

# EO for disaster and risk management

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The SPEAR project and how it  
supports the UN-SPIDER  
programme



Technical Presentation at  
62<sup>nd</sup> Session of COPUOS,  
Vienna

19.06.2019  
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University of Bonn,  
Germany



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

Duration: 01.01.2019 - 31.12.2023 (5 years)

Team:

- ZFL
- UN-SPIDER



Funded by the German Aerospace Center (DLR) via Federal Ministry for Economic Affairs and Energy (BMWi)

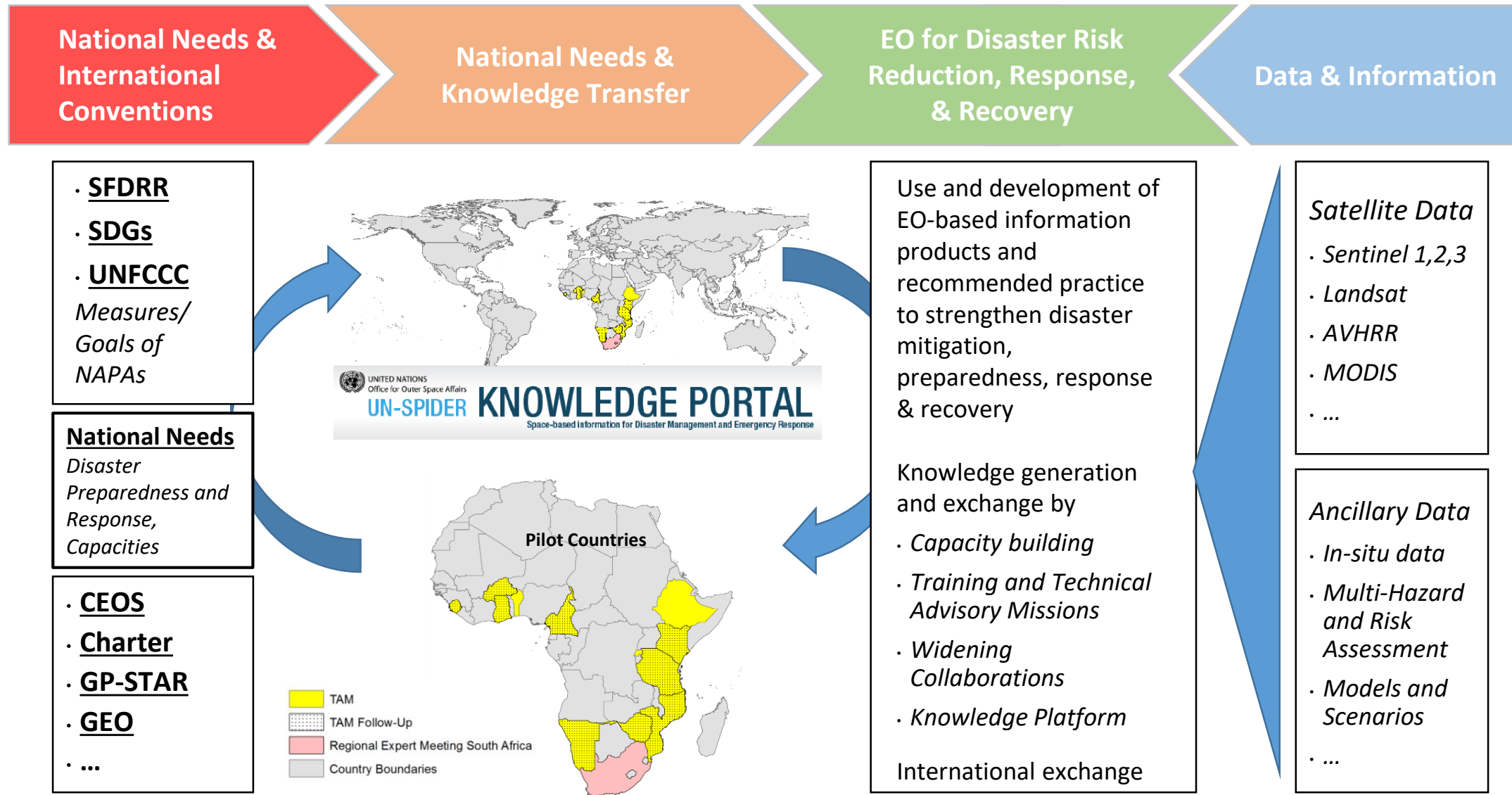
- **Raise awareness for the usefulness of EO to contribute to efforts conducted in the areas of DRR, preparedness, response, and recovery with a focus on African countries and in line with the German Africa Strategy.**
- **Make use of and strengthen German expertise for the use of EO information in support of 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 of SPEAR II

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- **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**

# The SPEAR Approach





# Regional Focus: Africa

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- Strengthen capacities of African countries to make use of space-based technologies
- Provide technical advice and institutional strengthening
- Provide recommended practices and guidelines for EO in the disaster risk reduction and emergency management context tailored to the specific needs of African countries
- Involve African institutions and government agencies in events and organize events and missions in Africa

# SPEAR Work Packages



**AWARENESS RAISING  
& OUTREACH**



**EARTH OBSERVATION  
– METHODS, TOOLS,  
APPLICATIONS**



**TECHNICAL  
ADVISORY SUPPORT**



**KNOWLEDGE  
MANAGEMENT**



**STRATEGY &  
PARTNERSHIPS**

All SPEAR activities are conducted jointly by ZFL and the UN-SPIDER Bonn Office!



# Awareness Raising & Outreach

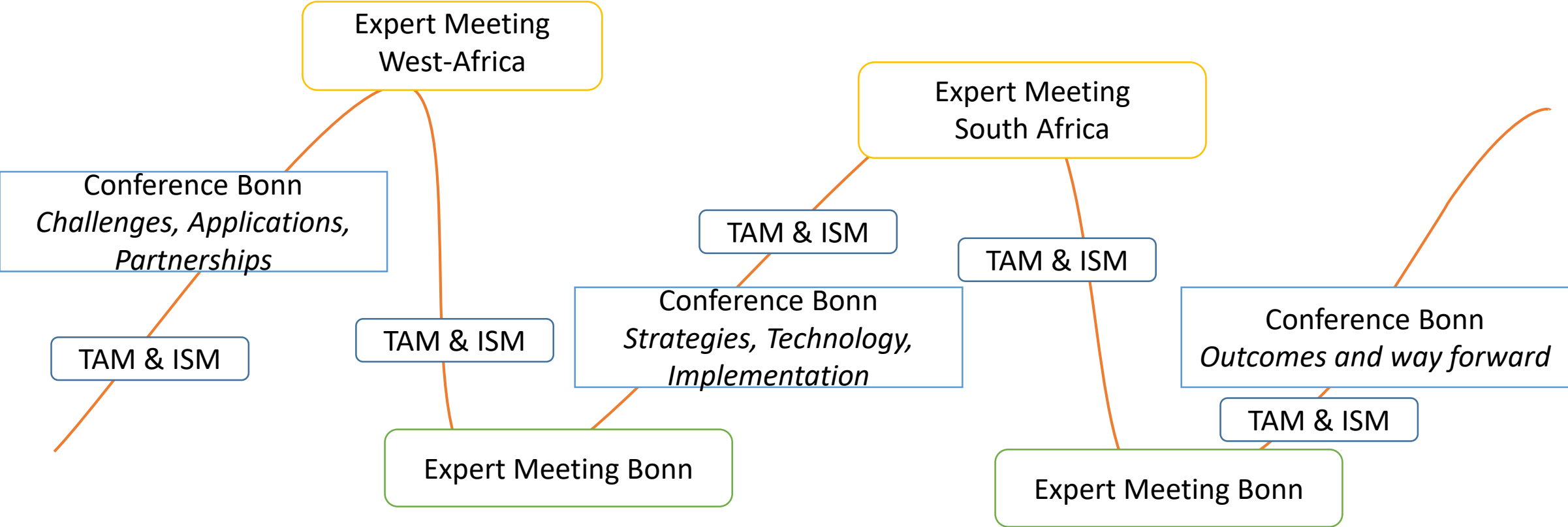
2019

2020

2021

2022

2023



Publications, Newsletter ...

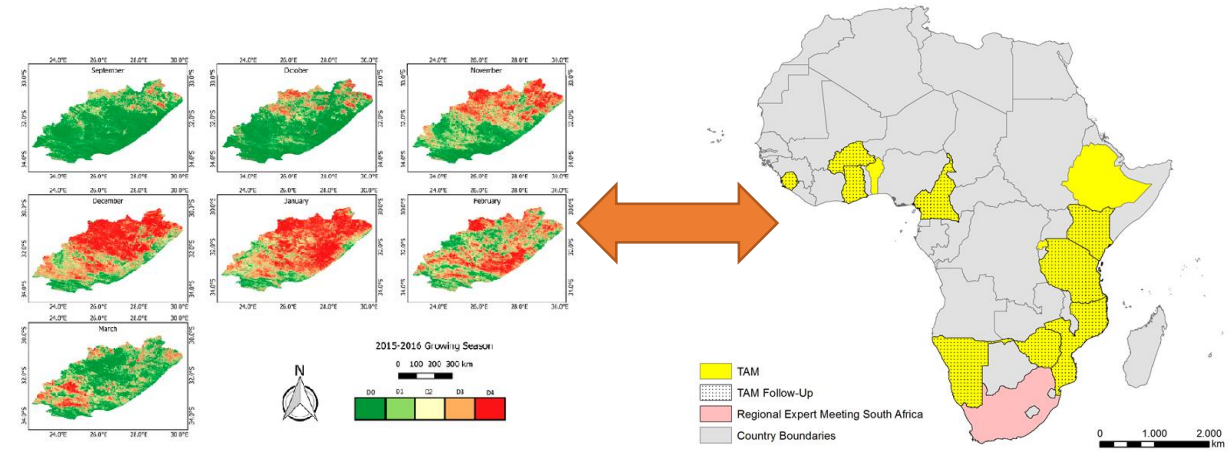




# Earth Observation

– Methods, Tools, Applications

- Test, update and develop recommended practices
- Tailor EO approaches to country needs
- Provide information and data to support UN-SPIDER missions
- Research and scientific guidance to support UN-SPIDER activities



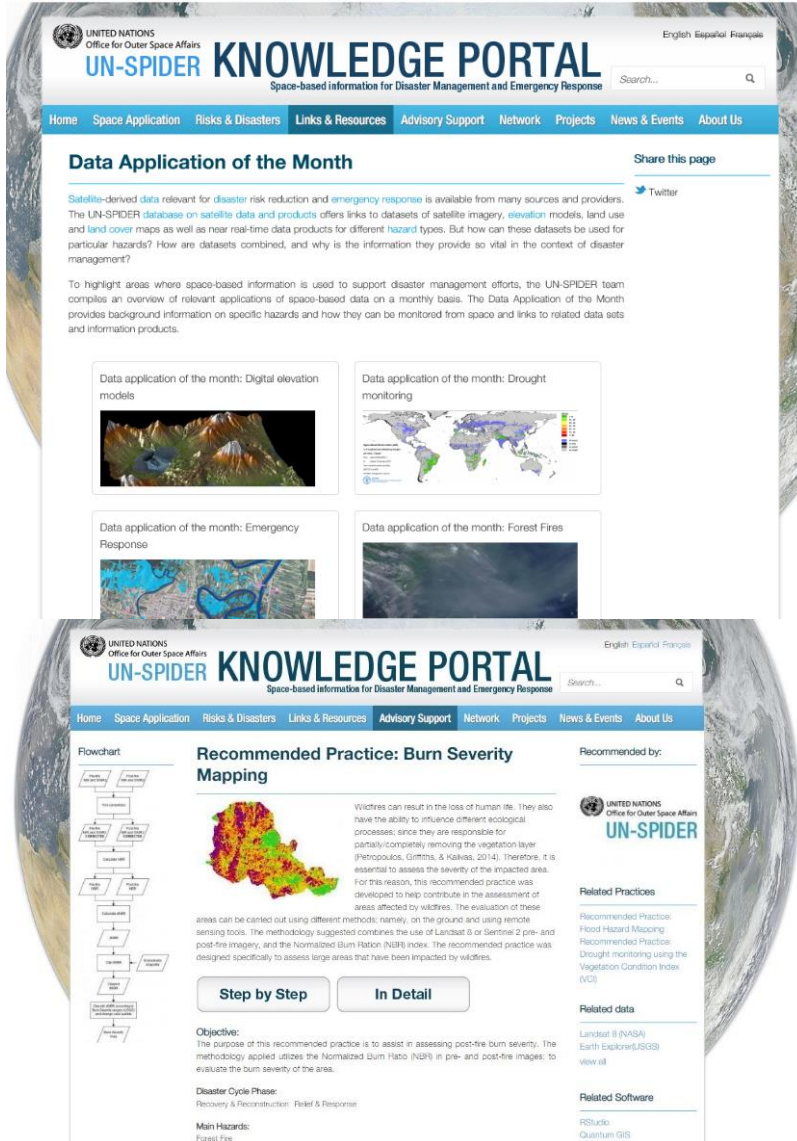
UN-SPIDER KNOWLEDGE PORTAL  
Space-based information for Disaster Management and Emergency Response

Recommended Practice: Drought monitoring using the Vegetation Condition Index (VCI)

Objective:  
The purpose of this recommended practice is to monitor the impacts of meteorological drought on natural vegetation (rainfed, rangeland & forest). Availability, simplicity, free of charge data, and research, practice and education requirements of both the end user...



# Knowledge Management



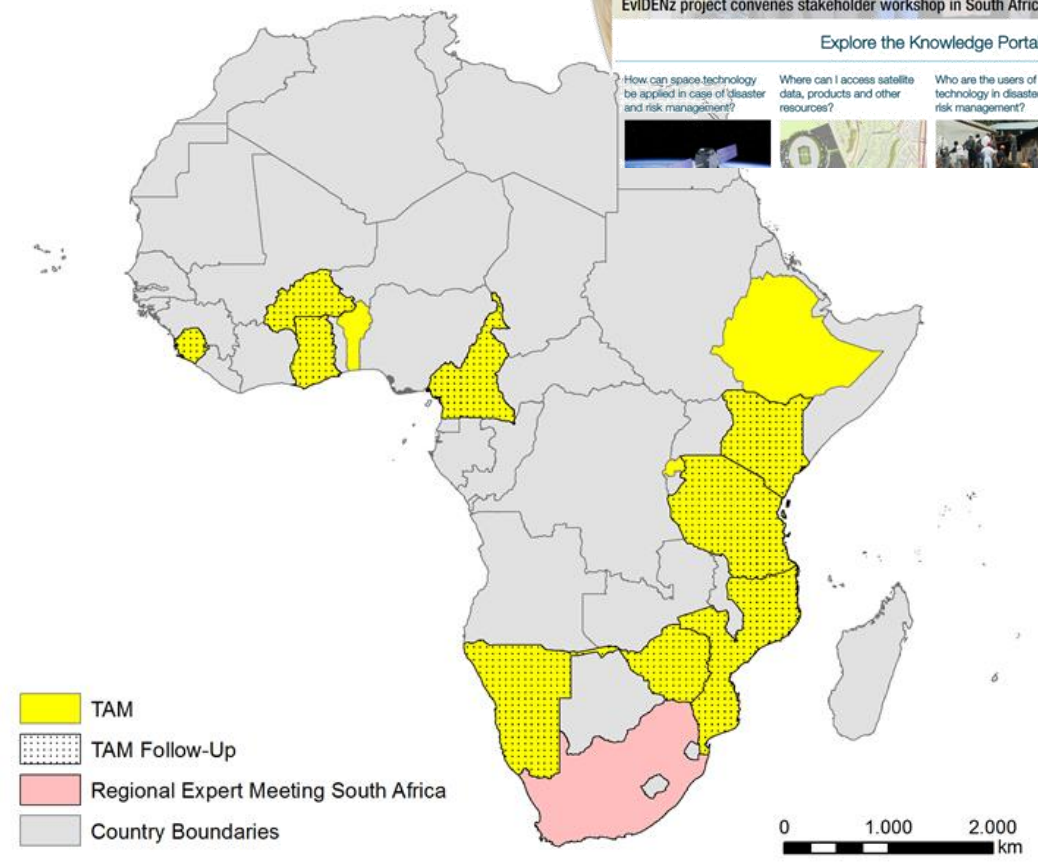
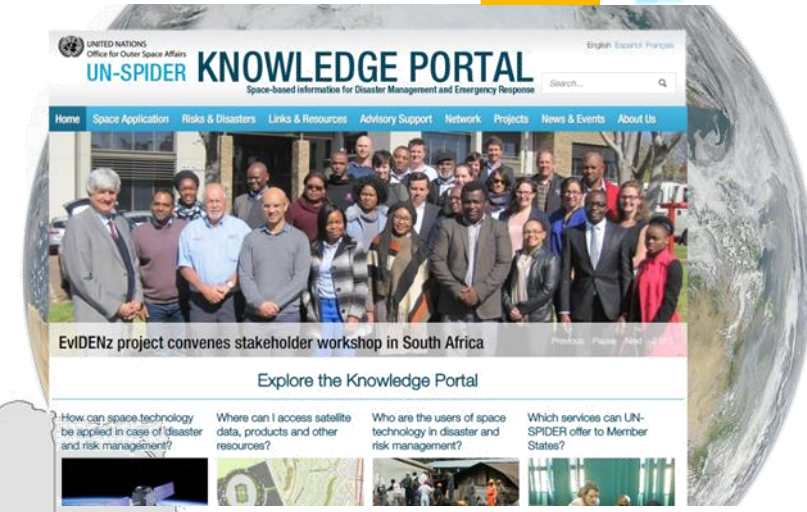
## The UN-SPIDER Knowledge Portal

- Central to all current and envisaged activities of UN-SPIDER
- Prepare and follow up on TAS activities such as trainings
- Supports learning process of target audience to get from data to knowledge through e.g.
  - Application examples
  - Step-by-step procedures for downloading, processing and analyzing data in various programming languages and software packages (Recommended Practices)
  - Curation of existing in-person and online learning opportunities (MOOC, webinars, etc.) to facilitate discovery for those interested in strengthening skills
- Future Plans
  - Develop an e-learning component for the KP based on existing material and new materials that will be developed as part of SPEAR
    - Based on different learning paths
    - Built in a modular way



# Technical Advisory Support

- 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
  - Tailored EO-based applications





# Strategy & Partnerships

- Support UN-SPIDERS ongoing involvement in different international and national networks and partnerships
- Build new partnerships with a focus on securing additional resources to strengthen SPEAR activities, like
  - Research activities in support of UN-SPIDER (e.g. development of new recommended practices)
  - Development of new functionalities and modules for the UN-SPIDER Knowledge Portal
  - Formation of consortia to apply for available project funding
- Form partnerships with different German stakeholders to strengthen national support for UN-SPIDER





# Thank You!

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