

Soil Impact on Slopes: Case Study of Bukit Dinding, Federal Territory of Kuala Lumpur, Malaysia

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Changes in climate have led to extreme weather pattern occurrences. This has impacted residences at foothills of hills that are being developed. This research made a case study of a hill that is impacted due to slope instability. This study was performed at Bukit Dinding (BD), a hill in the Federal Territory of Kuala Lumpur in Malaysia. Geological disasters such as landslides and mudslides often occur in this area. For slopes, factors affecting their stability are very complex, the most important of which are the types and properties of slope rock and soil mass, geological structure, topography, etc. In this research, soil effect is the main objective and discussed in five parts. Firstly, crucial approaches to study slope and soils are introduced, such as geological and topographical analysis, hydrological studies and vegetation evaluation. Secondly, in terms of slope and landslide definitions, BD's soil properties, rainfall and precipitations, similar simulation test results are illustrated here through literature review to support our study hypothesis. Thirdly, in sum, the decrease in soil moisture content, loss of soil nutrients, degradation of soil structure, and surface soil crust formation are attributed to the causes of slope instability. Last but not least, corresponding measures, including increasing vegetation coverage, controlling rainfall discharge, updating data in time and maintaining the natural features of the hillsides, are suggested to curb the degradation of slope soil erosion. In the era of environmental uncertainties, this study will be of interest to planners, residents, scientists and decision makers to provide scientific input to justify and conserve our diminishing green lungs in cities.

Keywords: Soil Impact, Slope instability, Soil properties