

UN-SPIDER International Expert Meeting

“Towards Big (Space) Data in Support of Disaster Risk Reduction and Emergency Response in Africa”



UN Campus

12 November 2018

Organized by the
United Nations Office for Outer Space Affairs through its
**United Nations Platform for Space-based Information for Disaster
Management and Emergency Response (UN-SPIDER)**
and the
German Aerospace Center DLR

In cooperation with the
German Federal Ministry for Economic Affairs and Energy BMWi

With the support of the
**Center for Remote Sensing of Land Surfaces (ZFL) of the University
of Bonn**

Background:

- Conducted in the UN Campus on 12 November;
- More than 50 participants representing space agencies, disaster management organizations, government agencies, universities, private companies and regional and international organizations;
- Addressing the potential use of big space data in applications related to disaster risk management and emergency response in African countries.



Goals of the International Expert Meeting:

- Take stock of the recent developments regarding big space data from the point of view of providers and how they envision the use of such big space data in Africa.
- Take note of opportunities, concerns and critical issues regarding the use of big space data in Africa from the point of view of end-users.
- Identify relevant issues to formulate strategies for technical advisory support to African countries upon demand and in line with the Africa Space Policy and UN-SPIDER's mandate.



Opportunities for the use of big data:

- There is a larger amount of freely available satellite imagery and in a higher resolution, but this means Terabytes to Petabytes;
- International Emergency Mechanisms (Charter, COPERNICUS EMS, SERVIR) have facilitated procedures to be used globally, and it is now easier to get their products;
- The incorporation of process automation and the use of cloud computing could be a solution to facilitate elaboration of products without the need to download data.
- There are more space agencies and space science and technology institutes in Africa.



Concerns raised during the meeting:

- There is a need to use other languages than English to facilitate the use of big satellite data and Emergency Mechanisms in Africa;
- In Africa, there remains a challenge to be able to download massive amounts of satellite data;
- Disaster management agencies may not yet have the capacity to generate relevant products from big space data.
- Big satellite data is still used in “silos” when thinking of climate change, disaster risk reduction, sustainable development goals, etc.



Big Data Approaches – State of Play

Strengths

- high spatial and temporal resolution;
- rapid mapping possible;
- Operational EO Systems;
- Exponential growth of available satellite data;
- Existing partnerships (e.g. GMES & Africa);
- Open data and open source software;
- everyone can get access to data and disaster/risk information;
- availability of additional data (e.g. social media);
- More and more people have access to internet.

Weaknesses

- large amounts of data: limits fast processing in developing countries;
- Huge number of stakeholders requires efficient coordination;
- Need for additional capacity development;
- how to manage huge amounts of data in an understandable way;
- Lack of inter-ministerial cooperation.

Opportunities

- national statistics;
- early warning;
- new cloud platforms to ease use of EO data;
- mobile technology: applications using EO data;
- parallel processing in the cloud;
- using EO data to report to Global Development Agendas (SFDRR, SDG);
- From 2D maps to 3D solutions and 4D visualization

Threats

- Large data amounts - losing sight when
- increasing resolution; misuse of data - privacy and data security issues;
- misinterpretation of data;
- commercialization of space data, increased costs?
- keep up with complexity - data fusion of multiple products;
- loss of knowledge due to changes in government staff.

THANK YOU

Godstime James
Deputy Director NASRDA;
Coordinator of the UN-SPIDER
Regional Support Office at
NASRDA
Abuja, Nigeria
Godstime.james@nasrda.gov.ng

Juan Carlos Villagran de Leon
Programme Officer, UNOOSA
Head of UN-SPIDER Bonn
Office
Bonn, Germany
juan-carlos.villagran@un.org

