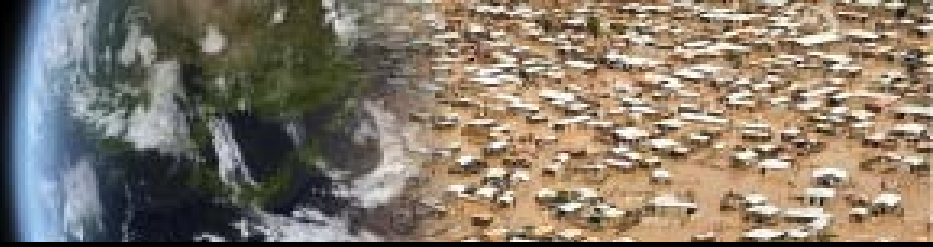UNITED NATIONS
Office for Outer Space Affairs

UN-SPIDER

"UN-SPIDER: A model approach to reduce vulnerabilities to hazards through good practices in geospatial information management"

luc.st-pierre@unoosa.org

Space-based Information for Disaster Management and Emergency Response

"Ensure that all countries and international and regional organizations have access to and develop the capacity to use all types of space-based information to support the full disaster management cycle."

- **Especially by being a gateway to space information for disaster management support;**
- **serving as a bridge to connect the disaster management and space communities; and**
- **being a facilitator of capacity-building and institutional strengthening (A/RES/61/110).**

The Office for Outer Space Affairs (UNOOSA)

ITS MISSION STATEMENT:

The core business of the Office is to promote international cooperation in the use of outer space to achieve development goals for the benefit of humankind.

Images from earth observing satellites help assess the damage caused by disasters and assess vulnerability to hazards.

Satellite communications help warn people who are at risk, especially in remote areas. They help connect a disaster zone to the outside world.

Global navigation satellite systems enable us to obtain positional information on events that have to be mapped.

ISDR
International Strategy for Disaster Reduction

HFA

Hyogo Framework for Action 2005 - 2015:
Building the Resilience of Nations and Communities to Disasters

Every year, more than 200 million people are affected by droughts, floods, cyclones, earthquakes, wildlandfires, and other hazards. Increased population densities, environmental degradation, and global warming adding to poverty make the impacts of natural hazards worse.

The past few years have reminded us that natural hazards can affect anyone, anywhere. From the Indian Ocean tsunami to the South Asia earthquake, from the devastation caused by hurricanes and cyclones in the United States, the Caribbean and the Pacific, to heavy flooding across Europe and Asia, hundreds of thousands of people have lost their lives, and millions their livelihoods, to disasters caused by natural hazards.

"Time is running out. We have less than 8 years left to achieve the goals set in the Hyogo Framework for Action. While some progress has been made, the cruel reality is that — helped by short sighted policies and practices — the vulnerability of our societies continues to grow. I urge all Governments, and regional and local authorities, to make disaster risk reduction a real priority and to accelerate practical steps to make communities safer from disasters. This will mean the investment of human and financial

Pledge of 168 Countries @ World Conference on Disaster Risk Reduction (DRR), Hyogo, Kobe, Japan, 2005

3 GOALS

- To integrate disaster risk reduction into sustainable development policies and Planning.

- To develop and strengthen institutions, Communities Mechanisms and capacities to build resilience to hazards

- To systematically incorporate risk reduction approaches into the implementation of emergency preparedness, response and recovery programs.

HFA – Priority Actions

5 PRIORITY AREAS

1. **Making disaster risk reduction a priority**
2. **Improving risk information and early warning**
3. **Building a culture of safety and resilience**
4. **Reducing the risks in key sectors**
5. **Strengthening preparedness for response**
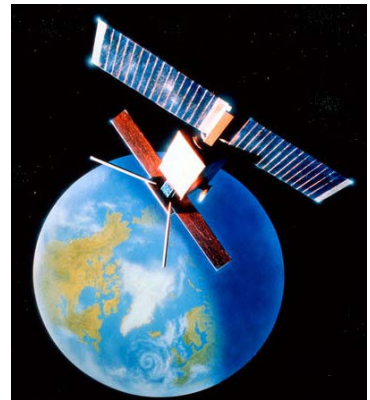
Support from space technologies

THE FUTURE WE WANT

Para 274

We recognize the importance **of space-technology-based data**, in situ monitoring, and **reliable geospatial information** for sustainable development policy-making, programming and project operations… …We recognize the need to support developing countries in their efforts to collect environmental data.

Knowledge Portal

The UN-SPIDER Knowledge Portal is a web-based tool for information, communication and process support. Users can find and share case studies, guides and products through the portal.

The Knowledge Portal's dynamic matrix enables rapid information access

Fostering Cooperation

UN-SPIDER bridges the gap between the space and disaster management communities. **UN-SPIDER fosters alliances and creates forums where both communities can meet.**

UN-SPIDER Activities

Technical Advisory Support

UN-SPIDER provides support to countries in assessing national capacity and in evaluating disaster and risk reduction activities, policies and plans with regard to the use of space-based technologies.

Capacity Building

UN-SPIDER facilicates capacity building and institutional strengthening, including the development of curricula and an e-learning platform (e-SPIDER).

...and many more

UN-SPIDER in Vienna

UN-SPIDER Beijing Office

UN-SPIDER Bonn Office

UN-SPIDER Team

Network of Regional Support Offices (RSOs, 16)

National Focal Points (45)

Network of Regional Support Offices

A web portal for information, communication, and process support. A platform which supports knowledge management, capacity building, technical advisory support and support to emergency and humanitarian assistance.

http://www.un-spider.org

Space Application Guides

Scientific and technical papers, best practices and case studies, etc.

News and Events from the space and the disaster/risk management community

Guides on technologies, institutions and organizational mechanisms

Links to data and information sources

Repository of freely available Earth observation data and products

- Hazard-specific datasets
- Digital Elevation Models
- Land use and land cover maps
- Satellite data
- Search engines for geospatial data

Recommended practices on the use of archived imagery

Lessons learned from drought in Iran, floods in Pakistan and earthquakes in Japan

Best practices on geo-information for disaster and risk management

Cyclone: Space inputs

Pre-disaster
Preparedness plan

Prediction/early warning
Cyclone monitoring
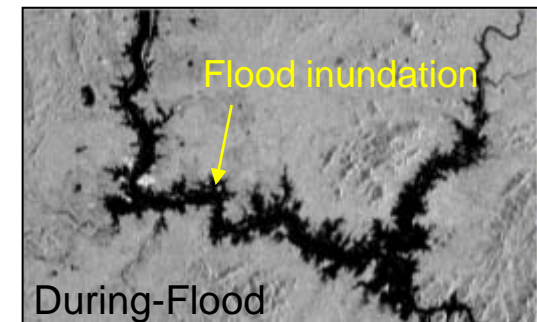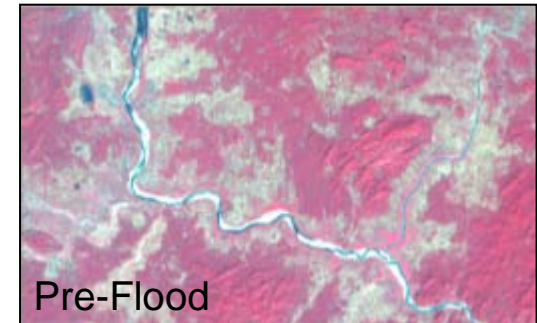Track prediction, landfall point, Storm and storm surge
Disaster warning station

Disaster
Flood and damage assessment

Post-Disaster
Rehabilitation

AWiFS i

Pre-Flood

Flood inundation

During-Flood

Source: ISRO

Up-to-date thematic and baseline spatial data is a basic requirement

Thematic data on terrain and natural resources

Baseline data

Disaster specific data

Utility and infrastructure data

Satellite images (Pre and Post disaster event)

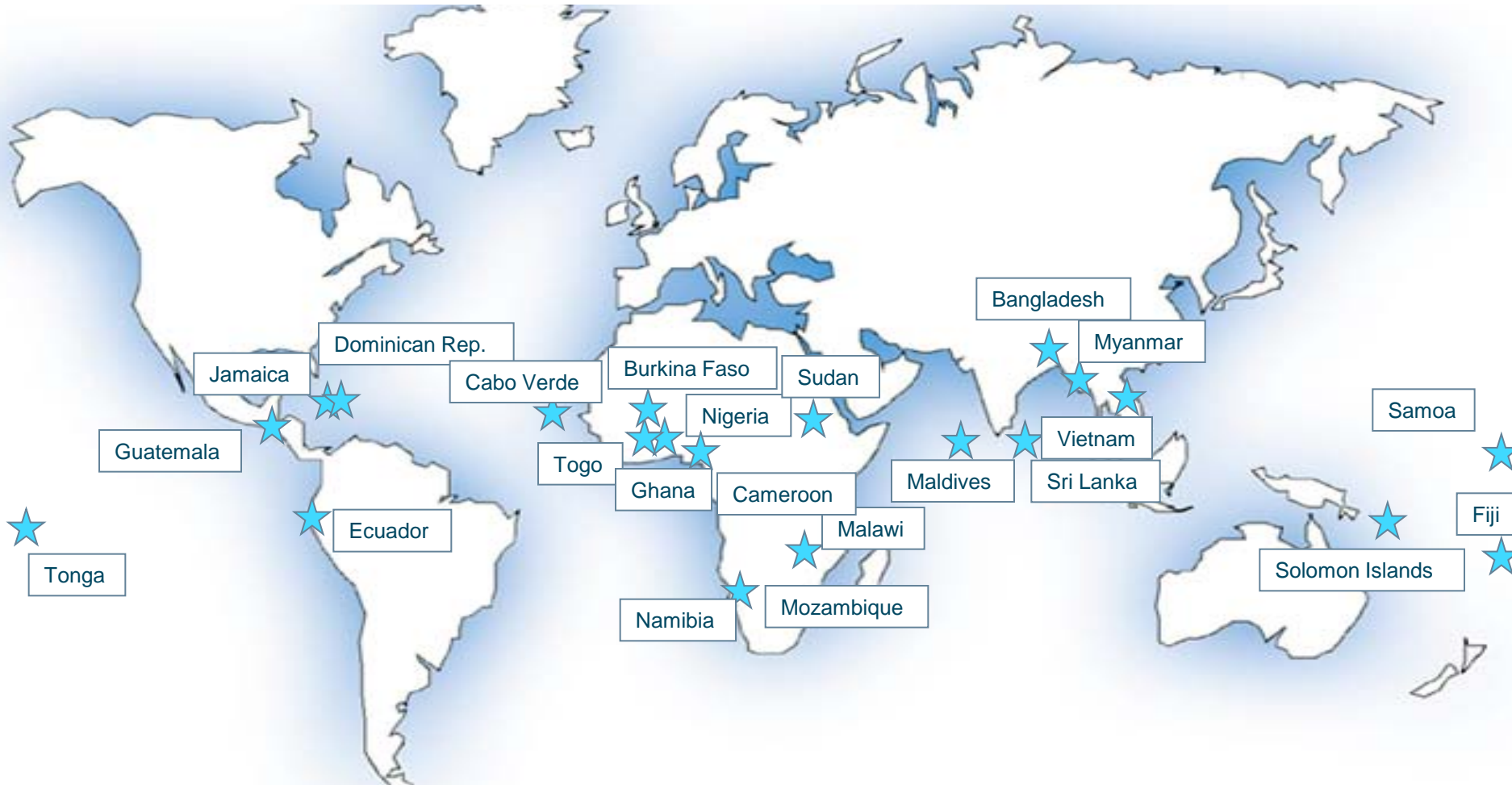## Most of the georeferenced information is derived from the satellite images

Technical Advisory Mission (2008 - 2013)

UN-SPIDER Technical Advisory Missions
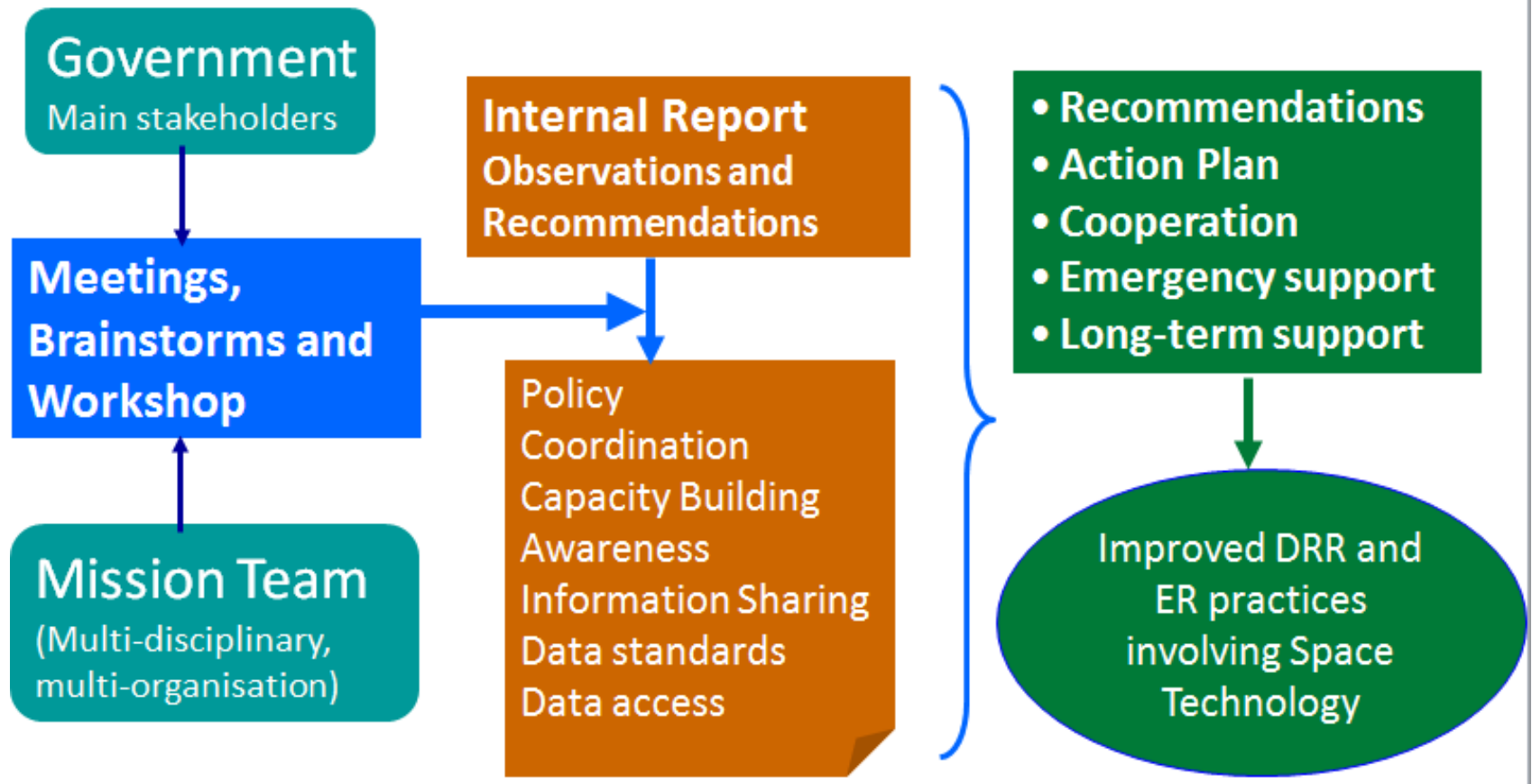
Government
Main stakeholders

Meetings, Brainstorms and Workshop

Mission Team
(Multi-disciplinary, multi-organisation)

Internal Report
Observations and Recommendations

Policy
Coordination
Capacity Building
Awareness
Information Sharing
Data standards
Data access

• Recommendations
• Action Plan
• Cooperation
• Emergency support
• Long-term support

Improved DRR and ER practices involving Space Technology

- Technical Advisory Mission to **Vietnam**, 25 – 29 March 2013

- Technical Advisory Mission to **Ghana**, Nov/Dec 2013

- Technical Advisory Mission to **Malawi**, 14 – 18 October 2013

- Technical Advisory Support (training) to **Bangladesh**, 12-16 May 2013

- Technical Advisory Support (training) to **Sudan**, 5 – 9 May 2013

- Technical Advisory Support (training) to **Dominican Republic**, 13 - 17 May 2013

- Technical Advisory Support (training) to **Mozambique**, November

- Technical Advisory Support to **Indonesia**, 5 – 6 September

- UN/Germany Early Warning Expert Meeting, Bonn, **Germany**, 25 – 26 June 2013

- SPIDER/NDRCC training, Beijing, **China**, 21-22 October

- UN/China International Conference, Beijing, **China**, 23 – 25 October

- Beijing Training: Flood Risk Mapping, Modeling and Assessment using Space technology, Beijing, **China**, 27-31 October

Activities in 2013

Activities in 2014

Technical Advisory Mission

- **Kenya**, 3-7 March 2014
- **El Salvador**, 2-4 April 2014
- **Zambia**, end May or early June 2014
- **Bhutan**, 2-5 June 2014
- **Mongolia**, 3rd or 4th week July 2014

Training

- **Vietnam**, 3rd week September 2014
- **Sri Lanka**, 1st week November 2014
- **Bangladesh** (tbc)

WORKSHOPS/CONFERENCE

- Regional Expert Meeting/CEPREDENAC to Central America, **El Salvador**, 31March and 1 April
- Regional workshop ASEAN region (Partners – LAPAN, AHA), **Indonesia**, 15-16 April
- International training with ICIMOD on flood forecast and hazard mapping, **Nepal**, 26-30 May
- United Nations/**German**y Expert Meeting on Space Technologies for flood and drought risk reduction, 3-4 June
- UN/**China** International Conference on Space-based Technologies for Disaster, 1st week September
- Course in space-based applications for Disaster Risk Reduction, **China**, 2nd week September

luc.st-pierre@unoosa.org

skype: stpierreluc

www.un-spider.org

www.unoosa.org