

Name of the Candidate: Roohi Fatma

Name of the Supervisor: Prof. S.M. Rashid

Topic: Spatio-Temporal Analysis of Urban Sprawl and its Impact on Land Transformation (1991 - 2001): A Case Study of Unnao Town, Uttar Pradesh

Department of Geography, Faculty of Natural Sciences

Abstract

Key words: Land use/land cover change, Urban sprawl, Land transformation, Remote sensing, GIS

The growth in urban population impacted towards physical extension of cities and towns, thereby causing gobbling of agriculturally productive land, besides affecting the social milieu of surrounding villages. On the other hand the internal structure of the cities has also transformed, which is responsible for the increasing pressure on city infrastructure, densification of urban housing, and making travel costly and time consuming. Although, most of the cities and towns in India formulated the development plans, these plans are often vitiated at various stages of its implementation. In most of the sectors of development, the intent of the proposal is not adequately translated into the envisaged physical framework, thus creating differentiated, disjointed and undesirable urban growth. It has also been observed that the algorithmic growth of city population has produced demands for additional space for housing and city infrastructure.

The present study undertook land use/ land cover of the Unnao town for 1981, 1991, and 1997 and 2010 using remote sensing data acquired by IRS 1 C and IRS 1 D Resourcesat and the land utilization statistics and town plans collected from

Municipality. A correlation has been made between the dynamics of land use/ land cover change and the urban population growth. An analysis finally revealed the sprawling of the Unnao town has led to the transformation of land use/ land cover at the urban fringe and the surrounding rural hinterland during 1981 - 2010.

The centre of the town experienced land transformations from residential use to commercial, which caused the densification built – up area and traffic congestion. The population concentration in the center of the town ultimately resulted in out migration of population at the suburbs and beyond the town limits.

It may be concluded that the land transformation is a natural process and cannot be stopped but it can be regulated to minimize the adverse effects of urban expansion on fragile environment and resources of rural hinterland. A periodical assessment based upon the use of geospatial technology have proved the worldwide as an effective tool and have changed the methods of spatial data gathering and analysis towards a sustainable decision support system.