

# Center for Remote Sensing of Land Surfaces (ZFL)

UN-SPIDER support activities and outlook

Klaus Greve, Adrian Strauch, Victor Korir, Jonas Schreier  
*ZFL, University of Bonn*

*UN-SPIDER Regional Support Offices Meeting November 2022*



# What is new in Bonn?

## Upcoming joint Professorship Uni Bonn + DLR

The process is almost finished, the new professor will start at Uni Bonn very soon



- **CESOC**
- aims at a digital Earth model (digital twin). It combines modeling of the coupled Earth system and its observations

**ECMWF** (European Centre for Medium-Range Weather Forecasts)  
...opened its office in Bonn, further strengthening  
Bonn's position as a strong GIS-location

# The S4ADRR Project – now ongoing

Overall goal:

**To strengthen the benefit from Copernicus in African countries, specifically for Disaster Risk Reduction and Management, through...**

- Collection and evaluation of user-requirements and user-feedback
- Development of tailored training material in different formats
- Organization of targeted training events



Collaborative framework:

- Partnership between DLR and Uni Bonn
- Close links to Copernicus
- Closely linked to UN-SPIDER activities
- Goal: Establish an African user-network



# The S4ADRR Project



## Sentinels-4-African-DRR

Copernicus User Uptake in Africa via technical support in the field of Disaster Management and Disaster Risk Reduction

Training Module Handbook

Milestones reached:

- First version of the **Training Module Handbook** finished and distributed to select **test-users**
- Some initial Feedback received
- Work on the second version has started

If you are interested in the second round, **please let us know!**

## General Module

### Using Remote Sensing, Earth Observation Data to Monitor and Assess Natural Disasters

#### Overview

There are many questions that actors working with natural disasters are impacted by an event? How likely are certain event-affected populations be safely evacuated to? How likely are they to be impacted? Earth Observation (EO) data can help to answer these and other questions that arise before, during and after natural disasters. EO data can be provided in a timely manner with a high spatial and temporal resolution and is consistent over different periods of time. It has also proven to be useful in remote areas and in areas that aren't accessible during a disaster situation. EO data is therefore widely used in different stages of the disaster management

## Floods

### Using GloFAS for Flood Monitoring: Website Overview

#### Flood Module

Using this document, you will get a general understanding of the many functions and datasets of the GloFAS map-viewer. Some especially useful aspects will be explained more in-depth in further documents.



Additionally, GloFAS offers more [advanced video tutorials and webinars](#), showcasing some aspects of the portal in greater detail. After learning the basics, the video tutorials are a good place for further information.

## Droughts

### Observatory (GDO) Overview

...s of the Copernicus GDO. To get an overview, you can open the [GDO website](#) and follow the instructions on your own computer.



...to get an overview of ongoing or past droughts. The GDO provides a map view, written reports and analyses on drought conditions, a drought event database as well as a download portal. We will first focus on the map viewer, as it provides a fast and reliable way to assess drought conditions across the world.

# The S4ADRR Project

## Virtual training events coming up

- First event planned for the first half of **December 2022**
  - Focus on Copernicus Services in the natural disaster context
- Another event planned for the **beginning of next year (2023)**

**We are open for thematic suggestions!**  
(Within a natural disaster context)



# Nigeria Workshop

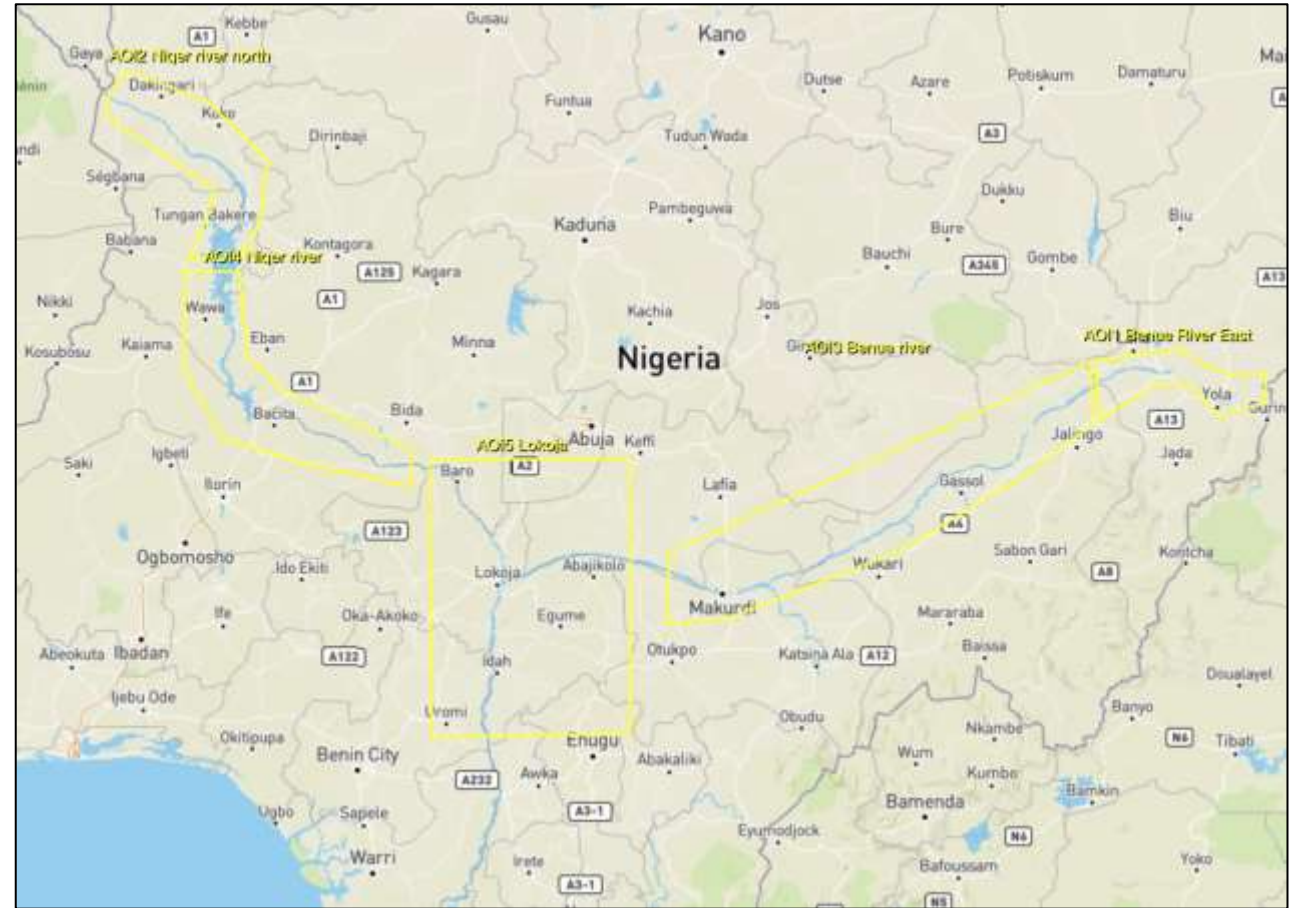
- 3-day workshop (Sep. 12th - 14th 2022)
- Organized by the National Space Research and Development Agency (NASRDA, Nigeria), UN-SPIDER and the Centre for Remote Sensing of Land Surfaces (ZFL)
- **Simulation of a transboundary flood** event using real data from previous floods
- Many national institutions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





# Nigeria Workshop

- 2 days of flooding simulation
- The new *Charter Mapper* cloud computing platform was tested
- Strengths and weaknesses of the tool in its current state could be identified
- Live feedback and troubleshooting, in-person and virtual
- **Overall helpful workshop outcomes**



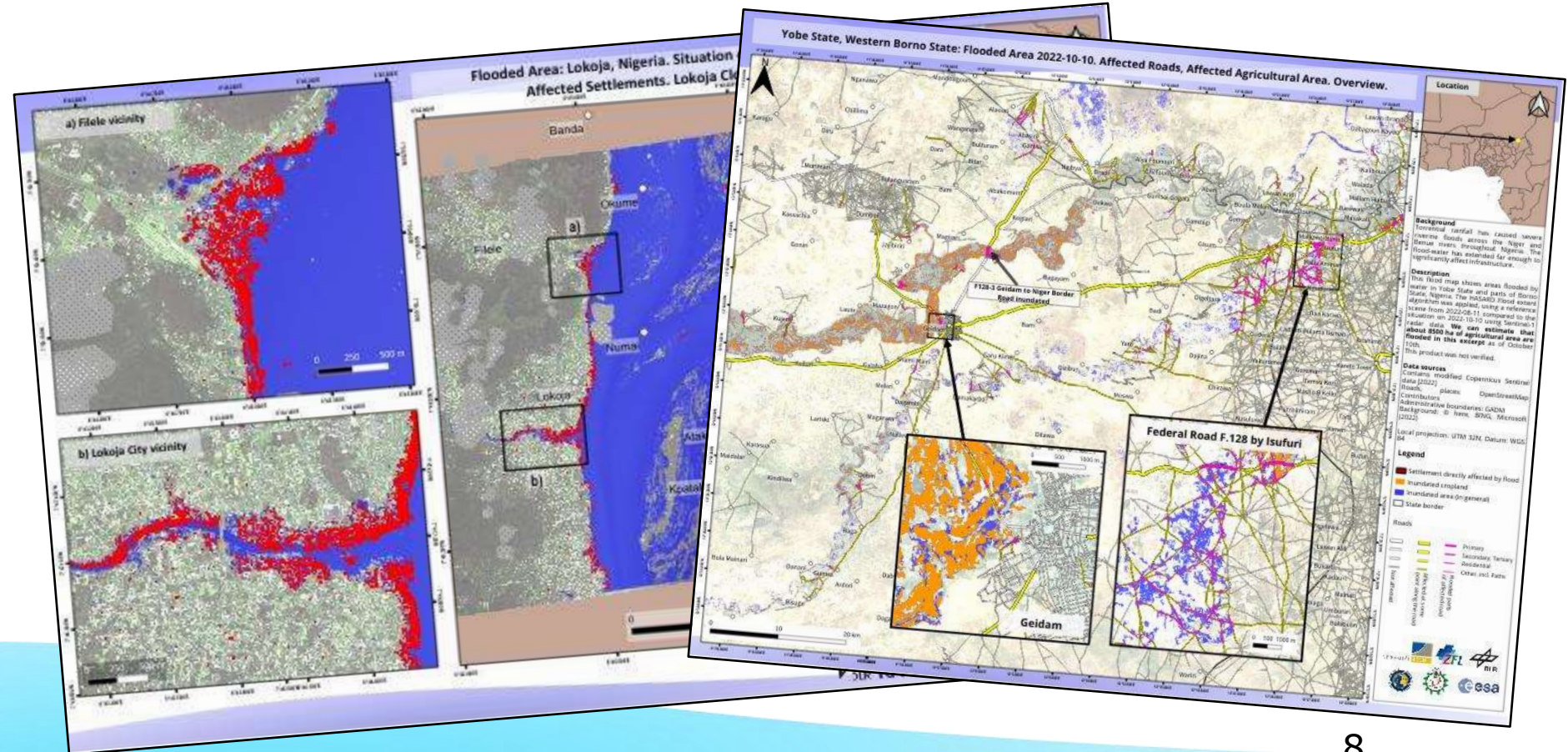


# Charter Activation (Nigeria, Flood)

- Occurrence of a **major flood event** some days after the workshop
- The *International Charter Space & 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

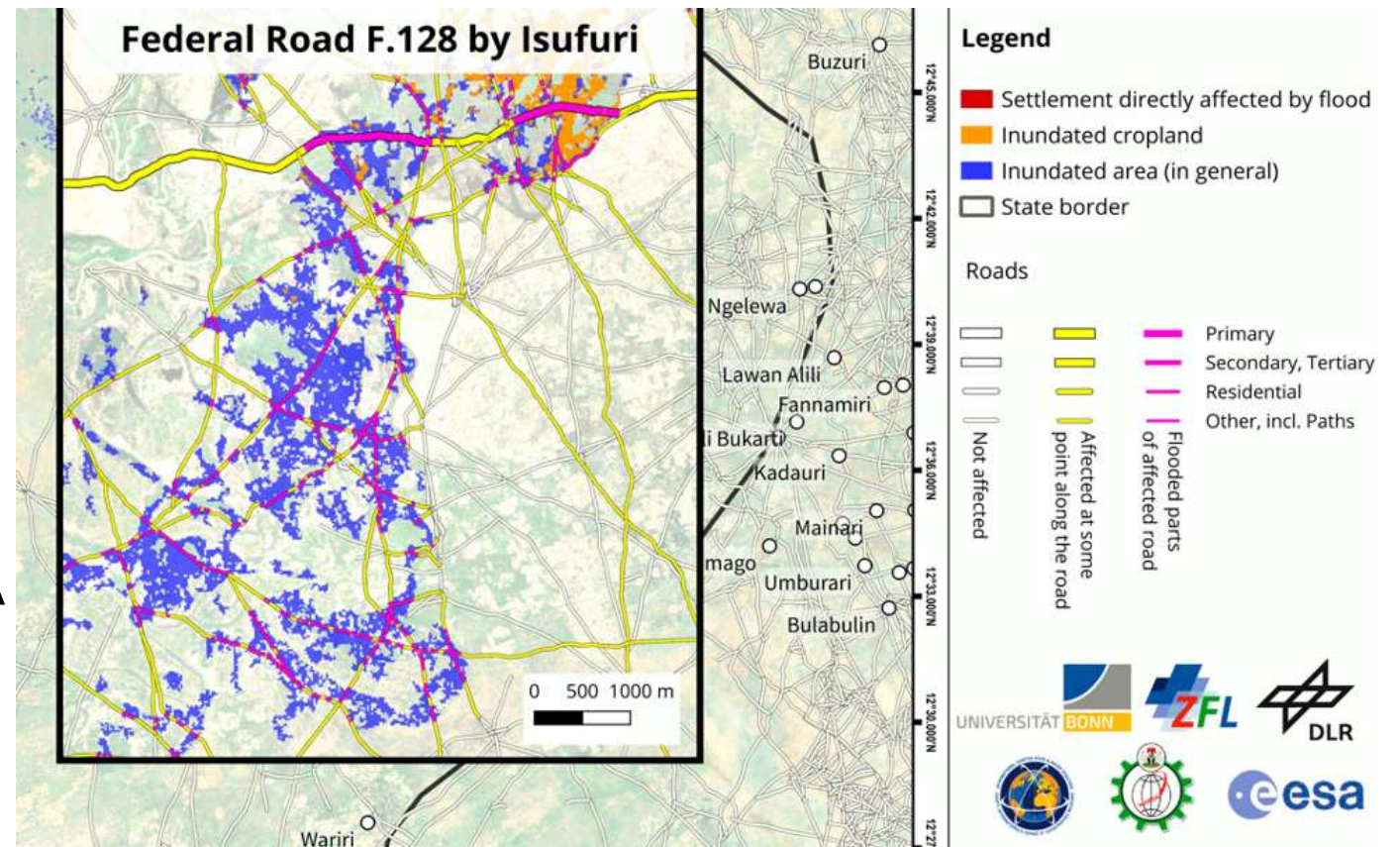




# Charter Activation (Nigeria, Flood)

## 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
- Delineation of affected, major roads
- Exchange with colleagues from NASDRA throughout the Charter activation



# Knowledge Portal

- UN-SPIDER Knowledge Portal (KP) has many users
  - May be the first source of information for many visitors (Recommended Practices, RP)
- Ongoing review and updates on some RPs
- eLearning capabilities could further improve and extend the portal
- Additional funding needed to significantly support an extension of the KP



# Outlook

- **S4ADRR** will continue into next year
  - A training event is coming up **this December** (Suggestions?)
- Supporting upcoming UN-SPIDER activities in Africa (Missions, trainings, ...)
- Discussions have started regarding a follow-up period for the SPEAR activity

## Knowledge Portal

- Updating, reviewing current recommended practices
  - Possibly development of new RPs
- *Practical uses:* Flood and drought, building on outcomes of S4ADRR (and other activities)
  - Focus on African examples



# Suggestions from our Side

## Suggestions / Discussion points

- Setting up an **academic branch within the RSO network**
  - Acquiring funding for joint projects
  - Possible focus on eLearning (Trainings, MOOCs, ...)
- Setting up a **register of experts** for future missions
  - Could significantly improve the planning-process of missions e. g. to Africa

# Thank You for Your Attention

**Contact information:**

Klaus Greve, [klaus.greve@uni-bonn.de](mailto:klaus.greve@uni-bonn.de)

Adrian Strauch, [adrian.strauch@uni-bonn.de](mailto:adrian.strauch@uni-bonn.de)

Jonas Schreier, [jonas.schreier@uni-bonn.de](mailto:jonas.schreier@uni-bonn.de)

