficiently. To do that, there is a pressing need for the management of the large amount of environmental data collected in recent years. The Center for Ecological-Noosphere Studies NAS RA (CENS), the authoritative Armenian environmental information and dataset provider, along with the Institute for Informatics and Automation Problems NAS RA (IIAP) in Armenia and the University of Geneva, joined their efforts in view of developing national distributed processing capacities for environmental data sharing.

This resulted in the deployment of the first environmental data sharing and interoperability service in Armenia, which strengthened the national capacities of geospatial data sharing, increased the visibility and national position of CENS as an expert in environmental research, and expanded their regional and international networks in this field.

The geospatial and environmental data sets and their associated metadata existing at CENS were integrated into an SDI by adopting the international standards from the Open Geospatial Consortium (Web Map Service (WMS), Web Feature Service (WFS), Web Coverage Service (WCS) and from the International Organization for Standardization (ISO 19139, 19115). The Web Processing Services (WPS) were also developed at IIAP to compute a set of vegetation indices on user-defined satellite images.



CENS Spatial Data Infrastructure



IIAP web portal for parallel geoprocessing of satellite image vegetation indices

### KEYS TO SUCCESS

- COLLABORATION**  
 Collaboration among the different research groups of the same institution (CENS), and with another Armenian institution (IIAP) made it possible to develop an environmental SDI that feeds an interoperable web portal for parallel geoprocessing of satellite image vegetation indices.
- STANDARDIZATION**  
 Thanks to the use of international standards (ISO and OGC), geospatial data and associated metadata can be widely accessed.
- COOPERATION**  
 International cooperation through projects or initiatives (e.g. GEO) allows Armenian institutions to integrate cutting-edge knowledge in national developments through various capacity building activities.



## SUCCESS STORY

### Armenia's membership of the Group on Earth Observations (GEO)

International collaboration is essential for exploiting the potential of Earth observation to support decision-making in an increasingly complex and environmentally stressed world.

The Group on Earth Observations (GEO) provides the framework necessary to the coordination of this global effort by giving its member countries a frame to coordinate their strategies and investments in Earth observation.

Along with CENS' efforts to develop an environmental SDI, steps were taken to integrate Armenia into this international Earth observation coordination effort by becoming a GEO member. This new membership came into force in September 2014.

It is expected that Armenia will greatly benefit from GEO membership through:

- improved national data flow through open-data sharing principles
- better cooperation between the various state institutions
- global contributions in capacity building for Earth Observation
- access to communities of practice in many fields

### LINKS

- CENS environmental SDI:  
<http://gis-ecocentre.sci.am:8080/dashboard>  
and  
<http://gis-ecocentre.sci.am:8080/geonetwork/>
- Satellite images vegetation indices web portal:  
<http://www.arpegeo.sci.am/gisservices>
- GEO:  
<http://www.earthobservations.org>

### RESULTS

- ✓ CENS Environmental Spatial Data Infrastructure (SDI) up and running
- ✓ The Armenian scientific and environmental communities benefit from the CENS environmental SDI
- ✓ An Armenian interoperable web portal for parallel geoprocessing of satellite image vegetation indices is running using web services from CENS SDI
- ✓ Armenia is the 94th GEO member

### PERSPECTIVES

- CENS Environmental SDI becomes the National Armenian Environmental SDI (nSDI)
- The Armenian nSDI positively influences similar initiatives elsewhere, particularly in the Caucasus region
- Implementation of Armenian environmental nSDI facilitates organizational and policy aspects of all stakeholders involved
- Integration of other types of data and associated services (e.g. geological datasets)

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