

# **Soil erosion risk in relation to rainfall erosivity in Gunung Alab and Inobong of Crocker Range Park in Sabah, Malaysia**

## **ABSTRACT**

The rainfall ability to erode and detach soil particles, resulting in soil erosion, is referred to as rainfall erosivity (R). This research aims to estimate the risk of soil erosion from rainfall intensity in Gunung Alab and Inobong of Crocker Range Park, Sabah. Daily rainfall data from 2017 and 2020 where an observed mild La Nina were extracted. The 30-minute Maximum Rainfall Intensity ( $I_{30_{30}}$ ) and Rainfall Kinetic Energy (E) were determined for estimating the R Factor. ROSE Index was then referred to in classifying the soil erosion risk. The estimated monthly R Factor in Gunung Alab ranged from 15282.2 to 32029.2 MJ.mm (ha.h)<sup>-1</sup> in 2017 and from 16069.5 to 35401.6 MJ.mm (ha.h)<sup>-1</sup> in 2020. Gunung Alab was rated as having an "extremely high" and "critical" risk of soil erosion 80% of the time in 2017 and 50% in 2020. At the Inobong substation, the monthly R Factor in 2017 (16069.5 to 58348.0 MJ.mm (ha.h)<sup>-1</sup>) and 2020 (16863.6 to 36246.4 MJ.mm (ha.h)<sup>-1</sup>) translates to an erosion risk (extremely high-critical) throughout 67% and 92% of the time, respectively. Given the possibility of landslides, rainfall erosivity is useful information in assessing soil erosion risk and could be used in soil and land management