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Landslide Susceptibility Mapping Along Highway Corridors in GIS Environment

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Abstract

The hilly regions are developing at a very rapid rate. The anthropogenic activities due to road construction increase the instability of slopes along highways. Aim of this study is to prepare a landslide susceptibility map along State Highway 32. Landslide susceptibility maps along road section prove a good tool for effective mitigation and management of the landslide hazards. The parameters considered in this study are slope, aspect, elevation, drainage density, lithology, soil and distance from fault. Analytic hierarchy process (AHP) is used for evaluating various parameters and ranking them. Landslide Susceptibility Index (LSI) is calculated by using weighted linear combination (WLC) technique. The final landslide susceptibility map is divided into four categories from low to very high susceptibility zones. It is found that around 65% of the area lies under high and very high landslide susceptibility. The results of the study can be used by the urban planners, transportation planners and highway engineers.

Keywords

Analytic hierarchy process Landslides Susceptibility mapping Weighted linear combination

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