Earth observations for the mitigation of natural disasters: the role of the Group on Earth Observations

Francesco GAETANI
GEO Secretariat
Created in 2005, to develop a coordinated and sustained Global Earth Observation System of Systems (GEOSS) to enhance decision making in nine Societal Benefit Areas (SBAs).
77 Participating Organizations
GEO Objectives

- Improve and Coordinate (existing) Observing Systems
- Provide Easier & More Open Data Access
- Foster Use (ST Applications)
- Build Capacity for the use of EO data

GEOSS is being built from the expansion and interlinking of existing observation and information systems and the investments of Members and Participating Organizations in new systems.
GEO Work Plan 2012-2015
(Main) Tasks contributing to the Disasters’ target achievement

Disaster Strategic target (by 2015)
Enable the global coordination of observing and information systems to support all phases of the risk management cycle associated with hazards (mitigation and preparedness, early warning, response, and recovery).
Not only global issues
GEO Regional stakeholders:
GEO at work (some projects from Task DI-01)
GEO Work Plan 2012-2015
A comprehensive approach for DRRM: DI-01-C3

The CEOS *ad hoc* Disaster Team created three thematic teams to develop three thematic pilots (one each relating to *floods, seismic hazards and volcanoes*) and the related components of the CEOS DRM Observation Strategy.

The *pilots* will:
- Acquire data
- Gather in situ data if relevant
- Supply data to Thematic value adders (VA) and/or Users
- Supply Thematic value-adding products to Users
- Gather feedback, validation report, exploitation report
- Assess performance and define service roll out
A comprehensive approach for DRRM: DI-01-C3 (ctd)

- **Caribbean Satellite Disasters Pilot (CSDP)**
- **Southern African Flood and Health Pilot (SAFHP)**

To demonstrate the effectiveness of satellite imagery to **strengthen** regional, national and community level capacity **for mitigation, management and coordinated response to natural hazards**

To identify specific satellite-based **products** that can be used for disaster mitigation and response on a regional level

To identify capacity **building activities** that will increase the ability of the region to integrate satellite-based information into disaster management initiatives
GEO Work Plan 2012-2015
Bridging science and society to mitigate risk: DI-01-C2

Geohazard Supersites and Natural Laboratories (GSNL)
Pooling Satellite imagery and terrestrial in-situ data for earthquake and volcano studies.
There are 3 different level of sites:
Permanent Supersite where integration between in-situ and satellite data is promoted by implementing e-infrastructures;
Post-Event Scientific Forum Supersite web portal where to collect information, data, modeling results etc.. immediately after a catastrophic event;
Natural Laboratories Global Network of regional Natural Laboratories.

http://supersites.earthobservations.org/
GEO Work Plan 2012-2015
Sharing actionable information: DI-01

Global Wildland Fire Information System
AFIS, a regional fire danger system for southern Africa
European Forest Fire Information System (EFFIS)
Global Early Warning System for Wildland Fire
Global Fire Information Management System (GFIMS)

The Atlas is aimed at equipping decision-makers with information on the impact and risk associated with global change in the region.
Strengthening response capacity and resilience: DI-01-C1

- International Charter Space and Major Disasters

In response to a request from the Group on Earth Observation (GEO) to improve access to the Charter during emergencies, collaboration has started with primary focus on users from Africa. Starting in 2009 the Charter has initiated a formal user consultation to address how to improve Charter access. Furthermore, starting from GEO member states of the Asia Pacific region, the Charter has established a link to Sentinel Asia users. Finally in September 2012, the process for the implementation of Universal Access for the Charter has been adopted by the Board.
GEO Work Plan 2012-2015

Building preparedness and sharing critical information: DI-01-C1

- **SERVIR** (The Regional Visualization and Monitoring System)
  - **Central America** 9 countries; **Africa** 18 countries; **Himalaya** 6 Countries
  - Support in Extreme Events and Capacity Building in the Use of GIS and Remote Sensing for Disaster Management.

- **GDACS Global Disasters Alert and Coordination System** is a cooperation framework between the United Nations (UNOSAT, UNOCHA), the European Commission (JRC) and disaster managers worldwide to improve alerts, information exchange and coordination in the first phase after major sudden-onset disasters.
GEOSS Targeted Gaps

1. Uncertainty over continuity of observations
2. Large spatial and temporal gaps in specific data sets
3. Eroding or little technical infrastructure in many parts of the world
4. Lack of relevant processing systems to transform data into useful information
5. Limited access to data and associated benefits in developing world
6. Inadequate data integration and interoperability
7. Inadequate user involvement
Francesco GAETANI
FGaetani@geosec.org

+41 22 730 8281

http://www.earthobservations.org