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Abstract

The amount, the rate and the intensity of land use and land cover change are very high in developing countries. The human impacts upon the land are still very great and increasing. This study analyses the process of human-induced landscape transformation in a micro watershed in mid elevation zone of central Himalaya of India in 1963, 1986 and 1996. The watershed (about 80 km² in size) comprises a small mountainous valley with steep slopes and deep cut ravines, typical of the landscape pattern in high population intensity mid elevation zone of central Himalaya. The spatial and temporal change patterns of land use were quantified by interpreting remote sensing (RS) data and use a geographical information system (GIS). During the last 33 years, the vegetal cover was altered drastically with increasing population pressure (both human and animal)

altered drastically with increasing population pressure (both human and animal), agricultural activities and industrial wood/raw material extraction activities. The traditional rain fed agriculture on raised terraces has passed through a process of agricultural intensification but this in turn reduced crop species diversity. Restriction on agricultural expansion by transferring large parts of vegetated areas to conservation forestry under government control and unrestrained agricultural expansion on community lands which supported fuel, fodder and manure requirements has resulted in a unbalanced land use. This in turn led to deforestation and environmental degradation. Some limiting factors such as socio-economic and policy forces caused these changes in natural resource management practices and the resulting land use patterns. The study showed that although development interventions such as World Bank aided Integrated Watershed Development Programme, etc., showed promising results in regenerating the resources; the lack of follow-up required after programme withdrawal might cause the deterioration of resources accrued during such regeneration activities. Such local impacts need to be considered in national policies and especially when time bound international aid based programmes are to be implemented.



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Keywords

Natural resource mapping; Land use; Landscape pattern; Natural resource policies; Central Himalayas; India; Forest cover

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