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## Slope Stability Analysis and Mitigation of Mehla Landslide, District Chamba, Himachal Pradesh, India.

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The Chamba District is situated in the North Western part of the Himachal Pradesh State where presence of ancient monuments in the form of temples and holy lakes make this district a pilgrimage destination. Extensive damage to some of these monuments has been done due to occurrence of natural disasters. Himalayas represents a highly sensitive ecosystem vulnerable for natural disasters. Landslides are common phenomena in this geodynamically active terrain triggered by a wide variety of factors. The increased magnitude and frequency of Landslides is a cause of concern, since these interfere with human interest, causing immense loss to human life, infrastructure and natural resources. Extensive human activity in the region has further intensified erosion and triggered slope failures. The consequences are occurrence of large landslides, particularly in the zones of active faults and thrusts. The Chamba- Bharmaur highway has number of such active slide zones which causes obstruction for normal activities of the inhabitants. The area lies in seismically active region due to which occurrence of micro-earthquake at repeated intervals disturbs the already weathered rock mass. The initiation of Landslide near Mehla village on NH-153 can be attributed to the developmental activities ranging from farming on hill slopes to development of highways. Based upon geotechnical properties, numerical modeling of the landslide site using Geo5 software was conducted in order to calculate the factor of safety. The results of the numerical study can be used to ascertain the dependability of these slopes for future activities and suggesting mitigation measures to lower the frequency and severity of landslides in areas with similar geological conditions. This will further help in preserving the rich ancient heritage from occurrence of natural disasters in this region.

Keywords: natural disaster, ancient monuments, earthquake, hill slopes.