



CHANGES IN ECOSYSTEM SERVICES IN RIPARIAN FORESTS AMIDST CLIMATE CHANGE: A CASE OF THE DENSU RIVER BASIN

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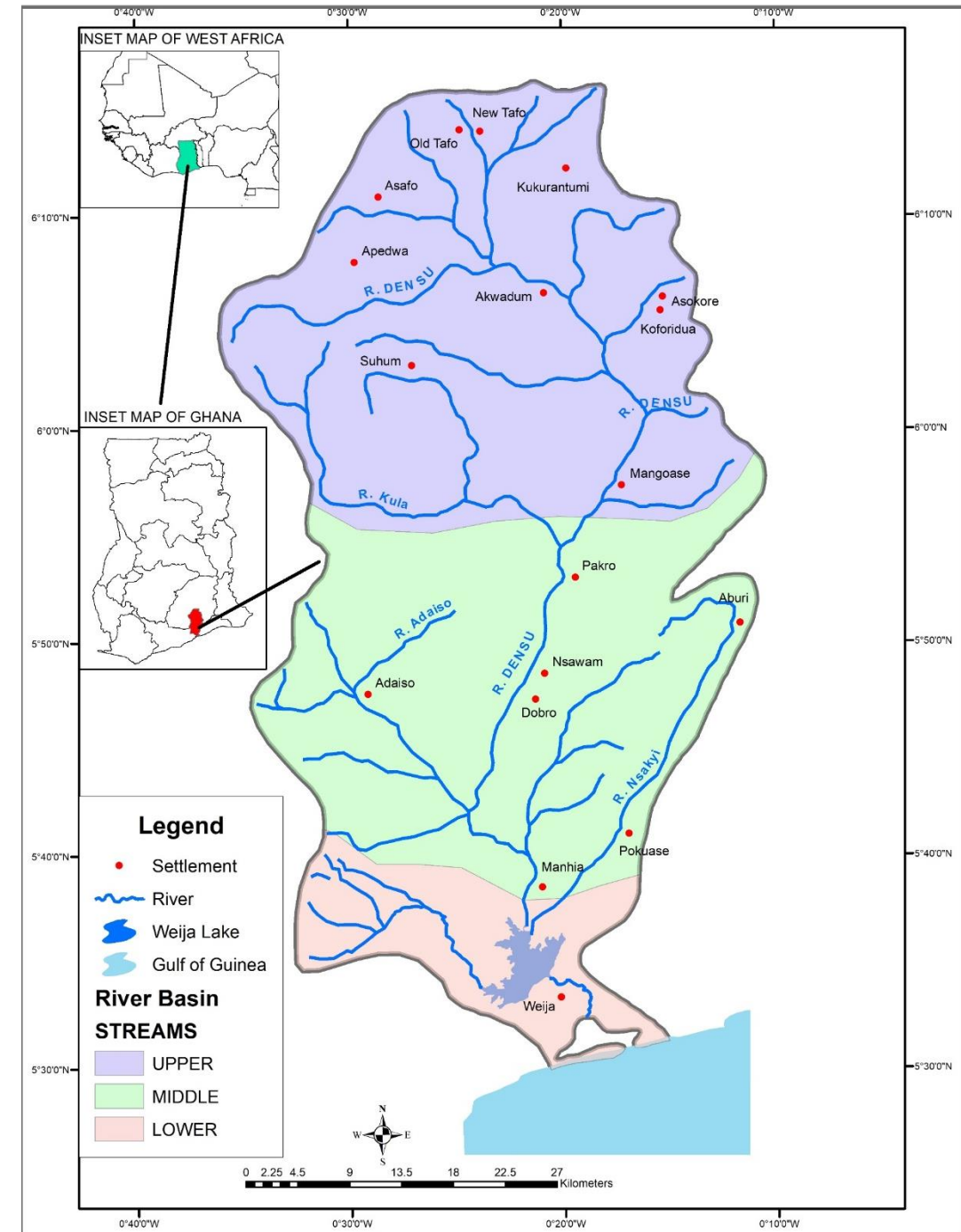
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INTRODUCTION

- Ecosystem services of riparian forest have been a source of livelihood opportunities.
- Food provisioning components of the water body and the forest face a potential threat with climate change
- The Densu River Basin (DRB) is a typical riparian forest which provides such benefits.
- It is not clear how the provisioning functions of the ecosystem is changing.





OBJECTIVE

- To assess the changes in ecosystem functions of the Densu River Catchment over a period of 30 years and establish the underlying causes of the changes.



METHODOLOGY

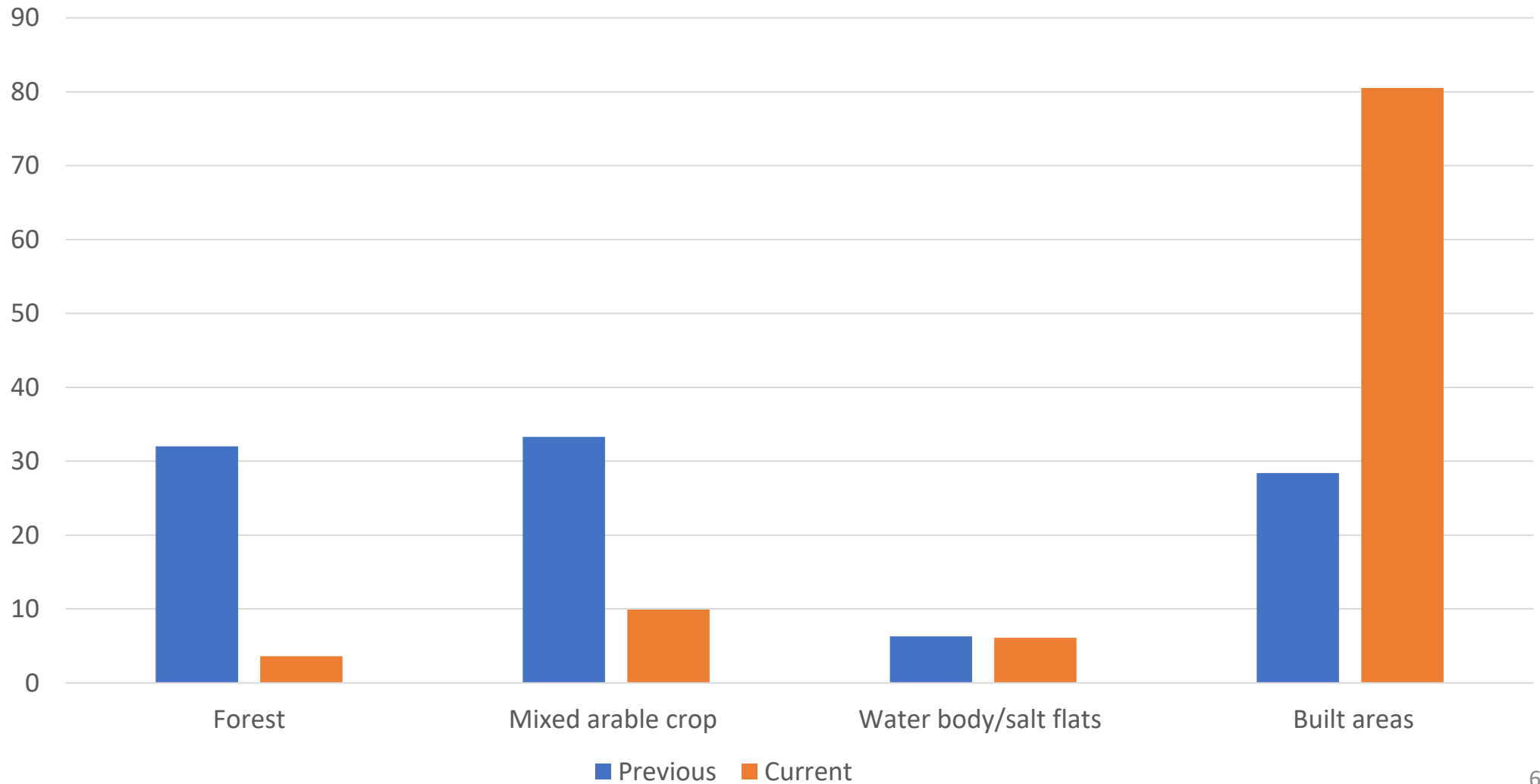
- **Social-ecological approach**
 - Quantitative survey of residents (450) in the catchment
- **Geospatial technology thus, Remote Sensing**
 - Satellite Images (LANDSAT) captured in 1991, 2002 and 2021



FINDINGS FROM SURVEY

Figure 1: Changes in Land use

Changes in Land Use in the catchment





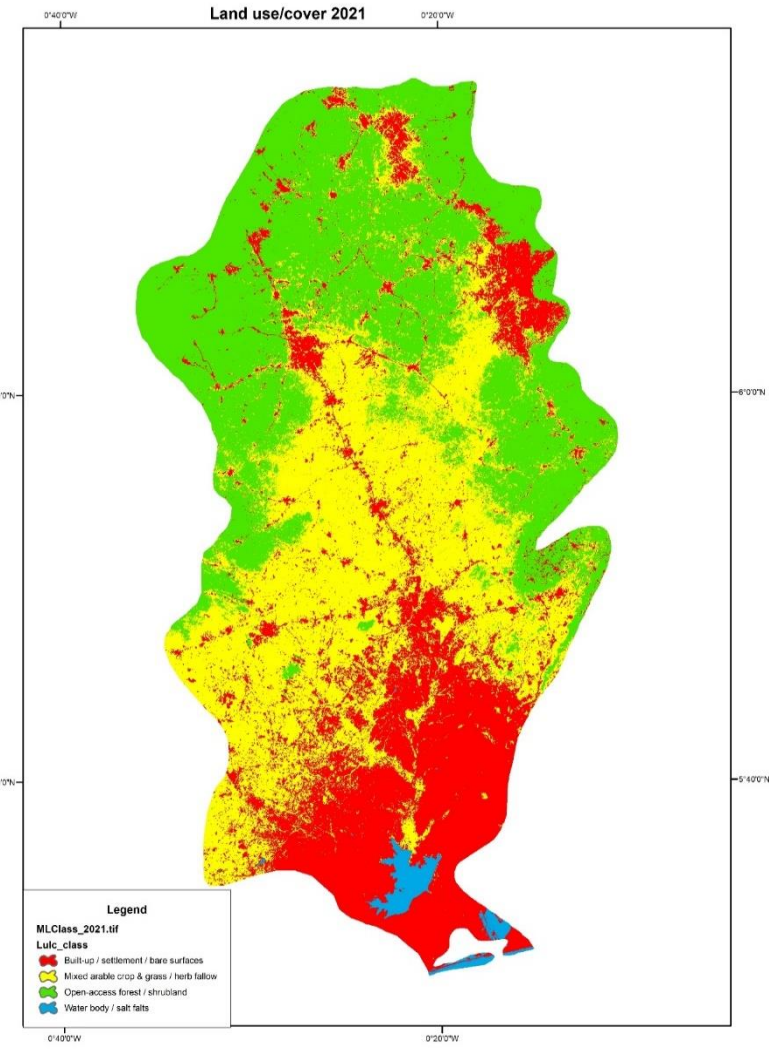
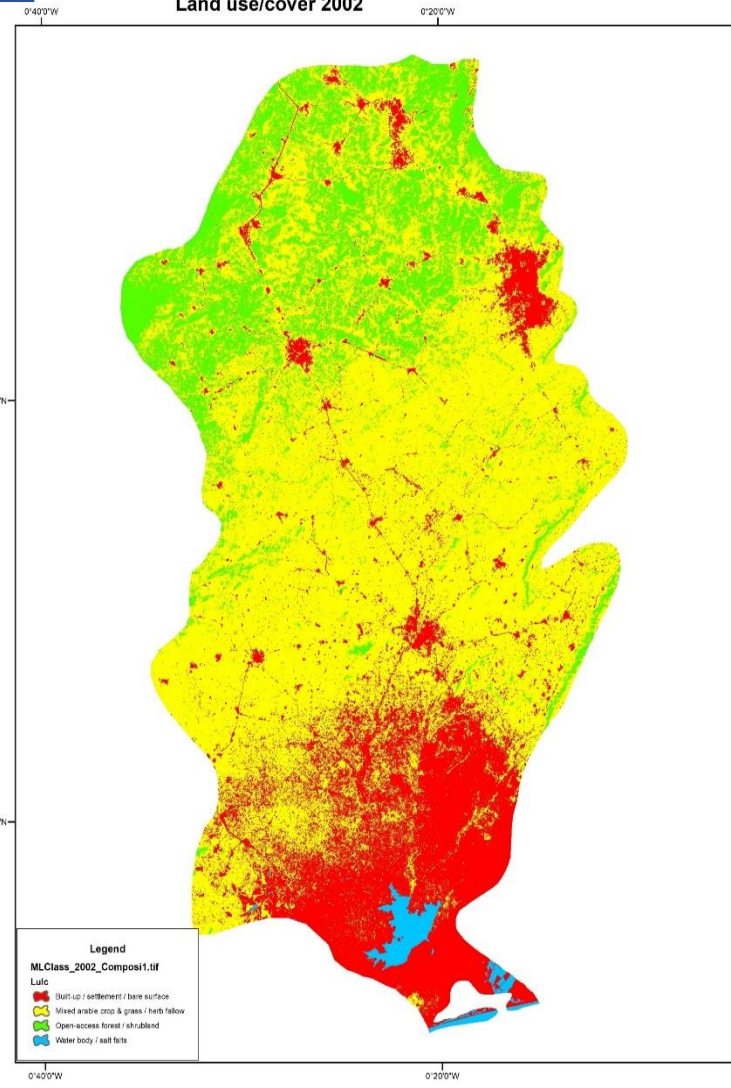
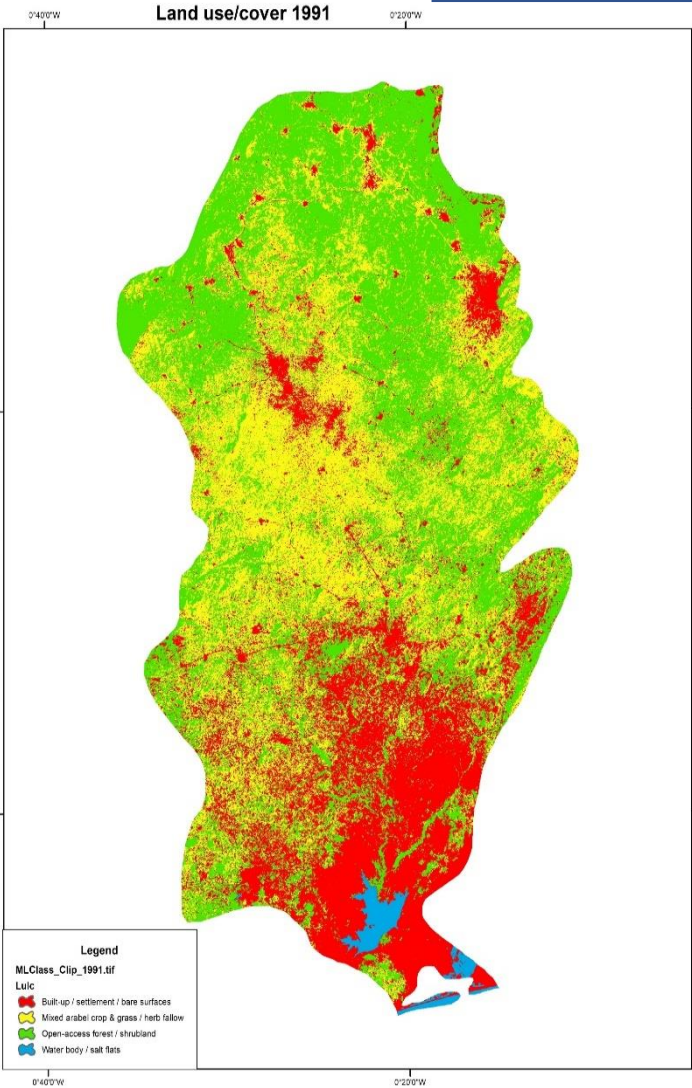
FINDINGS FROM GEOSPATIAL SURVEY

Open-access forest/shrubland

Mixed arable crops and grass

Built up/bare surfaces

Water body/salt flats





USE OF RIPARIAN FOREST OVERTIME BY SEGMENTS

Variables	Pearson Value	Degrees of Freedom	Approx. Significant
Current land use	22.517	6	0.001
Previous Land use	209.175	6	0.000
Current use as Built-up areas	1.1800	2	0.554
Previous use as Built-up areas	33.8386	2	0.000
Current use of water body for domestic purposes	11.309	2	0.004
Previous use of water body for domestic purposes	2.409	2	0.300
Current use of forest for food	264.5219	2	0.000
Previous use of forest for food	162.9550	2	0.000



DISCUSSION

- Increase in built areas overtime
- Decrease in forest areas overtime
- Significant difference in land use in both previous and current era across various segments
- Significant difference in previous and current use of riparian forest for food
- No significant difference in current use of land as built areas along the streams
- Significant change in current use of water body for domestic purposes along the various streams
- No significant change in previous use of water body for domestic purposes



Conclusion and recommendation

- Increase in built-up areas at the expense of forest and farmlands
- Decrease in forestland and farmland

Recommendation

- Public education on the integration of urban forestry in town planning.
- Forestry Commission in collaboration with the District Assemblies should enforce the buffer zone policy to protect the River Basin



THANK YOU!!

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