



## ZFL of University of Bonn and UN-SPIDER:

## Joining forces to enhance the use of space-based information in Africa

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Prof. Dr. Klaus Greve University of Bonn



## **UN-SPIDER:** Mission statement



"Ensure that all countries have access to and develop the capacity to use all types of space-based information to support the full disaster management cycle."

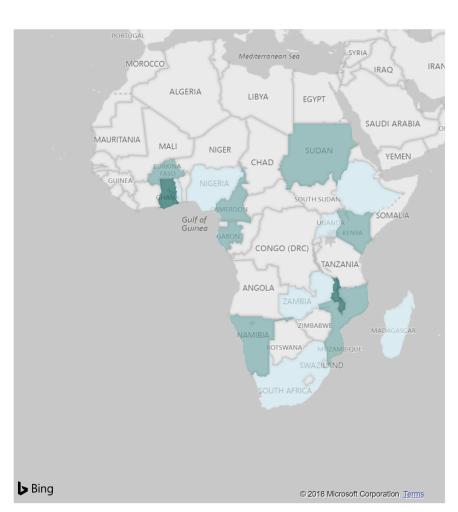
United Nations General Assembly Resolution 61/110 (2006)



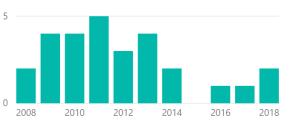
## **UN-SPIDER** in Africa

28

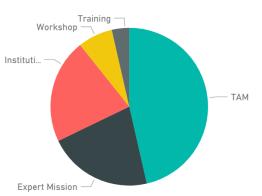
**UN-SPIDER** activities in Africa



#### Number of activities by year



#### Activity type



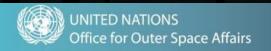
#### **UN-SPIDER Regional Support Offices**

Country	Regional Support Office
Algeria	Algerian Space Agency (Agence Spatiale Algerienne, ASAL)
Nigeria	National Space Research and Development Agency (NASRDA)
Kenya	Regional Centre for Mapping of Resources for Development (RCMRD)

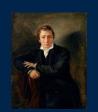


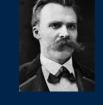
# University of Bonn Rheinische Friedrich-WilhelmsUniversität

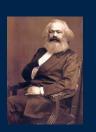
34.000 students
545 professors
2 nobel laureates
371 buildings incl. 2 castles

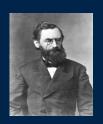


## University of Bonn - established in 1818

















Heine

**Nietzsche** 

Marx

Schurz

Christian IX Adenauer Benedict

Thiele-Eich

**ZFL** established in 2001

Center for Remote Sensing of Land Surfaces Interdisciplinary Research Center for Earth Observation and Spatial Analysis



### EVIDENz Project – A model for cooperation

#### A: Schematic representation of EVIDENz elements

**UN-SPIDER** International

**Conventions** and Initiatives

#### **EVIDENZ National level** implementation

**Drought hazard indicators** 

Input data

#### **SFDRR**

"Priorities for Action" Goal and targets

#### **SDGs**

Goals, targets, indicators

#### UNFCCC

Measures/ Goals of NAPAs

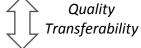
#### **National Needs**

- Capacities; Risk knowledge; Losses and damages; benfits/costs





South Africa



#### Ukraine



#### **Development of Information** products:

- People affected per 100.000
- Direct economic loss agricultural sector in relation to Gross Domestic Product
- Drought hazard monitoring, extend, intensity and frequency
- Agricultural exposure and social Vulnerability
- Risk of yield and income loss
- Recommendations for risk reduction and adaptation

#### Satellite Sensors

- Sentinel 1 & 2
- AVHRR
- MODIS

- Processing chains: Hazard, Exposure

#### Socio-economic

- Statistics (incl.
- Agriculture)
- Census data. ADP\*

Method:

UNU

**ZFL** 

Vulnerability and Risk assessment

\*Agricultural dependent population





Knowledge needs, national reporting













## SPEAR Project

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

University of Bonn & UN-SPIDER

Duration 1.1.2019 – 31.12.2013

Funded by DLR

SPEAR aims to understand needs, develop solutions and strengthen national capacities in using space-based information for disaster monitoring and prevention in Africa in line with international and regional frameworks.



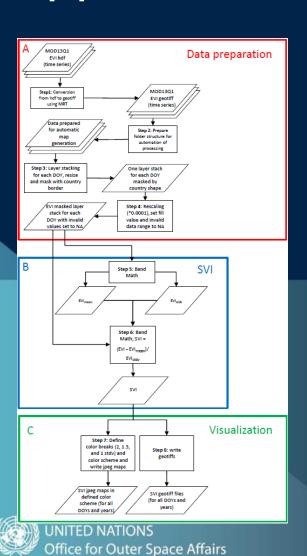
## Awareness Raising & Outreach





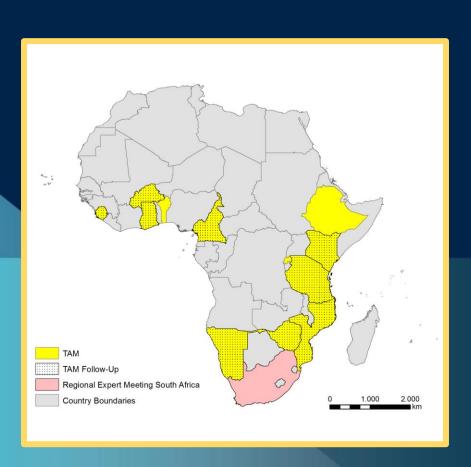
- Elaboration and dissemination of awareness raising material (flyers, Newsletters, brochures).
- Organization of International Conferences in Bonn and Regional Expert Meetings in Africa.
- Participation in events organized by partners including DLR, UNISDR, UN-SPIDER Regional Support Offices, CEOS, Space Agencies, etc.

# EO based methods, tools and applications



- Development of Earth observation tools in close collaboration with partners in Germany, Europe, and Africa.
- Development of toolboxes for risk assessment, early warning, disaster response, and recovery.
- Enhanced use of products such as DEM, GUF and GHSL.
- Cloud-based computing solutions.

## Technical Advisory Support



- Conduction of Technical Advisory and Institutional Strengthening Missions to countries in Africa.
- Conduction of training activities.
- Institutionalizing the use of space-based information in disaster management activities.

## Knowledge Management







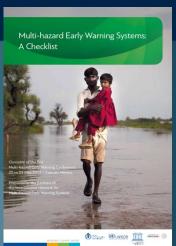
- Enhancing the UN-SPIDER
   Knowledge Portal.
- Design and implementation of an e-learning environment.
- Guidelines for use of new tools and methods.



## Strategy & Partnerships







- Enhancing the role of the UN-SPIDER Regional Support Offices and National Focal Points.
- Coordinating activities of GP-STAR and contributing to IN-MHEWS.
- Widening cooperation among German, European, African institutions.





## Thank you

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