Report from the Thirteenth Plenary Session –GEO-XIII

St Petersburg, 9 – 10 November 2016

The XIII Plenary Session presented activities of groups of organizations within GEO.

1. GEOSS Portal

GEO opened a portal with a large volume of spatial data at the GEOSS Portal at:

www.geoportal.org

All the data are geographically registered and organized according to topics. The data are available for all users.
Each user can upload his/her own data in case they can be freely used.
Contact: Joost van Bemmelen &Guido Colangeli,

2. GEOSS Components

A central part of GEO‟s mission is to build the Global Earth Observation System of Systems (GEOSS). GEOSS is a set of coordinated, independent Earth observation, information and processing systems that interact and provide access to diverse information for a broad range of users in both public and private sectors. GEOSS links these systems to strengthen the monitoring of the state of the Earth.

In order for GEO Members and Participating Organizations to better understand where there are gaps, help close the gaps, and ensure a robust GEOSS implementation, a brief status, challenges and opportunities to help will be described for the following four essential elements comprise of GEOSS implementation:

1. Building the space segment of GEOSS;

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2. Building the *in situ* segment of GEOSS;

Contact**:** Joan Maso (European Commission) joan.maso@uab.cat
Osamu Ochiai (GEO Secretariat) oochiai@geosec.org

3. Advancing GEO Data Sharing Principles;

Contact**:** Wenbo Chu (GEO Secretariat) wchu@geosec.org

4. Contributing to the GEOSS Common Infrastructure (GCI)

Contact: Osamu Ochiai (GEO Secretariat) oochiai@geosec.org
Paola De Salvo (GEO Secretariat) pdesalvo@geosec.org

5. GEOSS Knowledge Base Development.

Contact**:** Hans-Peter Plag, IEEE hpplag@odu.edu
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Flagships

The first group are called **Flagships** and went through a thorough review:

GEO Biodiversity Observation Network (GEO BON): Monitoring biodiversity change in support of policy. GEO BON is focused on helping countries understand and monitor the status and trends in their ecosystems, the biodiversity that they sustain and the services they provide. To that purpose, GEO BON facilitates the development of national and regional biodiversity observation systems.
Contact person: Laetitia Navarro (Executive Secretary): info@geobon.org
Website: http://geobon.org/

GEO Global Agriculture Monitoring (GEOGLAM): Leveraging Earth Observations for a Food Secure World. The project takes into account the present expanding world population combined with climate change versus sustainable agriculture production. GEOGLAM, the GEO Global Agriculture Monitoring initiative (geoglam.org), contributes to meeting this challenge by promoting the use of Earth Observations (EO) for monitoring agriculture, and is implemented globally and regionally with a focus on enhancing national capacity.
Contact person: Michel Deshayes (GEOGLAM Coordinator)
Websites : geoglam.org; geoglam-crop-monitor.org; asia-rice.org; geo-rapp.org; jecam.org

The Global Forest Observations Initiative (GFOI): Measuring and Monitoring Forest and Terrestrial Carbon. GFOI supports REDD+ countries to develop their national forest monitoring systems and associated emissions measurement, reporting and verification (MRV) procedures.
Contact person: Thomas Harvey, Coordinator Global Forest Observations Initiative (GFOI)
Office: tom.harvey@gfoi.org ; www.gfoi.org

GOS4M: Global Observation System for Mercury - in support of policy and science. The GOS4M Flagship aims to: i) increase the availability and quality of Earth Observation data and information to contribute to the understanding of the cycling of mercury released to the global environment and, where appropriate, anticipate possible changes; ii) harmonize metadata production, archiving and data sharing from the mercury observation network; and iii) develop advanced services in support of policy mandate(s) through the Minamata Convention.
Contact person: Nicola Pirrone (nicola.pirrone@iia.cnr.it)
GEO Principal of Italy & Director of the CNR-Institute of Atmospheric Pollution Research (www.iia.cnr.it)

3. Initiatives

The second group are called **User & Policy-Driven Initiatives:**

GEOCRI (GEO Cold Regions Initiative). The ambition of GEOCRI is to serve both the policy and user demand by (among others) strengthening the synergies between environmental, climate, and cryosphere research efforts for improved Earth

Observations and information throughout the Cold Regions, and ultimately on a global scale. Reported by Hannele Savela
Contact: Dr Yubao Qiu, qiuyb@radi.ac.cn , GEOCRI Work Plan
http://www.earthobservations.org/activity.php?id=44

The GEOCarbon & GHG Initiative: Monitoring the Global Carbon Cycle: a complex ensemble of different players, countries, systems, networks, datasets, methodologies, rules, standards, etc.
ESA (CEOS Programme Board & ExCom Representative) Reported by Stephen Briggs.
Contact: antonio.bombelli@cmcc.it , jost.lavric@icos-ri.eu

Earth Observations for Ecosystem Accounting (EO4EA) A GEO Initiative for 2017 – 2019. There are several parts of the project and these are: compilation and assessment of Ecosystem Accounts and their use of Earth Observation, definition of ecosystem extent and condition, ecosystem services classification to identify EO measurements to track ecosystem services. The project is focused both on pilots at national and regional scales. Reported by John Matuszak

GEO ECO, The Global Ecosystem Initiative: Monitoring and Modeling the Changing Global Ecosystem to Improve Ecosystem Benefits.

The GEO ECO Initiative builds upon available Earth observation data, results and information and use them on a global scale, identifying Protected Areas of international relevance, extending the analysis to unprotected areas and adopting the view of ecosystems as „one physical system" with their environment.
Contact: Antonello Provenzale (GEO ECO Lead:) antonello.provenzale@cnr.it
Website: (the GEO ECO site is under construction but see http://www.ecopotential-project.eu/)

Data Access for Risk Management (GEO-DARMA): Using Earth Observations for Better Decision-Making in Support of Disaster Risk Management and Resilience.

GEO-DARMA addresses some of the most critical issues related to Disaster Risk Reduction (DRR) affecting countries in a given region (e.g. South-East Asia, Africa, or Latin America). Through end-to-end pilot projects that rely on the use of multiple Earth observations (space, airborne, in situ) and other data (socio-economic, models outputs, etc.), GEO-DARMA will deliver specific risk information products and services in response to end-user needs. GEO-DARMA addresses some of the most critical issues related to Disaster Risk Reduction (DRR) affecting countries in a given region (e.g. South-East Asia, Africa, or Latin America). Through end-to-end pilot projects that rely on the use of multiple Earth observations (space, airborne, in situ) and other data (socio-economic, models outputs, etc.), GEO-DARMA will deliver specific risk information products and services in response to end-user needs.
Contact: Ivan Petiteville (CEOS, European Space Agency), Ivan.Petiteville@esa.int

Global Network for Observations and Information on Mountain Environments (GEO-GNOME): Improving Understanding of Mountain Regions.

GEO-GNOME will compile data and make data available on the current and future state of the mountains to improve our understanding of the drivers, conditions and trends in the high-altitude regions and to support policy decisions.
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GEO Global Water Sustainability (GEOGLOWS): Applications of Earth Observations for Sustainably Managing the World's Water Resources.
GEOGLOWS facilitates the use of Earth observation assets to contribute to mitigating water shortages, excesses and degraded water quality arising from population growth, climate change and industrial development on a world-wide basis.
Contact: Angelica Gutierrez: angelica.gutierrez@noaa.gov
Bradley Doorn: bradley.doorn@nasa.gov
Nathaniel Booth: nlbooth@usgs.gov
Cc to Richard Lawford: Richard.lawford@morgan.edu

Geohazard Supersites and Natural Laboratories -GSNL: better science for more effective Disaster Risk Reduction. The Geohazard Supersites are seismic or volcanic areas where an international partnership is focused on providing new scientific results, directly supporting local DRR actions by institutional end-users.
Contact: Stefano Salvi, stefano.salvi@ingv.it - http://www.earthobservations.org/gsnl.php

GEO Human Planet Initiative (GEO HPI): Spatial modeling of human settlements, impact, exposure and access to resources to support the post-2015 international framework policies. The GEO HPI is committed to develop a new generation of measurements and information products that provide new scientific evidence and a comprehensive understanding of the human presence on the planet to support global policy processes with agreed, actionable, goal-driven and universally applicable metrics and indicators.
Contact: Martino Pesaresi (European Commission, Joint Research Centre)
martino.pesaresi@jrc.ec.europa.eu
http://ghsl.jrc.ec.europa.eu / https://ec.europa.eu/jrc/en

GEO VENER: Vision for renewable ENERgies. GEO-VENER plans to lay the groundwork to link renewable energy services, data and metadata to GEOSS, to serve a large variety of users (from citizens to decision makers, including the private sector), to use EO data to enhance our knowledge and information about renewable energies in order to increase substantially the share of renewable energy in the global energy mix by 2030 as proposed within the SDG7 Target.
Contact: thierry.ranchin@mines-paristech.fr , http://www.webservice-energy.org

GEO-Wetlands : Coordinated Earth Observations for Sustainable Use and Conservation of Wetlands. The GEO-Wetlands Initiative is a collaborative framework for the development of a Global Wetland Observation System (GWOS). It brings together a broad global community from different disciplines and sectors to tackle common challenges related to wetland mapping, monitoring and assessment.
Contact: Adrian Strauch (University of Bonn) adrian.strauch@uni-bonn.de
Lammert Hilarides (Wetlands International) lammert.hilarides@wetlands.org

Global Drought Information System (GDIS) -developing capabilities to monitor global drought and water scarcity for sustainability. Among other activities, the Global Drought Information System (GDIS) aims to identify the optimal blend of space-based and in situ observations that would permit drought and water scarcity monitoring at the global and continental levels, including: global precipitation monitoring; global space-based vegetation and crop monitoring for water stress due to drought; and surface water and soil water monitoring and modeling.

Contact: Will Pozzi (Point of Contact) Will.Pozzi@gmail.com
Richard Heim (NOAA NCEI), richard.heim@noaa.gov
Steve Ansari (NIDIS portal manager), Steve.Ansari@noaa.gov
Web site: https://www.drought.gov/gdm/current-conditions

GEO Global Urban Observation and Information (GI-17): Monitoring Urban Assets in Support of Sustainable Cities. GI-17 intends to improve urban monitoring and assessment through international cooperation and collaboration, to provide datasets, information, technologies to pertinent users (planning and environmental management agencies, especially in developing countries as well as the World Bank and UN), and to support UN SDG Goal 11: Make cities inclusive, safe, resilient and sustainable.
Dr. Qihao Weng, Indiana State University, Email: qweng@indstate.edu

Global Wildfire Information System (GWIS): Assessing wildfire regimes and impacts globally. The Global Wildfire Information System (GWIS) is a Global Initiative of GEO that aims to have a comprehensive view and evaluation of fire regimes and fire effects at global level through bringing together existing information sources at regional and national level.
Contact: effis@jrc.ec.europa.eu or the coordinator of the initiative jesus.san-miguel@jrc.ec.europa.eu

Oceans and Society –Blue Planet: Utilizing Ocean and Coastal Observations to Benefit Society. The overall goal of the GEO Blue Planet Initiative is to ensure the sustained development and use of ocean and coastal observations for the benefit of society. Blue Planet will work to support the users of ocean and coastal data by working on the integration of, and access to, in situ and remote sensing data.
Cintact: Dr Emily Smail (Blue Planet Secretariat), emily.smail@noaa.gov
Dr Sophie Seeyave (GEO Principal, POGO), ssve@pml.ac.uk
Website: www.geoblueplanet.org

Earth Observations in Service of the 2030 Agenda for Sustainable Development: Organize and realize the potential of Earth observations and geospatial data to advance the 2030 Agenda and enable societal benefits through achievement of the Sustainable Development Goals.
The 2030 Agenda for Sustainable Development provides a universal development agenda for all countries and stakeholders to use as a blueprint of action for people, the planet and prosperity. The agenda is anchored by 17 Sustainable Development Goals (SDGs), associated Targets, and a global Indicator framework, and demands new data acquisition and integration approaches to improve the quality, coverage and availability of data to support the implementation of the development agenda at all levels.
Contact: Lawrence Friedl (lfriedl@nasa.gov)
Chu Ishida (ishida.chu@jaxa.jp)
Eduardo De La Torre (JDELATORRE@inegi.org.mx)

AfriGEOSS Initiative: Strengthening use of Earth Observations and bringing GEOSS to Africa

Contact: Andiswa Mlisa, AfriGEOSS Coordinator, GEO Secretariat, amlisa@geosec.org
AfriGEOSS: https://www.earthobservations.org/afrigeoss.php

AmeriGEOSS Initiative: Implementing GEOSS in the Americas

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4. 2017 GEO Work Programme Symposium

2017 GEO Work Programme Symposium will be held back-to-back with the 37th International Symposium of Remote Sensing (ISRSE), in Tshwane, South Africa, the week of 8-13 May 2017

In support of the Work Programme Symposium, there are eight GEO special sessions in which you are encouraged to submit an abstract:

- 04-1 GEOGLAM - Beyond crop monitoring, form data to actionable knowledge;
- 04-4 Towards a new philosophy for generating land cover;
- 10-2 The GFOI as a R&D promoter toward operational tropical forest monitoring systems;
- 11-2 Innovative infrastructure for delivering Earth Observations solutions;
- 11-4 Implementing GEOSS Data Sharing and Management Principles at the national level in Africa;
- 12-2 GEO *in-situ* observation networks;
- 13-2 GEOSS Common Infrastructure for Africa; and
- 13-5 Implementing the GEO user needs and gaps process: expectations, opportunities and challenges.

To contribute to these special sessions, please submit your abstract by 24 November 2016 using this link: https://confmanage.eventsair.com/isrse-37/invited-session-presentation-portal

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Lena Halounová

Prague, 21 November 2016