

## **Development of landslide susceptibility map utilizing remote sensing and Geographic Information Systems (GIS)**

### **ABSTRACT**

**Purpose:** The purpose of this research is to produce the landslide susceptibility map of Fraser's Hill and its surroundings in Pahang (Malaysia), utilizing remote sensing data and Geographic Information System (GIS) as a way to monitor sustainable highland development. **Design/methodology/approach:** Ancillary data are collected, processed, and constructed into a spatial database in a GIS platform to produce the satellite image. The factors chosen that influence landslide occurrence are land cover, vegetation index (NDVI), precipitation, and geology. Landslide-hazardous areas are analyzed and mapped using the landslide-occurrence factors through the heuristic approach Analytic Hierarchy Process (AHP). **Findings:** It is demonstrated that the integration of remote sensing data and GIS database is of assistance in managing land-use planning of sustainable development. The verification with the existing landslides record shows a noteworthy accuracy. **Research limitations/implications:** The list of data/maps reflects a considerable understanding of the basic cartographic information that is needed to effectively deal with the landslide problem. **Practical implications:** This approach indicates a potential long-term application of remote sensing and GIS in managing sustainable highland development by monitoring the hazard-susceptibility area. **Originality/value:** The value of the work is in its integration and utilization of remote sensing and GIS to provide sustainable development which can be developed to aid landslide warning systems.

**Keyword:** Sensors; Geographic Information Systems; Landslides; Hazards