GO1

Regional Scale Landslide Risk Assessment and Proposed Management Plan - a case study on Dhalai District, Tripura, India

Sunil Kumar DE[1*] and Kapil GHOSH[2]

[1]Department of Geography, North-Eastern Hill University, Shillong 793022, Meghalaya, India

[2]Department of Geography and Disaster Management, Tripura University, Suryamaninagar –

799022, Tripura

*Corresponding author: desunil@yahoo.com

Keywords
Landslide hazard, Risk assessment, Fuzzy set theory, Landslide management

Abstract
The present study is focused on the assessing the landslide risk by using fuzzy set theory in order to determine the spatial distribution of different risk categories on different land use/ land cover. Landslide risk assessment was carried out as an integral part of landslide hazard management in Dhalai District, Tripura (latitude 23025'19"N to 24015'37"N and longitude 91d045'01"E to 92010'26"E). The final landslide risk scouring map of the District was generated by integrating hazard scoring and resource damage potential scoring (fuzzy membership values) maps. After successful hazard and risk assessment, detail study of some important landslides have been carried out and based on such studies suitable management plan for individual landslides have been proposed. The values landslide risk matrices are varying within the range of 0.001 to 0.18. The risk scoring map was reclassified into very high, high, moderate, low and very low risk zones. The final risk assessment map shows that only 0.45% (10.80 km2) of the district is under very high risk zone. The major part (94.06%) of the district is under very low and low risk zone. The risk assessment map indicates that about 50% area of road section (i.e. 919 pixels out of 1869 pixels) is prone to high or very high landslide risk.