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Landslide hazard zoning using the GIS approach – A case study from the Ramganga catchment, Himalayas

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Abstract

This paper deals with the development of a technique for risk assessment of landslide hazards using the Geographic Information System (GIS) approach. The method has been applied to the Ramganga catchment, lying in the Lower Himalayas, and the investigations are based on multi-data sets. The landslide activity is related to a number of parameters, viz., lithology, land-use, distance from major tectonic-shear zone and azimuth direction. Based on the data for 522 landslides in four selected sub-basins, an index value, called ‘‘landslide nominal risk factor’’ (LNRF) is defined and developed for each of the important factors. Different weights have been assigned to the terrain depending upon the LNRF and integrated in an ordinal scale, to help locate areas of high, moderate and low landslide risk.



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