Center for Remote Sensing of Land Surfaces (ZFL)

UN-SPIDER support activities, Covid-19 impacts and work plan for 2021

Klaus Greve, Adrian Strauch, Jonas Schreier (University of Bonn)
Valerie Graw (Ruhr-University Bochum)

10th Annual UN-SPIDER Regional Support Offices Coordination Meeting
November 2020
CESOC-Founding: Together we see more

Universities of Bonn and Cologne and Forschungszentrum Jülich found the Center for Earth System Observation and Computational Analysis (CESOC)

The University of Bonn, the University of Cologne and Forschungszentrum Jülich have founded a joint Center for Earth System Observation and Computational Analysis (CESOC). This creates a high-profile international focal point in the Rhineland for global Earth system observation with the aim of making strides toward a comprehensive understanding of our planet and better predicting changes.

New UN Organisation for Bonn in 2021

Fri, 09/18/2020 - 11:45

The Global Geodetic Centre of Excellence (GGCE), a new UN organisation will open on the UN Campus in Bonn in 2021.

All Access Bonn: The proposed new ECMWF location at the heart of Europe – The German offer
RSO Activities 2019/20

• SPEAR Initiative is supporting the UN-SPIDER Bonn office from 2019-2023
• Since 2020, close collaboration with Ruhr-University Bochum (GER)

• Improvement and development of Recommended Practices
• Support of UN-SPIDER Missions to African countries
• Providing maps and data to African countries
• Support organization of UN-SPIDER events in Bonn and Africa
• Participation in the production of the UNOOSA MOOC
Global Drought Monitoring with GEE

Drought monitoring using the Standardized Vegetation Index (SVI)

UN-SPIDER Recommended Practice
SPEAR Team during Activation of the International Charter Floods in Sudan, August 2020

Collaboration between University of Bonn, Ruhr-University Bochum and UN-SPIDER to support Sudan
SPEAR Team during Activation of the International Charter Floods in Sudan, August 2020

During the Activation

Disaster Monitoring
Response
Support Disaster Management

Flooded area and agricultural cover affected on East Nile/ Umum Dawn/ Soba Al Hilla, Sudan based on Pleiades data

Estimated Number of People Directly Affected by the Flood: Al Jazirah, Al Qadarif, Kassala, Khartoum, Sennar and White Nile States Based on NOAA VIIRS 5 Day Maximum Flood Extent (2020-08-18 to 08-22)

State | District | People affected | Area [km²] | Flooded [ha]
--- | --- | --- | --- | ---
Al Jazirah | | 252,268 | 248 | 3,540
Al Jazirah | Al Kafin | 29,953 | 2,407 | 133
Al Jazirah | Al Neil | 20,957 | 2,268 | 174
Al Jazirah | Al Neil | 44,615 | 3,946 | 376
Al Jazirah | East of Kassala | 29,953 | 3,946 | 50
Al Jazirah | North of Kassala | 124,954 | 3,746 | 416
Al Jazirah | South of Kassala | 5,285 | 3,036 | 87
Al Jazirah | West of Kassala | 23,953 | 3,622 | 124
Al Qadarif | | 276,112 | 60,663 | 2,966
Al Qadarif | Al Fime | 3,056 | 2,467 | 91
Al Qadarif | Al Fime | 18,373 | 3,192 | 513
Al Qadarif | Al Qadarif | 2,373 | 3,036 | 1
Al Qadarif | Al Qadarif | 2,373 | 14,122 | 162
Al Qadarif | AL Qadarif | 2,373 | 95,790 | 2,976
Kassala | | 59,836 | 49,696 | 3,979
Kassala | Al Gash | 14,266 | 53,952 | 573
Kassala | Harar rashid | 273,133 | 3,807 | 5
Kassala | Kassala | 282,133 | 2,857 | 1
Kassala | North of Kassala | 28,642 | 3,925 | 428
Kassala | South of Kassala | 3,250 | 14,488 | 417
Khartoum | | 3,056 | 515 | 30
Khartoum | Al Kaffa | 2,37 | 3,192 | 513
Khartoum | Khor Khashem | 66,373 | 3,213 | 27
Khartoum | Khor Khashem | 207,452 | 4,509 | 189
Khartoum | Shur el Nile | 8,266 | 3,400 | 6
Khartoum | Shur el Nile | 37,476 | 7,324 | 89
Khartoum | South of Kassala | 62,136 | 606 | 79
Khartoum | Um Barka | 38,964 | 2,029 | 33
Sennar | | 254,342 | 40,324 | 4,035
Sennar | Al Fime | 3,265 | 2,857 | 1
Sennar | Sennar | 75,613 | 3,594 | 857
White Nile | | 65,314 | 4,036 | 1,694
White Nile | Al Qadarif | 152,401 | 39,184 | 598
White Nile | Al Qadarif | 3,233 | 3,334 | 166
White Nile | Al Qadarif | 5,189 | 4,866 | 399
White Nile | Al Qadarif | 5,764 | 5,521 | 21
White Nile | Kordofan | 49,720 | 17,185 | 1,064
Total | | 1,229,387 | 33,561 | 10,372

Description

The flood situation in Sudan has increased considerably, affecting much of the country since late August. Across the country, flooding has affected more than 250,000 people in the Al Jazirah, Al Qadarif, Kassala, Khartoum, Sennar and White Nile states. In total, over one million people are currently affected.

Data sources

- NOAA VIIRS for flood extent data
- WorldPop for population data
- Shapefiles for administrative boundaries
- MISR data for flood extent

Background

Heavy rainfall in Sudan has caused flooding in various parts of the country in August 2020. Al Jazirah, Al Qadarif, Kassala, Khartoum, Sennar and White Nile states were heavily affected.

Location

The flood situation in Sudan has increased considerably, affecting much of the country since late August. Across the country, flooding has affected more than 250,000 people in the Al Jazirah, Al Qadarif, Kassala, Khartoum, Sennar and White Nile states. In total, over one million people are currently affected. The area flooded is shown.

Disaster Monitoring
Response
Support Disaster Management
SPEAR Team during Activation of the International Charter Floods in Sudan, August 2020

After the Activation

Recovery → Prevention and Mitigation → Preparedness

Close exchange with Ministry of Agriculture and Natural Resources in Sudan to understand the process of recovery and the next steps

How can EO support?

Online Training for Sudan is currently planned with SPEAR team. Current solutions complex.

KP as key tool during the dependency on virtual solutions and trainings
Locust: Monitoring across-scales with free and open data and tools

BFAST-GEE web app

https://andreim.users.earthengine.app/view/bfastmonitor
Covid-19 impacts and adjustments

• 2020:
  • Several planned missions to African countries and expert meetings could not take place
  • Virtual alternatives have been implemented as compensation
    • Virtual expert meeting in July 2020 organized by ZFL and UN-SPIDER Bonn
    • Several telecons and training events with representatives of African countries performed by UN-SPIDER
    • Virtual training event planned with Sudan

• 2021:
  • Explore new ways to make use of virtual and online formats to replace in-person meetings
  • Support UN-SPIDER by strengthening e-learning capabilities of the knowledge portal
Work Plan 2021

SPEAR project activities continue in 2021

• Support of UN-SPIDER Missions in Africa and Events in Bonn and Africa
  • If still no in-person meetings possible alternative virtual events

• Identify potential partners and funding for development of e-learning components for the UN-SPIDER Knowledge Portal

• New Copernicus user uptake project together with DLR
  • Improve uptake of Copernicus products and services in Africa for disaster management and disaster risk reduction
  • Develop guidelines, training materials and courses that can also support UN-SPIDER missions and become part of the Knowledge Portal