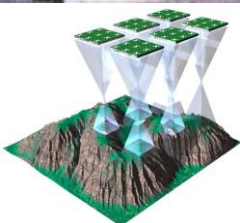# CHALLENGES IN DEVELOPING CORE GLOBAL REFERENCE DATASETS

by

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2nd HLF on GGIM

The views and opinions expressed herein are those of the author and do not necessarily represent the official position.

Introduction

• Issues transcend human-made political boundaries.

• Geospatial information is essential in dealing with these issues.

• Core 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 result of reduced efficiency and effectiveness of decisions and plans.

Essential requirements

For geo-spatial information to be used effectively the following three factors are essential:
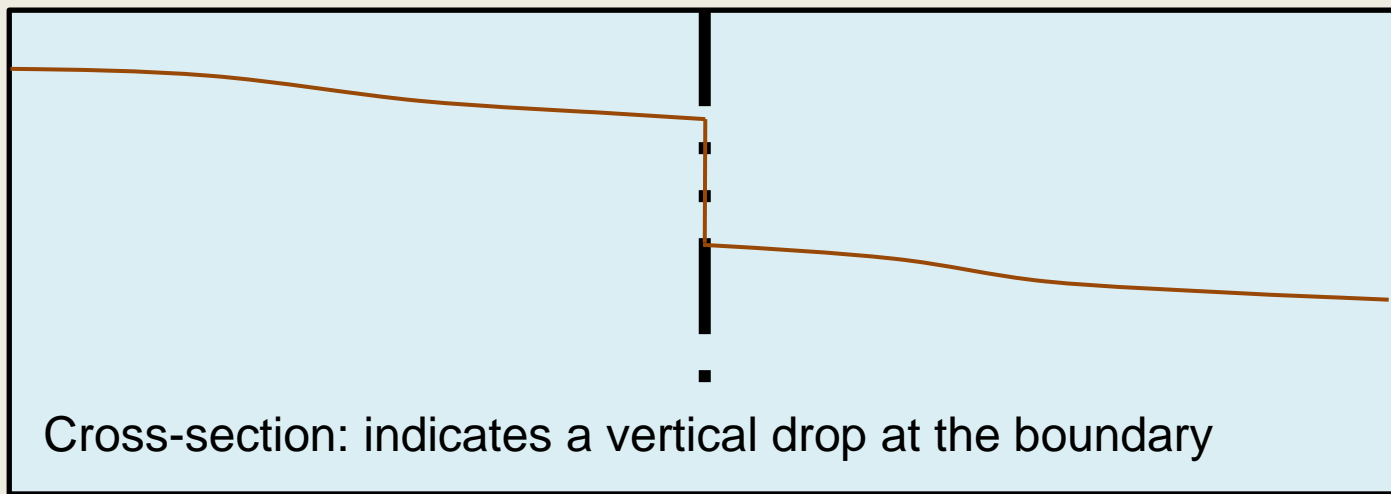
1) Ability of the user to use the geo-spatial information (*Usability*);

2) *Access* to geo-spatial information;

3) *Availability* of relevant geo-spatial information.

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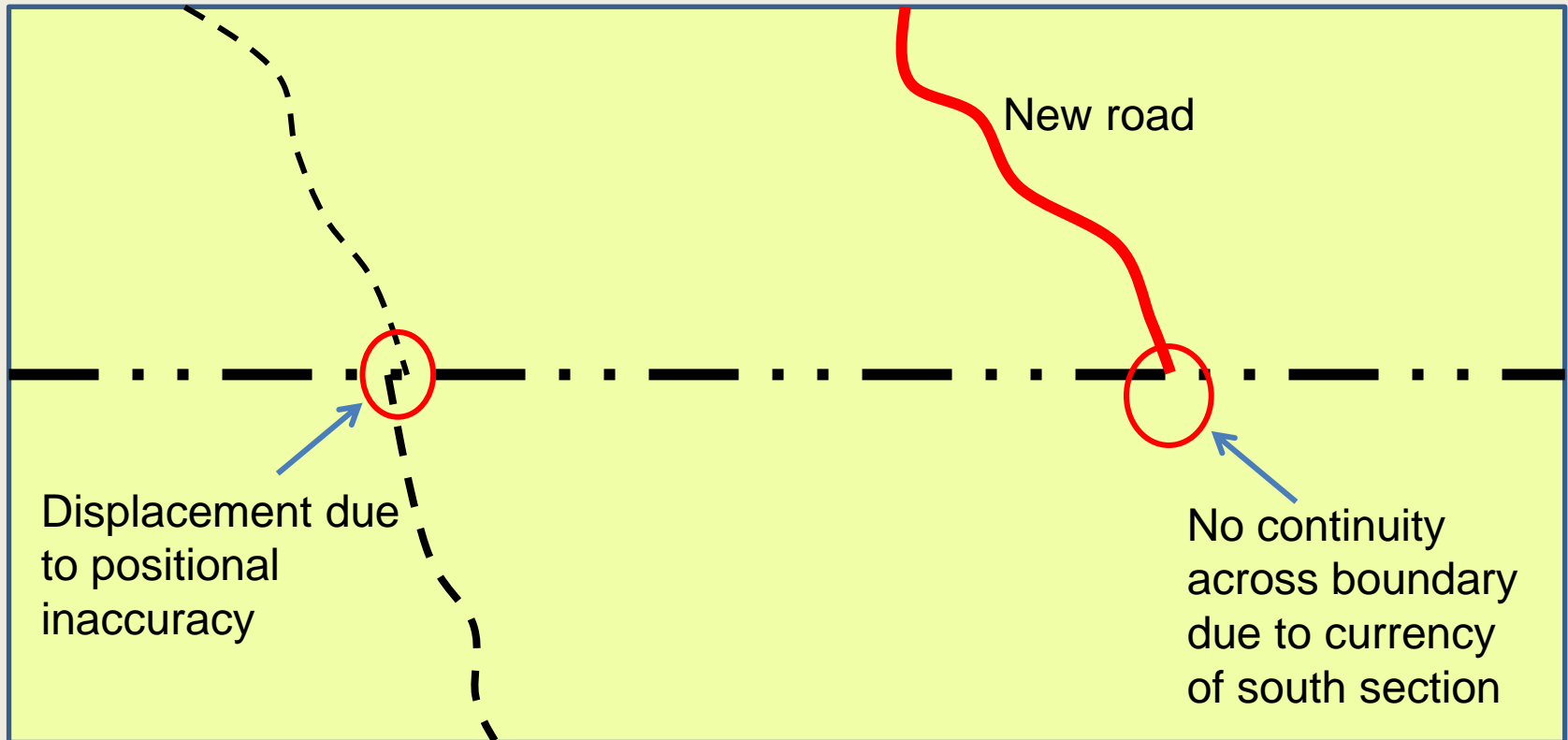
- Different spatial reference frames and datums (height), making integration of datasets across national and regional boundaries difficult.
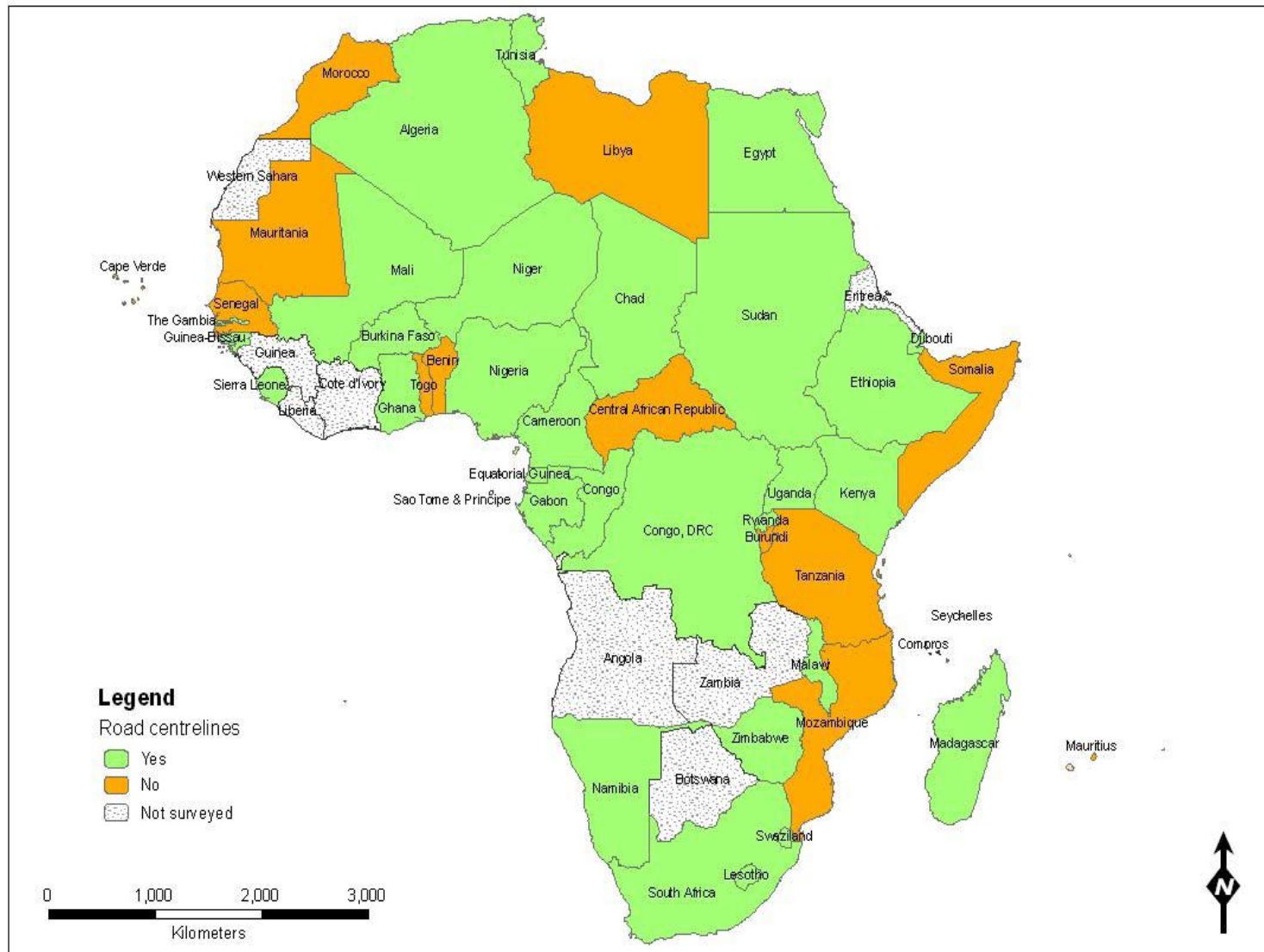

International Boundary

Map

Cross-section: indicates a vertical drop at the boundary

… 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.
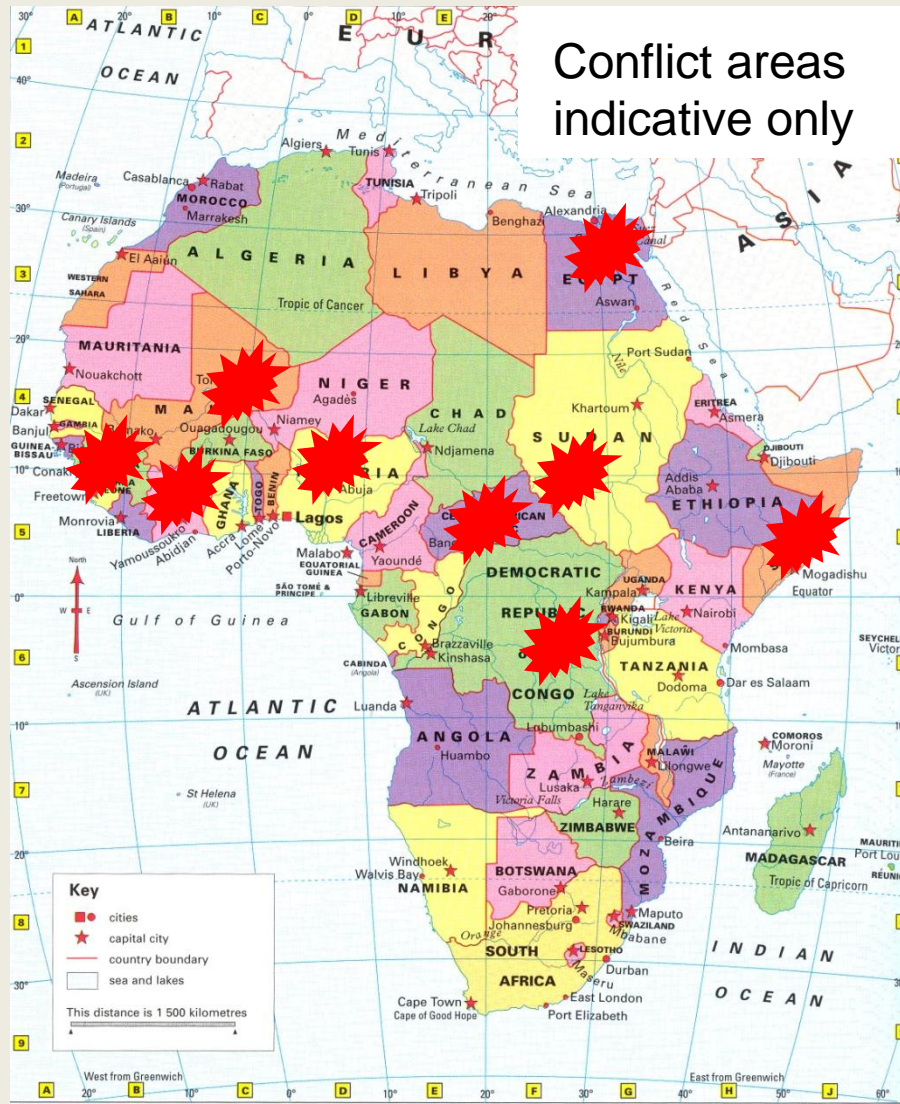

New road

Displacement due to positional inaccuracy

No continuity across boundary due to currency of south section

• Incomplete coverage of available core geospatial datasets results in incomplete regional and global datasets

• 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.

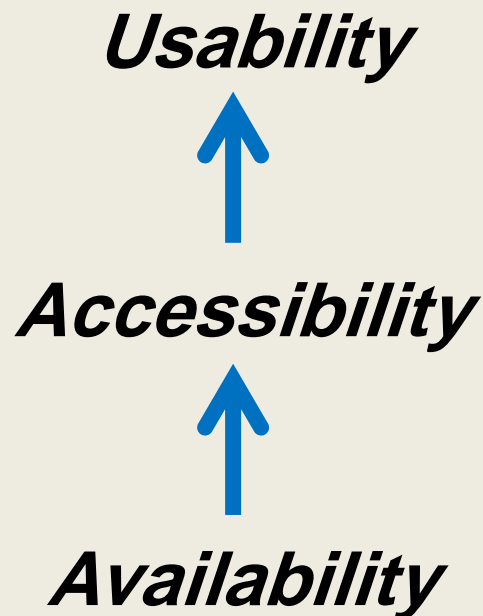• Cost of accessing geospatial datasets could make access unaffordable.

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

Conflict areas indicative only

• 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.

Addressing the Challenges in Developing Core Regional and Global Geospatial Reference Datasets

These challenges need to be addressed to achieve the three elements of:

Usability

↑

Accessibility

↑

Availability

Addressing the Challenges

The challenges can be categorised as:
- technical;
- institutional; and
- political.

Addressing the Challenges

- Technical
  - Easiest to deal with
  - Open standards developed
  - Implementation of standards (also institutional)
  - Guidelines of best practice
  - Technical assistance

- Institutional
  - More difficult to achieve
  - Breaking down 'silos' and 'empires'
  - Promote cooperation, collaboration and communication
  - Appropriate institutional arrangements
  - Adequate resources
  - Need critical mass

Addressing the Challenges

- Political
    - Hardest to achieve
    - Awareness of benefits (ROI, monetary and social)
    - Communication (language)
    - Address concerns of national security

"You cannot manage that what you cannot count."

"You cannot count that what you cannot locate."

"There can be no effective decision making and planning without geospatial information."

Thank you.