

Title: Evaluation of Slope Assessment Systems for Predicting Landslides of Cut Slopes in Granitic and Meta-sediment Formations

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Abstract: In Malaysia, slope assessment systems (SAS) are widely used in assessing the instability of slope or the probability of occurrence and the likely severity of landslides. These SAS can be derived based on either one particular approach or combination of several approaches of landslide assessments and prediction. This study overviews four slope assessment systems (SAS) developed in Malaysia for predicting landslide at a large-scale assessments. They are the Slope Maintenance System (SMS), Slope Priority Ranking System (SPRS), Slope Information Management System (SIMS) and the Slope Management and Risk Tracking System (SMART). An attempt is made to evaluate the accuracy of the SAS in predicting landslides based on slope inventory data from 139 cut slopes in granitic formation and 47 cut slopes in meta-sediment formation, which are the two most common rock/soil formations found in Malaysia. Based on this study, it was found that none of existing SAS is satisfactory in predicting landslides of cut slopes in granitic formation, for various reasons such as the use of hazard score developed from another country, insufficient data base, oversimplified approach and use of data base derived from different rock/soil formations. However for the case of cut slope in meta-sediment, the Slope Management and Risk Tracking System (SMART) was found to be satisfactory with 90% prediction accuracy. The current database of SMART is largely based on meta-sediment formation.