COMBATING LAND DEGRADATION AND DESERTIFICATION IN DRYLANDS OF INDIA USING REMOTE SENSING AND GIS

Dr. T.S.Chouhan
DEPARTMENT OF GEOGRAPHY, UNIVERSITY OF RAJASTHAN, JAIPUR (RAJASTHAN) INDIA, INDIA
69/325, V.T. ROAD, MANSAROVAR, JAIPUR-302020 (RAJASTHAN) INDIA , INDIA
E-mail: ashok_udn@yahoo.co.in

Abstract:

Desertification is the process of land degradation occurring in the arid, semi-arid and dry sub-humid areas of the globe. These areas are referred to as 'the susceptible drylands', which cover about 40 percent of the world's land surface. Recent investigations show that they are the home of more than one billion people. They are the focus of the United Nations Convention to Combat Desertification (UNCCD). Desertification directly affects or put at risk, the livelihoods of more than one billion people, who are directly dependent on land for their survival. An attempt has been made in this paper to evaluate and quantify the extent and degree of desertification and associated factors in India by employing remote sensing and GIS technique to suggest ways and means to combat and check the desertification process. Out of the total 304 million hectare reporting area in the country, 175 million hectare forming 52.9 percent, is affected by problems of erosion by water, wind and various types of degradation like alkalinity, salinity, ravines, gully formation etc. This degraded area consists of 24.3 percent under agricultural land, 12.2 percent under forests and rest 16.4 percent under other categories. According to some estimates, 141.25 million hectare of land in the country is affected by water and wind erosion, 7.1 million hectare by salinity and alkalinity 2.7 million hectare by shifting cultivation and 3.7 million is affected by ravines and gully formation. The results revealed that the area under investigation is highly vulnerable and desertification process has been accelerated because of anthropogenic and zoogenic activities to varying extent and degrees in both the categories of areas having move or less than 300 mm rainfall. The results further suggest to take up immediate steps to adopt the improved land management technologies with people's participation to mitigate the effects of desertification in the region, if not possible to check or control completely. Further the results of this study could be fruitfully utilized by the planners, scientists and policy makers to evolve suitable land management technologies and strategies commensurate to the agro-climatic and soil conditions of the region.