



UN-GGIM: AFRICA

UNITED NATIONS INITIATIVE ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT

CHALLENGES WITH THE FUNDAMENTAL GEOSPATIAL DATA IN AFRICA

Dr Derek Clarke

Chair: UN-GGIM: Africa WG on Fundamental Geospatial Data
and Standards

derek.clarke.dr@gmail.com

International Workshop on Fundamental Data Themes for
Africa, April 2018

Introduction

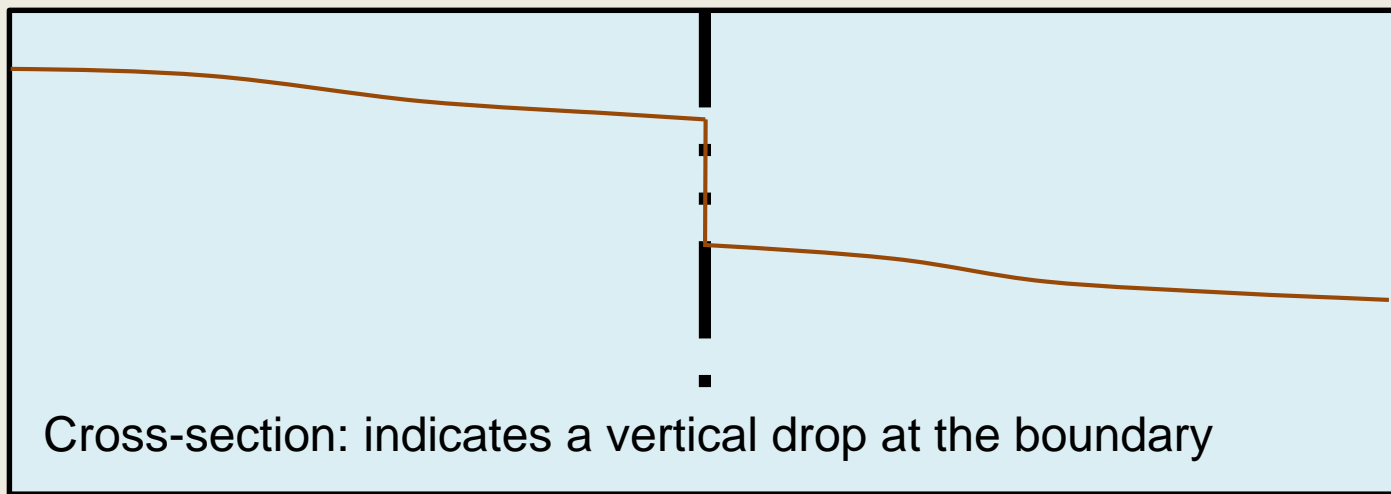
- Issues transcend human-made political boundaries.
- Geospatial information is essential in dealing with these issues.
- Fundamental geospatial datasets are required at national, regional and global level for this purpose.
- The whole process, from sensing of observations, through the processing to 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.



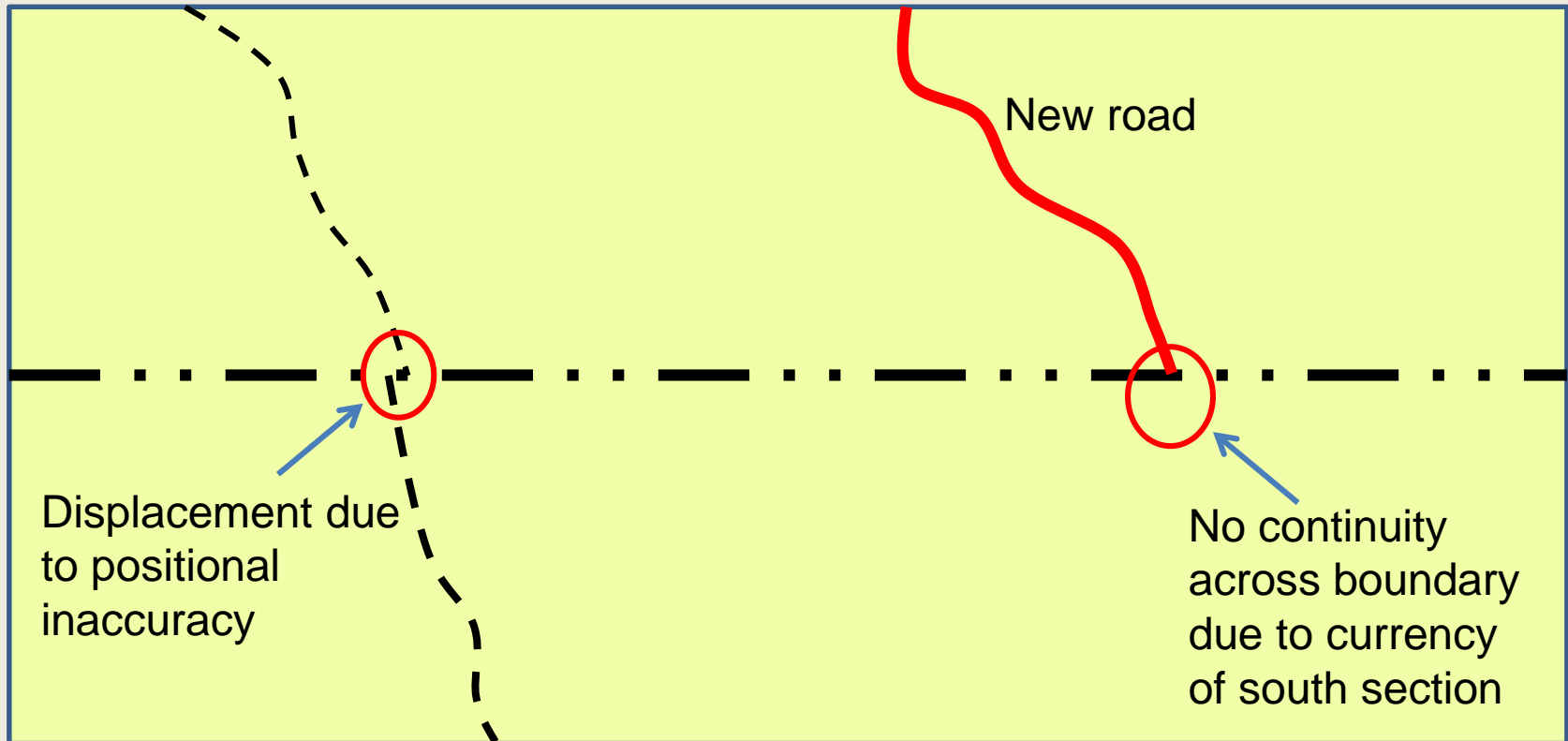
- Different spatial reference frames and datums (height), making integration of datasets across national and regional boundaries difficult.



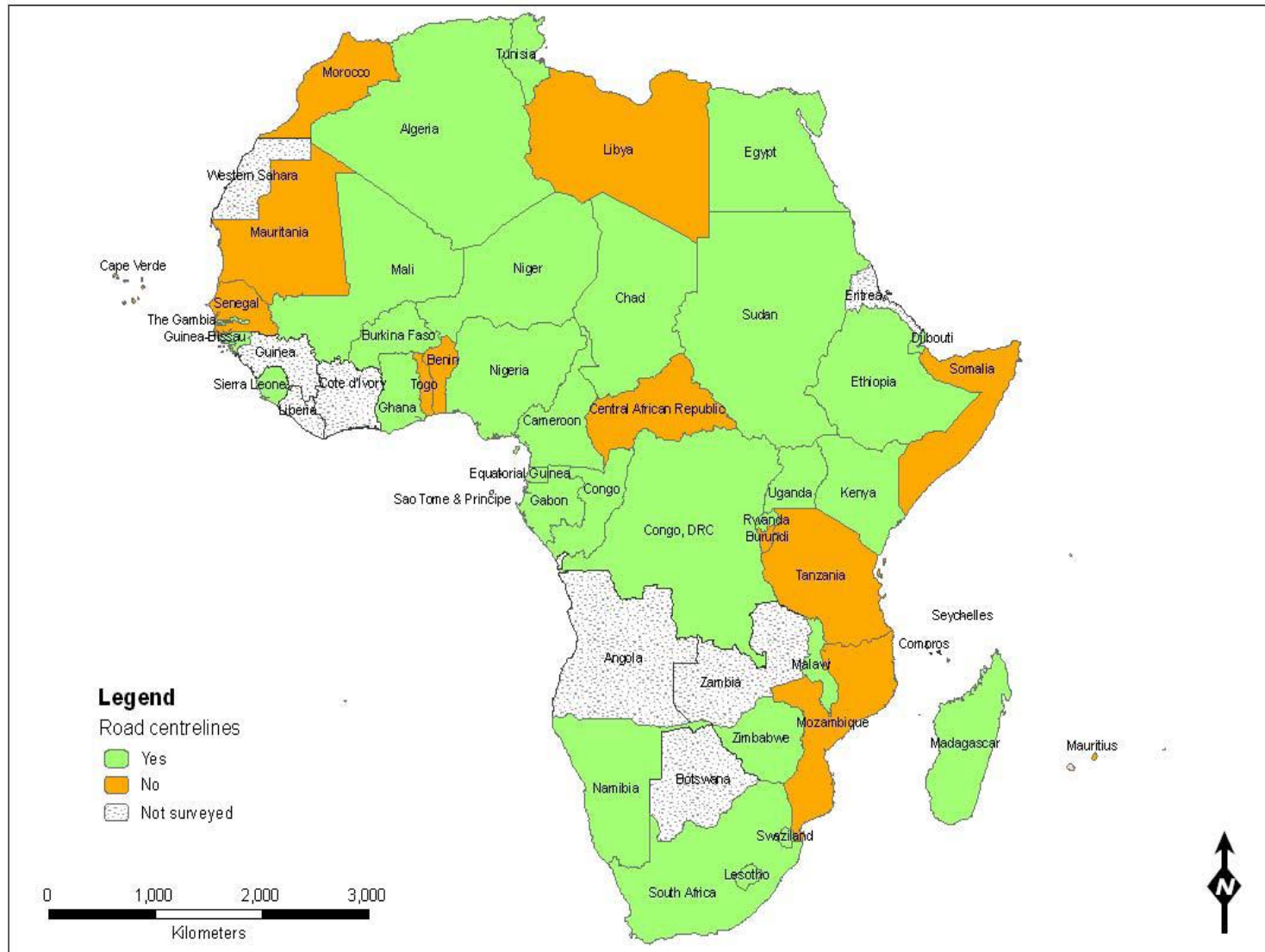
... but in reality it is continuously flat terrain.



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



- Incomplete coverage of available fundamental geospatial datasets results in incomplete regional and global datasets



- 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- Much of the data is unreliable (out of date, inaccurate).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.