Modelling erosion and landslides induced by farming activities at hilly areas, Cameron Highlands, Malaysia

ABSTRACT

This work was conducted at hilly farms of Cameron Highlands to model the incidences of soil erosion and landslides using historical data and field observations. IfSAR data with spatial resolution of 5 m was used which enable clear observation and delineation of the geographic features within the study area. Field visits were conducted to various places where landslides occurred on agricultural farms in order to validate the model. Also, the rate of soil erosions was evaluated using geospatial techniques. The potential landslide event and its probability of occurrence were combined using bivariate statistical analysis. The results revealed that most of the landslides incidents were occurred at areas with intensive agricultural activities with no proper erosion control measures. It was gathered that more than 75% of landslides occurred in agricultural activities areas are under sheltered farms. The annual soil erosion rates in both Telom and Bertom Catchments ware 38 ton /ha/year and 73.9 ton /ha/year respectively. It was revealed that, there is high risk of erosion-induced landslides in agricultural farms. However, the erosion induced landslide map shows that most the landslide occurred close to the rivers. This indicated that both agricultural operations and proximity to rivers are influencing factors for the incidences.

Keyword: Farming activities; Soil erosion; Landslide; Sediment; Geospatial