

## **Geological Engineering Mapping Approach to Know Factor of Safety Distribution and Its Implication to Landslide Potential at Muria Mountain, Kudus, Central Java Province, Indonesia**

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**Abstract :** Landslide is a geological hazard that is quite common in some areas in Indonesia and have disadvantages impact for public around. Due to the high frequency of landslides in Indonesia, and extensive damage, landslides should be specifically noted. Landslides caused by a soil or rock unit that has been in a state of unstable slopes and not in ideal state again, so the value of ground resistance or the rock been passed by the value of the forces acting on the slope. Based on this fact, authors held a geological engineering mapping at Muria Mountain, Kudus, Central Java province which is known as an agriculture and religion tourism area. This geological engineering mapping is performed to determine landslides potential at Muria Mountain. Slopes stability will be illustrated by a number called the "factor of safety" where the number can describe how much potential a slope to fall. Slopes stability can be different depending on the physical and mechanical characteristics of the soil and slope conditions. Testing of physical and mechanical characteristics of the soil conducted in the geotechnical laboratory. The characteristics of the soil must be same when sampled as well as in the test laboratory. To meet that requirement, authors used "undisturb sample" method that will be guarantee sample will not be distracted by environment influences. From laboratory tests on soil physical and mechanical properties obtained characteristics of the soil on a slope, and then inserted into a Geological Information Software that would generate a value of factor of safety and give a visualization slope form area of research. Then, as a result of the study, obtained a map of the ground movement distribution map and i is implications for landslides potential areas.

**Keywords :** factor of safety, geological engineering mapping, landslides, slope stability, soil

**Conference Title :** ICGGE 2017 : International Conference on Geotechnical and Geological Engineering

**Conference Location :** Copenhagen, Denmark

**Conference Dates :** June 11-12, 2017