Land Cover Classification and Change Analysis in the **Volta Delta Of Ghana** Benjamin K. Nyarko*, K. Appeaning Addo¹, Philip-Neri Jayson-Quashigah¹, Francisca Martey²

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Introduction

- Coastal environments are undergoing rapid changes due to the impacts of climate change, which has affected the land cover.
- There is therefore the need for accurate and timely information about the nature and extent of land cover and how it is changing over time.
- This information provides understanding into climate variability driven land cover

Methodology



Preliminary Results



Figure 3: Sample Class Models of Mangrove and Lagoons



Figure 1: The FAO GCLN Approach for Land Cover Mapping (Source: Gregorio, 2015)

- Development of legend FAO LCCS
- Verification of legend in the field using GPS, camera and drone
- Segmentation of Landsat images using e-Cognition (FAO)
- Interpretation of the land cover using (MadCat/QGIS)

Data and Source

Data	Year	Resolution	Source
Landsat OLI	2015	30m	USGS
Landsat TM	2000	30m	USGS
Google Earth	2015	2.5m-60cm	Google Earth
Ground Truth Data	2015	2-5cm	Using Drone

Study Area



Figure 4: A Section of the Land Cover Interpretation

Summary

- In all 17 classes have been identified and modelled (Figure 3)
- These classes were then validated in the field, sampling from over 30 points.

Figure 2: Map of the Study Area



- The main classes identified include wetlands, savanna grassland, water bodies, mangroves and cropland
- The segmentation of the Landsat image resulted in about 7000 segments
- The segments are currently being interpreted into the Land cover as shown in Figure 4

Literature Clted:

✓ Gregorio, A. (2015). The FAO GLCN Approach for Land Cover Mapping. FAO Land Cover Classification System Training, Rome, 7-8 September.



