

Mapping potential landslide using digital terrain model: application in Ringlet Forest Reserve

ABSTRACT

Cameron Highland is one of the landslide prone areas in Malaysia where Ringlet is a hotspot location that is tagged as high landslide frequency. Ringlet Forest Reserve (RFR) is one of the water catchment areas in Cameron Highland which collects rain water by its natural landscape. This study assessed terrain sensitivity of RFR and produce a terrain sensitivity map to highlight the different level of landslide prone areas. Conditioning factors which include slope degree, elevation and terrain wetness index (TWI) were extracted from DTM of RFR using System for Automated Geoscientific Analyses (Saga GIS). Weighted overlay analysis was conducted involving three steps which are weightage assignation, grid reclassification and grid calculus. Potential Terrain Sensitivity Map that displays the red zone (area with high landslide susceptibility) was produced. The result obtained will be useful for forest management planning while aiding in future decision making.

Keyword: Digital Terrain Model (DTM); Terrain sensitivity; Landslide; Weighted overlay analysis; TWI