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## Land-Cover Dynamics in an Urban Area of Ghana

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### ABSTRACT

The objectives of this study were to quantify land-cover changes. A short-term projection of land-cover distribution in a 2400-ha (1 ha = 10 000 m<sup>2</sup>) area of northern Ghana was generated. Landsat Thematic Mapper images acquired in 1984, 1992, and 1999 were used for land-cover mapping, whereas land-cover projections were carried out using transition probability techniques. Remote sensing analyses showed that in the first period (1984–92), the dominant land-cover change process was the expansion of the built-up area (26 ha yr<sup>-1</sup>) as a result of an increase in demand for housing by the increasing population. Expansion of the built-up area continued at the rate of 35 ha yr<sup>-1</sup> in the second period (1992–99), as well as development of peri-urban agriculture (24 ha yr<sup>-1</sup>) to meet the food demand of the rapidly growing population. Projection of land-cover distribution showed that the built-up area would further increase at the expense of cropland and natural vegetation, covering about 39% of the landscape by 2006. Policy implications of this trend are discussed.

This paper is part of a special theme issue on land use and ecosystems.

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