

Spatio-Temporal Analysis of Land Use and Land Cover Change in the Cocoa Belt of Ondo State, southwestern Nigeria

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Abstract : The study evaluates land use and land cover changes in the cocoa belt of Ondo state to quantify its effect on the expanse of land occupied by cocoa plantation as the most suitable region for cocoa raisin in Nigeria. Time series of satellite imagery from Landsat-7 ETM+ and Landsat-8 TIRS covering years 2000 and 2015 respectively were used. The study area was classified into six land use themes of cocoa plantation, settlement, water body, light forest and grassland, forest, and bar surface and rock outcrop. The analyses revealed that out of total land area of 997714 hectares of land of the study area, cocoa plantation land use increased by 10.3% in 2015 from 312260.6 ha in 2000. Forest land use also increased by 6.3% in 2015 from 152144.1 ha in the year 2000, water body reduced from 2954.5 ha in the year 2000 by 0.1% in 2015, settlement land use increased by 3% in 2015 from 15194.6 ha in 2000, light forest and grassland area reduced by 10.4% between 2000 and 2015 and 9.1% reduction in bar surface and rock outcrop land use between the year 2000 and 2015 respectively. The reasons for different ranges in the changes observed in the land use and land cover in the study area could be due to increase in the incentive to cocoa farmers from both government and non-governmental organizations, developed new cocoa breed that thrive better in the light forest, rapid increased in the population of cocoa farmers' settlements, and government promulgation of forest reserve law.

Keywords : satellite imagery, land use and land cover change, area of land

Conference Title : ICSPTL 2018 : International Conference on Satellite Photography, Techniques and Limitations

Conference Location : Paris, France

Conference Dates : January 25-26, 2018