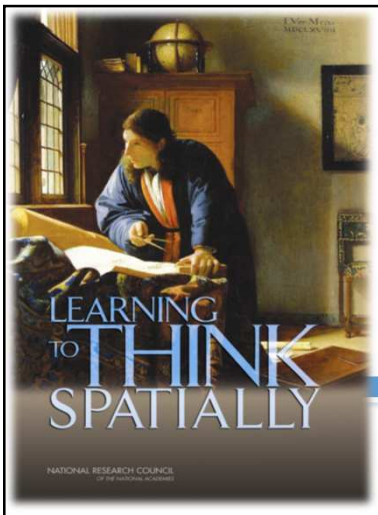

Integration of Geospatial and Statistical Information

The African Spatial Statistical Framework

United Nations
Economic Commission
for Africa

Geoinformation &
Spatial Statistics

Andre Nonguierma

FOSS4G 2018 Conference
Intergovernmental Geospatial: The African Opportunity
30 August 2018 – Dar-es-Salaam, URT

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

Outlines : Spatially-Enabled Statistics

- 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, this needs to bring together data linked with the one thing they have in common: Location (**Where**)

Overview
Everything that happens, happens somewhere over space and time
Most decisions need to be anchored to geography
Where is "it"?
How far is A from B?
What is the extent/territory of some phenomenon?
How do I get from A to B?
What areas are suitable for a certain activities?

Purpose
Expanding the spatial enablement management of information" refers to the idea of integrating spatial information with other data products to enable decision makers and general users to exploit the locational attributes for better targeting of interventions and more efficient service delivery.
This will require leadership, combined collaborative global leadership, with appropriate frameworks and methods and close collaboration between national statistical and geospatial and earth observation communities to deliver seamless data for national to global objectives and aspirations

Issues and Challenges
Availability
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 technology for effective access or because of associated costs
Transformability
There is a general lack of infrastructure capacities for the collection and assessment of data, for their transformation into useful information and for their dissemination.
Governance
There is also need for improved coordination among environmental, demographic, social and developmental data information, applications and services.

Integration Dimensions
Scale : The scope of the geographic space in which the integration is due to take place.
Policy : The policy dimension necessary at all levels on the Scale axis to initiate and harmonise the strategies and related regulations in order to smoothly achieve full integration
Institutional : The institutional arrangements necessary to achieve real integration, in accordance with the orientation of the two compatible policies.
Modelling : The component of the integration process dealing with the technical, technological, scientific abstraction and their related functional and procedural interactions :) GSGF

Way Forward
Policy : Institutional mechanisms aligned with national efforts, while taking into account international perspectives
Data democracy : Ubiquitous availability of relevant spatial data/information as common goods. Adhering to agreed standards : metadata, data models, encoding, interoperability
People : High Level Education to empower African youth in geospatial science and technology culture at all education levels (schools, universities)

- Strengthening governance of geospatial information
- Meeting urgent development needs
- Providing a service (Spatial enablement)

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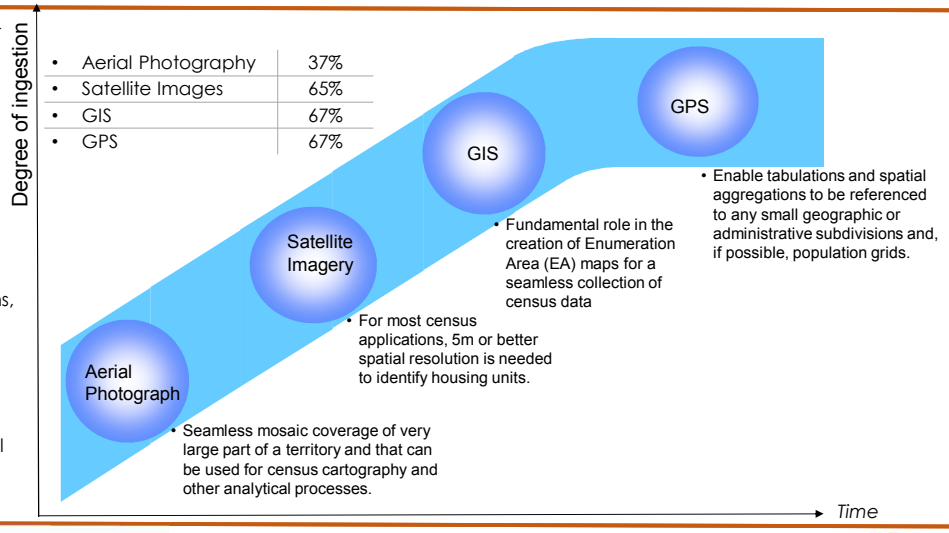
What We know about Geospatial into Statistical Processes in Africa

- The question is no longer about the ingestion of geospatial technology, but what are some of challenges and commonalities in Africa.
- Adoption and sound application of GIS, Remote Sensing and other geospatial solutions, tools and techniques (including standard and interoperability) in the creation, analysis and presentation of statistical data.



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Nexus Issues in Linking Geography and Statistics

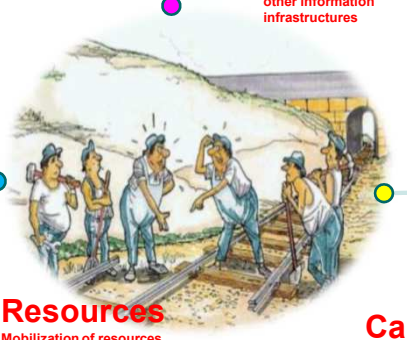
- **Lack of suitable base maps in scale and currency**
- **Lack of coordination: there is no linkages between the statistical systems and the geospatial systems and infrastructures**
- **Duplication of Effort: the statistical offices create their own data on administrative boundaries and topographic maps**
- Counting and Locating
- Counting in Real Time

Cooperation

institutional arrangements for operationalizing an integrated and coherent approach with other information infrastructures

Leadership

Leadership: Establishment of effective national leadership



Resources

Mobilization of resources needed to effectively produce development information

Capabilities

Member States capabilities to ensure geospatial data, products and services are readily available

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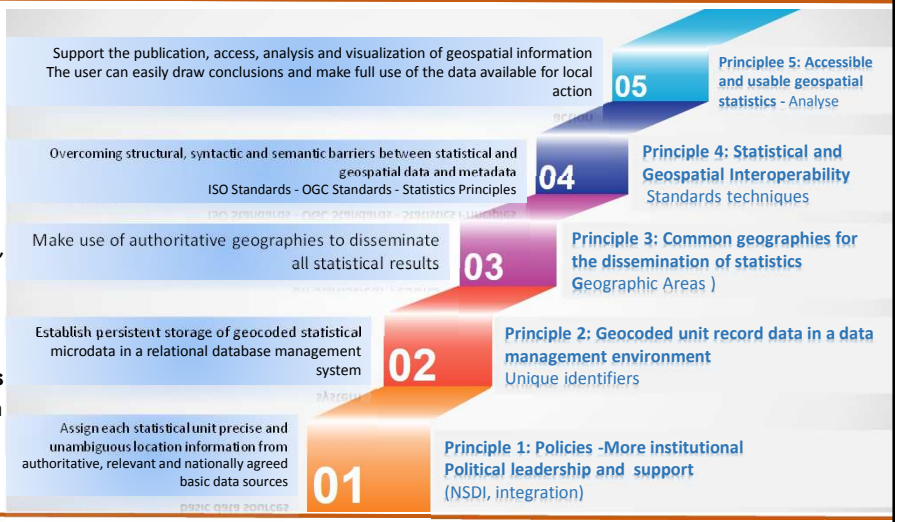
The African Statistical Spatial Framework : Overarching Principles (From the GSGF)

- **Integration of Statistical and Geospatial Information : Overarching Principles**
- **Mainstreaming the enabling capabilities of geospatial technology into National Statistics Offices activities (all the way through training, data and processes)**
- **Linking NSDs and NSDI: National statistical, planning and cartographic authorities have effective collaboration between them in the development of respective data infrastructures**



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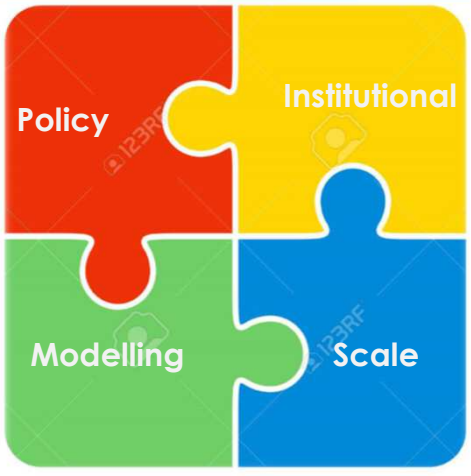
The African Statistical Spatial Framework : Dimensions

- A successful integration of geospatial information and Statistical Information requires to look at the following dimensions: (1) Scale; (2) Policy; (3) Institutional; (4) Modelling.
- **Scale** : The scope of the geographic space in which the integration is due to take place.
- **Policy** : The policy dimension necessary at all levels on the Scale axis to initiate and harmonise the strategies and related regulations in order to smoothly achieve full integration
- **Institutional** : The institutional arrangements necessary to achieve real integration, in accordance with the orientation of the two compatible policies [Custodianship Principles].
- **Modelling** : The component of the integration process dealing with the technical, technological, scientific abstraction and their related functional and procedural interactions



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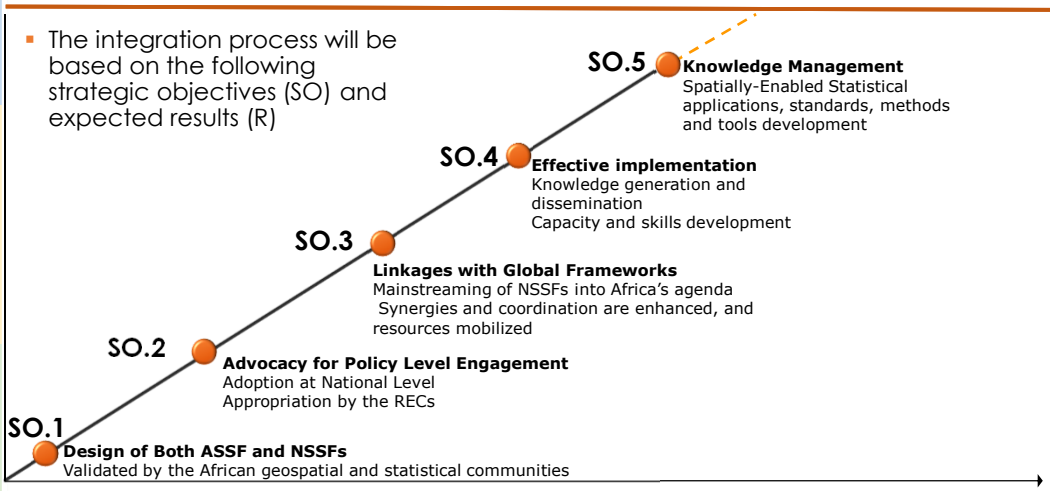
The African Statistical Spatial Framework: Strategic Objectives

- The integration process will be based on the following strategic objectives (SO) and expected results (R)



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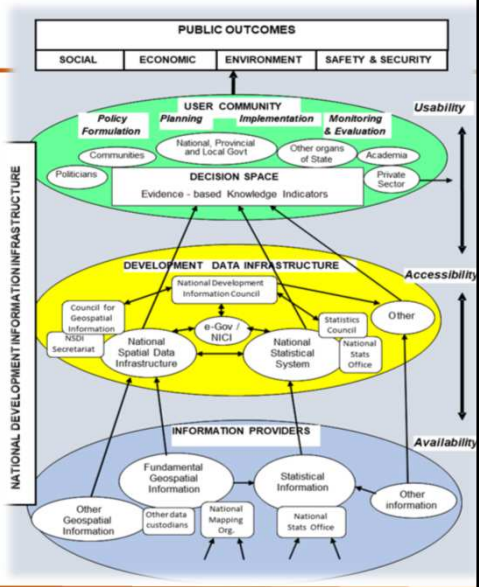
Next Step : From Global to Local : Downscaling into NSSF

- The strategy includes a deconvolution mechanism to downscale the framework at national level
- Member States can adopt, adapt and apply their own National Statistical Spatial Framework (NSSF)
- Building the National Development Information Infrastructure (NDII)
  - The foundational, authoritative and up-to-date spatially-enabled statistical information that are consistently available and accessible over time for informed decision-making at the local, national, regional, and global levels.



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Next Step : Leveraging the ASSF Dimensions

- Leveraging the enabling capabilities of geospatial information technologies in statistical data collection, processing, analysis and dissemination. While ensuring that spatial information infrastructures are harmonized with national statistical development strategies.

Policy and Governance

Geo-enabling NSDS
[Before NSDS, NSDI was]
Ensuring effective collaboration between statistical and geospatial community

Data, Common Tools

Building on Basic Data Themes
Use of common specifications and standards

Partnership

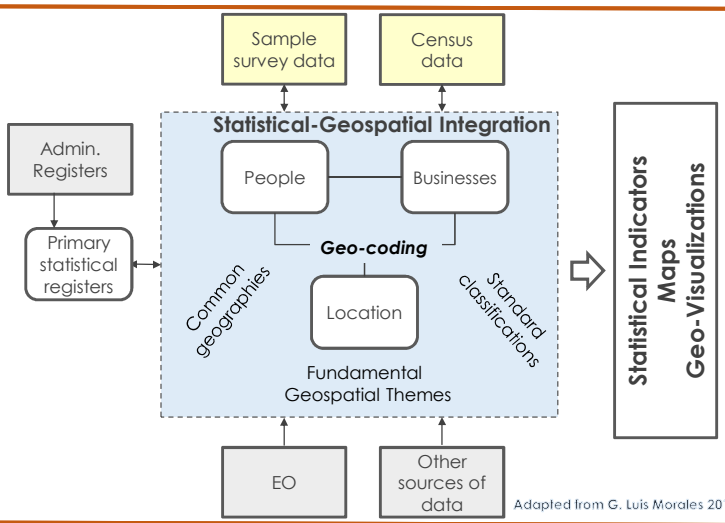
Ensuring linkages and cooperation with various initiatives

Capacities

Making geospatial analysis a core competency in any Census Office

Next Steps : Implementing Quick Wins

- **SALB Project** :
  - Building, updating and sharing common administrative boundaries.
- **GeoNyms Project** :
  - Standard web-based application to record and edit geographic names in a harmonized manner.
- **2020 Round of Censuses**
  - Fostering geospatially-enabled censuses.
  - Building geo-referenced dwelling frames



Concluding Remarks

- Invariably, GIS have modified the way in which data from national statistics offices are collected and stored and are produced.
- In Africa more and more countries are integrating GIS into their census mapping processes and household listings in some regard.
- Many now have developed a solid geo-referenced (GPS) database of dwelling locations, clearly delineated enumeration area boundaries and a complimentary set of high-resolution satellite imagery.

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Thank You [www.un-ggim-Africa.org]

- Download the African Action Plan on integration of geospatial and statistical information:
- English :
  www.uneca.org/sites/default/files/PublicationFiles/un-ggim_-_geospatial_information_for_sustainable_development_in_africa-20171115.pdf
- French :
  www.uneca.org/sites/default/files/PublicationFiles/geospatial_information_for_sustainable_development_in_africa_fre-20171115.pdf
- Nonguierma@un.org

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