African Human Geography

Remote Sensing and GIS in Environmental Monitoring: An Ethiopian Perspective, 2004

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Abstract

Remote sensing and Geographic Information Systems (GIS) have become crucial tools in environmental monitoring across various regions, including Ethiopia. The research utilizes historical satellite imagery data from NASA's Landsat programme and GIS software to analyse ecological patterns and land use changes within targeted regions of Ethiopia. A significant proportion (30%) of agricultural lands showed signs of deforestation, particularly in the central highlands over a five-year period. Remote sensing and GIS technologies provided valuable insights into environmental dynamics but also highlighted challenges such as data acquisition costs and spatial resolution limitations. Future research should focus on integrating remote sensing with traditional field surveys to enhance accuracy, while policymakers must consider the socio-economic impacts of land use changes. Remote Sensing, GIS, Environmental Monitoring, Ethiopia, Land Use Changes The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Ethiopia, GIS, Remote Sensing, Environmental Monitoring, Spatial Analysis, Ecological Mapping, Satellite Imagery*

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