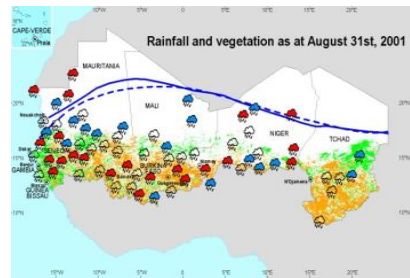# Global Fundamental Geospatial Data Themes

Data and information for SDGs

United Nations
Economic Commission
for Africa
_____
Geoinformation &
Spatial Statistics
_____
Andre Nonguierma

International Workshop on Global Fundamental
Geospatial Data Themes for Africa
25-27 April 2018
Addis Ababa, Ethiopia

UN-GGIM: AFRICA
UNITED NATIONS INITIATIVE ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT

The Policy Drivers : Global Need for Spatially-Enabled Complex Information

Agenda
2063
The Africa
We Want

Leadership
Policy and Advocacy
Coordination
Partnerships/linkages
African Land Policy Centre (ALPC)

customers
streets
parcels
elevation
land usage
real world

Prosperity and Equity

Create jobs
Unite the nation
Expand infrastructure
Fight corruption
Use resources properly
Build a capable state
Quality healthcare
Quality education
Inclusive planning

National Development Plan

THE GLOBAL GOALS
For Sustainable Development

- **A right decision making requires the gathering and reviewing of up-to-date, cold &hard facts.**
- **For the facts to be interpreted, understood, and linked to our goals and to our decisions, we need to bring together data linked with the one thing they have in common : Location (Where)**
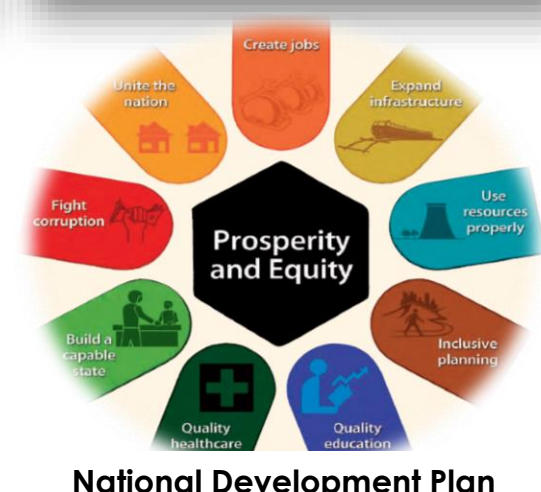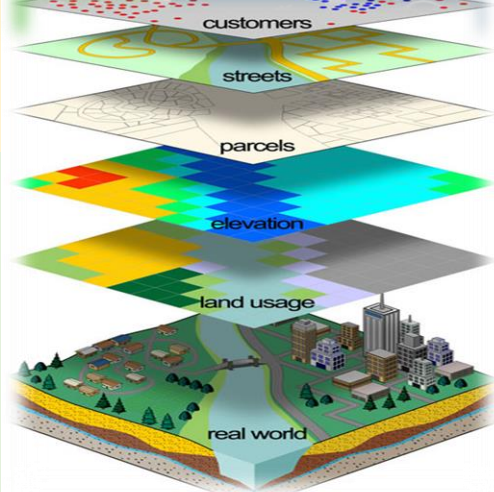
African Data Nexus Issues

Mapping of the African continent has been at best very patchy. The territories of many countries have not been systematically mapped, particularly in the post-colonial era, at scales that are adequate for national development purposes.

There have been several project-specific mapping activities, but they have often been sporadic and have usually tended to meet the minimum requirement of a particular project. In addition, institutions in the North hold much of the data, with little or no access to users in Africa.

Core Data : Poor Mapping Coverage Lack of consistency	2.5 % of the Continent is Mapped at 1/25.000 (Europe: 86.9% ; Russia : 100%)
Frameworks & Tools :	Poor Interoperability Lack of Standardisation Non codified rules for data access
Applications: Duplication of efforts	Several applications build repetitively the same datasets Data are not publicized
Capacity : Recognition & Retention of Professionals	Critical mass. Turnover
Governance: Lack of Coordination	Redundancies in initiatives. Inadequacy

Disponinility

Finding the appropriate information at the required time and at the relevant scale of aggregation

Accessibility

Even where information is available, it may not be easily accessible, either because of the lack of tehnology for effective access or because of associated costs

Transformability

There is a general lack of infrastructure capacities for the collection and assessment of water data, for their transformation into useful information and for their dissemination.

Africa Response : The Durban Statement

- That every country identifies its fundamental data sets, from which the consistent regional fundamental data sets should be derived, including geodetic framework, topography, administrative boundaries, transportation, etc.

- That every development project proposal identifies, up front, programmatic arrangements for continuous maintenance of resulting data sets at the end of project.

- That every country develops or adopts mapping standards consistent with international standards

- That mapping activities be prioritized in line with priority needs of Africa

United Nations
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Africa Initiative : Mapping Africa for Africa

- Initiative to accelerate the rate of geoinformation activities in Africa

- A plan of action to provide the fundamental geo-spatial information for sustainable development in support of regional projects

- Premised on the principle that Africa should be involved, if not lead, the production of maps of Africa

- Based on the Durban Statement

- In collaboration with the International Cartographic Association (ICA) and other global institutions

- Fundamental data sets definition document published

- Ongoing Study : Guidelines for Best practices of FDS

Economic Commission for Africa

Determination of Fundamental Datasets for Africa

Geoinformation in Socio-Economic Development

United Nations
Economic Commission for Africa

UN-GGIM: AFRICA

MAfA : Business Model

- Phased Approach

Policies | Programme | Conceptualisation | Benchmark | Building FDS

Durban Statement | Mapping Africa for Africa | FDS Definition | Best Practices Inventory | Core Datasets Thematic Datasets

Inetgrated FDS in Africa

2003   2005   2007   2011   2015   20…

Time
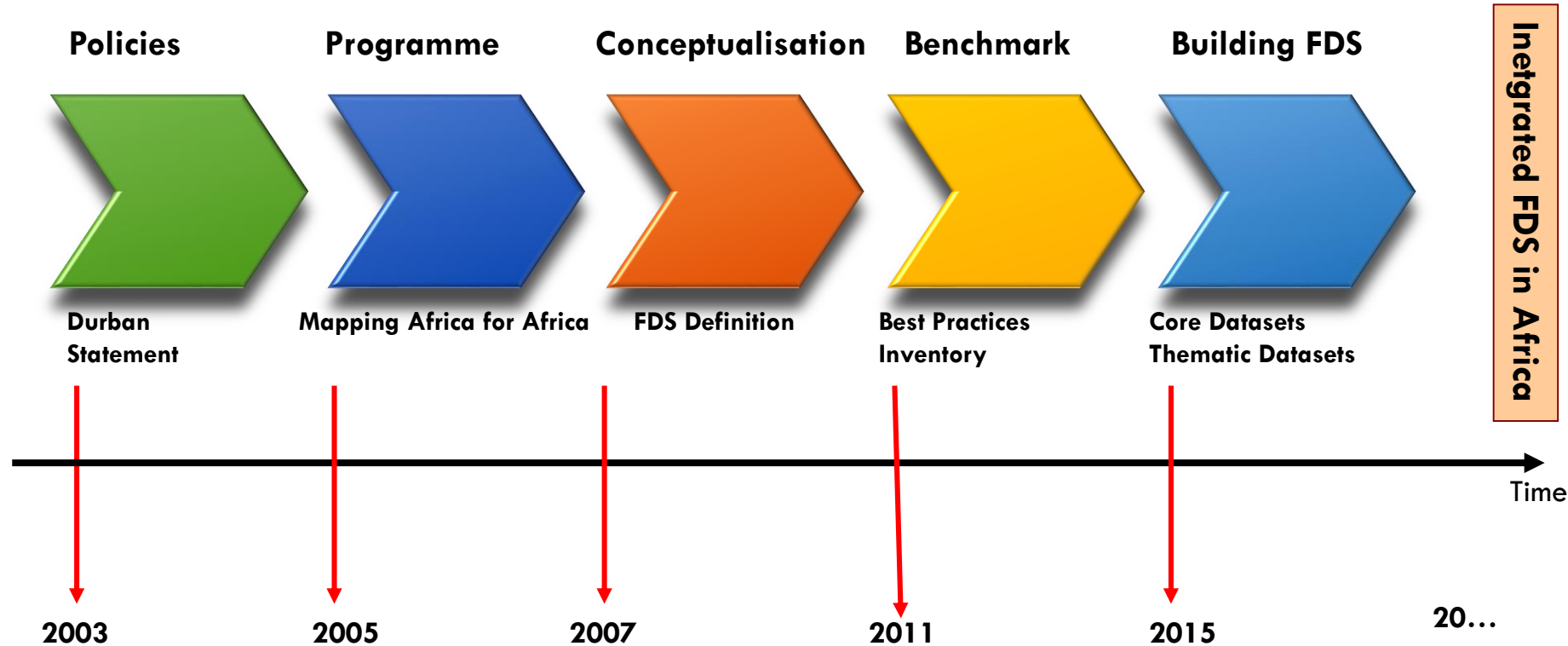
What are Fundamental Geospatial Datasets for Africa
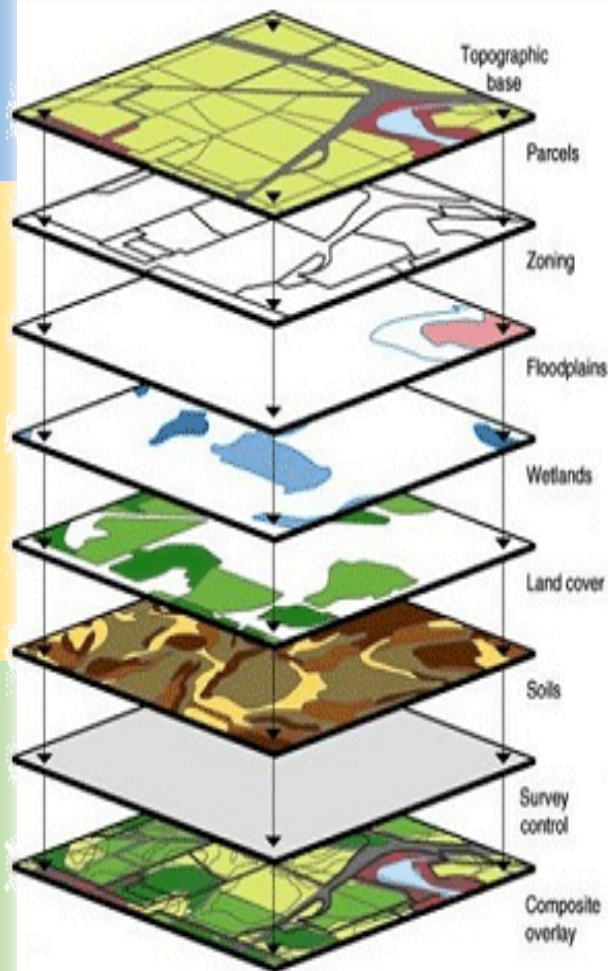
Data Theme	Data Set
Geodetic Control Network	Geodetic control points
	Height datum
	Geoid model
Rectified Imagery	Aerial photography
	Satellite imagery
Hypsography	Digital elevation model
	Spot heights
	Bathymetry
Hydrography	Coastline
	Natural water bodies
Boundaries	Governmental units
	Populated places
	Enumeration areas
Geographic names	Place Names
	Feature Names

Data Theme	Data Set
Land management units/ areas	Land Parcels/Cadastre
	Land Tenure
	Street Address
	Postal or zip code zones
	Land use planning zones
Transportation	Roads
	Road centrelines
	Railways
	Airports and ports
Structures	Bridges and tunnels
Utilities and services	Power
	Telecommunications
Natural environment	Land cover
	Soils
	Geology

Comparaison with Others

	CODIST	**INSPIRE**	**ANZLIC**	**UN-GGIM**
	Africa	*Europe*	*Au. & NZ*	*Proposal*
1	Geodetic Control Network	Coordinate reference systems	Positioning	Positioning (geodetic)
2	Geographic names	Geographical names	Place names	Names (Gazetteer)
3	Boundaries	Administrative units	Administrative boundaries	Administrative Boundaries
4	Hydrography	Hydrography	Water	Water (Hydrology)
5	Land Management	Cadastral parcels	Geocoded addressing	Address (Buildings)
6	Transportation	Transport networks	Transport	Transport
7	Natural Environment	Protected sites	Land cover	Cadastre (Tenure)
8	Utilities	Addresses	Land parcels	Land Cover (Vegetation)
9	Hypsography	Geographical grid systems	Elevation & depth	Elevation
10	Imagery		Imagery	Imagery (Satellite & photo)
11				Bathymetry (Hydro.)

Africa Efforts : Policies – People - Data

- Policies : (NSDI)
  - Cooperative, multi-stakeholder approach to production, management, and dissemination of spatially enabled data.
- Data : Purpose-oriented datasets
  - Structured and comprehensive data foundation that would be consistent, comparable and compatible at all levels.
- Technicalities
  - Robust geodetic infrastructure
  - Standards to ensure compatibility and interoperability

FDS Status In Africa : Mapping Activities

Countrie with New Mapping Initiatives	**Botswana, Burkina, Congo, Lesotho, Liberia, Madagascar, Mali, Namibia, Niger, Nigeria, Senegal, South Africa, Sudan, Swaziland, Tanzania, Zambia**
Countries with Maps Revision	Botswana, Burkina, Congo, Lesotho, Liberia, Madagascar, Mali, Namibia, Nigeria, Senegal, South Africa, Sudan, Swaziland, Tanzania, Zambia

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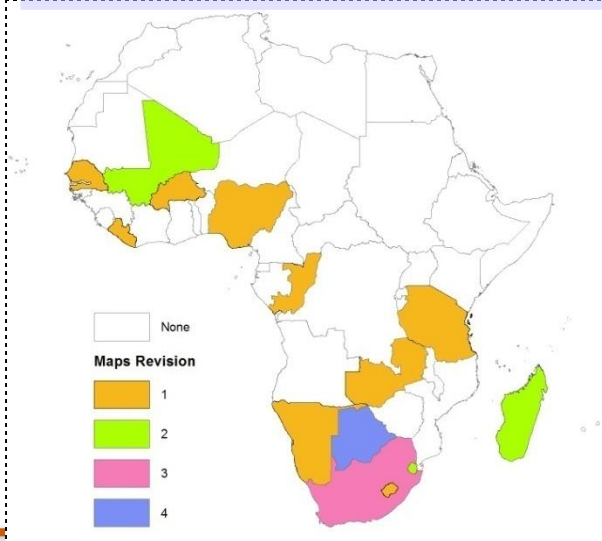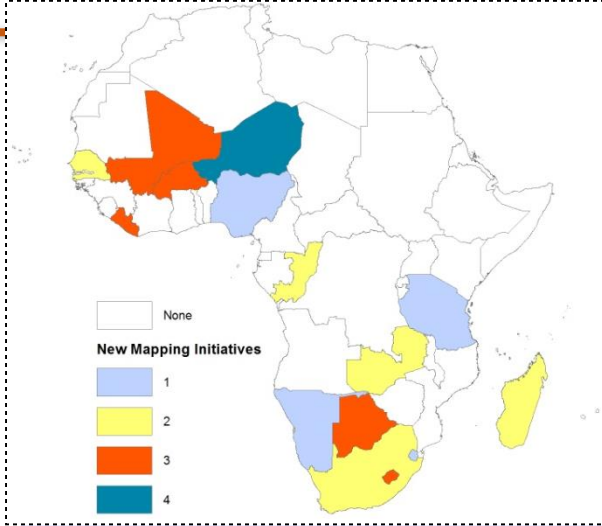
FGDT for Africa Business Focus

- **Data Centric activities**

  - **Developing a taxonomy of data sets and Semantic of FDS**

  - **Linking Geography and Statistics**

  - **Fundamental geospatial datasets**

- **One Source Spatial Data Warehouse**

  - **Identify existing data and information resources and create a metadata clearinghouse to enable the discovery of these data**

  - **Upgrade the data and information resources to make their products accessible to the wider user community (online, interoperable, open access)**

- **One Source Visualization Facility**

  - **Implement a geospatial portal to integrate all datasets into a Common Platform (ARSDI)**

Thank You....

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