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Title: Spatio-Temporal Analysis of Land Transformation: A Case Study of Hisar District, Haryana (1988-2008)

ABSTRACT

The present study relates to the examining of Spatio-Temporal Analysis of Land Transformation in Hisar district of Haryana. Irrespective of the fact that the district being predominantly an agricultural in nature, an accelerated urban development is witnessed in the recent decades. The present study aims to analyze the land use/ land cover change, sprawl of city of Hisar and other towns and consequent land transformation at suburbs and rural hinterland. Landsat TM and IRS P6 LISS-III images have been used in mapping land use/land cover for 1988, 1998 and 2008 in order to examine its dynamics. Spatial analysis has been performed to assess land transformation in the district. The results show that most of the land uses falling under built – up category exhibit increasing trends during the 20 years periods between 1988 and 2008. The maximum increase in areal extent was recorded under both urban and rural residential land use. The ribbon shaped urban expansion has taken place along the major transport corridors. The sprawling cities/towns have adversely affected the rural hinter land, where agriculturally productive land is gobbled up. In some cases most of the village land or the entire village was urbanized, under the influence of urban extension. Significant land change from one land use/ land cover class to another during1988 –

2008 have taken place in the Hisar district. The rate of the change has not been uniform both over time and space. It may be noted that the transformation of non built – up classes towards urban built – up land use classes has been active along NH 65, NH 10 and other major transportation routes connecting Hisar city with Delhi in the East, Bhatinda in the northwest, Ganganagar in the west, Bhiwani and Rajgarh in the south. Besides, the land transformations of cropland, fallow land, plantations/ orchards, scrub lands, grass lands etc. exhibit deep impact of the changing soil moisture conditions. Further, the population growth and the processes of development in both urban and rural areas of the district are also seen as factors for land transformations in the study period. It may be inferred that favorable atmosphere for the integrated rural-urban development could be seen as a factor for ongoing land transformation since 1988. It has been found that significant change has occurred due to the extension of irrigational facilities and 16416.2 hectares under dunes have brought under cultivated land. The urban extension has taken place not only in the rurban hinterlands of the cities/towns but there has been transformation of the large villages which have shown the tendency to urbanize. One of the main cause of this tendency has been the level of agricultural development under the technological changes in the wake of green revolution strategy. Hisar district has witnessed commercialization of agriculture with the introduction of cotton cultivation, cultivation of sugarcane and vegetables. Under the increasing demand of vegetables from expanding urbanization the farmers have responded by devoting more land to vegetables particularly in the immediate hinterland of the city/towns.