

## **An Overview: Relationship of Geological Condition and Rainfall with Landslide Events at East Malaysia**

### **ABSTRACT**

Tropical country like Malaysia is rich with residual soil and nurtured with high rainfall amount on average 2,550 mm per year. From 2009 until 2018, there are many landslide events reported in the news at Ranau, Sabah and Canada Hill Miri, Sarawak that occurred during rainy season and the landslide recurs within same location over the years. The objective of this study is to determine the relationship of landslide events with geological condition and rainfall at Ranau, Sabah and Canada Hill Miri, Sarawak. Historical landslide data were obtained from local news, previous researchers, and local authorities. Integrated review was conducted to meet the objective. In summary, both areas are prone to landslide due to the high average amount rainfall recorded and the geological properties that are susceptible to landslide occurrence namely shale interbedded with sandstone. Sandstone and shale contact are easily accessible by water weaken the contact surface lead to landslides incidents. Besides, Shale classified as highly plastic soil due to high amount of clay. Clay soil depends on its matric suction to sustain its strength towards sliding. Thus, increasing of pore pressure from rain infiltration reduce the matric suction and eventually reduce the shear strength. Ranau is located at seismically active area compare to Miri and other locations in Sabah crossing Lobou-Lobou fault, Mensaban fault and Mesilou fault. Theoretically, slope instability due to earthquake happened because the cementation of soil may be broken and lead to lesser roughness between soil surfaces resulting in reduction of internal friction angle and cohesion of soil.