

Intensity Analysis to Link Changes in Land-Use Pattern in the Abuakwa North and South Municipalities, Ghana, from 1986 to 2017

Authors : Isaac Kwaku Adu, Jacob Doku Tetteh, John Joseph Puthenkalam, Kwabena Effah Antwi

Abstract : The continuous increase in population implies increase in food demand. There is, therefore, the need to increase agricultural production and other forest products to ensure food security and economic development. This paper employs the three-level intensity analysis to assess the total change of land-use in two-time intervals (1986-2002 and 2002-2017), the net change and swap as well as gross gains and losses in the two intervals. The results revealed that the overall change in the 31-year period was greater in the second period (2002-2017). Agriculture and forest categories lost in the first period while the other land class gained. However, in the second period agriculture and built-up increased greatly while forest, water bodies and thick bushes/shrubland experienced loss. An assessment revealed a reduction of forest in both periods but was greater in the second period and expansion of agricultural land was recorded as population increases. The pixels gaining built-up targeted agricultural land in both intervals, it also targeted thick bushes/shrubland and waterbody in the second period only. Built-up avoided forest in both intervals as well as waterbody and thick bushes/shrubland. To help in developing the best land-use strategies/policies, a further validation of the social factors is necessary.

Keywords : agricultural land, forest, Ghana, land-use, intensity analysis, remote sensing

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