

# **Quantitative Landslide Hazard Assessment Using Frequency Ratio Model: A Case Study from SMK Kundasang, Sabah, Malaysia**

## **ABSTRACT**

The landslide issue is considerably prominent in the SMK Kundasang area. In 2012, the school was evacuated due to the instability of the ground on the premise. This study aims to research the landslide hazard in the affected area by employing a multi-hazard Frequency Ratio model. The first step was to create a landslide distribution map consisting of 191 landslides in total. 70% of it was used to generate the model. Meanwhile, the rest of it was utilized to verify the model. The ten landslide causative factors integrated to produce the model were lithology; soil series; distance from lineament, drainage, and road; slope angle; slope aspect; elevation; precipitation rate; and land use map. Area Under the Curve (AUC) analysis showed that the model performed at 84.0% of prediction accuracy. The hazard map was interpreted as having 12% very low, 23% low, 29% moderate, 25% high, and 12% of very high landslide hazard levels in the study area, respectively. The proposed approach in this study is deduced to be applicable to yield reasonable outcomes that benefit the development planning in SMK Kundasang.