

**EVALUASI KESTABILAN LERENG PASCALONGSOR MENGGUNAKAN
METODE *SIMPLIFIED JANBU* DI PADUKUHAN PATIHOMBO
KALURAHAN PURWOSARI KAPANEWON GIRIMULYO KABUPATEN
KULONPROGO DAERAH ISTIMEWA YOGYAKARTA**

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Intisari

Indonesia memiliki potensi besar dalam sumber daya alam dan bencana, dipengaruhi oleh iklim tropis dan topografi yang beragam. Kabupaten Kulon Progo di Daerah Istimewa Yogyakarta memiliki potensi bencana longsor di empat Kapanewon. Gerakan massa tanah/batuan adalah pergerakan material lereng karena gravitasi. Titik lokasi longsor terletak di Padukuhan Patihombo, Kalurahan Purwosari, Kapanewon Girimulyo, Kabupaten Kulonprogo, DIY yang berdekatan pemukiman penduduk. Evaluasi lereng pascalongsor perlu dilakukan untuk menanggulangi terjadi longsor kembali.

Penelitian ini bertujuan untuk mengidentifikasi kondisi eksisting lereng pascalongsor, menganalisis tingkat kestabilan lereng menggunakan metode *Simplified Janbu* berdasarkan nilai Faktor Keamanan (*safety factor*), dan menentukan arahan pengelolaan lereng sesuai dengan nilai Faktor Keamanan. Metode penelitian meliputi survei dan pemetaan lapangan, *purposive sampling*, analisis data, uji laboratorium, dan analisis *Simplified Janbu*. Penilaian kestabilan lereng mengacu pada Keputusan Menteri Energi dan Sumber Daya Mineral No. 1827/K/30/MEM/2018 serta klasifikasi Bowles (1989).

Berdasarkan hasil analisis kestabilan lereng, pada lereng I (Timur Laut) memiliki ketinggian 13,5 m, sudut kemiringan lereng 88° bobot isi sebesar 10.8 kN/m^3 , nilai sudut geser dalam sebesar 43° , dan nilai kohesi sebesar 13 Kpa. Sedangkan lereng II (Barat Daya) memiliki ketinggian 13,7 m dengan rata-rata nilai bobot isi sebesar 11.4 kN/m^3 , nilai sudut geser dalam sebesar 33° , dan nilai kohesi sebesar 12 Kpa. Nilai FK pada lereng timur laut memiliki FK sebesar 1,017. Sedangkan lereng barat daya memiliki nilai FK sebesar 0,701. Kedua nilai FK tersebut termasuk dalam golongan lereng labil sesuai klasifikasi Bowles, 1989 dan berpotensi longsor menurut Kepmen ESDM. Arahan pengelolaan yang dapat dilakukan yaitu dengan pembuatan dinding penahan tanah tipe kantilever dan pembuatan drainase. Rekayasa ini dapat meningkatkan nilai faktor kemandan lereng timur laut dari 1,017 menjadi 1,811 Sedangkan pada lereng barat daya 0,701 menjadi 2,467. Sehingga dapat memenuhi kriteria lereng bekas tambang yang dapat diterima berdasarkan Kepmen ESDM No. 1827K/30/MEM/2018 dan Klasifikasi Bowles (1989).

Kata Kunci : Evaluasi, *Simplified Janbu*, Longsor, Faktor Keamanan

**SLOPE STABILITY EVALUATION FOR POST-LANDSLIDE
USING THE SIMPLIFIED JANBU METHOD IN PATIHOMBO
HAMLET, PURWOSARI VILLAGE, GIRIMULYO DISTRICT,
KULON PROGO REGENCY, SPECIAL REGION OF
YOGYAKARTA**

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Abstract

Indonesia has great potential in natural resources and disasters, influenced by its tropical climate and diverse topography. Kulon Progo Regency in the Special Region of Yogyakarta has the potential for landslides in four Kapanewon. Land/rock mass movement is the movement of slope material due to gravity. The landslide site is located in Patihombo sub-village, Purwosari sub-village, Kapanewon Girimulyo, Kulonprogo regency, Yogyakarta, which is near residential areas. Evaluation of the post landslide slope needs to be done to prevent landslides from happening again.

This study aims to identify the existing conditions of post-landslide slopes, analyze slope stability using the Simplified Janbu method based on the Safety Factor (SF) values, and provide slope management recommendations in accordance with the Safety Factor values. The research methods include field surveys and mapping, purposive sampling, data analysis, laboratory testing, and Simplified Janbu analysis. The slope stability assessment refers to the Minister of Energy and Mineral Resources Regulation No. 1827/K/30/MEM/2018 and the classification by Bowles (1989).

Based on the results of the slope stability analysis, slope I (Northeast) has a height of 13.5 m, a slope angle of 88°, a content weight of 10.8 kN/m³, an inner shear angle of 43°, and a cohesion value of 13 Kpa. While slope II (Southwest) has a height of 13.7 m with an average content weight value of 11.4 kN/m³, an inner shear angle value of 33°, and a cohesion value of 12 Kpa. The safety factor value on the northeast slope has a Safety Factor of 1.017. While the southwest slope has a safety factor value of 0.701. Both safety factor values are included in the class of unstable slopes according to Bowles classification, 1989 and have the potential for landslides according to the Ministerial Decree of ESDM. The management direction that can be done is by making a cantilever type retaining wall and making drainage. This engineering can increase the safety factor value of the northeast slope from 1.017 to 1.811 while on the southwest slope 0.701 to 2.467. So that it can meet the criteria of acceptable ex-mining slopes based on Kepmen ESDM No. 1827K/30/MEM/2018 and Bowles Classification (1989).

Keyword : Evaluation, Simplified Janbu, Landslide, Safety Factor