

# Center for Remote Sensing of Land Surfaces (ZFL)

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

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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.

### ARTICLE

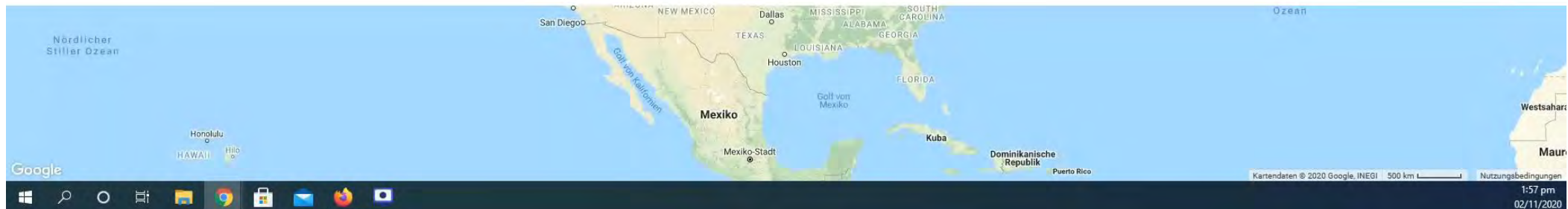
## All Access Bonn: The proposed new ECMWF location at the heart of Europe – The German offer

- 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



## 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

13 AUGUST 2020

## Flood in Sudan

[Browse activations on map](#) ▶



Type of Event:	Flood
Location of Event:	Sudan
Date of Charter Activation:	2020-08-13
Time of Charter Activation:	15:49
Time zone of Charter Activation:	UTC+02:00
Charter Requestor:	UNOOSA/UN-SPIDER on behalf of Ministry of Agriculture and Natural Resources in Sudan
Activation ID:	667
Project Management:	Ruhr-University Bochum

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

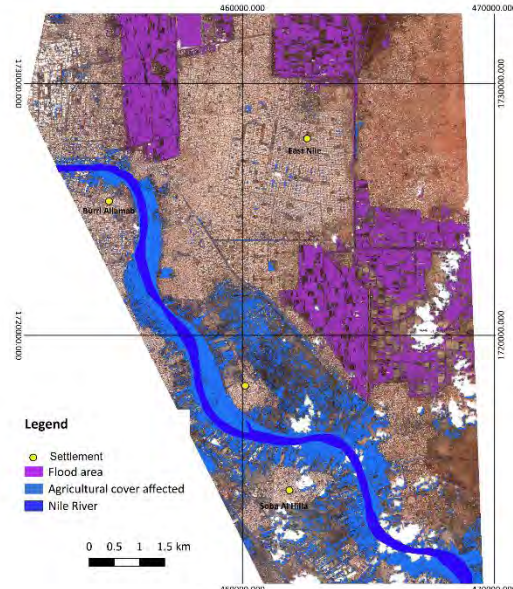
Disaster Monitoring

Response

Support Disaster Management

Flooding area on East Nile/ Umm Dawn/ Soba Al Hilla, Sudan based on CBERS-4 data (Period: July 16th - August 11th 2020)

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



Location

**Background**  
Torrential rainfall in Sudan has caused flooding across much of the country since 4 August. Among others, the region around the cities Omdurman and Khartoum was affected.

**Description**  
This flood map shows areas covered by water. Change detection analysis was calculated based on Pleiades data, date: 2020-08-16. This map has not been validated.

**Data sources**  
Includes Pleiades material CNES (2020).  
Overview-map: OpenStreetMap Contributors;  
Administrative boundaries: GADM

Local projection: UTM 36N, Datum: WGS 84

Affected People: 148, 562

Agricultural area affected 43.1 km<sup>2</sup>

Affected people calculated based on the spatial distribution of population 2020.  
Dataset provider: Worldpop ([www.worldpop.org/](http://www.worldpop.org/)).

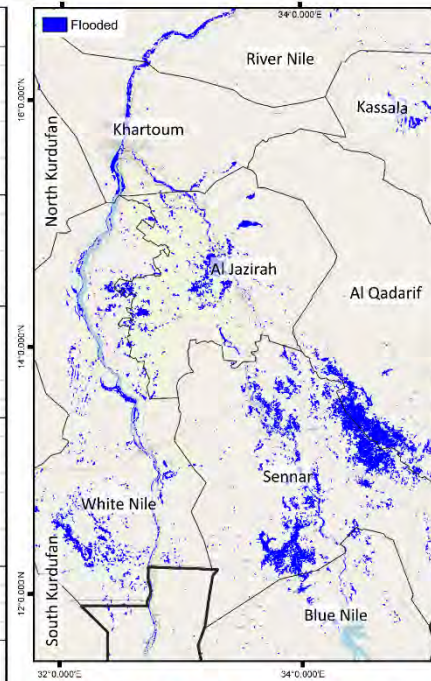


Overview map: OpenStreetMap Contributors  
Background: OpenStreetMap Contributors

Local projection: UTM 36N, Datum: WGS 84

Estimated Number of People Directly Affected by the Flood: Al Jazirah, Al Qadiri, 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 [km <sup>2</sup> ]	Flooded [km <sup>2</sup> ]
Al Jazirah	Total	315 653	24 230	1 434
	Al Kamlin	29 513	1 497	113
	Al Mahagil	46 614	3 369	326
	East al Gazera	25 955	4 898	60
	North al Gazera	124 454	2 746	456
	Sharq al Gazera	50 383	6 424	228
Al Qadiri	South al Gazera	5 211	2 674	47
	Um Al Gura	33 524	2 622	204
	Total	126 112	64 063	2 350
Al Qadiri	Al Faw	1 254	22 467	31
	Al Fushqa	18 373	10 912	352
	Al Qadaref	123	3 434	1
	Al Galabat	2 713	14 222	162
	Al Rahd	103 648	13 029	1 805
Kassala	Total	38 816	45 618	1 373
	Al Gash	14 086	15 052	521
	Hamashkorieb	373	5 897	3
	Kassala	382	2 857	3
	Nahr Atbara	20 342	7 323	428
Khartoum	Setet	3 633	14 488	417
	Total	550 964	21 143	535
	Karary	11 627	5 212	23
	Khartoum	89 373	323	27
	Khartoum Bahri	163 432	4 959	189
Sennar	Omdurman	8 186	1 490	6
	Sharg En Nile	37 476	7 224	89
	South Khartoum	102 216	906	79
	Um Badda	138 654	1 029	121
	Total	214 142	40 324	4 035
White Nile	Ad Douiem	32 334	9 184	366
	Al Gutaina	32 103	7 486	399
	Al Jabalian	28 744	6 129	255
	Kosti	49 220	17 185	1 164
Total	Total	1 388 087	235 361	11 912



Location

**Background**  
Torrential rainfall in Sudan has caused flooding across much of the country in August 2020. Al Jazirah, Al Qadiri, Kassala, Khartoum, Sennar and White Nile States were heavily affected.

**Description**  
This flood map shows flooded areas in the mentioned States. Flood data from NOAA VIIRS are visualized. The areas marked in blue were affected by flooding any time between 2020-08-18 and 08-22. The table on the left side shows the number of directly affected people per district based on WorldPop population data and GADM administrative boundaries. In total, over one million people are affected. Khartoum state is affected the most. Furthermore, the area flooded is shown.

**Data sources**  
Includes NOAA-VIIRS data, NOAA  
Includes WorldPop population data, [www.worldpop.org](http://www.worldpop.org/)  
Map backgrounds: OpenStreetMap Contributors

Local projection: UTM 36N, Datum: WGS 84



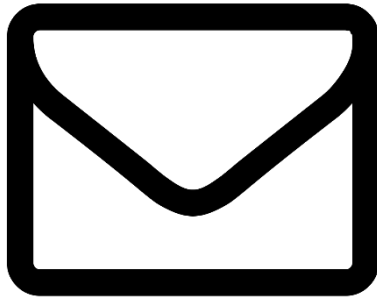
# SPEAR Team during Activation of the International Charter Floods in Sudan, August 2020

## After the Activation

Recovery

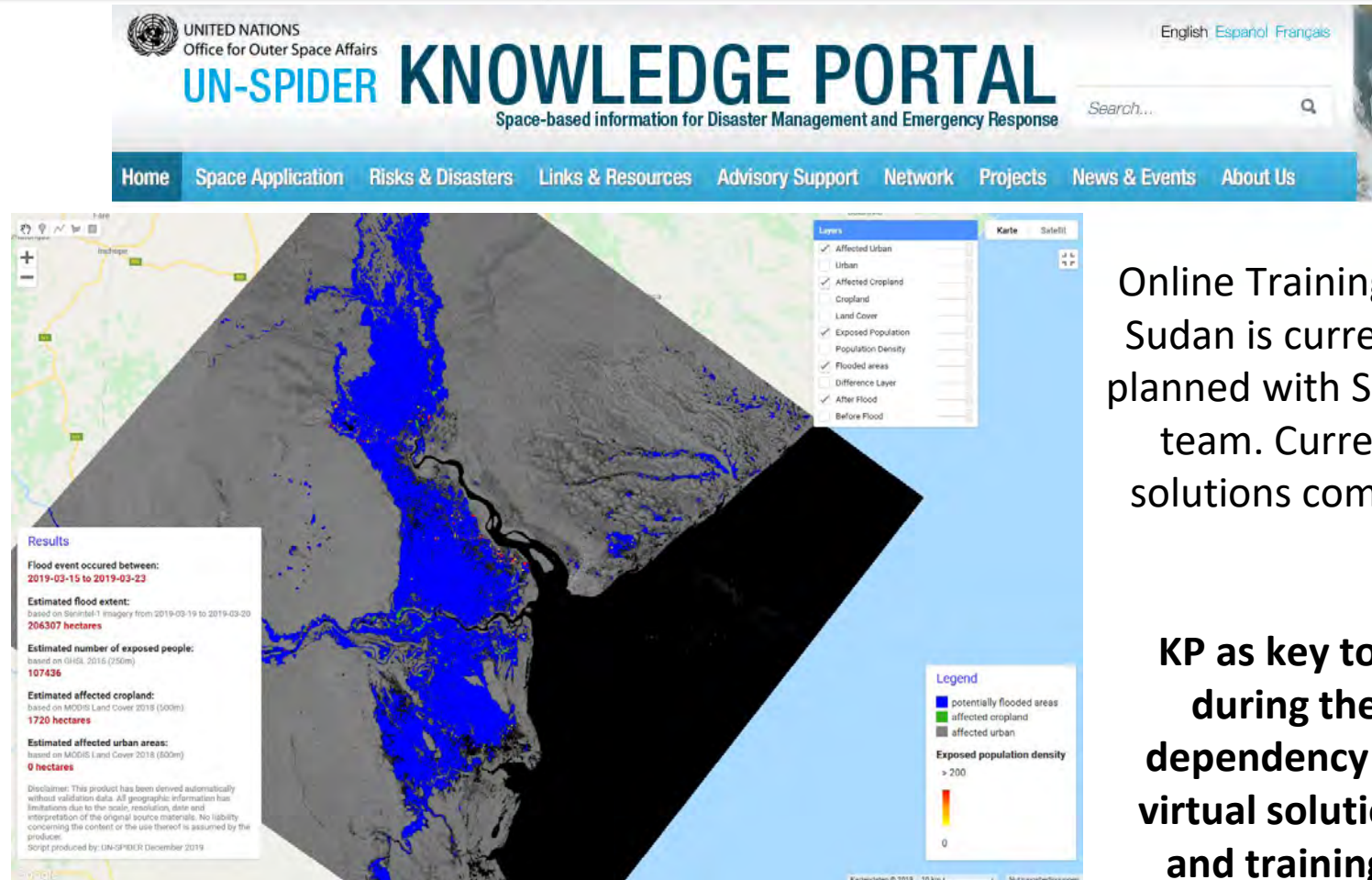
Prevention and Mitigation

Preparedness



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

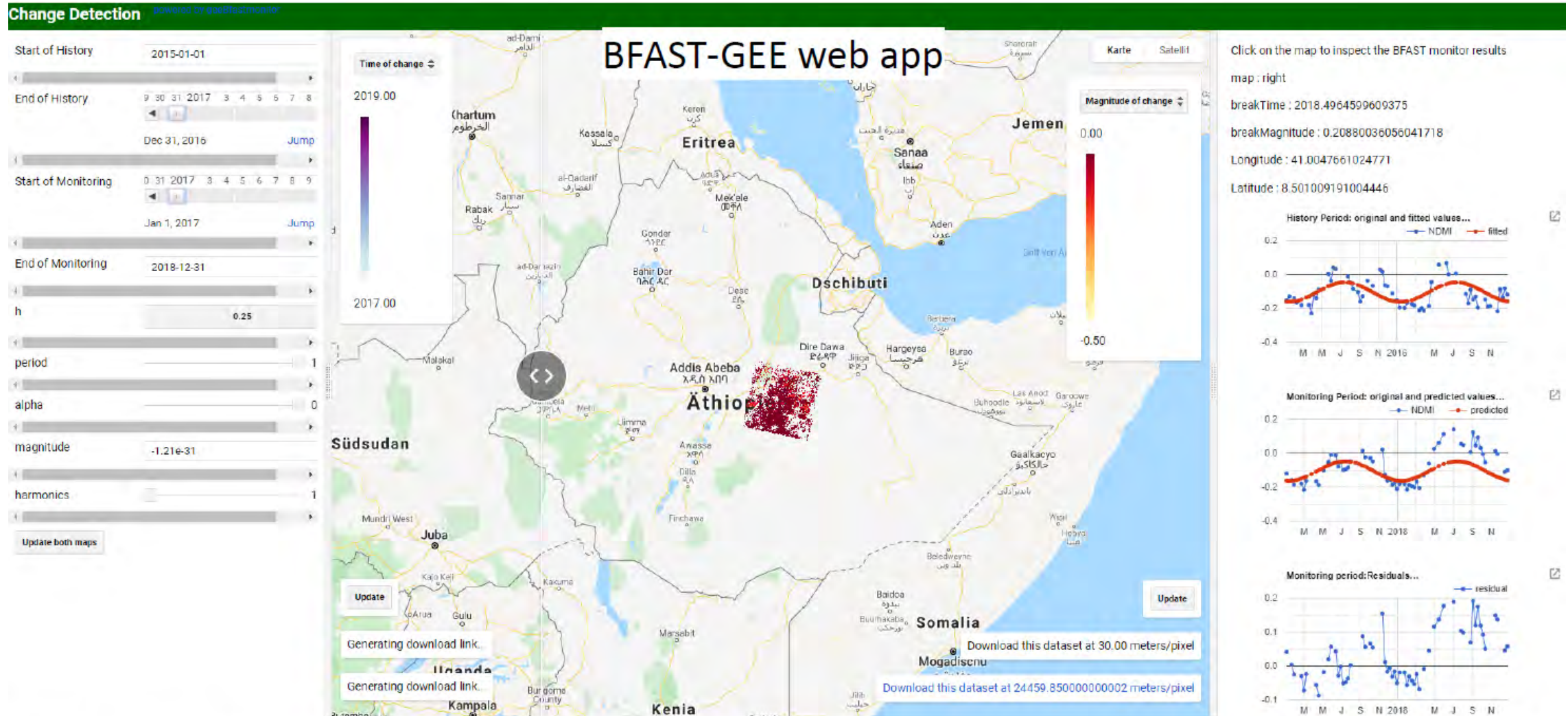
**How can EO support?**



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



<https://andreim.users.earthengine.app/view/bfastmonitor>



- 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

## **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