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AN ASSESSMENT OF THE IMPACT OF URBAN GROWTH ON LAND SURFACE TEMPERATURE IN FCT, ABUJA USING GEOSPATIAL TECHNQUE

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Abstract

Urbanization and economic dependence on land and its numerous resources have been the major driving force shaping various landscapes. This study employs the use of remote sensing and GIS techniques to identify the various land uses, their various transformations between 1986 and 2006 and measures the rate of urban expansion and the loss of vegetation cover in the study area. It also analyzed the changes in urban surface temperature over Abuja area using Landsat TM and ETM + satellite data for 1986, 2002 and 2006. The variability of the land surface temperature has been investigated with respect to different land use/ Land cover (LU/LC). Types determine from the Landsat visible and near infrared (LRI) channels. The emissivity per pixel is retrieved directly from satellite data and has been estimated as narrow band emissivity at the satellite sensor in order to have the least error in the surface temperature estimation. Strong correlations were obtained between high surface temperature and negative NDV 1 Values. The study also reveals that the built up area has expanded by 17.88% of the total land area of Abuja in 1986 to 27.02% in 2006, vegetation cover reduced from 47.23% to 37.79%. the implication of this unprecedented growth is the resulting environmental and ecological problems associated with unplanned urban growth and development such as flooding, urban hit island etc. however, greening and due adherence to development control were suggested as amelioration to the impending environmental crisis.