UN-SPIDER

United Nations Platform for Space-based Information for Disaster Management and Emergency Response

- Established by the UN General Assembly in 2006:
- Managed by the United Nations Office for Outer Space Affairs (UNOOSA)
- Headquarters at the United Nations Office in Vienna and additional offices in Bonn, Germany and in Beijing, China.
SPEAR
A joint initiative by UN-SPIDER and ZFL of UniBonn

National Virtual Expert Meeting
“Space-based Solutions for Disaster Risk Management and Emergency Response in Nigeria”
13 to 15 April 2021
UN-SPIDER 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.
Network of Regional Support Offices
Access to Knowledge

- Geoinformation for Hazard, exposure, vulnerability, and risk assessment
- Recommended Practice on Flood Hazard Mapping
- Recommended Practice on Storm surge hazard mapping
- Recommended Practice on Post Disaster Needs Assessment (PDNA)/Damage and Loss Assessment (DaLA)
- Recommended Practice on Flood extent mapping
- Recommended Practice on Drought Monitoring
- Recommended Practice on Forest fire burnt severity mapping
- Recommended Practice on debris flow extent mapping
- Recommended Practice on Storm surge hazard mapping
- Recommended Practice on Disaster mapping cycle
- Recommended Practice changes in flood behaviour due to land-use changes
- Geoinformation for Early Warning systems
- Geoinformation for Rapid mapping: Extent and impact
Main Aim:
Institutionalizing the generation and use of space-based information:

Establish inter-institutional teams in developing countries

Capacity building and Institutional strengthening
Technical Advisory Support to Nigeria:

- **Technical Advisory Mission:**
  - 13-17 June 2011, coordinated with NASRDA and NEMA

- **Advisory Support due to floods:**

- **Capacity building efforts:**
  - Virtual training course for staff of NEMA, NASRDA and ARCSSTE-E in Oct. 2020 on flood mapping using Sentinel 1 radar imagery and Google Earth Engine.

- Mobilization of experts from Nigeria to UN-SPIDER Conferences in Vienna, Bonn and Beijing since 2007.
SPEAR

Space-based Earth observation Applications for Emergency Response and Disaster Risk Reduction

11.06.2019
Objectives

• Raise awareness for the usefulness of EO to contribute to efforts conducted in the areas of DRR, preparedness, response, and recovery with a focus on African countries and in line with the German Africa Strategy.

• Make use of and strengthen German expertise for the use of EO information to support international conventions in the fields of disaster preparedness and response in the multi-hazard and multi-risk context.

• Ensure that space-based data, information, tools and applications are accessible based on actual needs and requirements of users, especially in African countries.
Objectives

• Facilitate international cooperation between the space community and the communities that focus their efforts on disaster risk reduction, preparedness, response, and recovery efforts.

• Contribute to the strengthening of institutional capacities at the national level, in particular of institutions in developing countries.

• Strengthen Bonn as UN and Science location and increase the cooperation between the Center for Remote Sensing of Land Surfaces (ZFL) of the University of Bonn and the UN-Campus
National Needs & International Conventions

- SFDRR
- SDGs
- UNFCCC
  Measures/Goals of NAPAs

Knowledge Transfer

- CEOS
- Charter
- GP-STAR
- GEO
- ...

EO for Disaster Risk Reduction, Response, & Recovery

- Use and development of EO-based information products and recommended practice to strengthen disaster mitigation, preparedness, response & recovery
- Knowledge generation and exchange by
  - Capacity building
  - Training and Technical Advisory Missions
  - Widening Collaborations
  - Knowledge Platform
- International exchange

Data & Information

Satellite Data
- Sentinel 1,2,3
- Landsat
- AVHRR
- MODIS
- ...

Ancillary Data
- In-situ data
- Multi-Hazard and Risk Assessment
- Models and Scenarios
- ...

Knowledge Portal

Pilot Countries
EO applied tools

- Development of EO-based tools and methods for Disaster Monitoring and Support for Disaster Risk Reduction
  - Drought and Drought Severity Monitoring
  - Flood Monitoring and Impact Analysis
  - Cascading Effects (e.g. fire, landslides ...)

- Close exchange before, during and after Technical Advisory Missions (TAM)
- Multi-data approaches
- Tools and methods should be embedded in recommended practices of the UN SPIDER Knowledge Portal
Technical Advisory Missions (TAM)
Institutional Strengthening Missions (ISM)

- 2-3 missions per year
- Regional Expert Meetings
- Training and Capacity Building
- On-demand -> Specific requests
- Africa-wide network
- Shapening EO-based applications
## Outreach

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Details</th>
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<tbody>
<tr>
<td>2019</td>
<td>Conference Bonn Challenges, Applications, Partnerships, TAM &amp; ISM, Expert Meeting West-Africa</td>
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<tr>
<td>2020</td>
<td>TAM &amp; ISM, Expert Meeting Bonn</td>
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<td>2021</td>
<td>TAM &amp; ISM, Conference Bonn Strategies, Technology, Implementation</td>
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<td>2022</td>
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<td>2023</td>
<td>TAM &amp; ISM, Conference Bonn Outcomes and way forward</td>
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Publications, Newsletter...
The way forward

• Continue and strengthen virtual activities

• Small Copernicus user-uptake project linked to SPEAR starts this year
  • Possibility to work with African countries to improve the accessibility of Copernicus data, services and related materials and training
  • Maybe Nigeria could become a pilot country

• Continue work on recommended practices
  • Improve methods
  • Incorporate new possibilities and data sources
  • Cover different disaster types
  • Develop pilot studies