Title : **Landslide Susceptibility Model of Tachileik District, Myanmar Using the Frequency Ratio Method**

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ABSTRACT

Tachileik District, located in Shan State in northeastern Myanmar, is characterized by complex terrain and high susceptibility to landslides. This study aims to develop a landslide susceptibility model using the Frequency Ratio (FR) method and to evaluate its performance to provide accurate and up-to-date mapping information. The analysis examined the spatial relationships between historical landslide locations and seven conditioning factors: lithology, slope, curvature, Topographic Wetness Index (TWI), average annual rainfall, the Normalized Difference Vegetation Index (NDVI), and land use/land cover (LULC). The results indicate that the landslide susceptibility map can be classified into five categories: very high, high, moderate, low, and very low susceptibility. These classes account for 44.07%, 35.57%, 3.77%, 11.78%, and 4.81% of the total study area, respectively. Model validation and performance assessment were conducted using the Area Under the receiver operating characteristic (ROC) curve (AUC) method. The success rate and prediction rate were 91.52% and 79.65%, respectively, indicating that the model demonstrates very good predictive performance. Therefore, the developed model can be effectively applied to support landslide risk management and spatial planning in the study area.

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