SPATIAL DATA

DATA FOR ACHIEVING THE SUSTAINABLE DEVELOPMENT GOALS

What is spatial data?

- Spatial data are data that have a spatial component which simply means that is tied to a specific geographic.
- Spatial data helps us to see, understand and interpret data to establish relationships, trends and patterns. (Forest cover, protected areas)
- Spatial data presentation mainly in the form of maps help to undertake critical analysis for decision making and planning purposes. In recent times, the usage of Geographic Information Systems eases with the production of spatial data.
- It is assumed that up to 80% of all human actions are related to space. All statistics produced have territorial connections and hence could be mapped.

Why spatial data?

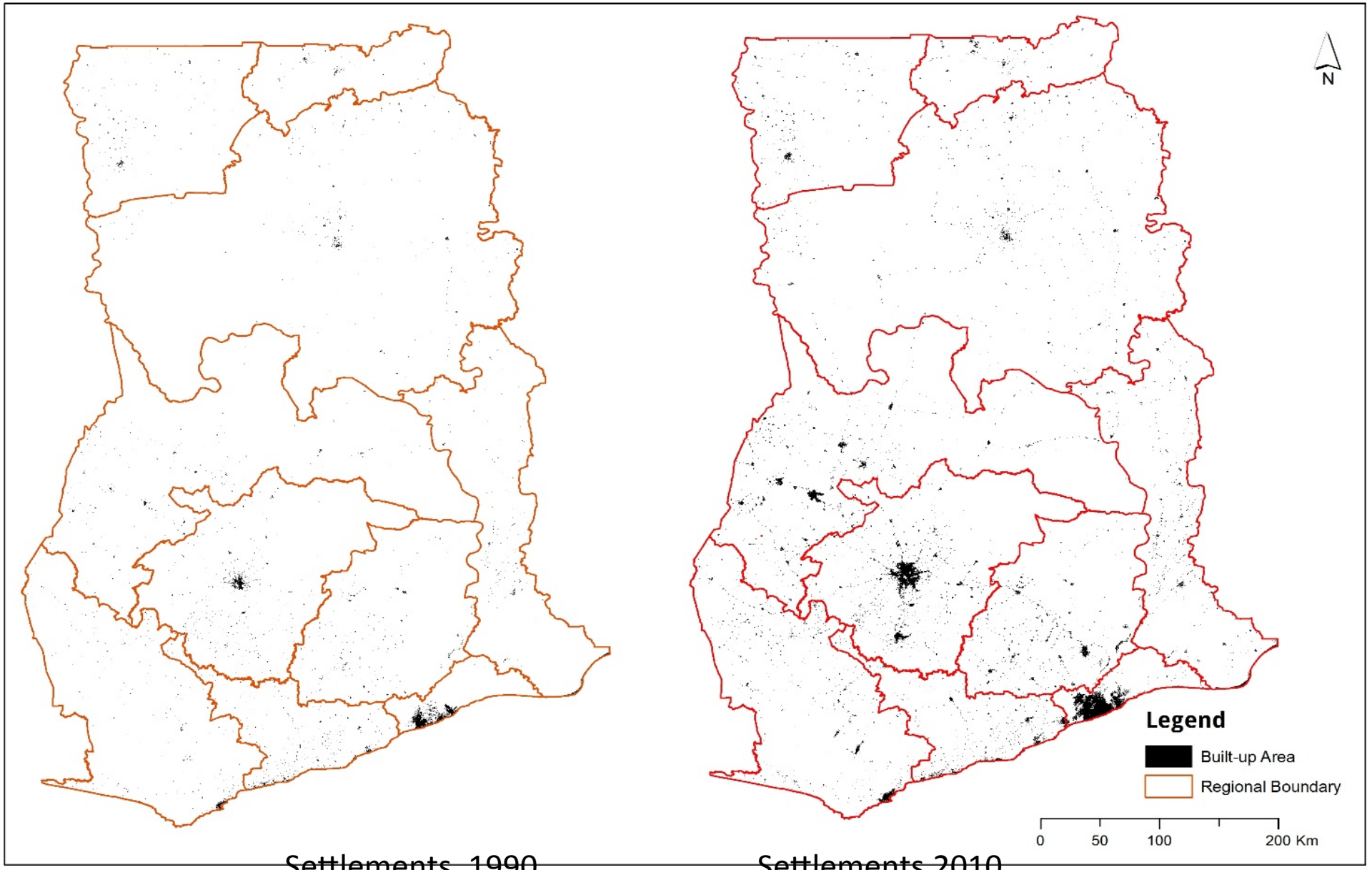
- **Data communication**
  - **Maps displayed data in a format easily understood by decision makers –**
- **Data analysis**
  - **Spatial analysis – calculating population with access to a school or health facility**
- **Decision support**
  - **Ability to display development indicators and results of data analysis**
- **Linked to other sectors**
  - **Platform for displaying information from all sectors: education, economic development, infrastructure, finance, agriculture, environmental monitoring data etc.**

Settlement Growth in regional and national contexts

Region	Settlement 1990 Km2	Settlement 2010 Km2	Absolute change	% Change	Annual Growth rate
Ashanti	153.74	725.64	571.9	78.81	3.94
Greater Accra	246.06	689.17	443.11	64.3	3.21
Brong Ahafo	79.61	441.86	362.25	81.98	4.1
Eastern	82.26	303.21	220.95	72.87	3.64
Western	99.63	304.91	205.28	67.32	3.37
Northern	84.8	275.59	190.79	69.23	3.46
Volta	83.6	250.97	167.37	66.69	3.33
Central	119.73	275.39	155.66	56.52	2.83
Upper West	52.16	115.75	63.59	54.94	2.75
Upper East	21.41	61.55	40.14	65.22	3.26
Total Built up area	1023	3444.04	2421.04	70.3	3.51

Sustainable cities indicator- ratio of land consumption rate to population growth rate- Indicator 13.1

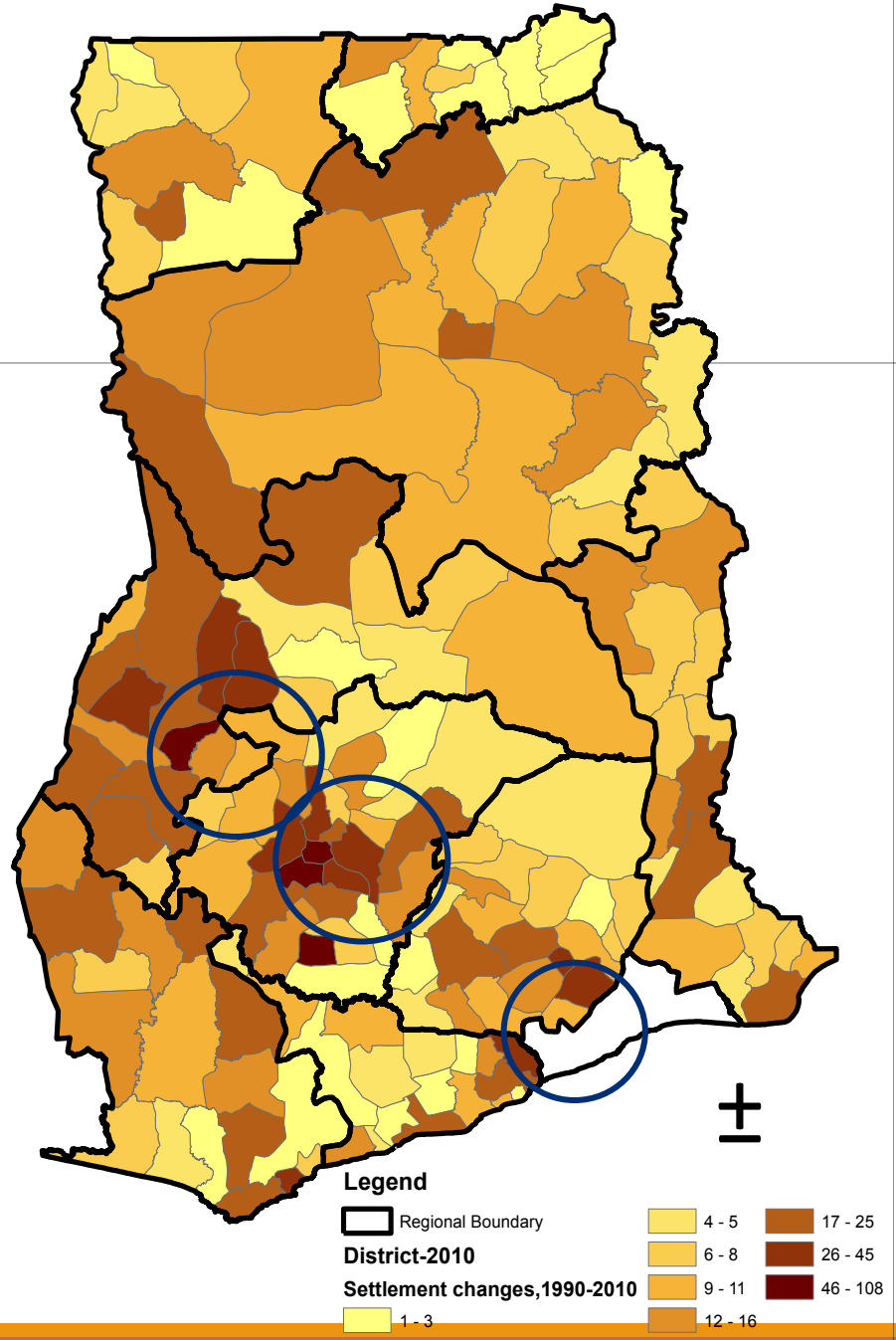
Settlement Growth 1990 - 2010

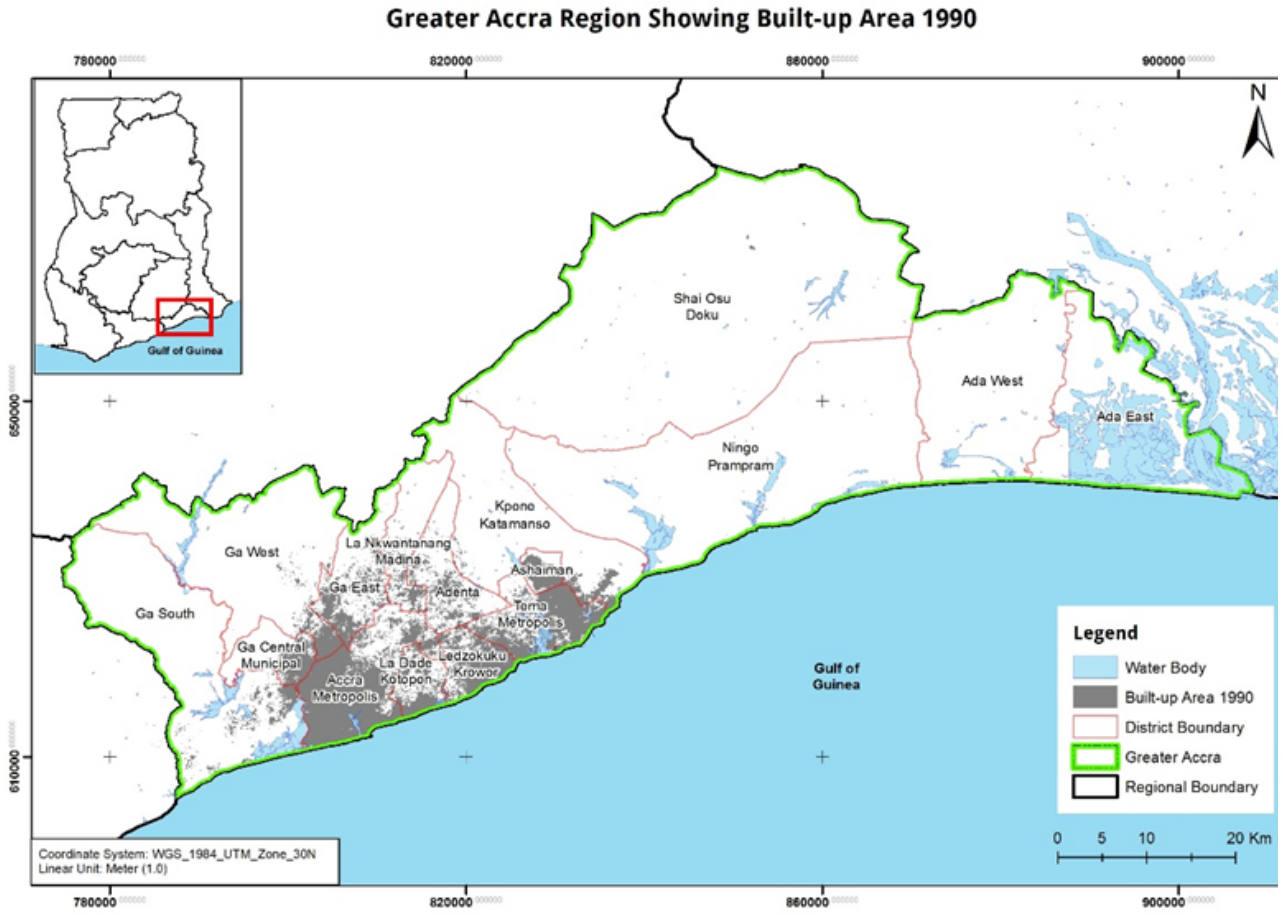


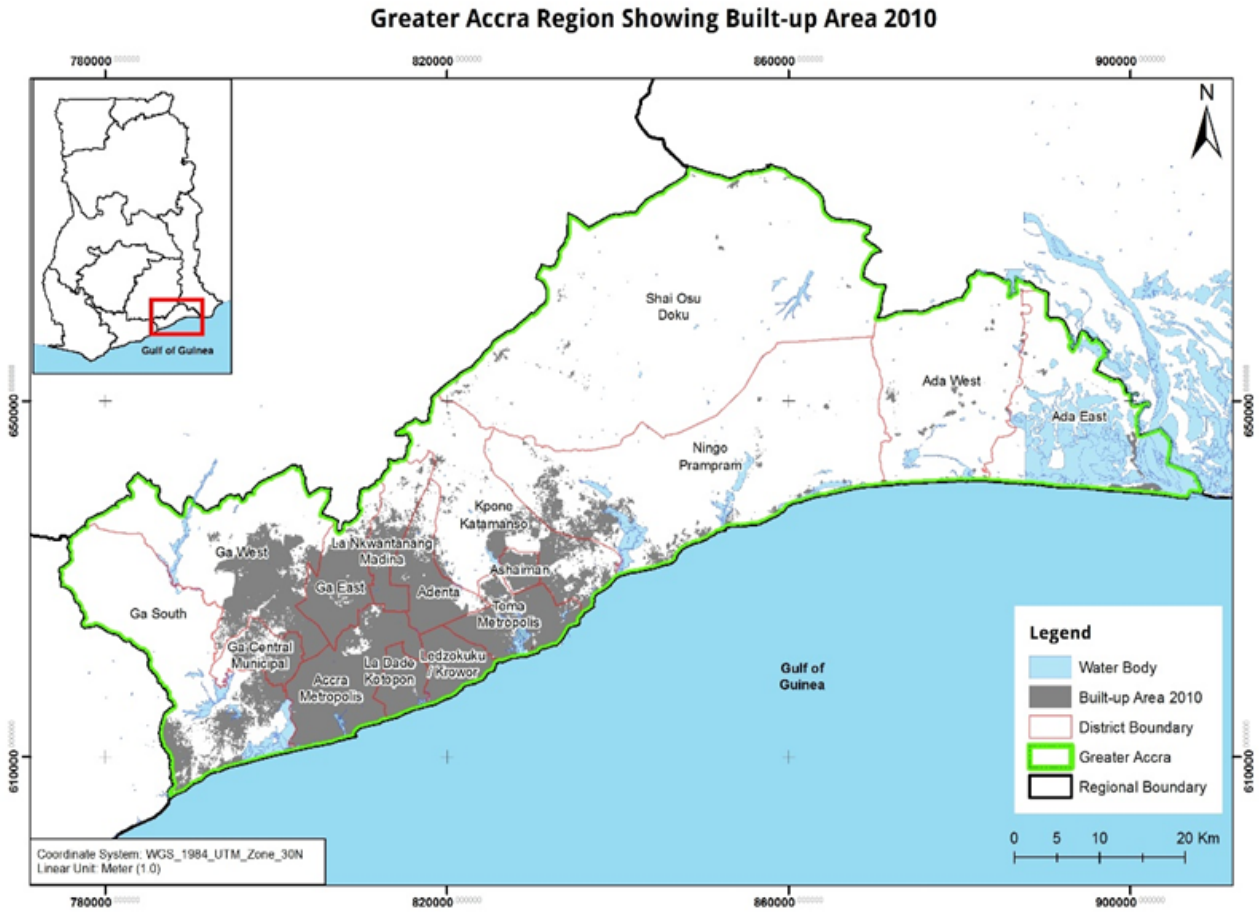
Settlements, 1990

Settlements,2010

Settlement Expansion at MMDA level, 1990-2010 (sq.km)




Greater Accra Region Showing Built-up Area 1990
780000
820000
860000
900000
650000
610000
N
Gulf of Guinea
Shai Osu Doku
Ada West
Ada East
Ningo Prampram
Kpone Katamanso
La Nkwantanang Madina
Ga West
Ga East
Adenta
Ashaiman
Tema Metropolis
Ga South
Ga Central Municipal
La Dade Kotopon
Ledzokuku Krowor
Accra Metropolis
Gulf of Guinea
Legend
Water Body
Built-up Area 1990
District Boundary
Greater Accra
Regional Boundary
0 5 10 20 Km
Coordinate System: WGS_1984_UTM_Zone_30N
Linear Unit: Meter (1.0)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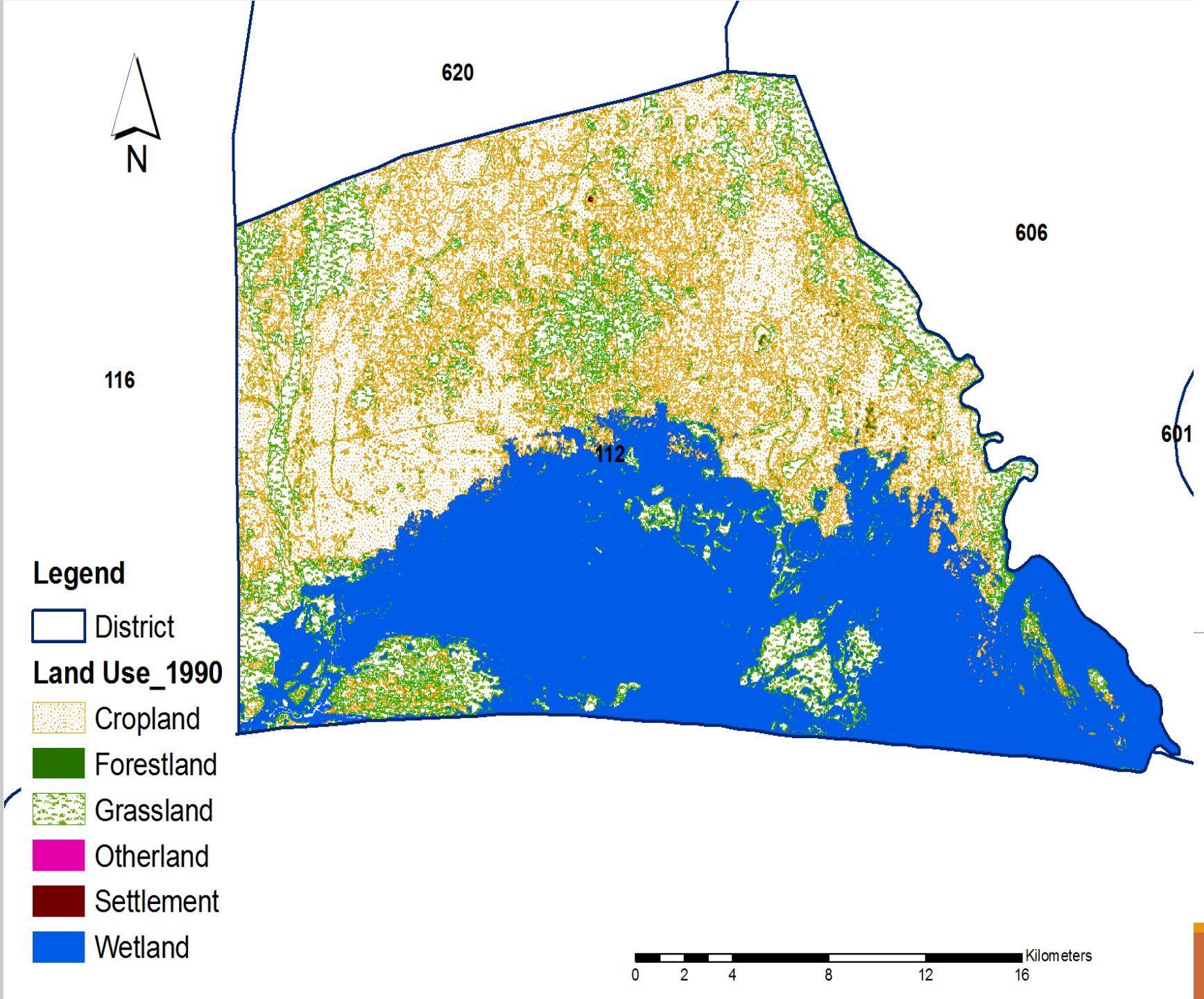
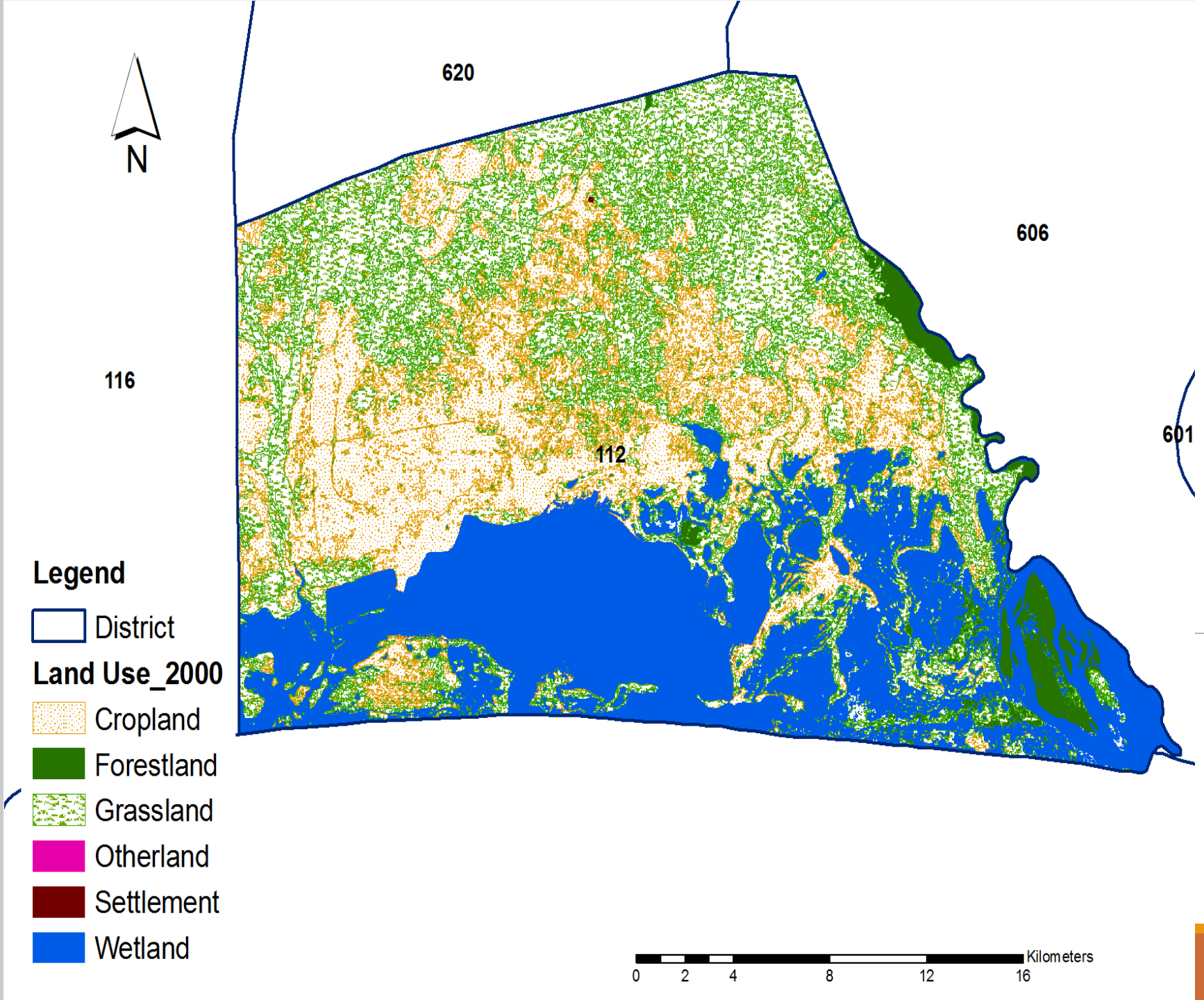
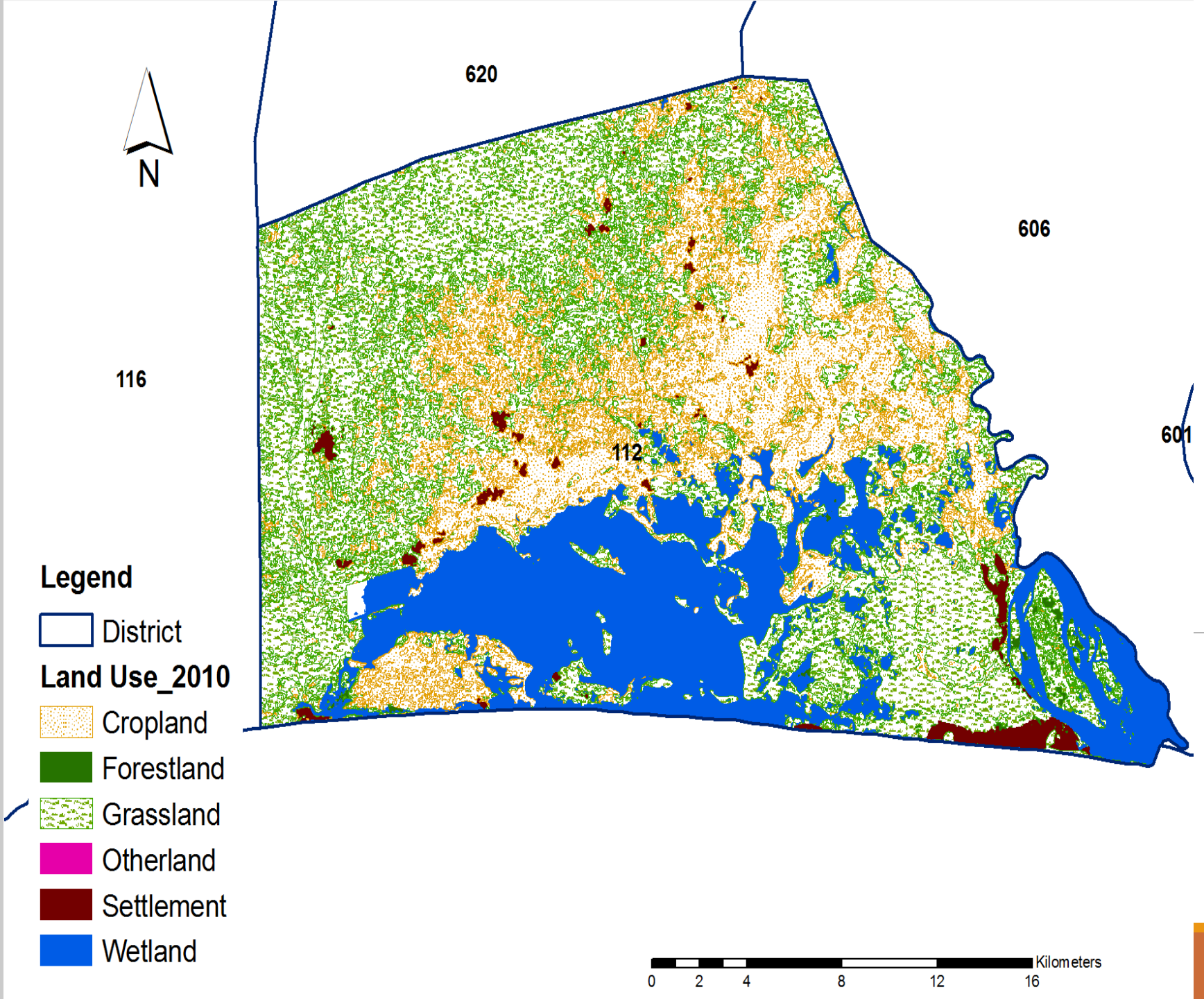
DANGME EAST (112)



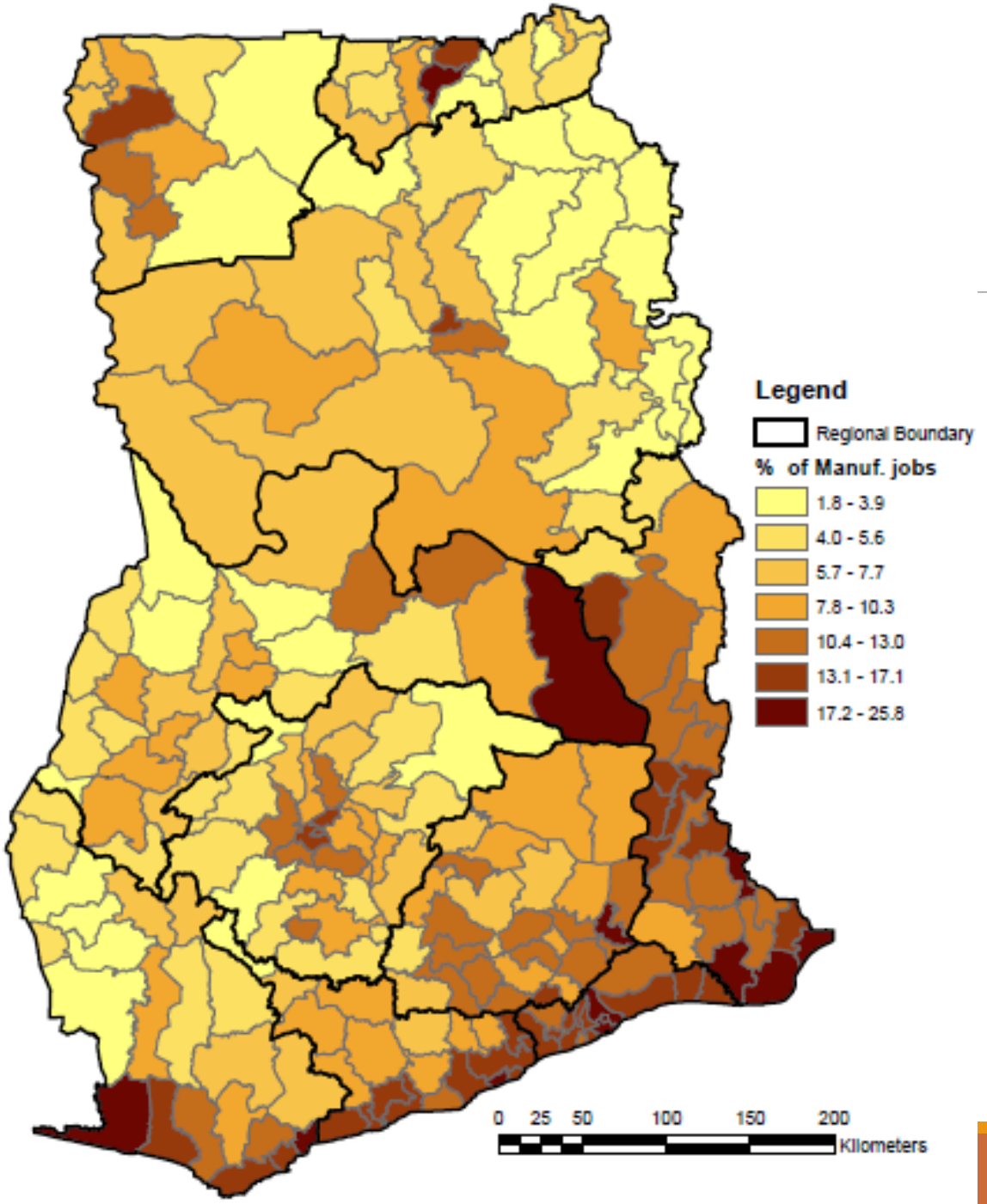
DANGME EAST (112)

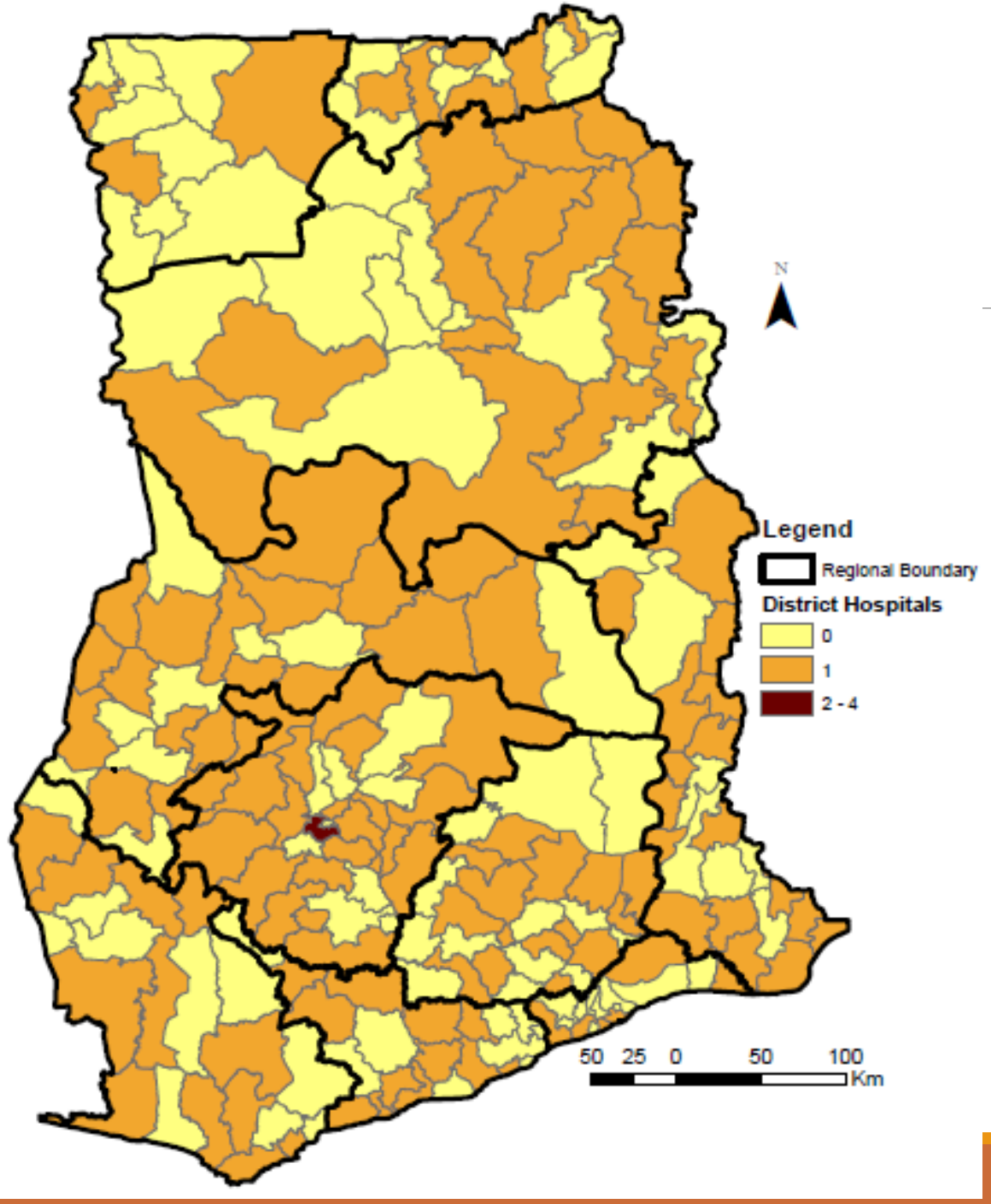


DANGME EAST (112)



% Share of Manufacturing jobs as % total employment at MMDA level, 2010 Census (10.94%)-




N
Legend
Regional Boundary
District Hospitals
0
1
2 - 4
50 25 0 50 100
Km

Spatial Environmental Data Problems

- Data are usually not readily available within MDAs (content and format, Record keeping challenges)
- MMDAs/ GSS do not usually capture spatial related data(Geo-coded).eg. GPS codes for the IBES.
- They are usually not regularly updated
- Challenges with technical quality (GPS coordinates from Ghana Health Service, in-house LUSPA)
- Usage of data collected (Weak analytical capacity of most officials)
- Weak information management system for planning purposes (Eg. EPA on particulate matter example, MMDAs databases)
- Non-standardized nature of information collection formats or styles (classification of sub-categories are confusing, Permitting forms, classification of hospital levels etc)

Spatial Environmental Data challenges

- Availability and quality of spatial (environmental) data is a major challenge (GPS of all schools and health facilities, road networks etc.)
- Lack of time series GIS (spatial) data to undertake trend analysis to influence decision making. Where they are available, they are usually old.
- Different efforts by different institutions Eg. National Development Planning Commission's National Spatial Data Infrastructure Project.
- Creation of data houses with similar functions as GSS/ Duplication of efforts (National Household Registry at Women and Gender Ministry)

Ways forward

- Clearly define specific indicators for the various sectors identified.
- Training of officials on the indicators and how to routinely collect data.
- Introduction of spatial data in all data collected by Ghana Statistical Service Eg. IBES surveys.
- Determine district, city and town codes to be used by all MDAs and MMDAs
- Develop stronger bottom-up information/data collation and management system.

(routine data – daily, weekly, monthly based on the nature of the sector)

- Adequate funding for the data collection and management.
- Identify Innovative routine ways of data collection (utilizing the long vacation window for district wide data collection via engaging post-secondary and tertiary students).

Target	Indicator		Responsible Agencies		Indicator already in existence
By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	6.6.1 Change in the extent of water related ecosystems over time	**Tier III**	UNEP	UN Water, IUCN, Ramsar	Change in area coverage of wetlands (representing all water bodies)