

SARI

GEOLOGI DAN ZONASI KERENTANAN GERAKAN TANAH DAERAH CIHANJUANG DAN SEKITARNYA, KECAMATAN CIMANGGUNG, KABUPATEN SUMEDANG, PROVINSI JAWA BARAT

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Daerah penelitian terletak di Desa Cihanjuang dan Sekitarnya, Kecamatan Cimanggung, Kabupaten Sumedang, Provinsi Jawa Barat. Satuan geomorfologi daerah penelitian terbagi menjadi 3 satuan berdasarkan klasifikasi BMB (2006). Satuan geomorfologi tersebut adalah Satuan Dataran Aliran Lahar Cibadak, Satuan Perbukitan Intrusi Cigulampok dan Satuan Dataran Aluvial Sawahdadap. Susunan stratigrafi yang menyusun daerah penelitian terbagi menjadi 3 satuan batuan, dari satuan batuan tertua sampai yang termuda adalah Satuan Breksi Laharik (Formasi Hasil Gunungapi Muda Tak Terurai) pada fasies medial gunungapi, Intrusi Basalt (Formasi Hasil Gunungapi Muda) pada fasies sentral gunungapi dan Endapan Danau (Formasi Endapan Danau) dengan lingkungan pengendapan di darat. Penelitian bertujuan untuk melakukan pemetaan geologi, geomorfologi, sifat keteknikan tanah dan infiltrasi dari perubahan curah hujan harian serta pemodelan tingkat zonasi kerentanan gerakan tanah dengan menggunakan perangkat lunak *Transient Rainfall Infiltration and Grid-Based Regional Slope Stability Model* (TRIGRS) versi 1.02 (Baum, dkk, 2002). Hasil dari pemodelan berupa zona dengan 3 (tiga) tingkat kerentanan gerakan tanah berdasarkan faktor keamanan, yaitu lereng labil ($FK \leq 1,07$), lereng kritis ($1,07 \leq FK \leq 1,25$) dan lereng stabil ($FK \geq 1,25$). Curah hujan yang lebat menyebabkan meningkatnya kerentanan gerakan tanah pada lokasi penelitian. Analisis hasil pemodelan dengan kombinasi citra satelit berguna untuk mengkaji zona-zona berbahaya yang memiliki kemungkinan terdampak dari bahaya gerakan tanah.

Kata kunci: Sumedang, Gerakan Tanah, TRIGRS, Faktor Keamanan Lereng

ABSTRACT

GEOLOGY AND ZONING VULNERABILITY OF LAND MOVEMENT CIHANJUANG AND SURROUNDING AREAS, CIMANGGUNG SUBDISTRICT, SUMEDANG REGENCY, WEST JAVA PROVINCE

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The research area is located in Cihanjuang Village and its surroundings, Cimanggung District, Sumedang Regency, West Java Province. The geomorphological unit of the study area is divided into 3 units based on the BMB classification (2006). The geomorphological units are the Cibadak Lava Flow Plain Unit, the Cigulampok Intrusion Hills Unit and the Sawahdadap Alluvial Plain Unit. The stratigraphic arrangement that composes the study area is divided into 3 rock units, from the oldest to the youngest rock units, namely Laharic Breccia Unit (Formation of Young Undecomposed Volcanoes) in the medial volcanic facies, Basalt Intrusion (Formation of Young Volcanic Products) in the central facies of volcanoes and sediments. Lake (Lake Sediment Formation) with a depositional environment on land. The aim of this research is to model the zoning level of soil movement vulnerability using geological, geomorphological, soil engineering properties and infiltration from changes in daily rainfall. The modeling was carried out using the software Transient Rainfall Infiltration and Grid-Based Regional Slope Stability Model (TRIGRS) version 1.02 (Baum et al, 2002) to calculate the safety factor for grid-based slopes with a size of 16m x 16m due to rainwater infiltration. The results of the modeling are zones with 3 (three) levels of vulnerability to ground motion based on the safety factor, namely unstable slopes (FK 1.07), critical slopes (1.07 FK 1.25) and stable slopes (FK 1, 25). Through zone changes in conditions of no rain, with a rainfall capacity of 79 mm/day on the 2nd day to a rainfall capacity of 89 mm/day on the 40th day, changes are seen at certain points. The analysis of the modeling results with a combination of satellite imagery is useful for assessing hazardous zones that have the possibility of being affected by the danger of ground motion.

Keywords: Sumedang, Ground Movement, TRIGRS, Slope Safety Factor