# GIS AND REMOTE SENSING BASED ASSESSMENT OF LAND USE-LAND COVER CHANGES IN THE COASTAL CITY OF LAGOS NIGERIA

***T. Idowu[1] and R. M. Waswa[2]***
*[1]Pan African University Institute for Basic Sciences, Technology and Innovation, Kenya*
*[2]Regional Centre for Mapping of Resources for Development, Nairobi, Kenya*
***Email:*** *lois.temitope@gmail.com*

**Abstract**
Coastal areas have experienced a massive population increase all around the world in recent decades. This has led to significant changes in land use land cover (LULC) with ecosystem patterns and functions also affected. Lagos, a fast rising mega city and *de facto* commercial and economic capital of Nigeria, characterised by a low-lying coastal strip, swamps, wetlands and lagoon, is a special case. Over the years, there has been a substantial change in the dynamics of land use/ cover of the study area. This study assessed these changes with emphasis laid on changes in wetlands, and built-up areas mainly due to urbanisation and land reclamation activities over a period of 30 years. Landsat images for years 1986 and 2001 were obtained as well as 2016 sentinel 2A images. ENVI software package was used for atmosphere correction, haze detection, layer stacking and classification. A pixel-based supervised classification was used to obtain the LULC maps. Filtering was done to reduce noise in the classification while ArcGIS software was used for assessing the LULC changes and obtaining the statistics across the satellite images representing the epochs under study. It was observed that the coverage of built-up areas increased in leaps (10.71%, 20.08%, and 30.98%) while over 70% loss of wetland coverage was observed over the 30-year period. These changes were observed to be mainly due to rapid urbanisation, extensive deforestation and land reclamation activities within the state. This trend poses threats to sustainable development vis-à-vis ecosystem services, health, and livelihoods of the populace as well as disaster management (flooding). It is therefore recommended that a more inclusive and holistic management be adopted for managing the rapid urbanisation, deforestation, wetlands losses and other land use changes in the state.

**Key words:** Land use-land cover, land reclamation, coastal areas, Lagos, Lagos lagoon, GIS, remote sensing, wetlands