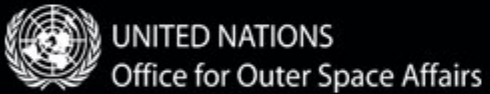


2022



ORGANIZED JOINTLY BY:



Federal Ministry
Republic of Austria
European and International
Affairs

Federal Ministry
Republic of Austria
Climate Action, Environment,
Energy, Mobility,
Innovation and Technology

Klaus Greve

EO for disaster and risk management. The SPEAR project and how it supports the UN-SPIDER programme



University of Bonn
Center for Remote Sensing of Land Surface

The SPEAR Project

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 Climate Action (BMWK)



Regional Focus: Africa

- 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

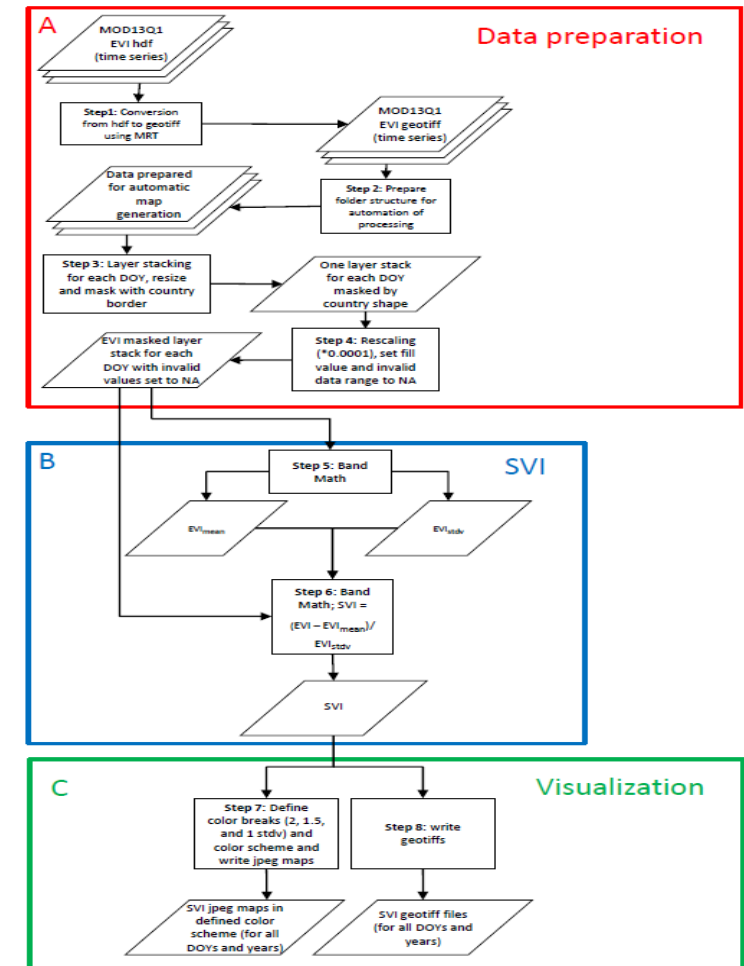
All SPEAR activities are conducted jointly by ZFL and the UN-SPIDER Bonn Office!



Earth Observation

– Methods, Tools, Applications

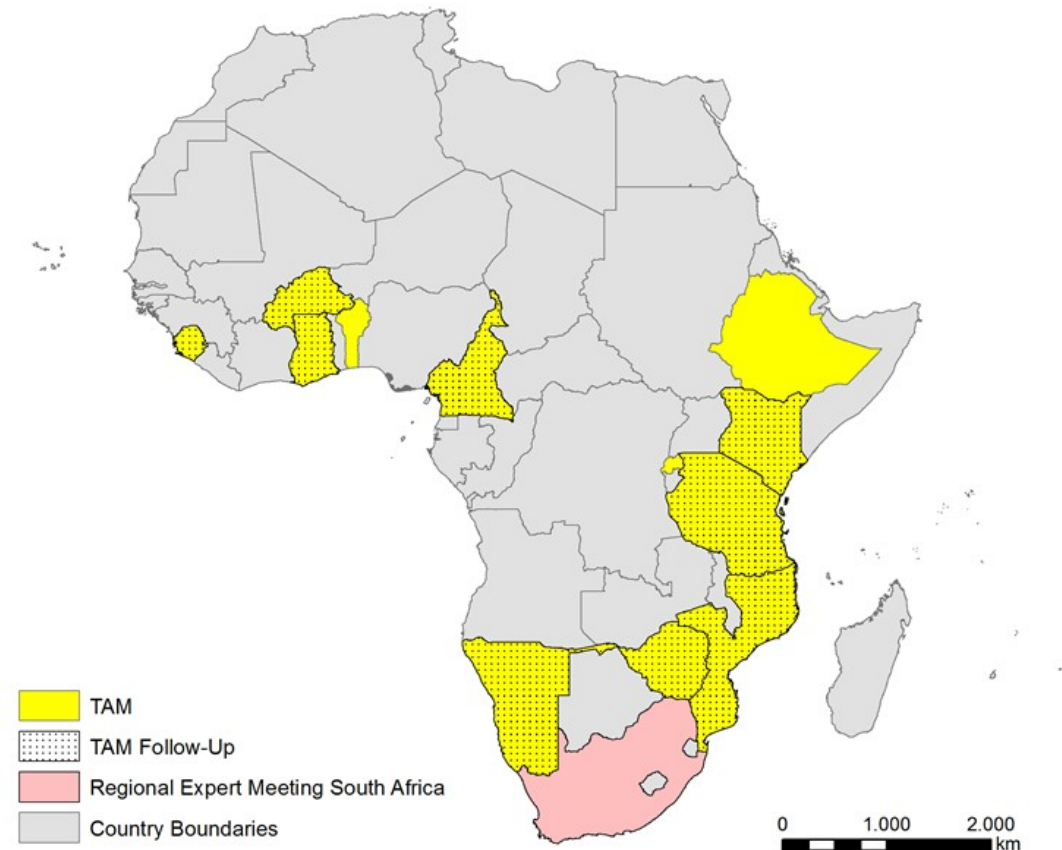
- Test, update and develop recommended practices
- Tailor EO approaches to country needs
- Provide information and data to support UN-SPIDER missions
- Research and scientific guidance to support UN-SPIDER activities





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



Awareness Raising & Outreach

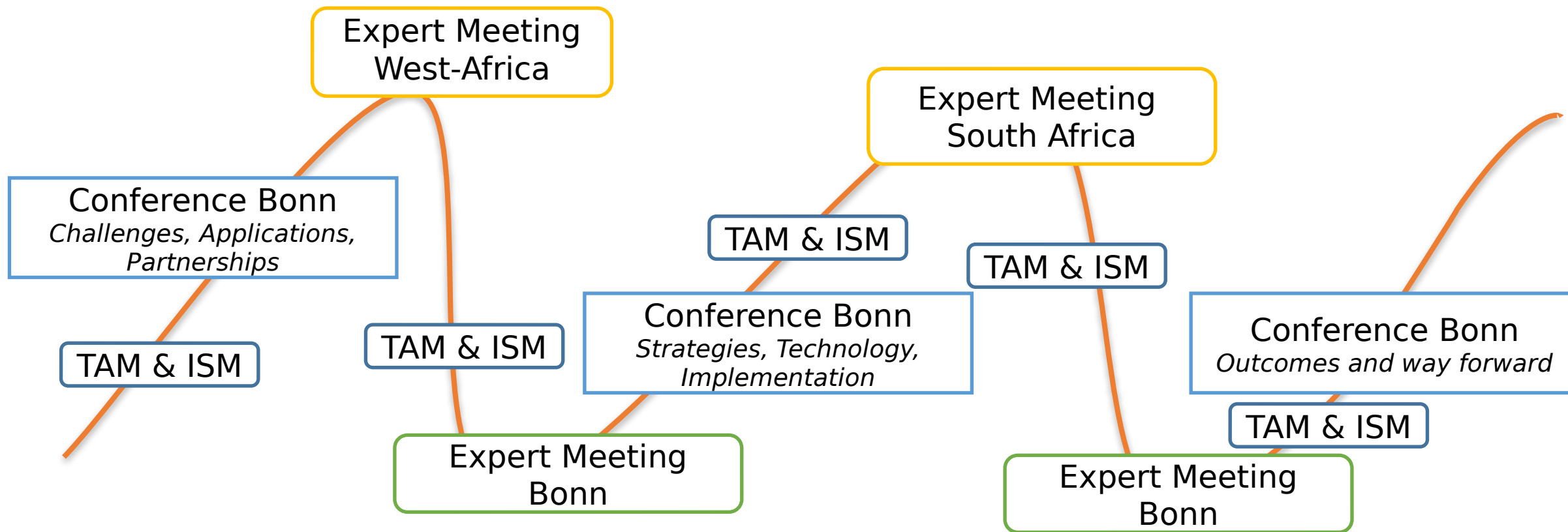
2019

2020

2021

2022

2023



Publications,
Newsletter



Awareness Raising & Outreach

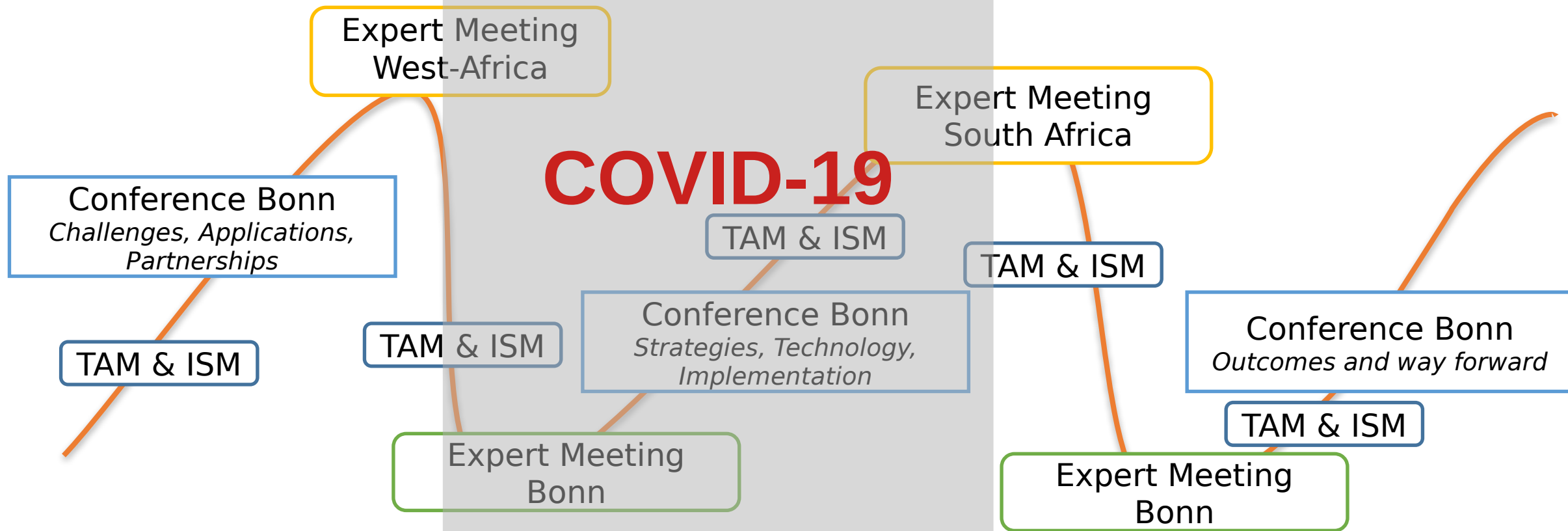
2019

2020

2021

2022

2023



Publications, Newsletter

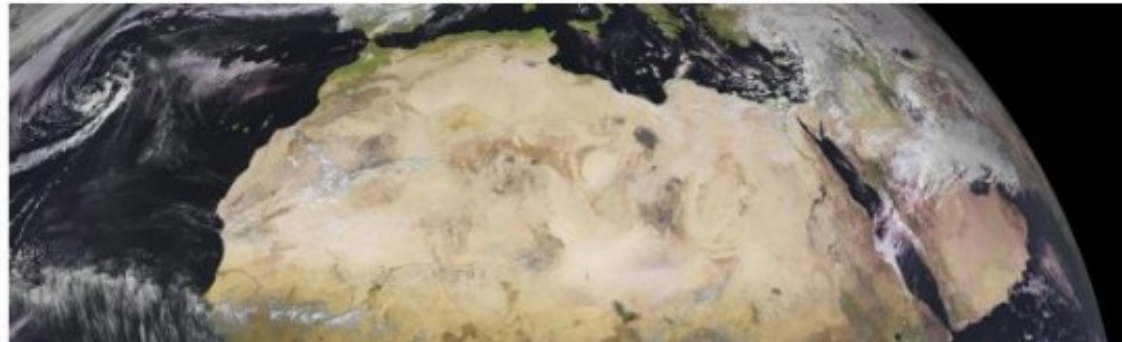


UNITED NATIONS
Office for Outer Space Affairs



UN-SPIDER Bonn International Conference (virtual)

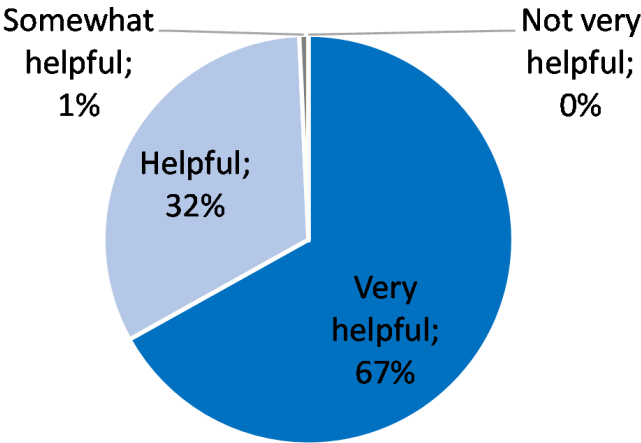
“Space-based Solutions for Disaster
Management in Africa: Networks and
Information Technologies
in times of crisis.”



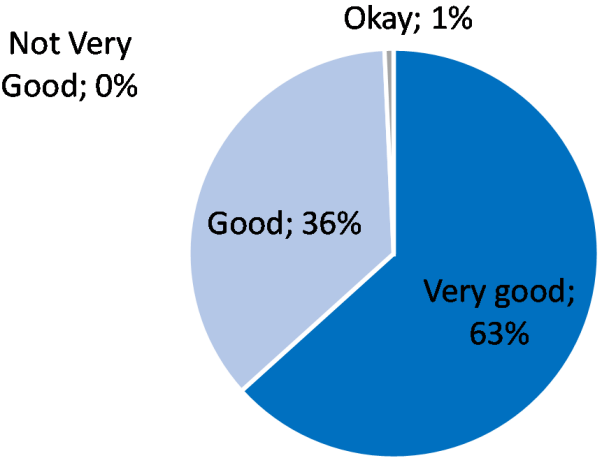
16 to 18 November 2021

Sum of all sessions

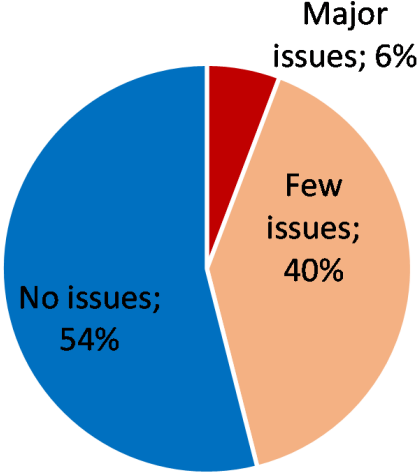
Was the session helpful for you?
(n=139)



How would you rate the quality of the presentations?
(n=139)

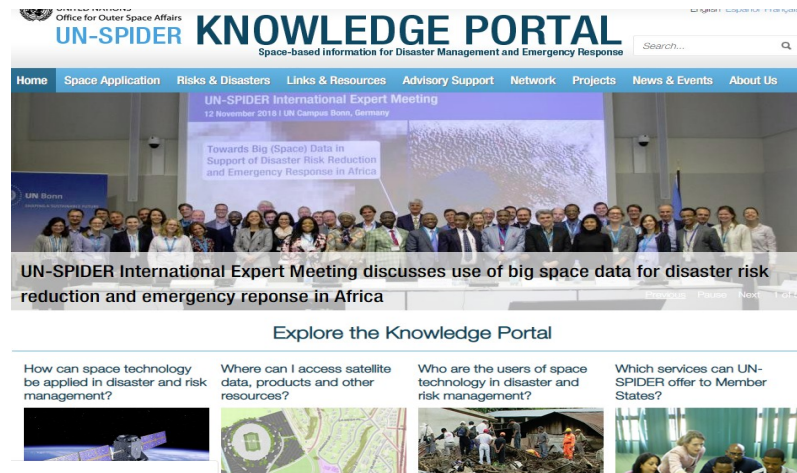


Did you encounter any technical issues [...]?
(n=139)





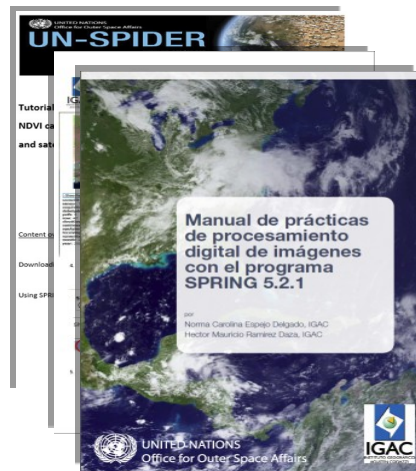
Knowledge Management



Enhancing the UN-SPIDER Knowledge Portal.

Design and implementation of an e-learning environment.

Guidelines for use of new tools and methods.



Nigeria Workshop

- 3-day workshop (Sep. 12th - 14th 2022)
- Organized by the National Space Research and Development Agency (NASRDA, Nigeria), UN-SPIDER and the Centre for Remote Sensing of Land Surfaces (ZFL)
- **Simulation of a transboundary flood** event using real data from previous floods
- Many national institutions were directly involved (NASDRA, NIHSA, NADMO, NEMA ...)



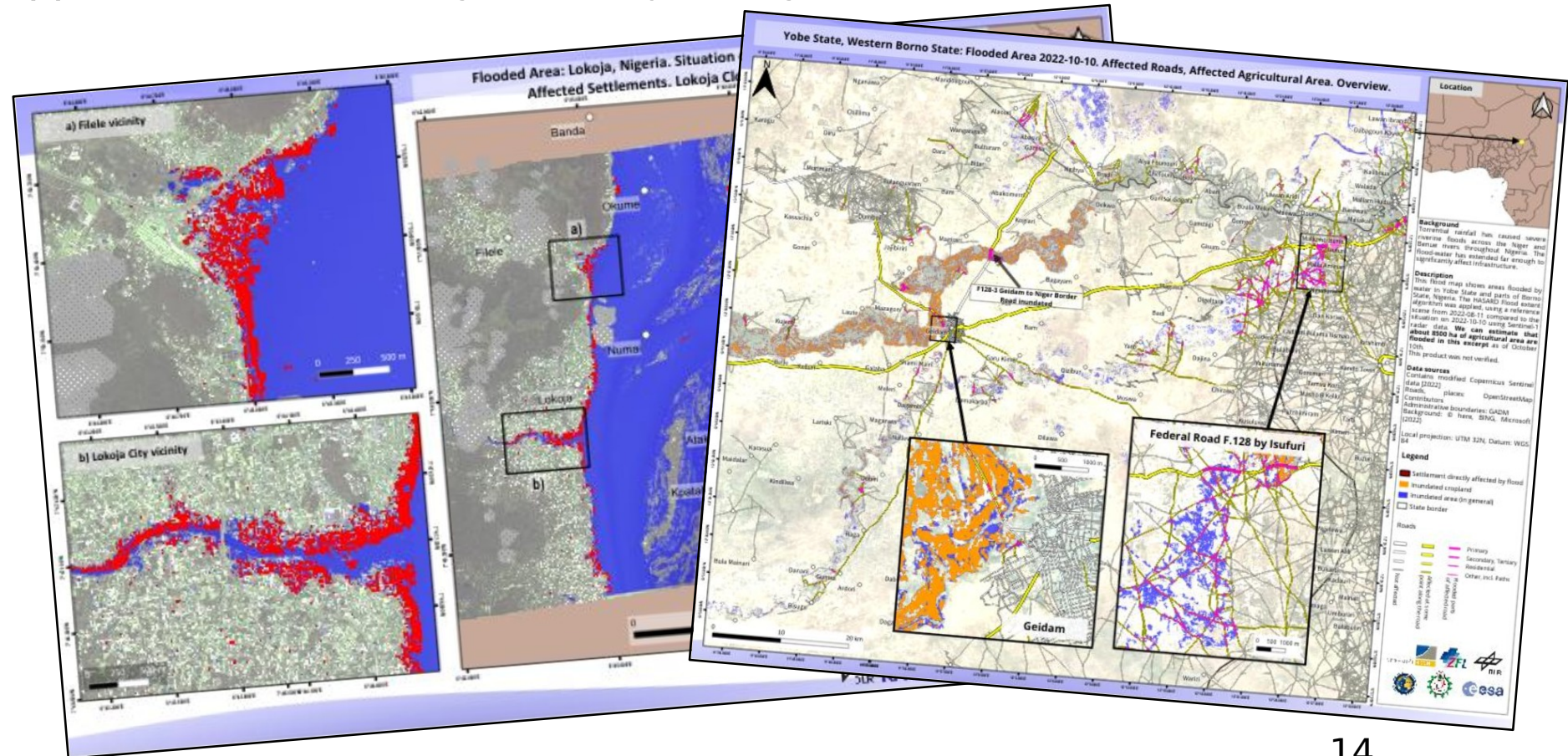
Charter Activation (Nigeria, Flood)



- Occurrence of a **major flood event** some days after the workshop
- The *International Charter Space and Major Disasters* was activated 2022-09-15 by NASDRA
 - ZFL supported the monitoring efforts by acting as a *Value Added Provider*



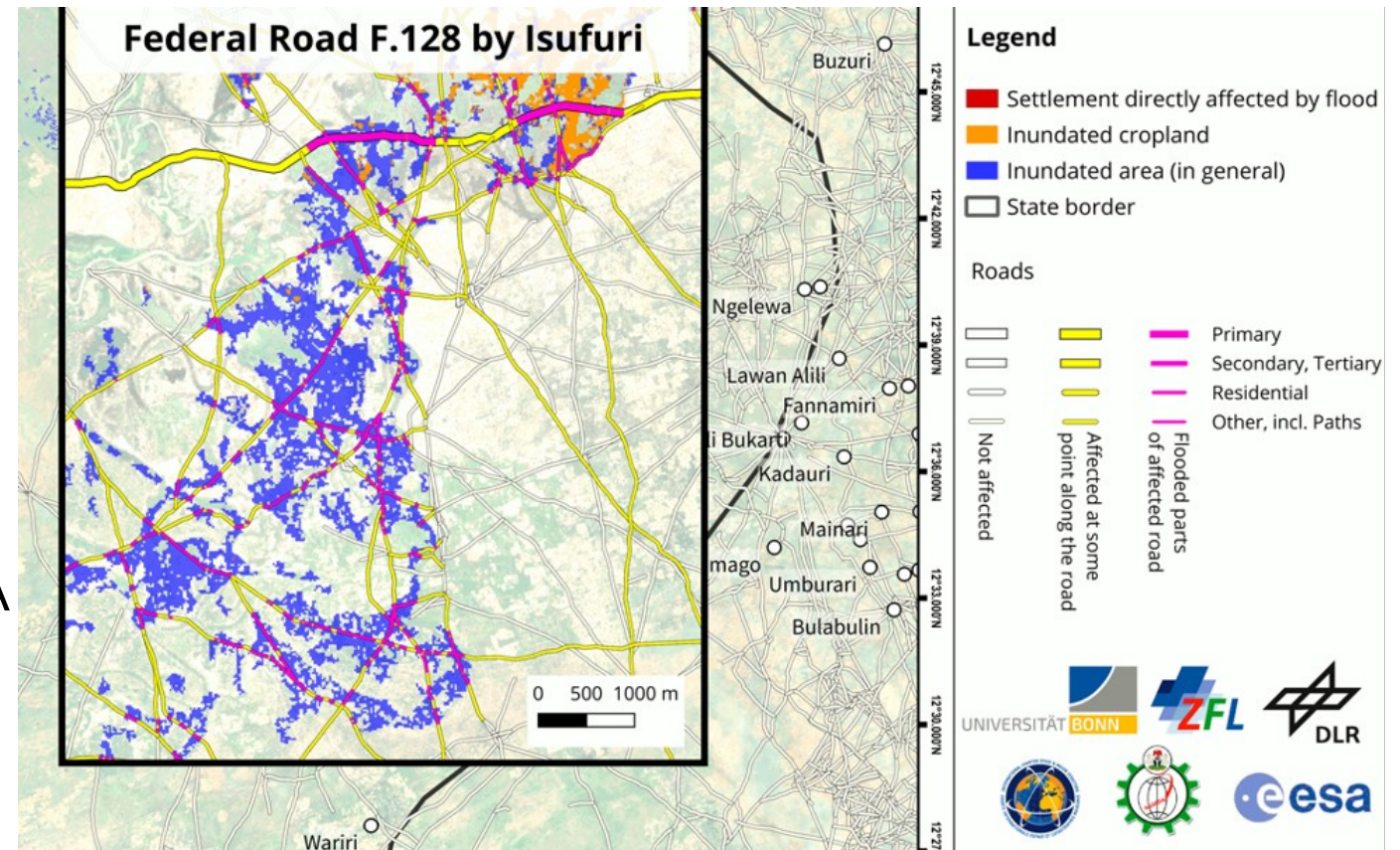
Link to the Charter activation



Charter Activation (Nigeria, Flood)

Support from ZFL

- Use of the Charter Mapper „HASARD“ Radar flood detection algorithm
- „Manual“ processing of optical data
 - Supervised classification
 - Water-sensitive indices (e. g. NDMI)
 -
- Identification of flooded cropland
- Deliniation of affected, major roads
- Exchange with colleagues from NASDRA throughout the Charter activation



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