APLIKASI SISTEM INFORMASI GEOGRAFIS (SIG) METODE *LOGISTIC REGRESSION* UNTUK EVALUASI STABILITAS LERENG BATUAN SERTA PERBANDINGANNYA DENGAN METODE *SLOPE STABILITY PROBABILITY CLASSIFICATION* (*SSPC*) PADA KAWASAN PIYUNGAN-PATUK, DAERAH ISTIMEWA YOGYAKARTA

SARI

Peristiwa terjadinya longsor di suatu kawasan merupakan manifestasi dari kondisi lereng yang tidak stabil, sehingga evaluasi stabilitas lereng dan pemetaan pada kawasan yang rawan tejadinya longsor menjadi hal yang sangat penting sebagai upaya mitigasi terhadap bencana longsor. Pada penelitian ini diterapkan metode *Slope Stability Probability Classification* (SSPC) untuk evaluasi stabilitas lereng dan metode regresi logistik untuk pemetaan kerentanan longsor di daerah Piyungan-Patuk. Hasil analisis stabilitas lereng pada 18 lereng terpilih didapat probabilitas stabilitas lereng dengan klasifikasi *sangat rendah* hingga *sangat tinggi* dengan nilai probabilitas kestabilan <0,5 sampai dengan >95. Perhitungan probabilitas longsor dari model regresi logistik dihasilkan 5 (lima) kelas kerentanan longsor yaitu: *sangat rendah* mencakup 52.69%, *rendah* mencakup 16.42%, *sedang* mencakup 9.59%, *tinggi* mencakup 14.33% dan *sangat tinggi* mencakup 6.97% dari total luas seluruh daerah penelitian. Kedua metode memiliki korelasi linier negatif yang diekspresikan dengan persamaan $\boldsymbol{Y = -0.7889X + 0.9482}$ dengan koefisien determinasi $\boldsymbol{R^2 = 0.7323}$.

Kata kunci: *longsor, stabilitas lereng, regresi logistik, SSPC*

LOGISTIC REGRESSION METHOD OF GEOGRAPHIC INFORMATION SYSTEM (GIS) FOR ROCK SLOPE STABILITY ANALYSIS AND ITS COMPARISON WITH SLOPE STABILITY PROBABILITY CLASSIFICATION (SSPC) METHOD IN PIYUNGAN-PATUK AREA, SPECIAL REGION OF YOGYAKARTA

ABSTRACT

The occurrence of landslide in a region is a manifestation of unstable slope conditions, so evaluation of slope stability and mapping in areas prone to landslides becomes very important as a mitigation effort against landslide disaster. In this research applied Slope Stability Probability Classification (SSPC) method for evaluation of slope stability and logistic regression method for landslide vulnerability mapping in Piyungan-Patuk area. The result of slope stability analysis on 18 selected slopes is obtained by the probability of slope stability with very low to very high classification with stability probability values <0.5 to> 95. The calculation of landslide probability from the logistic regression model is 5 (five) vulnerability class that is very low: 52.69%, low includes 16.42%, medium 9.59% cover, high covers 14.33% and very high covers 6.97% of the total area of the whole research area. Both methods have a negative linear correlation expressed by the equation $\boldsymbol{Y = -0.7889X + 0.9482}$ *with the coefficient of determination* $\boldsymbol{R^2 = 0.7323}$.

***Keywords**: landslide, slope stability, logistic regression, SSPC*