

The GeoHazards Community of Practice (GHCP):
Recent Progress and Plans

Stuart H. Marsh¹ & Hans-Peter Plag²

1) British Geological Survey (BGS), U.K.

2) Nevada Bureau of Mines and Geology, University of Nevada, Reno



- Recent Activities
- 1st GHCP Workshop, January 18-21, 2010
- The Draft GHCP Roadmap
- Plans for the Implementation of the Roadmap
- Next Steps

RECENT (SELECTED) ACTIVITIES:

- 2008: Supersite Initiative included in DI-09-02c
- December 2008: Geohazards Bureau at BRGM closed
- 2009: Supersite Web Page established by UNAVCO
- July 2009: Meeting of core group
- November – December 2009: Several meetings of the (growing) core group; preparation of the 1st Workshop
- January 18-21, 2010: 1st GHCP Workshop, UNESCO, Paris: Drafting of a GHCP Roadmap
- *March-April 2010: Iteration of the Roadmap*
- *2010: Efforts to secure funding for Networking*
- *Summer 2010: Call for Proposals for Core Sites*

GEO Community of Practice - SeaMonkey

Back Forward Reload Stop http://www.igosgeohazards.org/geo_community_of_practice.asp

GEO Community of Practice

Since its inception, the IGOS geohazards theme has been a bridge between high level policy makers such as UNESCO and the geohazard community. This role has gained weight through the interaction with the Global Earth Observing System of Systems (GEOSS) currently established by GEO. The GEOSS project helps production and management of observations in a way that benefits environment and humanity. GEOSS is envisioned as a large national and international cooperative effort to bring together existing and new hardware and software, making it all compatible in order to supply data and information at no cost.

Improving access to Earth observations is one of the main objectives of GEO and complements the IGOS Partnership initiative with larger scopes. GEOSS will be developed in order to respond to the needs of the society for:

- Easier and more open data access;
- Informed decision making;
- A better Earth Observing System.

[Geohazards Initiative](#)
[GEO Community of Practice](#)
[Supersites](#)
[Geohazards Bureau](#)
[Workshops / Meetings](#)
[Documents](#)
[Newsletters](#)
[GeoHazData](#)
[Editor](#) | [Viewer](#) | [Map](#)
[Members area](#)
[Contact](#)
[Home](#)

The Geohazards Communities of Practice (CoP)

Information

Data

While IGOS objective was to define a strategy, GEO is in charge of the implementation of GEOSS. To implement GEOSS, GEO defines tasks that are endorsed by Members States or organisations, or even expert groups. Each task reports to a specific committee.

- First CoP Web Page established in 2008 at BRGM.
 - Not updated since then.



SUPERSITES

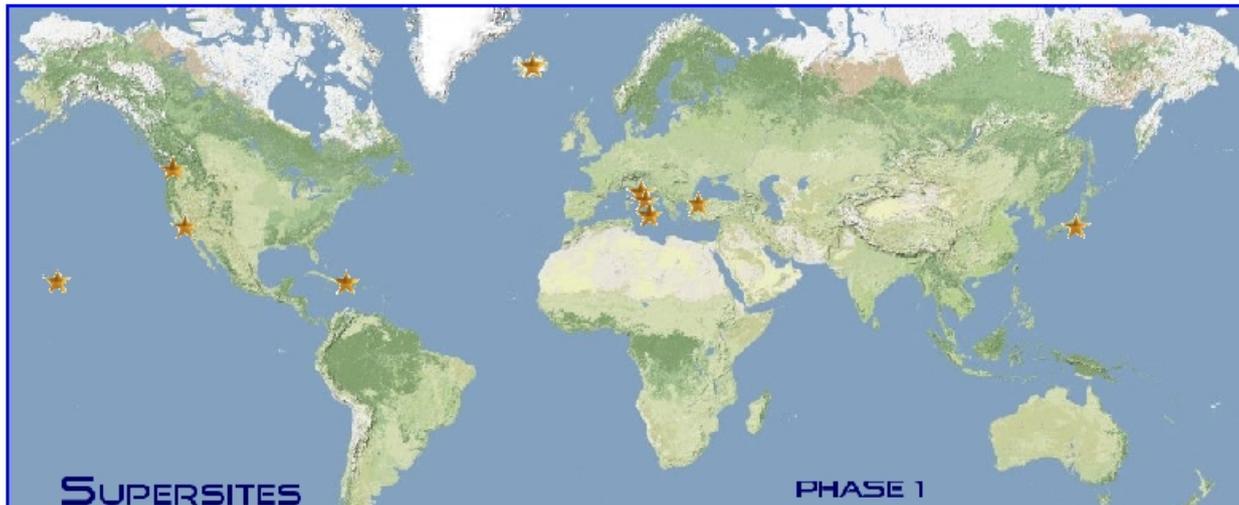


Welcome to the Supersite Website

The Supersites have data for the study of natural hazards in geologically active regions, including information from Synthetic Aperture Radar (SAR), GPS crustal deformation measurements, and earthquakes. The data are provided in the spirit of GEO, ESA, NASA and the National Science Foundation (NSF), that easy access to Earth science data will promote their use and advance scientific research, ultimately leading to reduced loss of life from natural hazards.

Click on a site in the map below, or see the regions listed below in Phase 1 and Phase 2 Supersites.

This website is a prototype created by [UNAVCO](#) and [Winsak](#) on behalf of the Group on Earth Observations ([GEO](#)) and the European Space Agency ([ESA](#)). The web site will attain an official design and move to a permanent home once a host is selected.



- main
- documents
- apply for access
- collaborators
- links
- contact

- Hawaii
- Los Angeles
- Seattle-Vancouver
- Vesuvius
- Etna
- Istanbul
- Tokyo

GEO's Haiti Event Supersite Website - SeaMonkey

File Edit View Go Bookmarks Tools Window Help

Back Forward Reload Stop http://supersites.unavco.org/haiti.php

Home Bookmarks

SUPERSITES HAITI

main
documents
apply for access
collaborators
links
contact
Hawaii
Los Angeles
Seattle-Vancouver
Vesuvius
Etna
Istanbul
Tokyo
Chile
Haiti
L'Aquila

Welcome to GEO's Haiti Event Supersite Website



Sections
[SAR](#), [Topography](#), [Visible](#), [GPS](#), [Surface Deformation](#), [Earthquakes](#), [Links](#)

New on Wednesday Feb 24: [PALSAR uplift map](#)
 New on Monday Feb 22: [Relief Resources from the OGC](#)
 New on Thursday Feb 18: [ScanSAR interferogram](#)
 New on Thursday Feb 11: [Radarsat interferogram](#) [Liquifaction](#)
 New on Tuesday Feb 9: [COSMO-SkyMed interferograms](#)
 New on Thursday Feb 4: [UAVSAR full resolution files](#)
 New on Tuesday Feb 2: [UAVSAR false color image](#) [PEER engineering report](#)
 New on Monday Feb 1: [PALSAR interferogram with fault](#) [Fault coordinates](#)
 New on Friday Jan 29: [Stress Triggering](#) [PALSAR interferogram](#) [Two new ALOS orbits](#)
 New on Thursday Jan 28: [link to USGS open file report](#) [ASAR wide swath interferogram](#)
 New on Wednesday Jan 27: [updated DLR TerraSAR-X report](#) [new ALOS interferogram by Jaxa](#)
 New on Tuesday Jan 26: [TerraSAR-X interferogram](#) [Postseismic relaxation model](#) [ALOS data](#)
 New on Monday Jan 25: [Spot 5 displacement map](#) [TerraSAR-X displacement map](#)

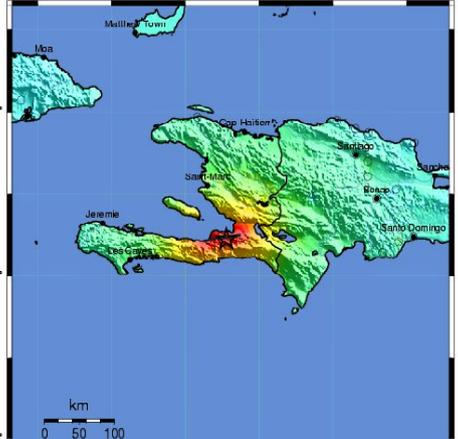





Earthquake, 12 January 2010 21:53:10 UTC, Lat 18.457 N, Lon 72.533 W, Mw 7.0, Depth 13 km (USGS)

If you have data or results that you would like to post on this webpage, please e-mail Falk Amelung, the Task Leader of GEO's Supersite initiative (famelung@rsmas.miami.edu) or Susanna Gross (sjg@unavco.org). Please include a kmz file as they are convenient to use in the field.

USGS ShakeMap : HAITI REGION
 Tue Jan 12, 2010 21:53:09 GMT M 7.0 N10.45 W72.45 Depth: 10.0km ID:2010jag0



GEO's Haiti Event Supersite Website - SeaMonkey

File Edit View Go Bookmarks Tools Window Help

Back Forward Reload Stop http://supersites.unavco.org/haiti.php

Home Bookmarks

WELCOME TO GEO'S HAITI EVENT SUPERSITE

GROUP ON EARTH OBSERVATIONS

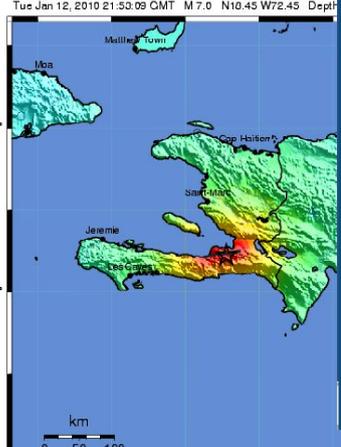
Sections
[SAR](#), [Topography](#), [Visible](#), [GPS](#), [Surface Deformation](#), [Earthquake](#)

New on Wednesday Feb 24: [PALSAR uplift map](#)
 New on Monday Feb 22: [Relief Resources from the Earth](#)
 New on Thursday Feb 18: [ScanSAR interferogram](#)
 New on Thursday Feb 11: [Radarsat interferogram](#)
 New on Tuesday Feb 9: [COSMO-SkyMed interferogram](#)
 New on Thursday Feb 4: [UAVSAR full resolution file](#)
 New on Tuesday Feb 2: [UAVSAR false color image](#) [PEER engineering report](#)
 New on Monday Feb 1: [PALSAR interferogram with fault](#) [Fault coordinates](#)
 New on Friday Jan 29: [Stress Triggering](#) [PALSAR interferogram](#) [Two new ALOS](#)
 New on Thursday Jan 28: [link to USGS open file report](#) [ASAR wide swath interferogram](#)
 New on Wednesday Jan 27: [updated DLR TerraSAR-X report](#) [new ALOS interferogram](#)
 New on Tuesday Jan 26: [TerraSAR-X interferogram](#) [Postseismic relaxation model](#)
 New on Monday Jan 25: [Spot 5 displacement map](#) [TerraSAR-X displacement map](#)

Earthquake, 17 January 2010 21:53:10 UTC, Lat 18.457 N, Lon 72.533 W

If you have data or results that you would like to post on this webpage, please contact the leader of GEO's Supersite initiative (famelung@rsmas.miami.edu) or Please include a kmz file as they are convenient to use in the field.

USGS ShakeMap: HAITI REGION
 Tue Jan 12, 2010 21:53:09 GMT M 7.0 N10.45 W72.45 Depth 10 km



main
documents
apply for access
collaborators
links
contact
Hawaii
Los Angeles
Seattle-Vancouver
Vesuvius
Etna
Istanbul
Tokyo
Chile
Haiti
L'Aquila

GEO - Group on Earth Observations | Home - SeaMonkey

File Edit View Go Bookmarks Tools Window Help

Back Forward Reload Stop http://www.earthobservations.org/ Search Print

Home Bookmarks

GROUP ON EARTH OBSERVATIONS

Home About GEO Meetings News Room Documents Contact

Home

The Global Earth Observation System of Systems (GEOSS)
 2009-2011 Work Plan

GEOSS themes:

- Disasters
- Health
- Energy
- Climate
- Water
- Weather
- Ecosystems
- Agriculture
- Biodiversity

GEOSS Common Infrastructure

- GEO Portal
- Components Registry
- Standards Registry
- Best Practices Wiki

Are you new to GEO and GEOSS? Find out more here!

GEOSS on-line

Scroll below for a sampling of GEOSS information resources; more sites can be found [here](#).

Haiti Supersite highlights critical earthquake information

Initiated by the geohazard scientific community as a contribution to GEO, the Supersites provide easy access to Earth science data and information on natural hazards in geologically active regions. In light of the recent tragedy in Haiti, the Haiti Supersite has been updated with seismic maps, damage maps, topography data, visible and infrared images, [interferograms](#), and useful links. See <http://supersites.unavco.org/haiti.php>.

GEO Forest Carbon Tracking portal now live

The portal for the GEO Forest Carbon Tracking (FCT) Task was launched at the GEO/VI Plenary meeting in Washington DC and can now be viewed on-line at www.geo-ct.org. The portal allows users to visualize the FCT National Demonstrators, the relevant Validation Sites and the inventory of the coordinated acquisitions of satellite and in-situ data; maps and information resulting from the processing of the data will also be posted here when available. A [three-minute video describing the portal](#) is also available.

INPE reaches mark of 1 million images distributed free

A pioneer in the distribution of cost-free satellite images, Brazil's National Institute for Space Research (INPE) announced that it has distributed one million images, more than 70% of which come from the China-Brazil Earth Resources Satellite (CBERS) program. For more details see the news clipping [here](#).

Announcing release of Global Digital Elevation Model (DEM)

What's new?

GEO newsletter
GEO News Issue #7
 (19 February 2010)

News

The 2010 William T. Pecora Award

The William T. Pecora Award is presented annually to individuals from groups around the world that have made outstanding contributions to understanding the Earth by remote sensing. The US Department of the Interior (DOI) and the US National Aeronautics and Space Administration (NASA) jointly sponsor the award. The award Committee must receive nominations for the 2010 award by February 15, 2010. Instructions for pre-nomination and other information can be found at <http://remotesensing.usgs.gov/award>.

GEO boosts access to data from Haiti earthquake

Time reports that GEO members are providing data making it possible to assess the geological forces that caused last month's devastating earthquake.

Geohazards Community of Practice of GEO - SeaMonkey

File Edit View Go Bookmarks Tools Window Help

Back Forward Reload Stop <http://www.geohazcop.org> Search Print

GEO GROUP ON EARTH OBSERVATIONS The GeoHazards Community of Practice (GHCP) [About these pages ...](#)

Introduction About GHCP GHCP and GEO News Projects Products Library Meetings Workshops Internal

Introduction

[Geohazards CoP at BRGM](#)

Latest News:
Geohazards Workshop was held in Paris: A Geohazards Workshop took place on January 18-21, 2010 in Paris. Main goal of the workshop was to scope out the objectives, goals, membership, and work programme of the GEO Geohazards Community of Practice. A roadmap for the GHCP was drafted and this roadmap is now being discussed and finalized in the GHCP and wider GEO community. The Workshop Web Page is available at the GHCP's [workshop web page](#).

Some links relevant to the Haiti earthquake:

- GEO News Item
- Haiti SuperSite
- Satellite Images and



Chile Earthquake 2010 ...

Geohazards: A challenge to Society

In many regions, geohazards are a major threat to society, costing lives, disrupting infrastructure and destroying livelihoods. Understanding the associated processes and gaining a comprehensive knowledge of the location and behaviour of these hazards is pivotal for risk assessment, hazard mitigation and adaptation, reduction of vulnerability and preparedness. The importance of observing and understanding geohazards to the GEO Disasters Societal Benefit Area (SBA), in particular, in building a successful Global Earth Observation System of Systems (GEOSS) is clear. Communities of Practice support GEO in its goal to provide the

A Geohazards Community of Practice for GEO

Over the past few years, initial steps have been taken by members of the former IGOS Geohazards Theme Team to make progress towards a Geohazards Community of Practice (GHCP) for GEO. This has been seen in successful initiatives like Super Sites and through a number of GEO Tasks, in the Disasters SBA, in other SBAs and in cross-cutting tasks like the Global Datasets Task. In order to support and build on this progress, a comprehensive review of the current situation and the development of strategies for the next five years is timely. Therefore, together with GEO and UNESCO, the GHCP organized its 1st Workshop on January 18-21, 2010 in Paris (see [Workshop Page ...](#)). This Workshop was of interest to the entire GEO and wider geohazards community; space agencies, geological surveys, end users such as civil protection agencies, the key observing systems (geodetic, seismic, magnetic) and the international networks for the major hazards addressed by the CoP (earthquake, volcano, tsunami, landslides, etc.).

Our Strategic Target

By 2020 put in place all building blocks for comprehensive monitoring of geohazards and the provision of timely information on spatio-temporal characteristics, risks, and occurrence of geohazards, in support of all phases of the risk management cycle (mitigation and preparedness, early warning, response, and recovery), and as a basis for increased resilience and disaster reduction.

This will be achieved by developing a global network of very few carefully selected core sites. These core sites will provide focal points for a large geographical region, where all building blocks of a value chain from observations to end users can be linked together and applied to the phases of the risk management cycle relevant for this region. Thus, these core sites will demonstrate the concept, enable scientific studies and technological developments, provide for capacity building, and inform policy and decision making in the region.

Done

Geohazards Community of Practice of GEO - SeaMonkey

 GROUP ON
EARTH OBSERVATIONS

The GeoHazards Community of Practice (GHCP)

[About these pages ...](#)

[Introduction](#) [About GHCP](#) [GHCP and GEO](#) [News](#) [Projects](#) [Products](#) [Library](#) [Meetings](#) [Workshops](#) [Internal](#)

[Back to GHCP workshop page ...](#)

Workshop Infos:

- [Rationale, Goals, Participation](#)
- [Venue, Registration, Abstracts](#)
- [Committees, contacts](#)
- [Deadlines](#)
- [Session description](#)
- [Program Overview](#)
- [Detailed Program](#)

Outputs:

- Workshop Notes: [html](#)
- Roadmap Presentation: [ppt](#), [pdf](#)

Work Area:

- [Draft Final Roadmap V0.4: doc, pdf](#)
- [Comments on Roadmap](#)
- [Comment Submission](#)

Invitation:

- [Invitation Letter](#)

Relevant Documents:

- [GEOSS Work Plan Site](#)
- [Task Sheets](#)
- [Frascati Declaration](#)

Building a Geohazards Community of Practice in Support of GEO Work Plan Tasks and GEOSS Implementation

1st Workshop of the Geohazards Community of Practice of GEO
January 18-21, 2010, Paris, France



Workshop Rationale: Communities of Practice (CoPs) are a key element for the linkage of GEO to users of products and services provided by GEOSS. In many geographical areas, geohazards are a major threat to society. Understanding and comprehensive knowledge of these hazards is pivotal for adaptation, reduction of vulnerability, and preparedness. The Geohazards Community of Practice (GHCP) is therefore highly relevant for several of the nine Societal Benefit Areas (SBAs) addressed by GEO. Over the last few years, initial steps have been taken by the [IGOS-P Geohazards Theme Team](#) to make progress towards a GHCP for GEO. In order to support this progress, a comprehensive review of the current situation and the development of perspectives and strategies for the next five years appears timely.

Workshop Goals: The Workshop aimed at developing a roadmap for the GHCP that would lead to active support of GEO and GEOSS components in a wide range of geohazards-related issues. A number of Tasks in the GEO Work Plan 2009-2011 are to be supported by the GHCP (see "[GHCP and GEO](#)" for more details on the Tasks), and the Workshop aimed to focus the roadmap to provide community support for these Tasks.

Participation: Participation in this first Workshop was by invitation. In total, 21 representatives of Participating Organization in GEO, the GEO Secretariat, and international organizations took part in the workshop.

Sessions:

- Session 1: Geohazards in the GEO and GEOSS Framework
- Session 2: Contributions of the GHCP to GEO (Breakout Sessions)
 - Breakout Session 2a: The GHCP and the GEO Work Plan, the GEO Task Teams, and the GEO Committees
 - Breakout Session 2b: Science, Technology, and Infrastructure issues in relevant GEO Work Plan Tasks
- Session 3: Perspectives of the GHCP (Breakout Sessions)

*A Roadmap for the
Geohazards Community of Practice of the
Group on Earth Observations*

Starting Point:

GEOSS STRATEGIC TARGET OF THE DISASTER SBA:

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).

This will be achieved through:

- more timely dissemination of information from globally-coordinated systems for monitoring, predicting, risk assessment, early warning, mitigating, and responding to hazards at local, national, regional, and global levels;
- development of multi-hazard and/or end-to-end approaches, as appropriate to meet the needs for disaster risk reduction, preparedness and response in relevant hazard environments;
- supporting the implementation of the priorities for action identified in the Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters (HFA).

*A Roadmap for the
Geohazards Community of Practice of the
Group on Earth Observations*

Strategic Target of the GHCP:

By 2020 put in place all building blocks for comprehensive monitoring of geohazards and the provision of timely information on spatio-temporal characteristics, risks, and occurrence of geohazards, in support of all phases of the risk management cycle (mitigation and preparedness, early warning, response, and recovery), and as a basis for increased resilience and disaster reduction.

This will be achieved through:

by developing a global network of very few carefully selected core sites. These core sites will provide focal points for a large geographical region, where all building blocks of a value chain from observations to end users can be linked together and applied to the phases of the risk management cycle relevant for this region. Thus, these core sites will demonstrate the concept, enable scientific studies and technological developments, provide for capacity building, and inform policy and decision making in the region.

A Roadmap for the Geohazards Community of Practice of the Group on Earth Observations

Contents:

Preamble (GHCP, membership and responsibilities, the Roadmap goals, audience, scope remains geohazards, but GHCP can be used as a pilot for other hazards in the Disasters SBA, describe links to other hazards, making the point that the roadmap structure is generic...)

Origin of the Roadmap (Workshop, iteration, ...)

Introduction

- Natural Disasters.
- Why focus on Geohazards?
- Where do we want to go? (the goals).
- Where do we stand?
- What is needed in order to get from here to there?

The Way Forward (The Map)

*A Roadmap for the
Geohazards Community of Practice of the
Group on Earth Observations*

Contents:

- The Map based on the four phases of the risk management cycle:

The Way Forward (The Map)

Activity 1: Mitigation and preparedness

Activity 2: Early warning

Activity 3: Response

Activity 4: Recovery

*A Roadmap for the
Geohazards Community of Practice of the
Group on Earth Observations*

The Way Forward (The Map)

Issues to keep in mind:

- Keep cross cutting issues clear
 - Observation system/sensors/ information system development.
 - Capacity Building (CBC) and Outreach (all GEO Committees?).
 - Science advances, inc. promotion of evidence based policy-making.
 - Reaching/connecting scientists/research and/to end-users/operations.
 - Resources – human and financial, for the network and its activities.
 - IPR and data access issues.
 - EO–In-situ integration and ground truthing.
- Interface with mandated advisory bodies and existing chains of command.
- Resilience is a cross-cutting issue – before, during and after.
- Awareness.

The Way Forward (The Map)

Activity 1: Mitigation and preparedness

Sub-activities:

- 1.1 Identifying the stakeholders (*identification of the 'right' end users, data providers, value adders; gaps in GHCP membership, who should be in the GHCP?*).
- 1.2 Understanding geohazards and mitigation measures (*identification of science and technology challenges, overview of adaptation and mitigation approaches, inc. mapping, measuring, modelling and monitoring hazards*).
- 1.3 Informing policy and decision makers and society (*provide information products about geohazards, inc. but not limited to mapping and assessment of (i) Hazard; (ii) Exposure; (iii) Vulnerability; and hence (iv) Risk*).
- 1.4 Creating awareness (*deliver the 'right' information to the 'right' people and the public; ensure education; engage in public education*).

Goals and objectives to be kept in mind in detailing the sub-activities:

- The overarching goal is mitigation and disaster reduction.
- Activities contribute to building resilience before hazard occurrence
- A focus of the GHCP is on decision support and information of society

The Way Forward (The Map)

Activity 2: Early Warning

Sub-activities:

2.1 Improving models and forecasts/predictions (*foster/facilitate model developments and forecasting/prediction algorithms where needed*).

2.2 Monitoring and detecting hazards (*identify areas to be monitored, understand the requirements, ensure the networks/infrastructure, identify indicators/precursors/thresholds, ...*).

2.3 Informing (early) warning systems (*consider products for warning systems, link to warning authorities, consider synergies between observing and warning infrastructure, work with ADC on demonstration, e.g., hazard data delivery via GeoNetCast*).

2.4 Integrating geohazards into public environmental information systems (*consider how information on geohazards can be integrated in public information provision on forecasts, c.f. weather forecasts; discuss role of GEO Portal for dissemination as it matures; clarify information and warning mandates, both at the GHCP level and promote this debate at GEO level*).

The Way Forward (The Map)

Activity 2: Early Warning

Goals and Objectives to be kept in mind while detailing the sub-activities

- GHCP fosters connections between the data/product providers and the end users; and takes an end to end approach, whilst respecting existing mandates.
- The activities contribute to building resilience before and during an event.
- The goal is to inform and support decisions on different levels, including decisions made by the public and individuals, through appropriate and timely information; while issuing public warnings is outside the mandate of the GHCP and GEO.

The Way Forward (The Map)

Activity 3: Response

Sub-activities:

3.1 Characterizing the event/Assessing the disaster (*full characterization of the event, including type of event, magnitude, extent, mechanism, ...; damage assessment; secondary hazards*).

3.2 Providing an EO clearinghouse for major international disasters (*including potential members of (science) response teams, useful EO infrastructure*)

Goals and objectives to be kept in mind while detailing the sub-activities:

- The GHCP can develop links and connections to the Charter.
- We should take an end to end and multi-hazard approach.
- The activities contribute to building resilience during and after events.
- The activities provide decision support and contribute to capacity building.

The Way Forward (The Map)

Activity 4: Recovery

Sub-activities:

4.1 Informing the Recovery Phase (*assessing the lessons learned; assessing safety of areas, access, infrastructure; provision of revised hazard assessment; feedback to activities 1 and 2*).

Goals and objectives to be kept in mind while detailing the sub-activities:

- We should take an end to end and multi-hazard approach.
- The activities contribute to building resilience after events.
- The activities provide decision support and contribute to capacity building.

Implementation

- Pilot implementation for a global network of a few “Regional Pillars” to be denoted as core sites;
- Core sites will comprise the so-called supersites;
- At least one core site per continent.

Goal: Build (a few) strong regional centers:

- based on the supersite initiative, the sites should have comprehensive monitoring and free access to all data;
- end-to-end approach and all phases of the risk management cycle;
- provide a testbed for capacity building in the region (monitoring, processing, science, application ...);
- should be determined through a Call for Proposals to all GEO Member Countries for the regional core sites through GEO.

Implementation

Establish and extent the networking of the global community, i.e. the GHCP.

Core funding for the GHCP:

- COST Action: global coordination around nucleus in Europe;
- Preproposal due in March.

Regional Offices:

- Should take the lead in organizing the regional core sites;
- Should provide support for regional CoPs;
- Should maintain a link to the global GHCP.

NEXT STEPS:**Iteration of the Draft Roadmap:**

- 1st iteration among workshop participants and invitees (March 19, 2010)
- 2nd iteration in the broader GEO community
(between 1 April and 1 May 2010)

Preparation of S&T Review of Disaster SBA Tasks for STC-13:

- Questionnaire sent to all Disaster Task Point of Contacts
- Three hour session at STC-13; draft agenda:
 1. Overview of the SBA Disaster as covered by the Work Plan
 2. Result of the Task Lead Interviews (with participation of available Task Leads)
 3. Uncovered societal issues (including a local user involved in decision making)
 4. S&T issues addressed
 5. Uncovered S&T issues
 6. Specific activities
 7. Recommendations

Networking:

- COST proposal