

Summary

Analysis of Crop Change Pattern and Optimal Land Use Planning Using Remote Sensing and Geographical Information System- A Case Study of Saoner Tehsil, Nagpur District, Maharashtra

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It has been observed during the field visit of Saoner Taluka, Nagpur district, the developmental activities during the past few years have focused on utilization of land and water, the most precious natural resources with total disregard to proper management and ecological impacts. As a result the land is losing its resilience at an alarming rate threatening the livelihood of people and constraining the ability to develop a healthy natural/ agricultural resource base. Therefore sustainable land development and land management are among the greatest challenges posed to the administrators and planners and require comprehensive action programmes aimed at optimal utilization of available resource potential. The comprehensive action plans call for optimal land use models to entail harmonious development of physical and biotic resources of an area. The present study is an attempt to develop an resources development model (LRDAP & WRDAP) for Saoner Taluka of Nagpur district. Spatial information of geology & lineaments, geomorphology, surface water resources, soils, slope and land use/land cover are the major inputs required for developing the optimal land/water resource model. Image processing techniques in conjunction with GIS techniques have been appropriately used to delineate, vectorise and integrate the thematic layers to derive a composite map. The Composite map is further generalized to derive optimal land use model with seven land use categories viz. intensive agriculture, irrigated dry crops, dry crops, horticulture, social forestry and quarrying. Based on the analysis of all input factors conservation measures have been suggested.

There has been remarkable variation in area under crops observed in three seasons. All cropped area find to be increase and decrease in their area from last ten year to the year of investigation. The highest average production was recorded under rice, soyabean, cotton and jawar, whereas the lowest average area was observed under sugarcane, tur in kharif season and wheat, rabi jawar, gram etc are under rabi season. In winter and summer season fruits and vegetables are observed in irrigated area. Rice is the first dominated food crop and second is jawar and maize followed by the pulses. There has been remarkable change mainly due to the having change in attitude of farmers from food crops to cash crops in the study area. Fruits and vegetables are important cash crops followed by oilseeds, spices and condiments and sugarcane. The area under fruits like mango, orange, mosumbi and clustered apple indicate remarkable increase during the period of investigation.