A satellite view of Earth showing a large storm system with a distinct eye over the ocean. A semi-transparent grey rounded rectangle is overlaid on the center of the image, containing text.

Session 5: Enhancing resilience: the role of space mechanisms. How can regional and international mechanisms contribute to sustainable development?

## How UN-SPIDER contributes to sustainable development

Luc St-Pierre, Coordinator

28 May 2015



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## Space-based Information for Disaster Management and Emergency Response (UN-SPIDER)

- “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).





## UN-SPIDER **Activities**



### Knowledge Portal

- The UN-SPIDER Knowledge Portal is a web-based tool for information, communication and process support



### Fostering Cooperation

- UN-SPIDER fosters alliances and creates forums where both space and disaster management communities can meet



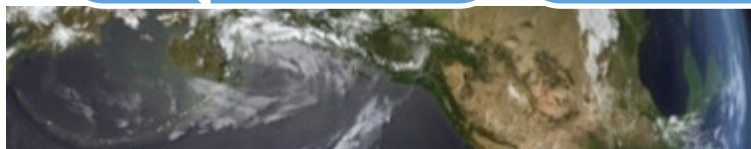
### Capacity Building

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



### Technical Advisory Support

- UN-SPIDER provides support to countries in assessing national capacity and in evaluating disaster and risk reduction activities, policies and plans

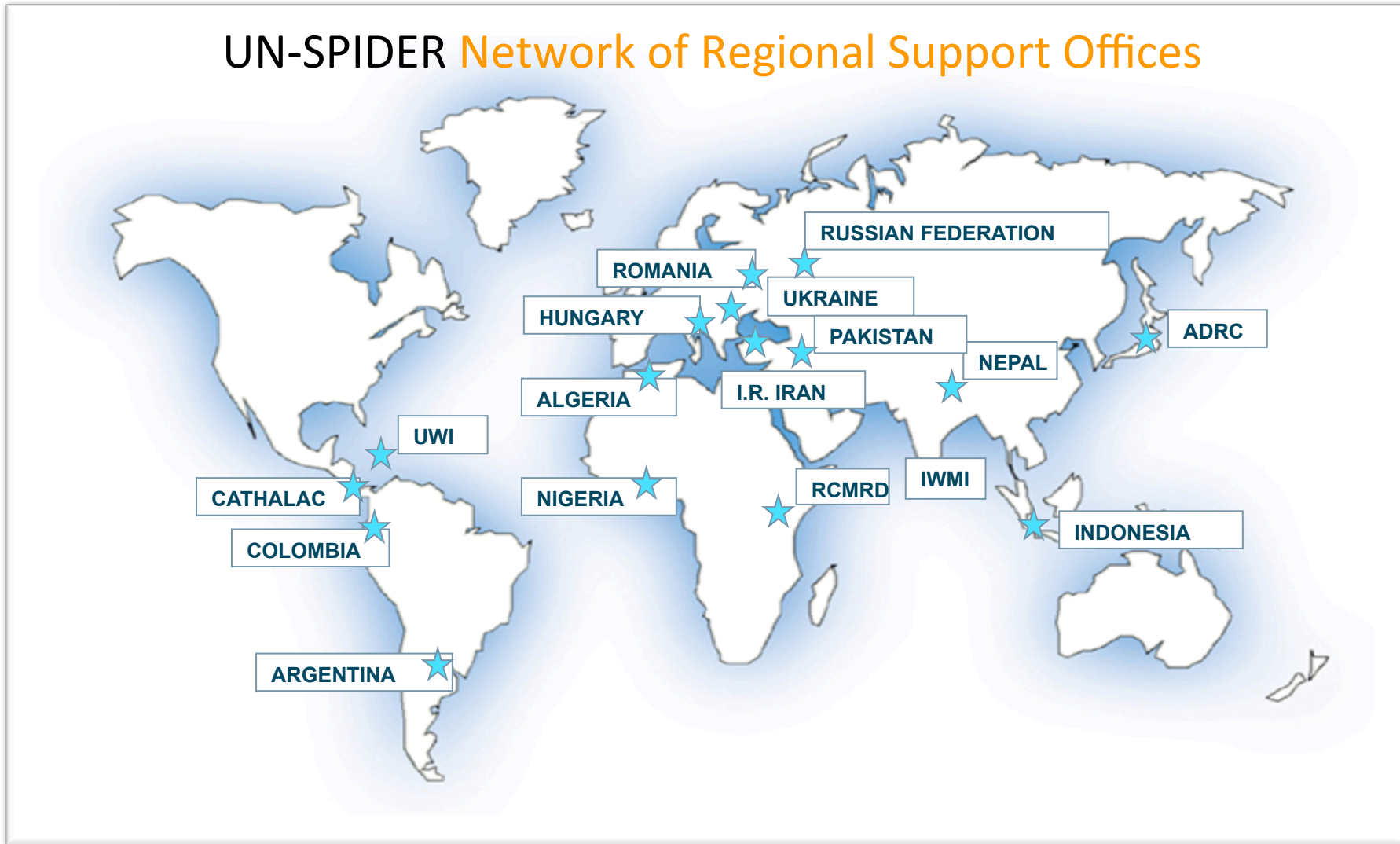






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## UN-SPIDER Network of Regional Support Offices



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[www.un-spider.org](http://www.un-spider.org)



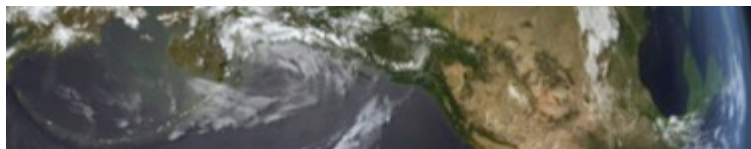
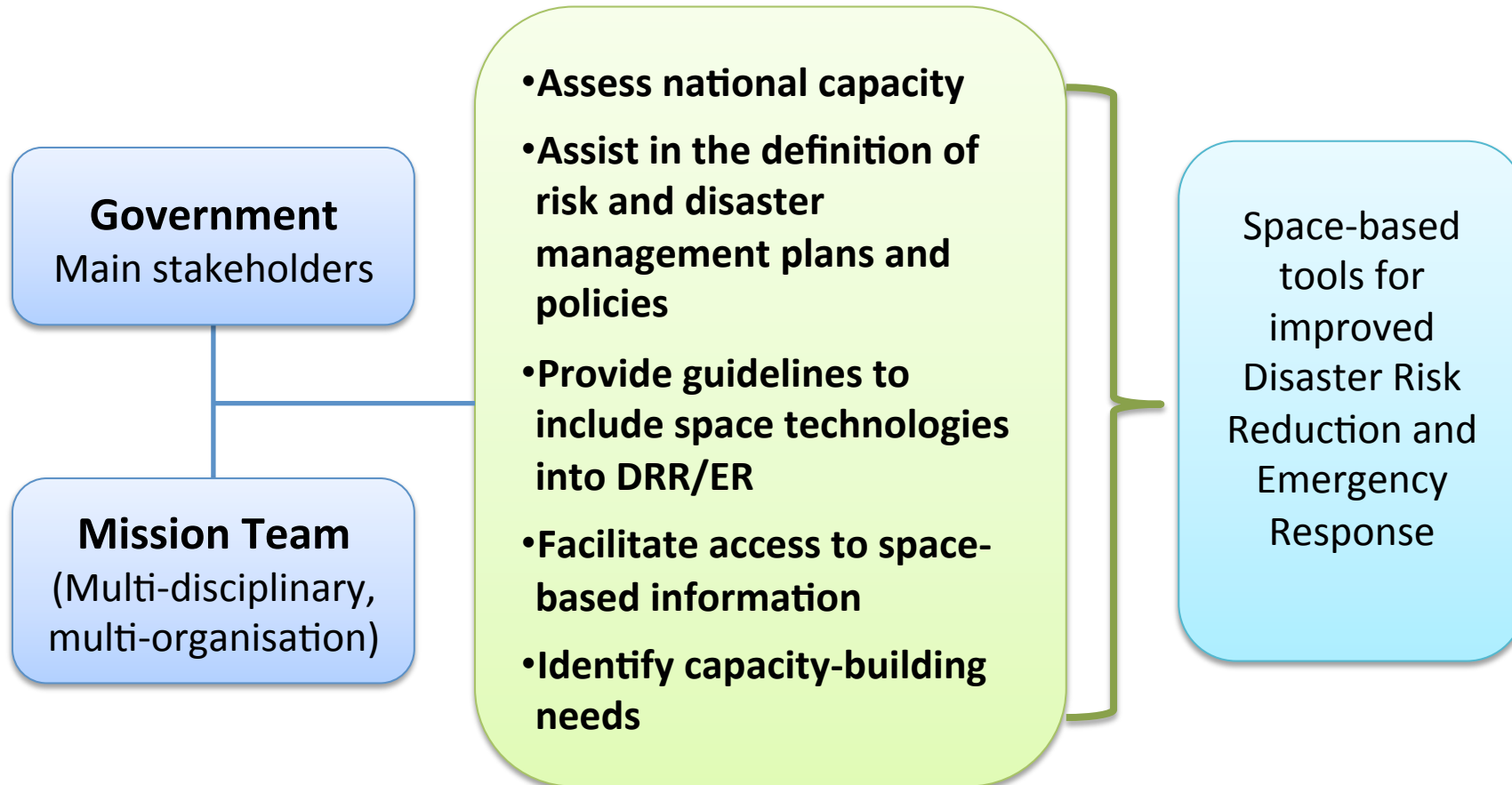
## Post-2015 framework for disaster risk reduction (Sendai)

- 22(c) Develop, update periodically and disseminate, as appropriate, **location-based disaster risk information**, including risk maps, to decision makers, the general public and communities at risk to disaster in an appropriate format by **using, as applicable, geospatial information technology**;
- 22(f) Promote real-time access to reliable data, **make use of space and in situ information, including GIS**, and use information and communications technology innovations to enhance measurement tools, collection, analysis and dissemination of data;
- 23(c) Promote and enhance, through international cooperation and technology transfer [...] access to, and the sharing and use of, [...] data, information, [...] communication and **geospatial and space-based technologies and related services**. Maintain and strengthen in situ and **remotely-sensed earth and climate observations**. [...]
- 23(g) Enhance the scientific and technical work on disaster risk reduction and its mobilization through the coordination of existing networks and scientific research institutions [...] to: strengthen the evidence-base in support of the implementation and [...]; **disseminate risk information with the best use of geospatial information technology**; [...]





## UN-SPIDER **Technical Advisory Missions**





## Technical Advisory Mission to Bangladesh

19-23 June 2011

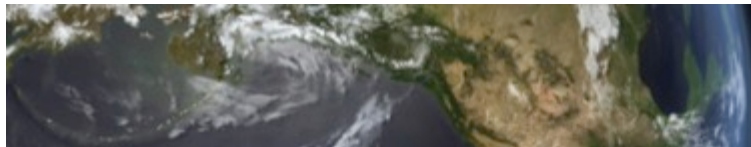
- Bangladesh delegation attended a “UN-SPIDER Side Event” of Asian Ministerial Conference on DRR at Incheon in **2010**.
- TAM requested from Bangladesh
- TAM team of 8 experts was formed (including two RSOs – ADRC and SUPARCO)
- 2 months prior to TAM, the Expert Teams and National Team prepared:
  - ToR
  - Collection of relevant reports and literature for “Country Profile”
  - Meetings with the stakeholder agencies
  - One day workshop





## Visits to Stakeholders in Bangladesh

- Disaster Management Bureau (DMB)
- Directorate of Relief and Rehabilitation (DRR)
- Centre for Environmental and Geographic Information Services (CEGIS)
- Bangladesh Meteorological Department (BMD)
- Space Research and Remote Sensing Organisation (SPARSO)
- Comprehensive Disaster Management Programme (CDMP)
- Survey of Bangladesh (SOB)
- Cyclone Preparedness Programme (CPP)
- Institute of Water Management (IWM)
- Flood Forecast Warning Centre (FFWC)
- Bangladesh Telecom Regulatory Commission (BTRC)
- Early Recovery Facility (ERF)





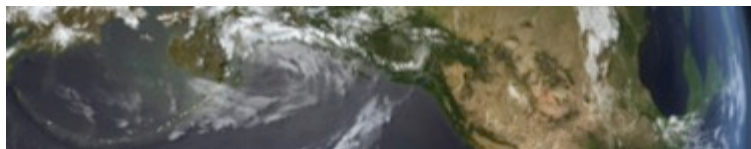


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## Mission Team



- UNOOSA/UN-SPIDER
- Centre for Space Science Technology Education in Asia and the Pacific (affiliated to UN), Dehradun, India
- National Disaster Reduction Centre of China
- Asia Pacific Space Cooperation (APSCO), Beijing China
- Pakistan Space and Upper Atmosphere Research Commission (SUPARCO), Pakistan
- Asian Disaster Reduction Centre (ADRC), Kobe, Japan
- UN Office for Coordination of Humanitarian Affairs (UNOCHA), Bangkok



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## Observations

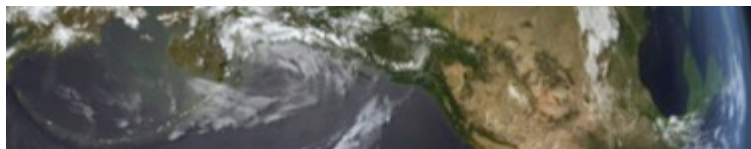
- Space-based information and products are in incubation stage;
- Satellite images are yet to be used during emergency response and damage assessments;
- No provision for emergency communication system;
- Early warning (flood and cyclone predictions) can be further strengthened by providing better access to the space-based information and related technologies





## General Recommendations

- **Policy and Coordination**
  - Coordination between organisations technology providers and technology users
  - Space technology providers should provide services directly to the end-users
  - National Plan for Disaster Management need mention of 'Space Technology'
- **Capacity Building and awareness**
  - Awareness amongst decision-makers
  - Capacity building in DM institutions
- **Information Sharing**
  - Information products should cater precise requirements of the end-users
  - Data is national property and need to be shared openly particularly in case of disaster
- **Data and access**
  - Timely availability of appropriate satellite data and geospatial data
  - Data policy – standards/formats/warehouse





## Specific Recommendations

### Data and access

- *Survey of Bangladesh* is the main agency to provide National Spatial Data Infrastructure (NSDI). Availability of NSDI is critical to develop effective GIS for disaster management.
- Spatial datasets and satellite data archives available at SPARSO and CEGIS should be organised to provide easy retrieval during emergency
- Linkages with regional and international initiatives (UN-SPIDER, Sentinel Asia and International Charter) should be effectively used by SPARSO.
- CEGIS should get access to satellite data products to offer their services during emergencies.
- Data policy is necessary to maintain data interoperability .







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At the Centre for Environmental and Geographic Information Services (CEGIS), the centre of excellence in using RS/GIS.

Comprehensive Disaster Management Programme (CDMP) – 70 million USD multi-donor programme implemented by UNDP and the Disaster Management.



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## Follow up

- **2012:** 1 month training to 2 officials : “Space technology applications in Disaster Risk Reduction” at the Centre for Space Science Technology Education for Asia and the Pacific (CSSTE-AP), Dehradun, India.
- **2013:** 5 days “National Training Programme on Space Technology for Flood Hazard Mapping, Flood Forecast and Rapid Mapping in Bangladesh”, UN-SPIDER, IWMI, ICIMOD, PDC and ADPC.
- **2014:** Completed SOP to implement TAM recommendations - The Ministry of DM recruited a consultant through CDMP.
- **2011, 2012 and 2013:** Participation of Bangladesh officials in all UN-SPIDER Beijing Conference.
- **2015** – Training on "Earth observation technologies for disaster damage and loss assessment" in Dhaka.





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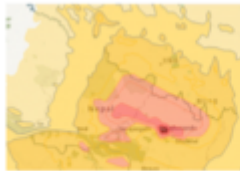
UNITED NATIONS Office for Outer Space Affairs **UN-SPIDER KNOWLEDGE PORTAL** English Español Français  
Space-based information for Disaster Management and Emergency Response

Home Space Application Risks & Disasters Links & Resources **Advisory Support** Network Projects News & Events About Us

## Advisory Support

- Advisory Missions
- Emergency Support
- Recommended Practices
- Training Activities

## Earthquake in Nepal, India, Bangladesh, China



Region:  
Nepal  
Sat, 25/04/2015

On Saturday, 25 April 2015 6:11UTC, an earthquake with a magnitude of 7.8 and a depth of 15km struck Nepal affecting 6.5 Million people within 100km (cf. [GDACS](#)). Several aftershocks have occurred since then, notably a 6.6. magnitude aftershock about 30min after the initial earthquake and a 6.7 magnitude aftershock on Sunday 26 April 2015 at 7.09UTC (cf. [JRC Situation report No. 1](#)).

On the 12th of May a magnitude 7.3 earthquake occurred with an epicenter close to Mount Everest, 18km South East of Kodari at 7:05:19 UTC (12.35 am local time) followed by a magnitude 6.3 earthquake at 7:36:53 UTC, 33km NNE of Ramechhap (cf. [USGS](#)). It occurred at a depth of 11.5 miles. A number of smaller aftershocks were recorded by the [USGS](#). These aftershocks caused more buildings to collapse and landslides to occur.

To support the [response](#) to the [disaster](#), several actors are involved in producing useful information. UN-SPIDER compiles this information here to make it easily accessible. This page is constantly being updated. If you are aware of additional information, please contact the UN-SPIDER team at [un-spider@unooosa.org](mailto:un-spider@unooosa.org) and we will include it in the list.

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Home Space Application Risks & Disasters **Links & Resources** Advisory Support Network Projects News & Events About Us

## Links & Resources

- Data Sources
- GIS and Remote Sensing Software
- External Training Opportunities
- Institutions
- Data Application of the Month

## Data Sources

Data Type  
- Any -

Disaster Cycle Phase  
- Any -

Costs  
- Any -

Temporal Coverage  
- Any -

Spatial Coverage  
- Any -

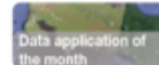
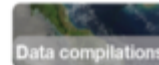
Data accessibility  
- Any -

File types (zip, kmz, csv, etc.)  
- Any -

Satellite/Sensor  
- Any -

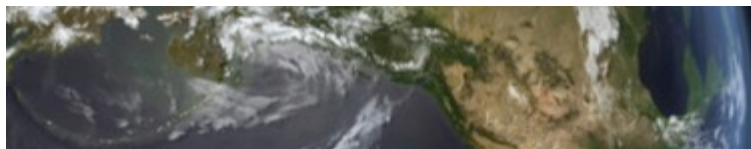
Name of the Dataset

## CONTACT US!



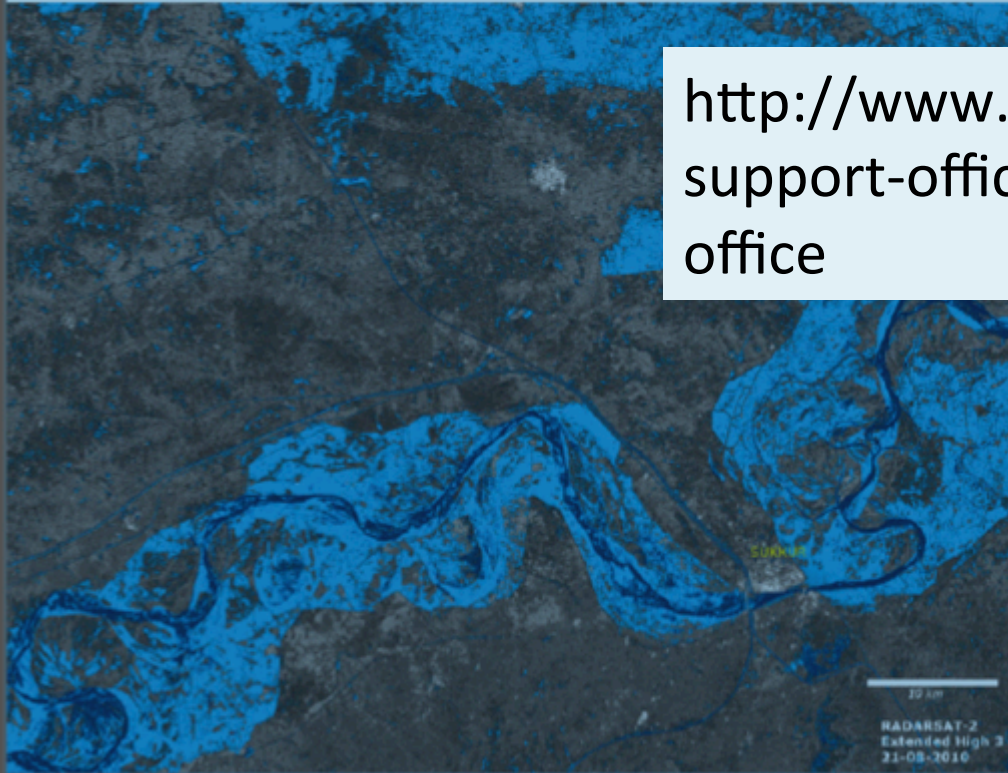
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SUPARCO



<http://www.un-spider.org/network/regional-support-offices/pakistan-regional-support-office>

Effective use of Space-based  
Information to monitor disasters  
and its impacts

## Lessons Learnt from Floods in Pakistan

prepared by SUPARCO, Pakistan





## News & Events

Events Calendar

Monthly Updates

Newsletter

News

UN-SPIDER Events

Archive

## UN-SPIDER strengthens Universal Access to the International Charter: Space and Major Disasters



On 16 October, Luc St-Pierre, Coordinator of UN-SPIDER, presented via teleconference the 2014 report of activities of UNOOSA in support to the [International Charter: Space and Major Disaster](#) (International Charter) during the Charter Board Meeting in Incheon, Republic of Korea. The report highlighted the actions taken by UNOOSA and UN-SPIDER in promoting the Charter's Universal Access initiative, started in September 2012. The

initiative aims to widen the user access from the previously restricted group of authorized users [who](#) were able to access the mechanism. With the Universal Access approach, all countries can nominate a focal point authorized to activate the mechanism to receive [satellite data](#) and derived products for a specific [emergency](#) situation.

As the UN-SPIDER programme aims to ensure that all countries have access to all types of [space-based information](#) to support the full [disaster](#) management cycle, including disaster [response](#), it fully embraced the approach and promotes it actively among its stakeholders. For example, during its one-week Technical Advisory Missions, the programme usually includes a training module on the International Charter and ways to trigger it, namely through the Universal Access.

Mr. St-Pierre also proposed to strengthen Universal Access through collaborations with UN-SPIDER's global network of Regional Support Offices and National Focal Points to raise awareness on the benefits of, and facilitate access to the International Charter. For instance, UN-SPIDER has closely collaborated with its [Regional Support Office in Argentina](#). [CONAF](#). to

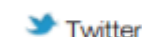
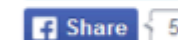
## Related News

Annual Report of International Charter Space and Major Disasters published

UN-SPIDER Advisory Mission to Mozambique concluded

Floods in Romania monitored by Copernicus EMS

## Share this page





# Mechanisms to Activate the Charter

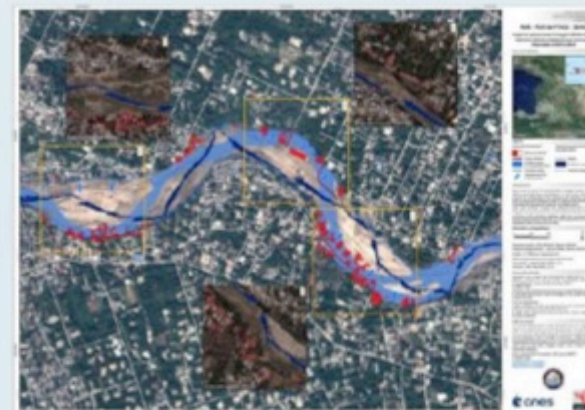
- **Direct activation:** The only bodies authorized to directly request the Charter to be activated for a disaster occurring in their country are the **'Authorized Users' (AUs)**. They are typically civil protection agencies, governmental relief organizations, or other authorities with a mandate related to disaster management.
- **Activation via an Authorized User on behalf of a user from another country without AU:** Authorized Users can access the Charter to request support for a disaster **in another country** with which **they cooperate for relief purposes**.
- **Activation via the UN for UN users:** The Charter has agreements with **UNOOSA** (Vienna) and **UNITAR/UNOSAT** (Geneva) to provide **support to UN agencies**. UNOOSA and UNOSAT may submit requests on behalf of users from the United Nations.
- **Activation for Asia Pacific users via Sentinel Asia:** Sentinel Asia is a regional collaboration for satellite based emergency response in Asia Pacific. Since 2009 the Charter has granted the Asian Disaster Reduction Centre the right **to submit activation requests on behalf of national users of Sentinel Asia**.





# Conditions for becoming an Authorised User

1. be a **national disaster management authority** or its delegated agency in that country
2. have the **capacity to download and use maps**
3. be able to **submit and pursue an activation request in English**





## Network

### IWG-SEM

National Focal Points

Regional Support Offices

Post-2015 Disaster Risk Reduction

## International Working Group on Satellite based Emergency Mapping (IWG-SEM)



The International Working Group on [Satellite-based Emergency Mapping](#) (IWG-SEM) is a voluntary group of organizations involved in satellite based emergency mapping. It was founded to improve cooperation, communication and professional standards among the global network of satellite based emergency mapping providers. The chairperson of the group is nominated for a term of one year and is responsible for organizing the monthly telecons and bi-annual meetings. The current chair is from the Center for Satellite based Crisis Mapping of the Germany Aerospace Center ([DLR/ZKI](#)).

The group meets twice every year in person at venues arranged by meeting participants. These meetings are forums for reviewing what has been accomplished to date and to define the steps forward. The monthly regular teleconferences are held to monitor progress on actions and for discussions on particular matters of interest to the group.

### Vision and Mission of IWG-SEM

During the first meeting in April 2012, the group defined its general direction through following vision:

**"Supporting [disaster response](#) by improving international cooperation in satellite based emergency mapping"**

## Contact

For any inquiries to the chair, please contact [iwg@dlr.de](mailto:iwg@dlr.de).

To send inquiries to the entire group, [please use the contact form](#).

## IWG-SEM members

ADPC

AHA Center

AIT

AKDN-FOCUS



CNES

CU-Boulder



DFO



DLR



EC-ECHO



EC-GROW



EC-JRC



ESA



GFO





## Opportunities for partnerships

- Enhancing drought early warning in Central America through the use of satellite imagery.
- Use of archived satellite imagery to enhance the resilience of nations.
- Enhancing the use of the UN-SPIDER Knowledge Portal through the translation of its content into other UN languages (Arabic, Chinese, Russian) and others innovative services.
- Institutional strengthening for disaster management and emergency response (e.g. advisory support at national and regional levels)
- and more...





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