

COUNTRY EXPERIENCES IN INTEGRATING STATISTICAL AND GEOSPATIAL INFORMATION

Presented by:

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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.24.7million

Area: 239,430s 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.

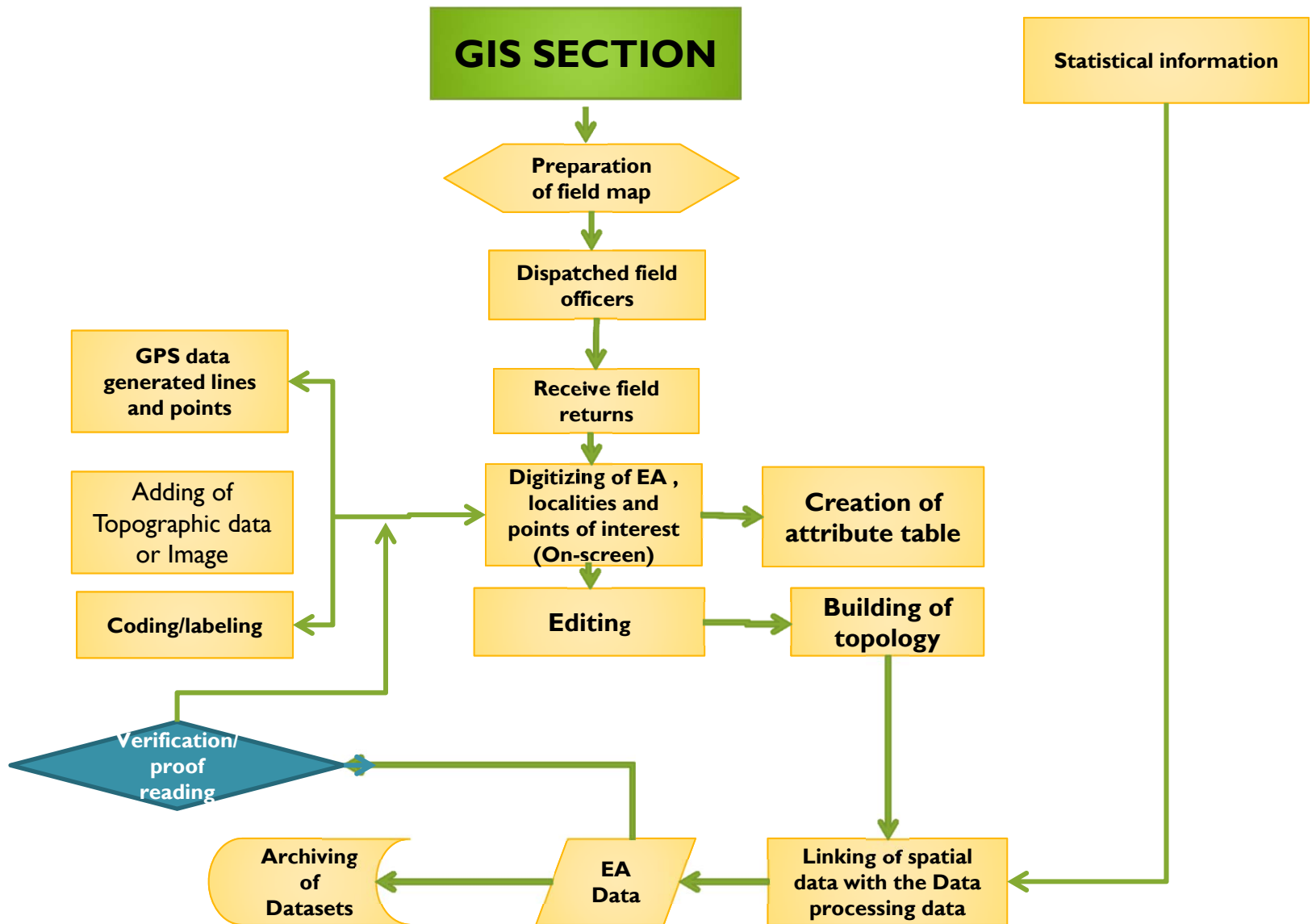


Main responsibility of GIS Unit in GSS

- 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



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.

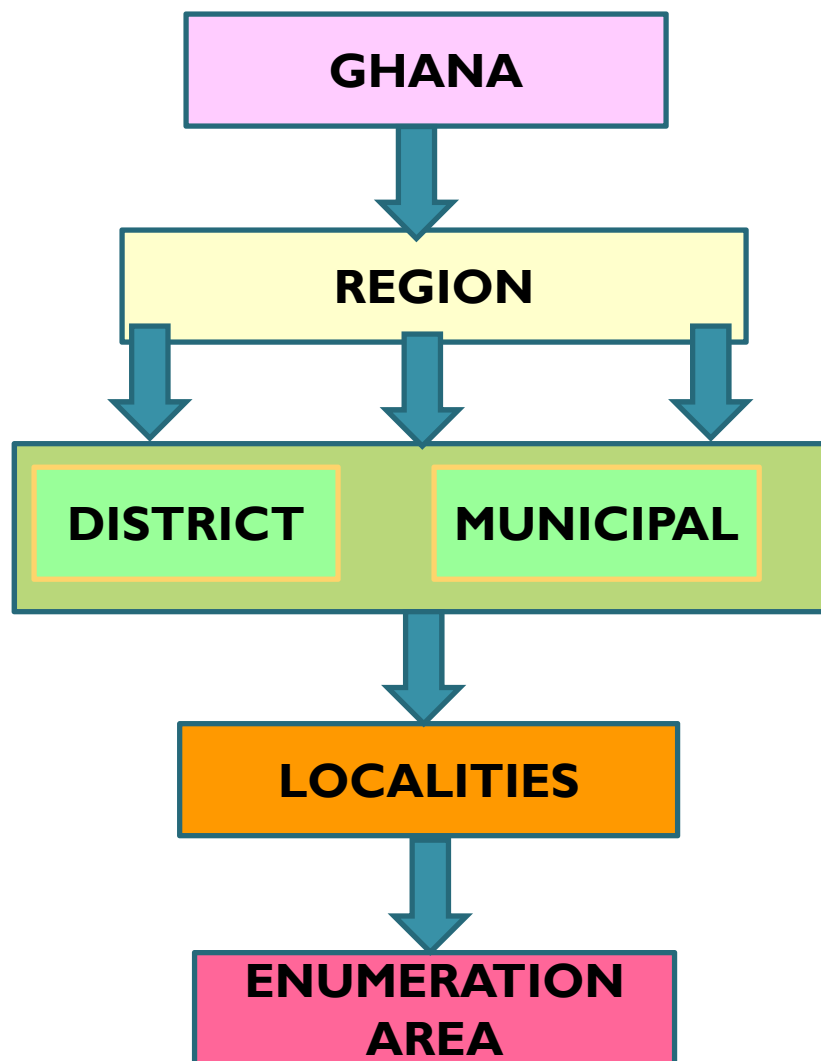


Hierarchical levels

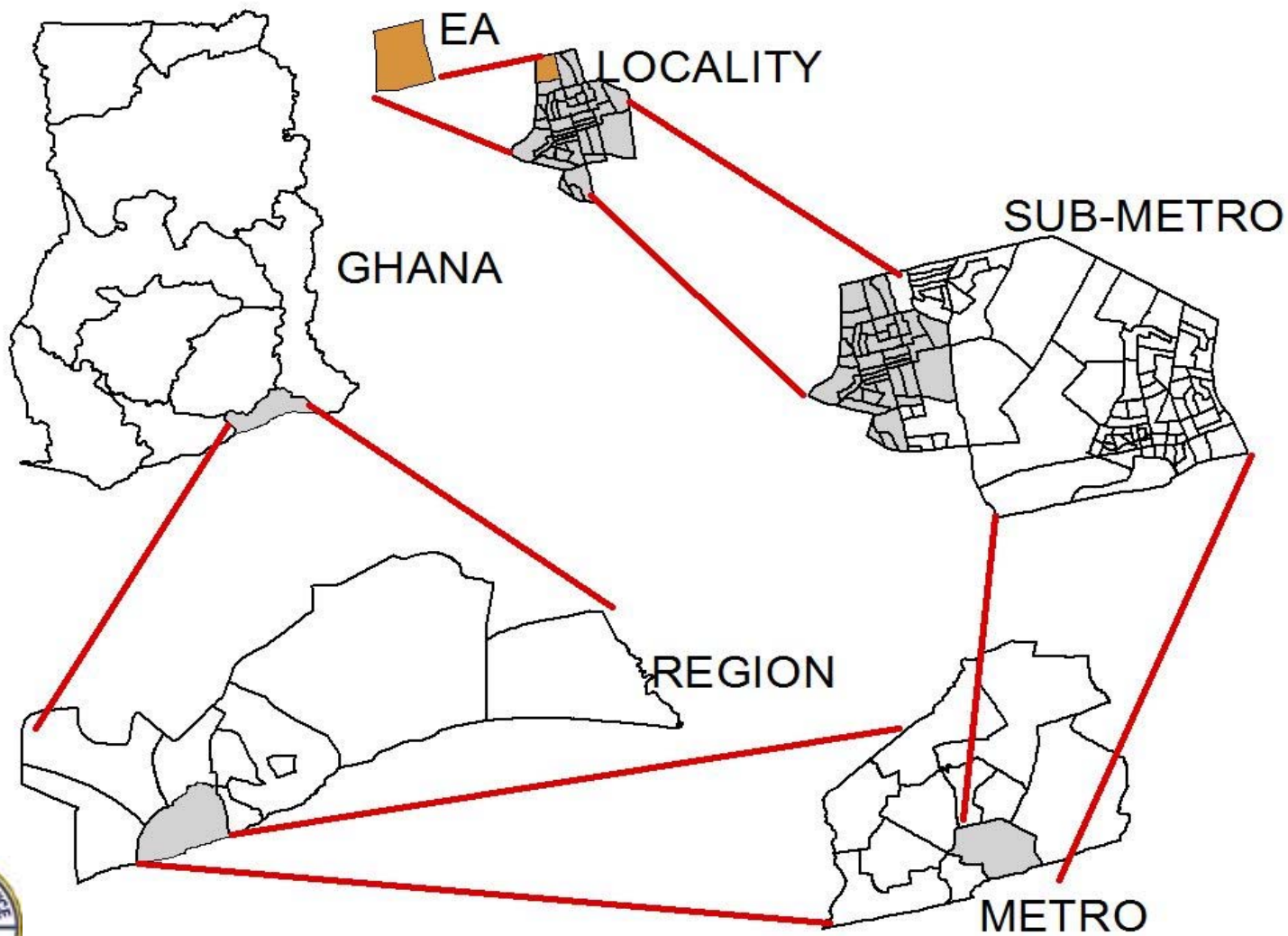
- In urban areas, there are five levels and in rural areas there are four. These levels could be region, metro, sub-metro, locality and enumeration area.
- Codes assigned to the various hierarchical levels in the spatial datasets and these normally correspond to the codes used in the census EA database. 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

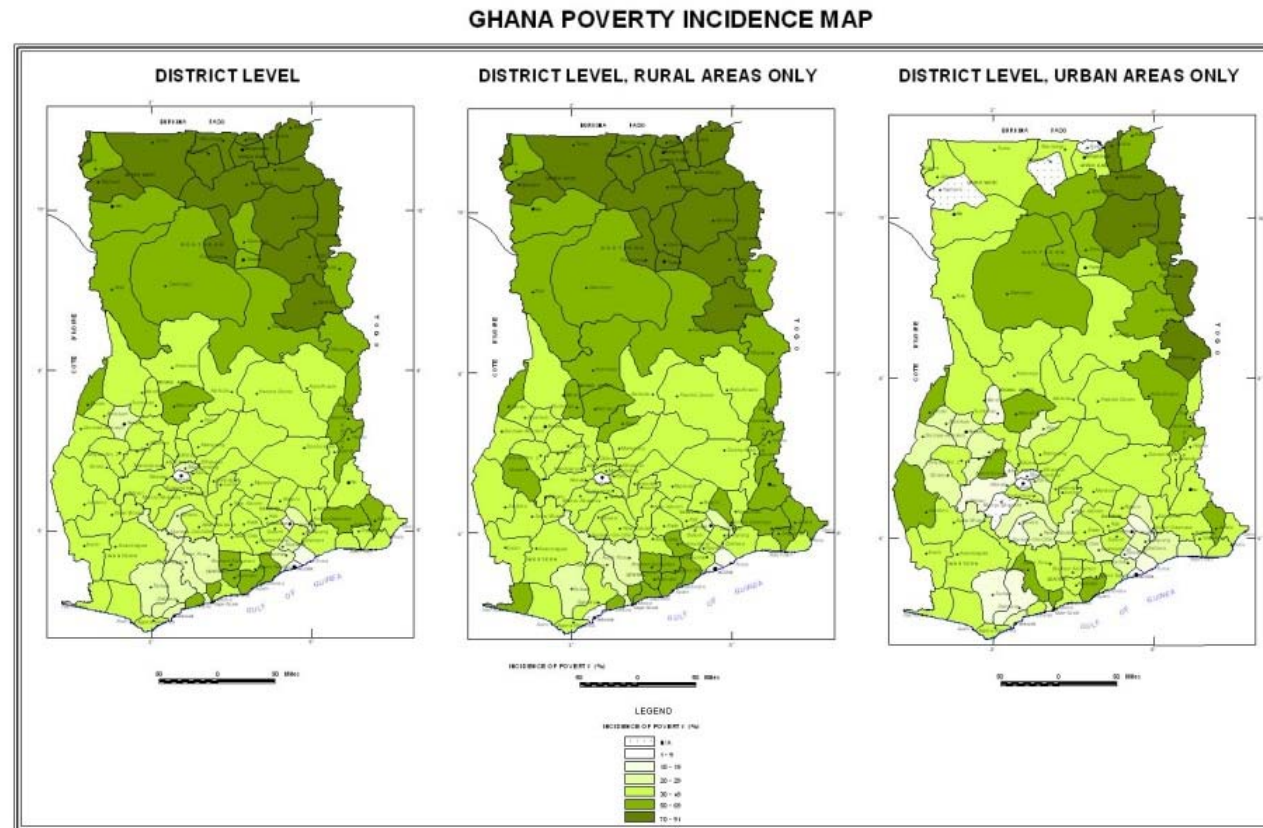


Hierarchical Levels: Urban Areas

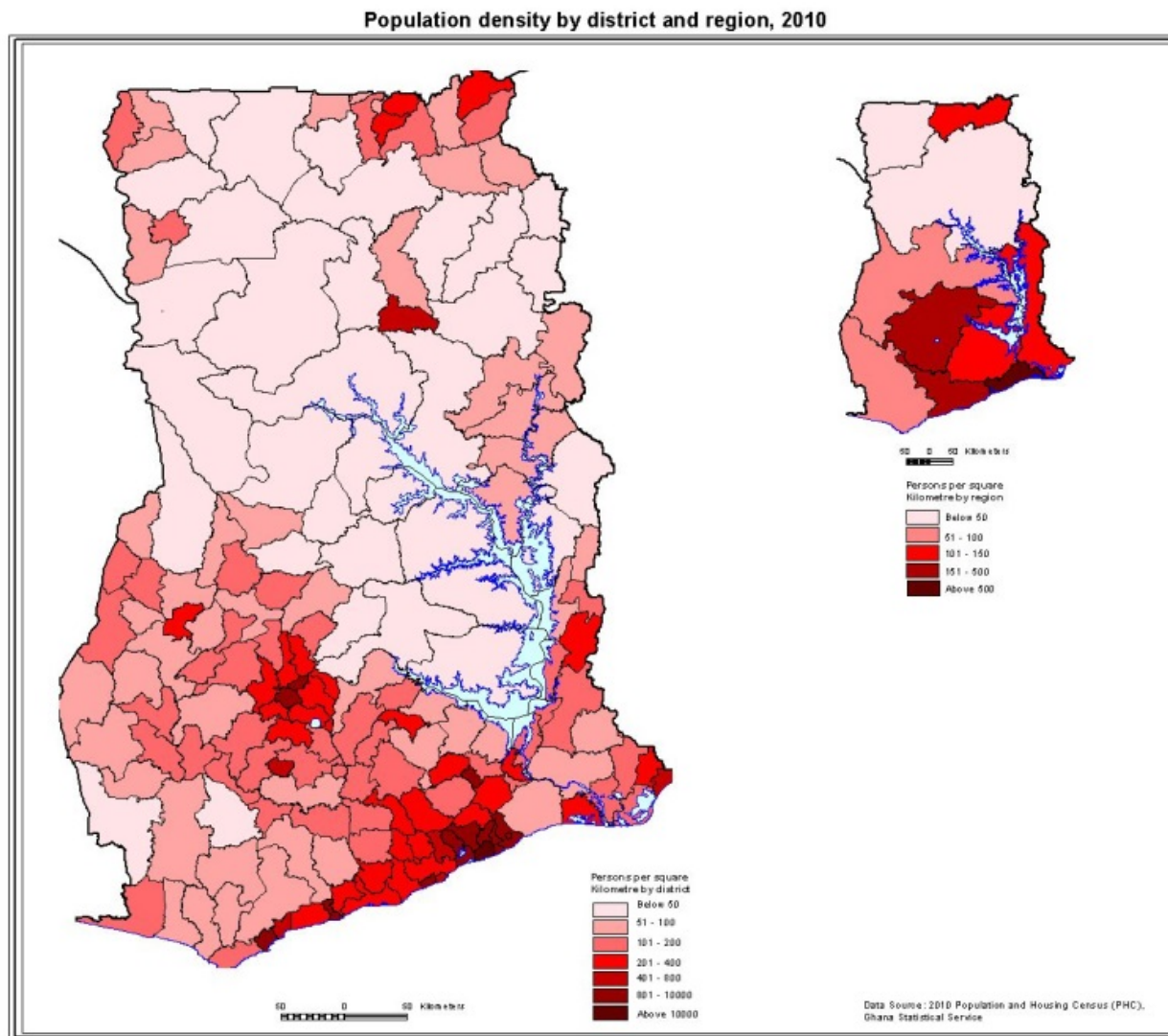


Examples of using statistical information for geospatial analysis

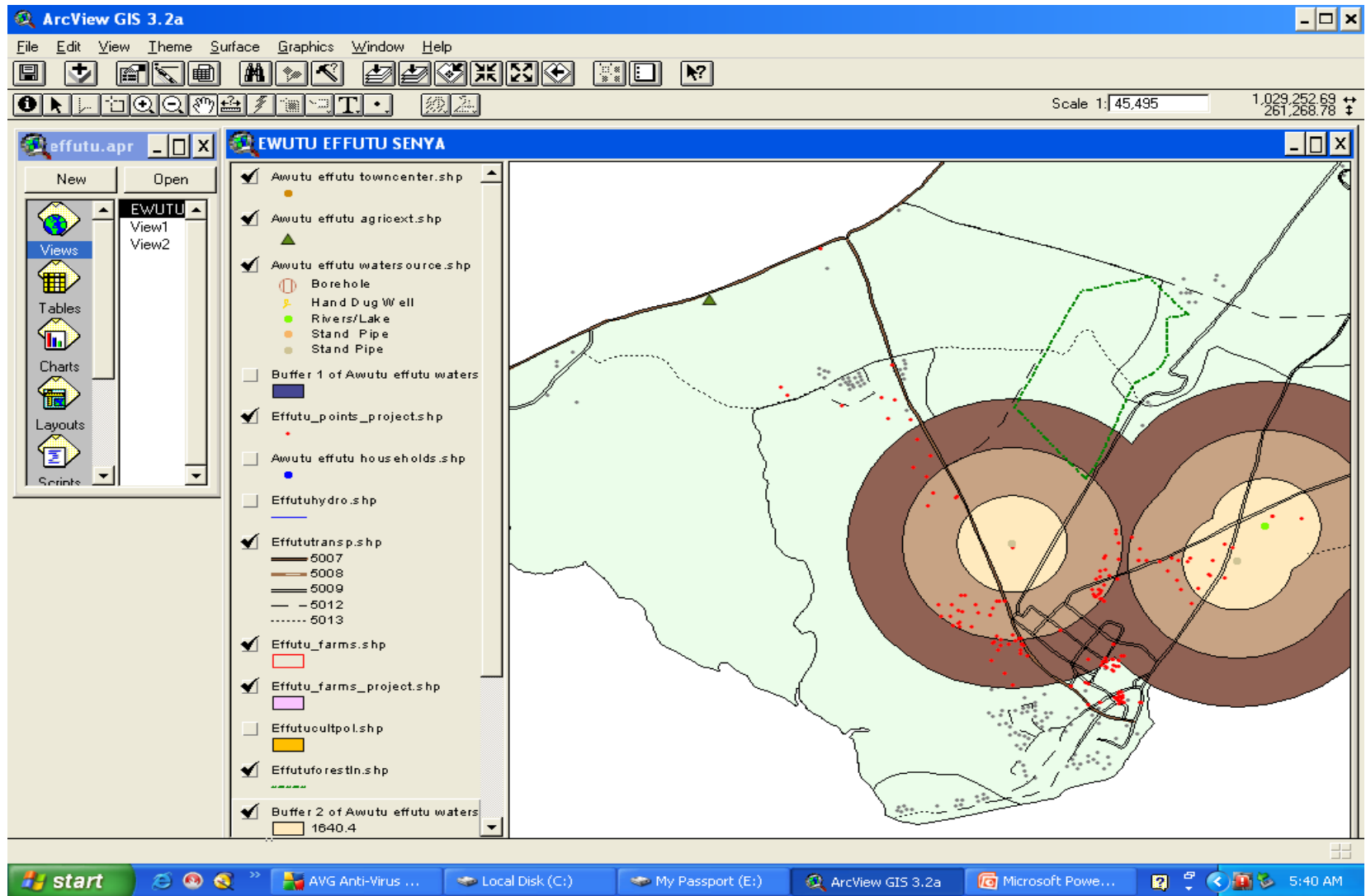
- Using 2000 Population and Housing Census (PHC) and Ghana Living standard Survey (GLSS 4) data in producing a poverty map.



- 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

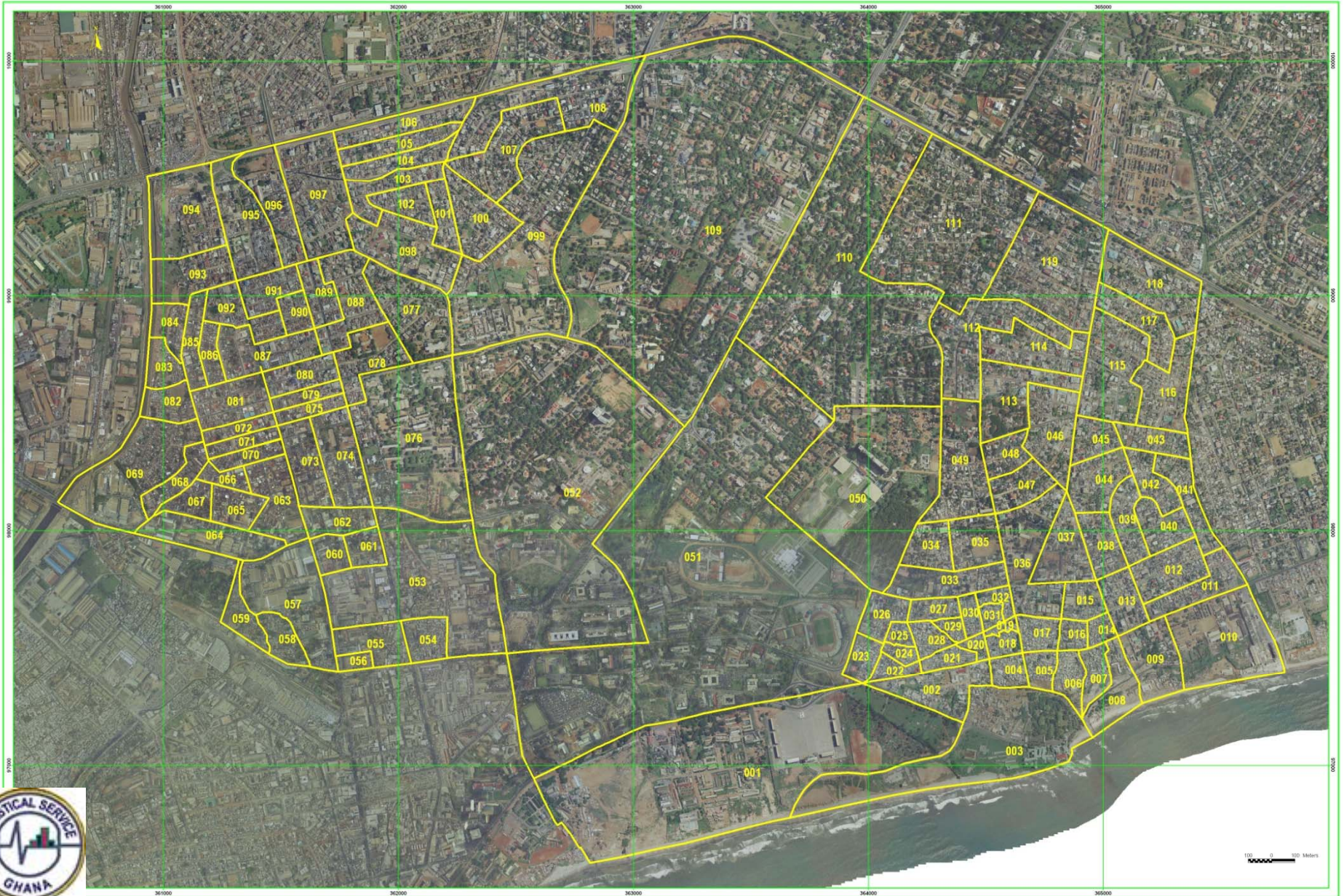
Ongoing geospatial activities

- 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

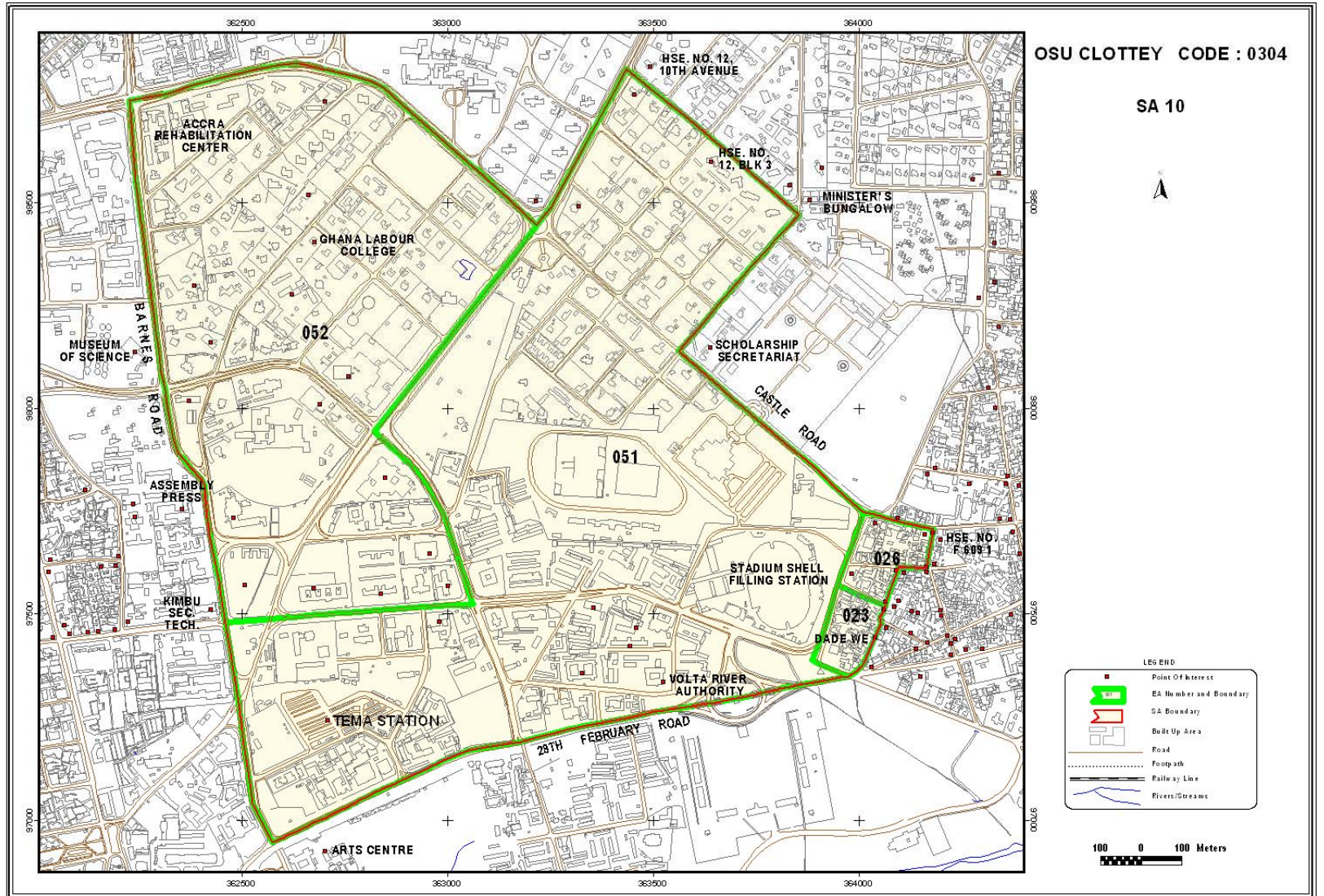


2010 POPULATION AND HOUSING CENSUS

SHOWING ENUMERATION AREA (EA) MAP OF OSU KLOTTEY SUB METRO



100 0 100 Meters



Attribute table

Attributes of merge12

FID	Shape *	EA_CODE	REGION	TYPE	GEOMETRY_S	BASE_NAME	ID1	SUBMETRO	SUBMETRO_N	LOC_NAME	Z010EA_COD	S_A	SUMETRO_DI
0	Polygon	0604100001	ASHANTI	2		HWIDEM AGGRAVE	1450				0604100001	0	ADANSI SOUTH
1	Polygon	0604100002	ASHANTI	2		HWIDEM	1451				0604100002	0	ADANSI SOUTH
2	Polygon	0604100003	ASHANTI	2		HWIDEM KENYA	1452				0604100003	0	ADANSI SOUTH
3	Polygon	0604100004	ASHANTI	2		OWUSUKROM	1454				0604100004	0	ADANSI SOUTH
4	Polygon	0604100005	ASHANTI	2		OPAREKOJOKROM	1455				0604100005	0	ADANSI SOUTH
5	Polygon	0604100006	ASHANTI	2		BEPOASE	1456				0604100006	0	ADANSI SOUTH
6	Polygon	0604100007	ASHANTI	2		ODUMAN	1457				0604100007	0	ADANSI SOUTH
7	Polygon	06041000010	ASHANTI	2		NKRANKESE	1458				06041000010	0	ADANSI SOUTH
8	Polygon	0604100009	ASHANTI	2		ODUMASE [MUSAHKROM]	1459				0604100009	0	ADANSI SOUTH
9	Polygon	0604100008	ASHANTI	2		BOTOKU	1460				0604100008	0	ADANSI SOUTH
10	Polygon	0604100012	ASHANTI	2		FREM	1462				0604100012	0	ADANSI SOUTH
11	Polygon	0604100133	ASHANTI	2		ADOSU	1463				0604100133	0	ADANSI SOUTH
12	Polygon	0604100012	ASHANTI	2		FREM	1464				0604100012	0	ADANSI SOUTH
13	Polynn	0604100014	ASHANTI	2		DANNYAMFO	1465				0604100014	0	ADANSI SOUTH

Record: 1 | Show: All Selected | Records (0 out of 4311 Selected) | Options

240115.671 585991.873 Unknown Units

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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**

