COUNTRY EXPERIENCES IN INTEGRATING STATISTICAL AND GEOSPATIAL INFORMATION

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Presentation outline

- Introduction
- Main responsibility of GIS Unit in GSS
- Workflow in GIS Unit
- Coding System
- Examples of using of statistical information for geospatial analysis
- Geospatial activities
- Conclusion
Ghana

Population size: Approx. 24.7 million

Area: 239,430 square kilometers

Capital Town: Accra

Urban population: 50.9%

Growth Rate: 2.5%
Introduction

- **Mandate:** The Ghana Statistical Service has the mandate to collect, collate, compile, process, analyze, publish and disseminate official statistics
- **Sources of data:** Data are obtained through surveys and censuses as well as administrative sources
- **Data dissemination:** This is done through publications and workshops
Data dissemination is also done using maps. Eg. The Census Atlas, Poverty Maps, etc.

These maps can be linked to physical features on the earth’s surface.

Geoinformatics is a useful tool in many areas of statistics e.g., population census, social and demographic statistics, etc.
Main responsibility of GIS Unit in GSS

- To respond to the new trend in the request for data
- To maximize efficiency of decision making and planning
- To provide efficient means for data distribution and handling
- To eradicate duplication of data
- To integrate data from many sources for the generation of new information
- To update data quickly and at minimum cost
- To assist responsible agencies to prepare for natural disasters by identifying highly populated areas that may be difficult to evacuate
Workflow in GIS unit

GIS SECTION

Preparation of field map

Dispatched field officers

Receive field returns

Digitizing of EA, localities and points of interest (On-screen)

Editing

Creation of attribute table

Building of topology

Linking of spatial data with the Data processing data

EA Data

Archiving of Datasets

Verification-proof reading

GPS data generated lines and points

Adding of Topographic data or Image

Coding/labeling

Statistical information
Coding System

- A unique code is assigned to each EA

- This code is used in data processing for compilation and aggregation of information for administrative or statistical zones for publication.

- Provides the link between the census and spatial data.
Hierarchical levels

• In urban areas, there are five levels and in rural areas there are four. These levels could be region, metro, sub-metro, locality and enumeration area.

• Codes assigned to the various hierarchical levels in the spatial datasets and these normally correspond to the codes used in the census EA database. E.g. 0304002001
  03 – Region
  04 – District
  100 or 200 – Locality (100 is for district and 200 for municipal
  001 – EA Number
Hierarchical levels: Rural Areas

- Ghana
- Region
- District
- Municipal
- Localities
- Enumeration Area
Hierarchical Levels: Urban Areas
Examples of using statistical information for geospatial analysis

- Using 2000 Population and Housing Census (PHC) and Ghana Living standard Survey (GLSS 4) data in producing a poverty map.
Using 2010 data PHC in producing a census atlas on population density
• Millennium Development Authority (MiDA) project for some selected districts
Geospatial activities

Completed geospatial activities based on the 2010 PHC

• Digitization of all 170 district
• Digitization of all 216 district
• Production 2010 census atlas

Ongoing geospatial activities

• Digitization of all major urban areas
• Digitizing and cleaning of all EAs delineated on the topographic sheet (1:50000)
• Creation of individual EA and SA maps
Attribute table
Conclusion

GIS is rapidly becoming a key technology for supporting decision making at all levels.

GSS is working hard to get to the top with this technology. The pace at which the Service is moving is quite encouraging. It is no more a new technology for us.

The near future will continue to see accelerated growth in data availability.

In this regard, the Service will continue to explore more ways of applying the GIS technology to improve data production and dissemination.
THANK YOU