



Use of geo-informatics for desertification status mapping: A case study of Hanle watershed in cold desert of Ladakh

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Abstract: Desertification refers to the process of land degradation that leads to transformation of productive land into a desert. The causative agent has been man in most of the cases. Misuse of land led to the degradation of productivity of vegetation, fertility of soil and unfavourable alterations in soil-water balance. Over-grazing, over-cultivation, tree cutting, shifting cultivation, mining, road construction, irrigation, and urbanization have causative effect on the reduction or destruction of vegetation cover that is subsequently accelerated by water and wind erosion process. In cold desert region, not much work has been reported to assess the status of desertification. The work herein is an attempt to evolve, standardize a methodology, and build a comprehensive classification system for the desertification status mapping of Hanle watershed (1F4H1), a cold desert region of Ladakh district of Jammu & Kashmir State, at 1:50,000 scale. The multi-temporal satellite data reveals that the processes of water erosion, mass movement, wind erosion, frost shattering and frost heaving are the causes of degradation/desertification of the watershed. In Hanle watershed, the diurnal range of temperature is very large, and hence water erosion is the dominant process, followed by mass movement.

Keywords: Desertification, Classification System, Cold desert, Degree of Severity, Hanle watershed, Ladakh district.