

Assessment of Environmental Implications of Rapid Population Growth on Land Use Dynamics: A Case Study of Eleme Local Government Area, Rivers State, Nigeria

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Abstract : Population growth in Eleme has been rapid over the past 75 years with its attendant pressure on the natural resources of the area. Between 1937 and 2006 the population of Eleme grew from 2,528 to 190,194 and is projected to be above 265,707 in 2016 based on an annual growth rate of 3.4%. Using the combined technologies of Geographic Information Systems (GIS), remote sensing (RS) and Demography techniques as its methodology, this paper examines the environmental implications of rapid population growth on land use dynamics in Eleme between 1986 and 2015. The study reveals that between 1986 and 2006, Built-up area and Farmland increased by 72.67 and 12.77% respectively, while light and thick vegetation recorded a decrease of -6.92 and -61.64% respectively. Water body remains fairly constant with minimal changes. Also, between 2006 and 2015 covering a period of 9 years, Built-up area further increased by 53% with an annual growth rate of 2.32 km² gaining more land area on the detriment of other land uses. Built-up area has an annual growth rate of 2.32km² and is expected to increase from 18.67km² in 2006 to 41.87km² in 2016. The observed Land used/Land cover dynamics is derived by the demographic characteristics of the Study area. Eleme has a total area of 138km² out of which the Federal Government of Nigeria compulsorily acquired an estimated area of 59.34km² for industrial purposes excluding acquisitions by the Rivers State Government. It is evident from the findings of this study that the carrying capacity of Eleme ecosystem is under threat due to the current population growth and land consumption rates. Therefore, measures such as use of appropriate technologies in farming techniques, waste management; investment in family planning and female empowerment, maternal health and education, afforestation programs; and amendment of Land Use Act of 1978 are recommended.

Keywords : population growth, Eleme, land use, GIS and remote sensing

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