



**UN-GGIM: AFRICA**

UNITED NATIONS INITIATIVE ON  
GLOBAL GEOSPATIAL  
INFORMATION MANAGEMENT

# **CHALLENGES WITH THE FUNDAMENTAL GEOSPATIAL DATA IN AFRICA**

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# Introduction

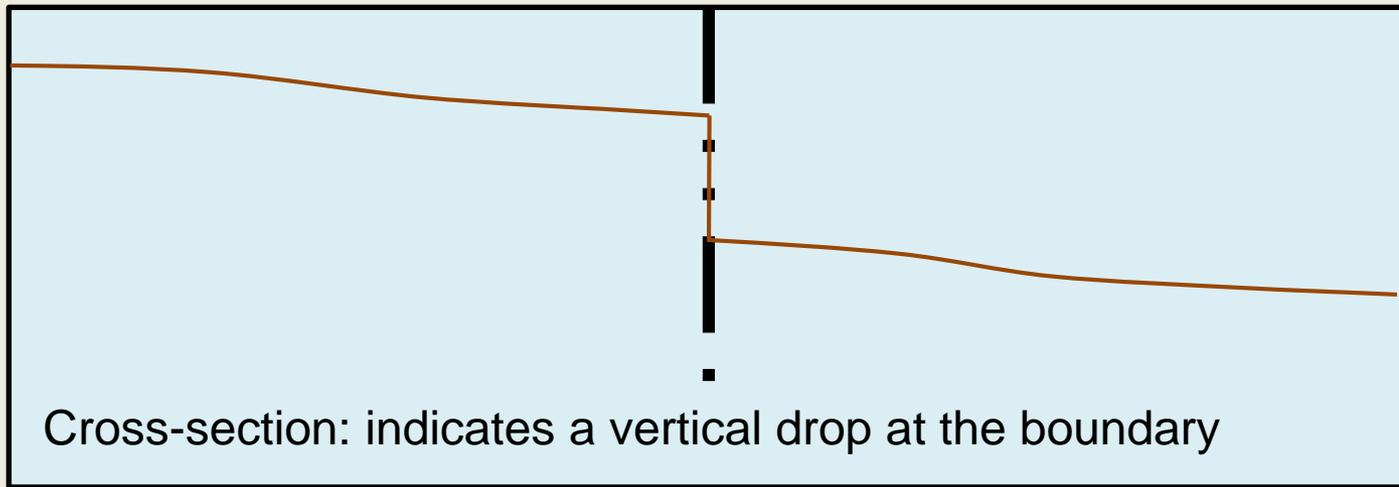
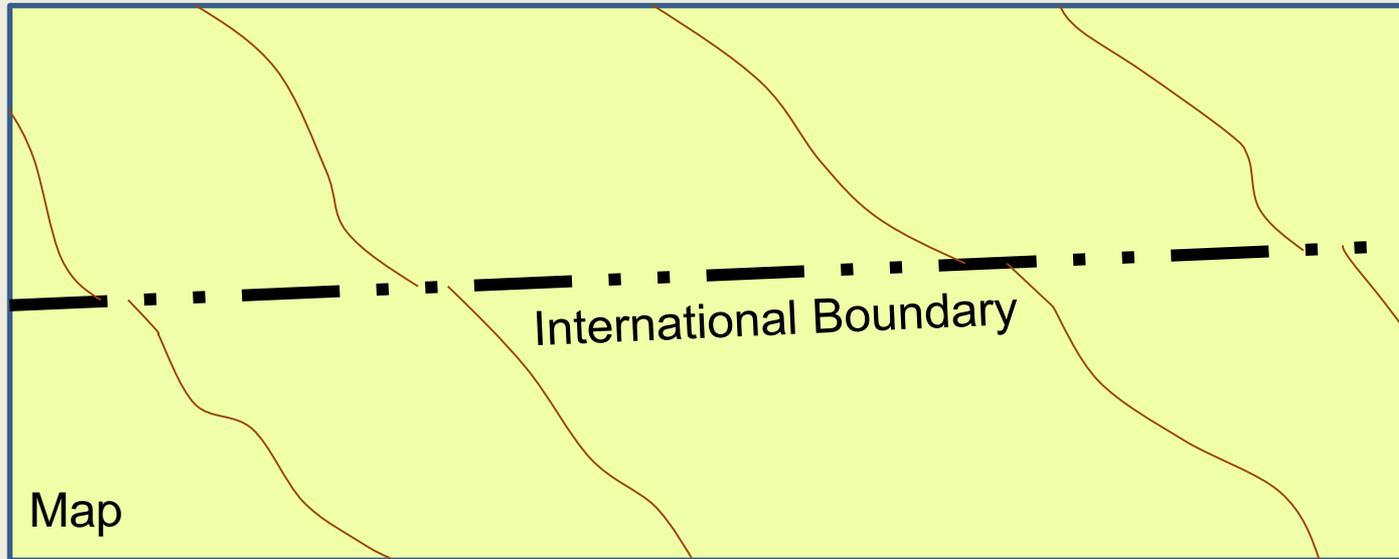
- Issues transcend human-made political boundaries.
- Geospatial information is essential in dealing with these issues.
- Fundamental geospatial datasets are required at national, regional and global level for this purpose.
- The whole process, from sensing of observations, through the processing to geospatial information, to the dissemination and use of the geospatial information, has challenges.
- These challenges detract from the user gaining the full benefit of geospatial information, with the result of reduced efficiency and effectiveness of decisions and plans.

# Challenges for Developing Regional and Global Geospatial Datasets

- Different spatial reference frames and datums (horizontal), making integration of datasets across national and regional boundaries difficult.



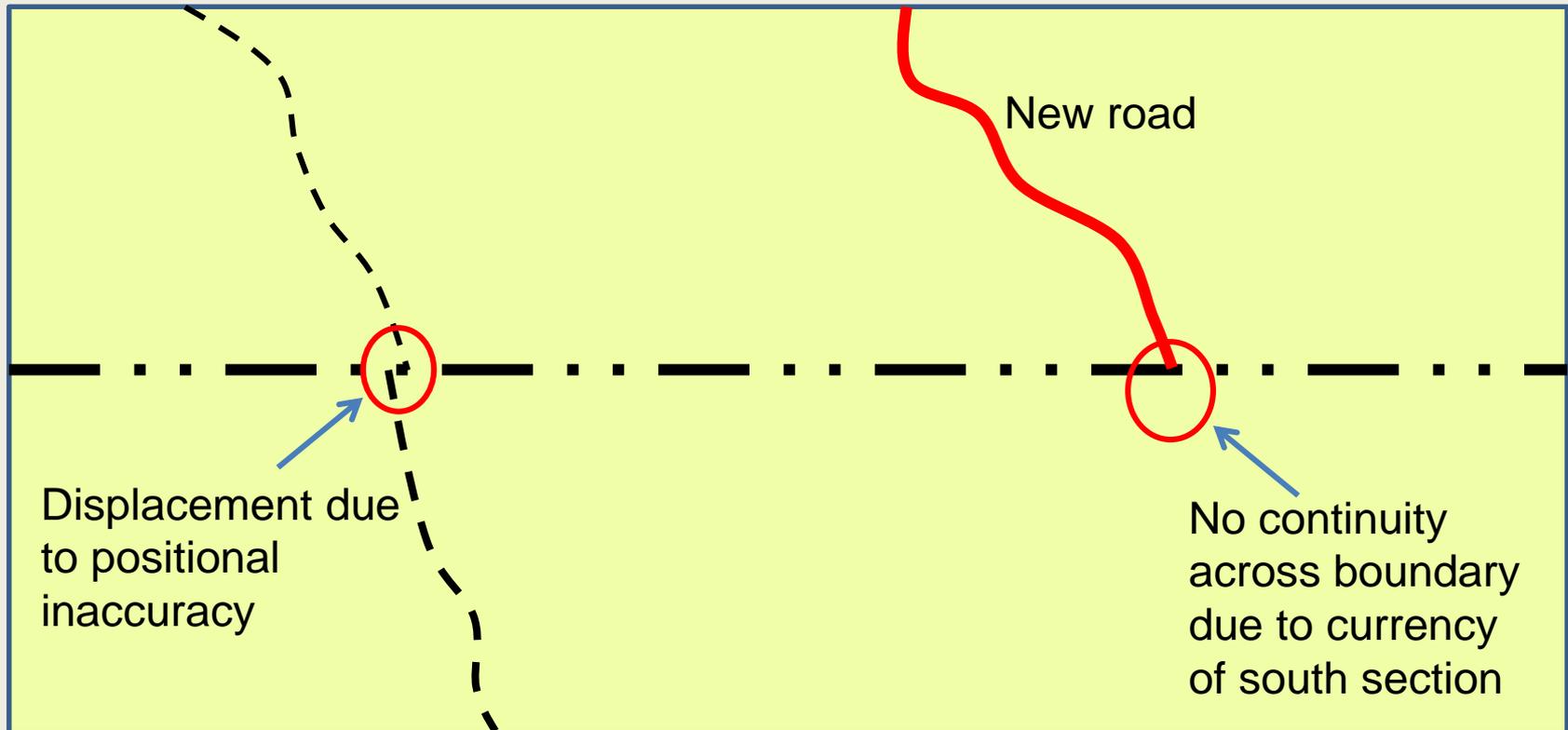
- Different spatial reference frames and datums (height), making integration of datasets across national and regional boundaries difficult.



... but in reality it is continuously flat terrain.



- Varying data quality (currency and positional accuracy) affects integration and usability of datasets across national and regional boundaries.





- Survey of available fundamental geospatial data confirmed the fact that Africa is poorly mapped, although in part there is a lot of this data available.
- Much of the data is unreliable (out of date, inaccurate).
- Imbalance in the availability of different datasets - some complete and others very poorly represented.
  
- Availability of metadata for these datasets was also collected:
  - only five of the 30 datasets had complete metadata
  - 23 datasets had less than 30% of its metadata available.
- The lack of metadata is of great concern for the access to and sharing of geo-spatial data across organisations and applications.
- More effort is required to record the metadata at the same time as collecting the geo-spatial data.
- The lack of metadata can result in the duplication of the collection of geo-spatial data because of the unknown quality and reliability of that data.

- Institutional capacity and capability to collect, maintain and disseminate geospatial information systematically and on an on-going basis – skills, resources, equipment and systems, processes, management and institutional arrangements.
- Willingness to share geospatial information – co-operation and collaboration.
- Legal and political regimes affect the collection and sharing of geospatial information:
  - Onerous Copyright and Intellectual Property laws;
  - Data access policies that are restrictive;
  - Personal privacy;
  - Self-funded public institutions (must charge for data);
  - National security concerns restrict access;
  - Lack of recognition for geospatial information = lack of funding and political support.

- Varying data models, data formats and data standards (not open standards) impacts on data integration and usability.
- Different classification schema used from country to country affects integration of datasets e.g. land cover classification.
- Lack of understanding of users' needs for geospatial information results in ineffective and irrelevant data being collected and disseminated.
- Lack of knowledge of available geospatial datasets results in data being duplicated or not being used.
- Cost of accessing geospatial datasets could make access unaffordable.

- Countries in conflict makes data collection difficult and dangerous, and increases national security concerns.



- Inability to integrate geospatial information with other datasets (linked data), e.g. demographics, reduces the potential of synergistic datasets.
- Geospatial datasets produced by organisations other than authoritative geospatial data collectors does not guarantee complete coverage, quality and longer term availability (commercially viable, altruistic interest, bias).
- Lack of good and affordable ICT connectivity impacts on accessibility.

***Are the African national mapping organisations up to the challenge to support the achievement of the development goals?***

*Thank you.*