

USE OF SATELLITE IMAGERY AND DIGITAL ELEVATION MODEL TO DEMARCATÉ DEGRADABLE LAND

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Land degradation due to improper land management practices in agriculture become severe problem especially in the Upper Mahaweli Catchment area. Monitoring of the ongoing land degradation requires the crucial data to identify affected areas, but they are not easy to acquire in mountainous area because of inaccessibility. Therefore the present study is aimed at identifying potentially degradable land area in Kothmale Catchment due to the agricultural activities. Satellite images of Landsat 8, 2013 in 30 m resolution, 1:10,000 digital terrain data in 10 m counter interval, slope data and land use data collected from field survey, were major data types used for the study. Data analysis were undertaken using GIS and Remote Sensing techniques involving satellite image processing, identification of degradable slope area by generating Digital elevation model and finally estimating potentially degradable area by Boolean logic overlaying. The result of the study indicates that nearly 17% of the total study area in the Kothmale catchment covers with degradable slope, which are particularly suitable for forest and forest plantation. By further analyzing of this degradable slope using overlaying Land use and slope maps indicated that out of total vulnerable area 30% land is found with potentially degradable due to the agriculture. Those lands are being used for cultivation of tea and field crop which are restricted to these land under Soil conservation Act. Therefore, in order to reverse the adverse effects of land degradation in the catchment, appropriate conservation and rehabilitation measures should be promoted and implemented.

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