

**Regional Committee of United Nations Global Geospatial  
Information Management for Africa**

## **Workshop on Integration of Geospatial and Statistical Information**

# **Progress Report on the Integration of Geography and Statistics in Africa**



**United Nations**  
**Economic Commission for Africa**

**Presented by:**  
**Ayenika Godheart**

**ECA (Geospatial Information Management Section)**



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

# Status on the Integration of Geospatial and Statistical information in Africa

## Presentation Plan



### ATTENTION

- ❑ Rationale for the Global Statistical Geospatial Framework
- ❑ Developing a National Statistical Geospatial Framework



### INTEREST

- ❖ Integration of geospatial and statistical information in Africa
- ❖ Principles of the Global Statistical Geospatial Framework



### DESIRE

- ✓ Geocoding data from the 2020 census round

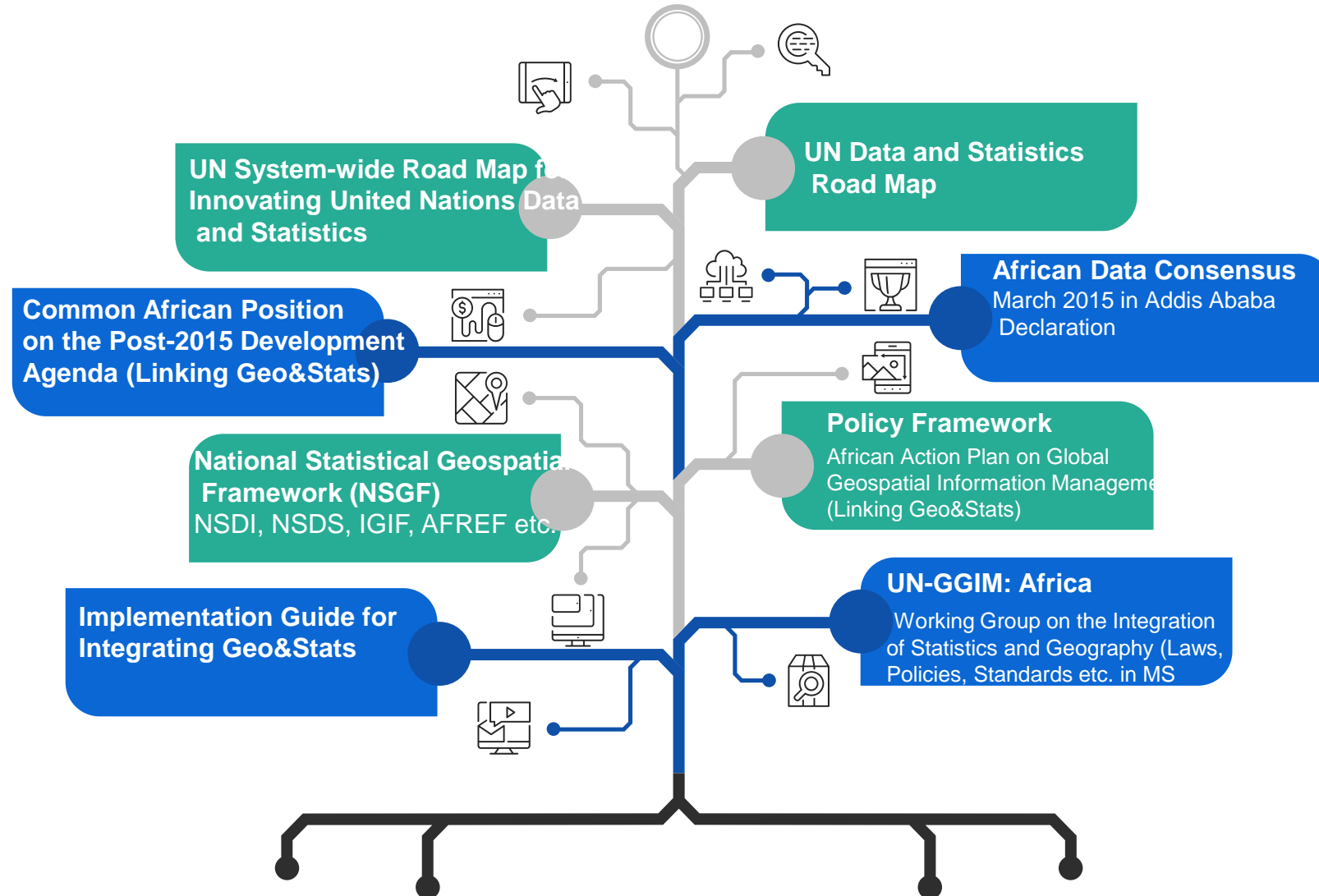


### ACTION

- ✓ Enhancing the implementation of the Global Statistical Geospatial Framework at the national level

# Rationale for the Global Statistical Geospatial Framework (GSGF)

## GSGF APPLICATION IN AFRICA



# Developing a National Statistical Geospatial Framework

**MILESTONE**

**01**

## MILESTONE 01

- ❑ UN-GGIM: Africa (Working Group on the Integration of Statistics and Geography)-Policies, Governance, Standards, Data, Partnerships, Legislature etc.
- ❑ SALB: Second Administrative Level Boundaries-Representation of Statistical Data
- ❑ Building Footprints (2020 Round of Census in Africa)-Dwelling Frames, Households, Population estimation, Spatial Analysis of Census Data, Quality Assurance, Dissemination

**MILESTONE**

**02**


## MILESTONE 02

- ❖ NSDI: National Spatial Data Infrastructure
- ❖ IGIF: Integrated Geospatial Information Framework
- ❖ AFREF: African Geodetic Reference Framework
- ❖ NSDS: National System for the Development of Statistics
- ❖ SHaSA: Strategy for the Harmonization of Statistics in Africa 2017-2026
- ❖ African Action Plan on Global Geospatial Information Management (Linking Geo&Stats)



# Implementation of the Principles of the Global Statistical Geospatial Framework in various Population and Housing Censuses and Surveys

## PHASES

 **Data Source: Rounds on Censuses**  
<https://unstats.un.org/unsd/demographic-social/census/censusdates/>.

 **Data Source: Demographic and Health Survey (DHS)**  
<https://dhsprogram.com/Methodology/GIS.cfm>.

Censuses and Surveys

Implementation of GSGF principles in Africa (Case Study for PHC and Demographic and Health Surveys)	Demographic and Health Survey	1990 census round (44 countries)	2000 census round (38 countries)	2010 census round (47 countries)	2020 census round (50 countries anticipated)
Principle 1. Use of fundamental geospatial infrastructure and geocoding	45 countries: Geocoding of DHS variables	5 countries	30 countries	45 countries	22 countries
Principle 2. Geocoded unit record data in a data management environment	45 countries: Geocoding of DHS variables	5 countries	30 countries	45 countries	22 countries
Principle 3. Common geographies for the dissemination of statistics	38 countries: Geocoding and spatial data repository of DHS variables	2 countries	10 countries	3 countries	5 countries
Principle 4. Statistical and geospatial interoperability	30 countries: Statistical and geospatial interoperability	1 countries	5 countries	3 countries	5 countries
Principle 5. Accessible and usable geospatially enabled statistics	30 countries: Accessible and usable geospatially enabled statistics	1 countries	2 countries	3 countries	5 countries

# Censuses and Enumeration Area Coding Scheme

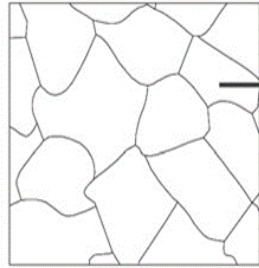
A generic enumeration area coding scheme

1	2	0	3	5	0	1	7	5	0	0	2
---	---	---	---	---	---	---	---	---	---	---	---

E4 4 ΦE54 4 4 4 ΦE54 4 4 4 54 4 ΦE54 4 4 4 54 4 Φprovince  
district locality enumeration area



# Spatial Boundary Database



EA Id	Area
1203501750071	42.3
1203501750072	34.8
1203501750073	26.9
1203501750074	51.2
...	...

EA Id	Population	Male	Female
1203501750071	432	209	223
1203501750072	502	240	262
1203501750073	525	258	267
1203501750074	494	251	243
...	...	...	...

EA Id	Num HH	Avg HH size
1203501750071	89	4.9
1203501750072	98	5.1
1203501750073	102	5.1
1203501750074	85	5.8
...	...	...



BEARABLE

VIABLE

EQUITABLE

Original data table

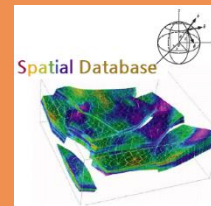
Id	Province	District	P_Pop	P_TFR	D_Pop	D_TFR
101	Merida	Palma	214084	3.2	89763	3.4
102	Merida	S. Maria	214084	3.2	45938	2.9
103	Merida	Veralo	214084	3.2	78383	3.2
104	La Paz	Bolo	397881	3.7	98302	3.9
105	La Paz	Jose	397881	3.7	67352	4.2
106	La Paz	Malabo	397881	3.7	102839	3.7
107	La Paz	Chilabo	397881	3.7	129388	2.8
...	...	...	...	...	...	...

Data tables after normalization

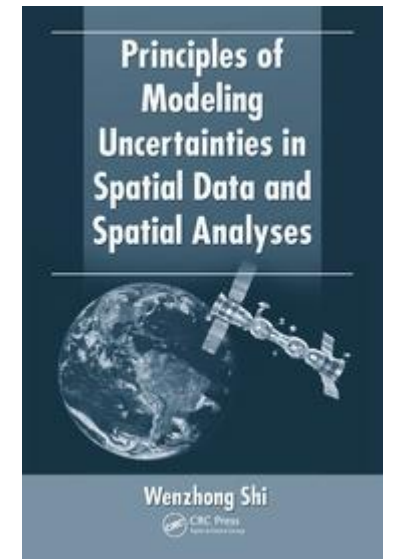
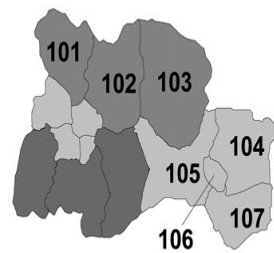
Districts						
Id	Province	District	D_Pop	D_TFR		
101	Merida	Palma	89763	3.4		
102	Merida	S. Maria	45938	2.9		
103	Merida	Veralo	78383	3.2		
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107	La Paz	Chilabo	129388	2.8		
...	...	...	...	...		

Provinces

Province	P_Pop	P_TFR
Merida	214084	3.2
La Paz	397881	3.7
...	...	...



Provinces and districts



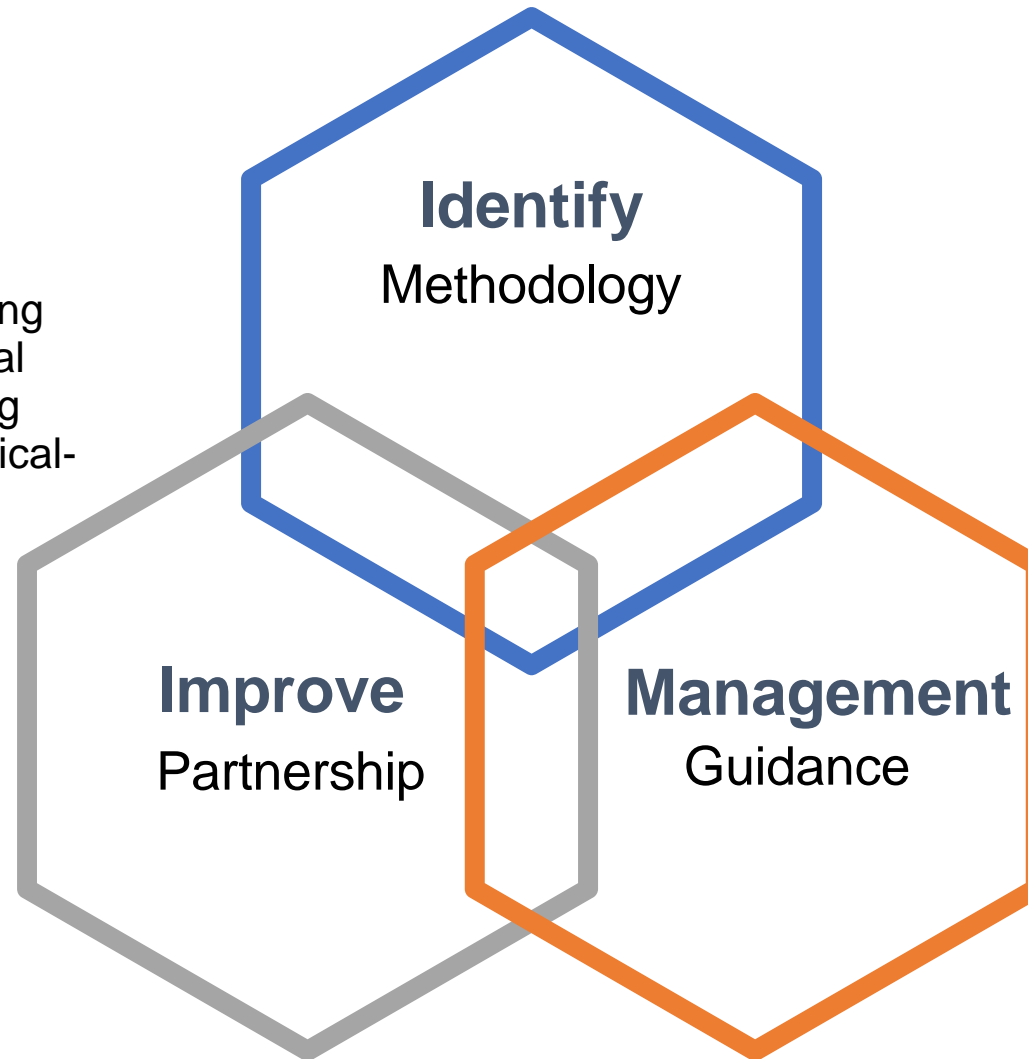
# Enhancing the Implementation of the Global Statistical Geospatial Framework at the National Level



Adopt a methodology for implementing the Framework through the Regional Committee mechanism for providing support to countries working on statistical-geospatial integration in Africa



Partnership with ECA and the Regional Committee in firm agreement and with a clear mandate to execute the provisions under the Framework



The working group on the integration of geography and statistics should provide continuous guidance in the implementation of the Framework



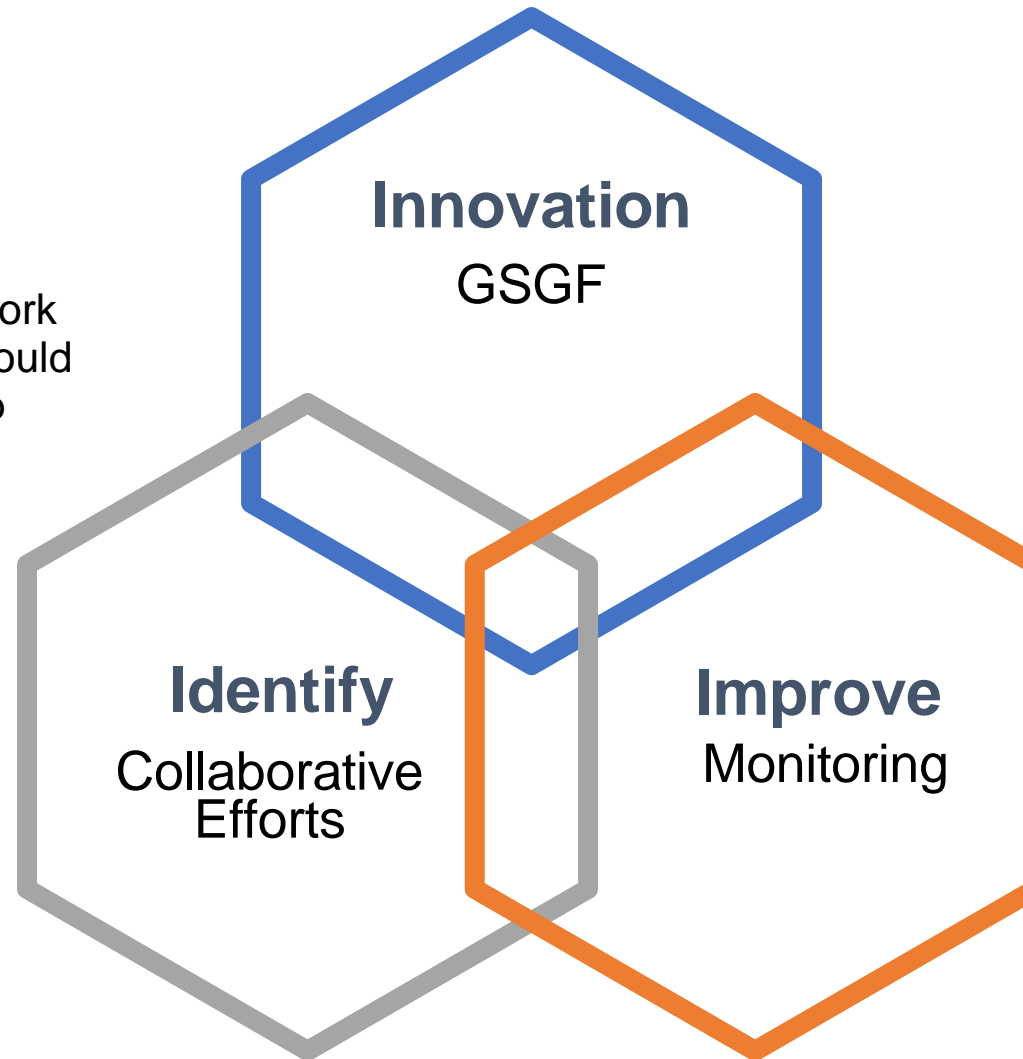
# Enhancing the Implementation of the Global Statistical Geospatial Framework at the National Level



Global Statistical Geospatial Framework that has been developed for Africa should be the official authorized road map



Collaborative efforts of various stakeholders, including those in the statistical and geospatial communities, before they can be applied in a harmonious way.



The implementation of the Global Statistical Geospatial Framework must be thoroughly and continuously monitored throughout Africa.



THANKS