Application of geomatics techniques for geological and geomorphological survey of Murree Area, Pakistan

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Abstract

The geology and geomorphology of Murree area has been studied using Geomatics techniques. Classification approach using Landsat TM image and survey data has been adopted to prepare Geological map, while, making use of Hammond's landform analysis with ASTER DEM, the landform map of study area has been developed. To address possible reasons of slope failure on different landsliding sites in the study area, different capabilities of remote sensing and GIS were integrated, i.e. generation of Slope map, Aspect map, Stream orders, False color composite overlay analysis. Total 40 zones have been demarcated, with 20 zones representing unstable zones and 20 zones displayed as potentially unstable zones. It was concluded that the best option to conduct, cost and time effective, preliminary geological study on a large scale is the use of satellite images integrated with digital elevation model (DEM). Database provided in the form of results of this study can be supportive in hazard studies, disaster management and future development plans.