

INTISARI

Lokasi penelitian berada di Desa Hargomulyo dan Desa Watugajah, Kecamatan Gedangsari, Kabupaten Gunungkidul, Daerah Istimewa Yogyakarta. Pada lokasi tersebut banyak dijumpai kejadian gerakan tanah, sehingga perlu dilakukan zonasi kerentanan gerakan tanah. Penelitian ini bertujuan untuk mengetahui kondisi geologi lokasi penelitian, faktor pengontrol geologi yang paling berpengaruh terhadap kejadian gerakan tanah, dan membuat zona kerentanan gerakan tanah. Metode yang digunakan dalam pembuatan zona kerentanan gerakan tanah adalah metode *Weight of Evidence* (WoE). Diperoleh 85 data kejadian gerakan tanah yang diambil pada bulan Desember 2022 sampai Januari 2023. Data tersebut dibagi menjadi dua set data, yaitu 70% data untuk analisis pembuatan peta model, dan 30% data untuk validasi prediksi. Parameter yang digunakan dalam penelitian ini adalah kemiringan lereng, litologi, jarak dari struktur geologi, jarak dari sungai, dan tataguna lahan. Setiap parameter dilakukan pembobotan dengan metode WoE, kemudian dilakukan *overlay* untuk menghasilkan peta zona kerentanan gerakan tanah, dan dihitung tingkat akurasi menggunakan metode *Area Under Curve* (AUC). Berdasarkan hasil penelitian, geomorfologi daerah penelitian terbagi menjadi tiga satuan, yaitu satuan dataran denudasional berlereng landai, perbukitan struktural berlereng curam, dan terjal. Daerah penelitian memiliki tiga satuan litologi, yaitu satuan perselingan batupasir tufan dengan batulanau tufan sisipan batulempung, satuan batupasir tufan sisipan batulanau tufan tufan, dan satuan perselingan batupasir tufan dengan batupasir lapili sisipan tuf. Daerah penelitian memiliki struktur geologi berupa sesar naik Watugajah, sesar geser kanan Watugajah, sesar geser kanan Hargomulyo, dan sesar geser kiri diperkirakan. Kejadian gerakan tanah di daerah penelitian paling dipengaruhi oleh persebaran litologi. Zona kerentanan gerakan tanah di daerah penelitian terbagi menjadi zona sangat rendah yang berada di tenggara dan barat Desa Hargomulyo, zona rendah yang berada di barat sampai timur Desa Hargomulyo, zona menengah yang berada di tengah Desa Watugajah dan utara Desa Hargomulyo, dan zona tinggi yang berada di timur dan barat Desa Watugajah. Validasi peta model menggunakan metode AUC mendapatkan nilai 0,803 yang tergolong sangat baik, sedangkan validasi prediksi mendapatkan nilai 0,706 yang tergolong baik.

Kata kunci: gerakan tanah, *weight of evidence*, *area under curve*, zonasi kerentanan gerakan tanah

ABSTRACT

The research site is located in Hargomulyo and Watugajah Villages, Gedangsari District, Gunungkidul Regency, Special Region of Yogyakarta. Due to many landslides occurred in the location, then it's necessary to conduct zonation of landslide susceptibility. This research aims to determine the geological condition of the research location, geological control factors that are highly affect the occurrence of landslides, and to create a landslide susceptibility zone. The method used in the making of landslide susceptibility zone is the Weight of Evidence (WoE) method. There were 85 landslides data taken from December 2022 to January 2023. The data was divided into two sets of data, 70% of the data for analysis of model map making, and 30% of the data for prediction validation. The parameters used in this research are slope, lithology, distance from geological structures, distance from rivers, and land use. Each parameter is weighted using the WoE method, then overlaid to produce a map of landslide susceptibility zone, and the accuracy level is calculated using the Area Under Curve (AUC) method. Based on the research results, the geomorphology of the study area was divided into three units, that is the sloping denudational plain, moderately steep, and steep structural hills units. The research area had three rock units, including alternating tuffaceous sandstone-tuffaceous siltstone with claystone insertion, tuffaceous sandstone with tuffaceous siltstone insertion, and alternating tuffaceous sandstone-lapilli sandstone with tuff insertion. The research area has geological structures such as Watugajah reverse fault, Watugajah dextral fault, Hargomulyo dextral fault, and estimated sinistral fault. The occurrence of landslides in the research area was highly affected by lithology distribution. The landslide susceptibility zone in the research area was divided into a very low zone located in the southeast and west of Hargomulyo Village, a low zone located in the west to east of Hargomulyo Village, a medium zone located in the center of Watugajah Village and north of Hargomulyo Village, and a high zone located in the east and west of Watugajah Village. The validation of the model map using the AUC method showed a value of 0.803 which is classified as very good, while the prediction validation showing a value of 0.706 which is classified as good.

Keywords: *landslide, weight of evidence, area under curve, landslide susceptibility zone*