LANDSLIDE VULNERABILITY LEVEL IN WONODADI VILLAGE, PRACIMANTORO SUB-DISTRICT, WONOGIRI REGENCY, CENTRAL JAVA PROVINCE

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ABSTRACT

The landslide case in Wonodadi Village, Pracimantoro District, Wonogiri, Central Java, occurred within the last three years during the rainy season due to the influence of rainfall levels and its geographical location on the slopes of the Seribu Mountains. Landslide vulnerability analysis was needed to determine the factors influencing landslides and to serve as a reference in minimizing the negative impacts. The aim of this study was to identify and map the landslide vulnerability levels in Wonodadi Village. The research used field survey methods supported by secondary data. Sampling points were based on the overlay results of slope maps, soil types, and land cover maps. Landslide vulnerability parameters included rainfall, slope steepness, solum thickness, land use, rock weathering, vegetation density, soil texture, and permeability. The laboratory-analyzed parameters were soil texture using the pipette method and soil permeability using the ICW (International Competence in Water) permeameter model. The determination of landslide vulnerability levels used a weighting method for classification. The classification was used for creating landslide vulnerability potential maps. The results of the study indicated that the factors triggering landslides in Wonodadi Village included slope steepness, rainfall, soil permeability, and vegetation density. There were two classes of landslide vulnerability levels, namely moderate and severe. The highest value at sample point 13 was in the severe vulnerability class with a total score of 51, and the lowest values at points 1 and 11 were in the moderate vulnerability class with a total score of 37.

Keywords: analysis, vulnerability, landslide, Wonodadi, Wonogiri