



Implementing the Integrated Global Observing Strategy (IGOS) for Geohazards through the UNESCO-IUGS Geological Applications of Remote Sensing (GARS) Programme



Stuart Marsh¹, Marc Paganini²
Robert Missotten³ and
Francesco Palazzo²

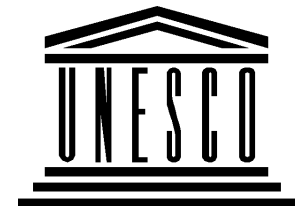


¹British Geological Survey



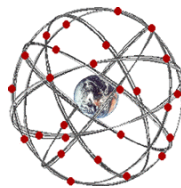
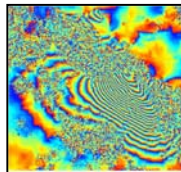
²European Space Agency

³United Nations Educational, Scientific and Cultural Organisation



Implementation Plan Highlights

- Commence **capacity building** through IGOS
 - Develop GARS as implementation mechanism
- Maximise existing observations
 - Seek release of SRTM and ASTER DEMs
- Lobby for new observation tools
 - L- and C-band radar satellite continuity
- Promote integration of data into products
 - Integration of INSAR with GPS networks
- Improve Infrastructures
 - Support WOVO and then use as a template
- Increase knowledge of geohazard processes
 - Define a global geohazards research agenda



GARS Programme



UNESCO-IUGS have run GARS for 20 years to:

- Assess value and utility of remote sensing for geoscience
- Build capacity, by assisting various geoscience institutes in developing countries with remote sensing technology

GARS is steered by scientists from geological surveys, other geoscience research institutes and universities:

- The ground-based geohazard community

It has run international collaborative programmes on:

- Geological Mapping (Africa)
- Landslide hazards (Latin America) & volcanic hazards (Asia)

Recent focus: IGOS Geohazard Theme development

GARS Evolves

GARS Interaction with space based community used to be achieved via agreements over satellite data access

Now...

IGOS Geohazard Theme has brought Space Agencies into the GARS Programme as full, active participants

GARS is now chaired by IGOS Geohazard's Chairman

And...

UNESCO and IUGS gave a mandate to modify GARS to be ready for IGOS Geohazard Theme implementation:

- adding space agency participation (ESA & CEOS SIT via JAXA)
- increasing representatives of disaster response agencies

Implementation Mechanism

IGOS Partners

ICSU

ESA Co-Chair
ESA

UNESCO Co-Chair
UNESCO

BGS Chair
IUGS

GARS Sponsors

Geohazards Theme... ..led by two IGOS partners' Programme

Implemented by Executive
BRGM Director

IGOS Geohazards Executive Bureau
(In **BRGM**, funded by **BRGM** & **ESA**)

Geological Applications of Remote Sensing Programme
(**BGS** Chair/Secretary, funded by **BGS**, **UNESCO** and **IUGS**)

Programme Steering
BGS Chair

Coordination with GARS

GEOLOGICAL SURVEYS working within IGOS

Joint GARS – IGOS Geohazards Committee
UNESCO & ESA (IGOS Geohazards Co-Chairs)
BRGM (as IGOS Geohazards Executive Bureau)
BGS (as GARS Chair & IGOS Geohazards Chair)
USGS (GEOSS link) **JAXA** (CEOS Agencies)
IUGS (GARS Sponsor and **ICSU** representation)

Coordination with IGOS

SPACE AGENCIES working within GARS

ESA Chair

UNESCO Co-Chair

IGOS Projects

IGOS Geohazard Working Groups
Capacity, Observation, Integration, Database & Science

GARS Working Group
e.g. Africa & Mid East Groundwater

GARS Projects

IGOS Geohazards Working Groups

Observations & Key Systems

Integration and Modelling

Databases and Infrastructure

Science

Capacity Building

- GARS Programme leads on this activity
 - UNESCO funds developing country participants
 - IUGS funds leading scientists from any country
- Stepwise approach
 - Build a global geohazards community via regional outreach
 - Geohazards curriculum development & regional workshops
 - Networks for N-S transfer then technology transfer projects
- Solid Earth observing system needs to be established
 - Build community of disparate in-situ networks
 - Currently talking to Geodesy and Seismology networks

Attend the 1st IGOS Geohazards Workshop, 6-8 April 2005, BRGM

Geological Surveys, Space Agencies, International Bodies, Research Institutes, Private Companies



British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL



Géosciences pour une Terre durable
brgm

