SARI

Geologi Dan Analisis Kerentanan Gerakan Tanah Menggunakan Metode *Spatial Multi-Criteria Evaluation* (SMCE) Daerah Gumingsir Dan Sekitarnya, Kecamatan Pagentan, Kabupaten Banjarnegara, Jawa Tengah

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Gumingsir dan sekitarnya merupakan salah satu daerah dengan potensi bencana tanah longsor yang tinggi di Kabupaten Banjarnegara. Bentuk geografi Banjarnegara yang terdiri dari tiga pembagian, yaitu zona utara yang termasuk kawasan dengan relief yang curam dan bergelombang, bagian tengah terdiri dari zona Depresi Serayu, dan di bagian selatan terdapat Pegunungan Serayu dengan kenampakan relief yang curam. Penelitian ini bertujuan untuk mengetahui kondisi geologi daerah penelitian, mengaplikasikan metode *Spatial Multi-Criteria Evaluation* (SMCE) dalam memetakan kerentanan gerakan tanah, dan mengidentifikasi faktor yang memengaruhi kerentanan tanah di daerah penelitian. Berdasarkan hasil analisis studio dan labolatorium yang telah dilakukan, diketahui bahwa satuan geomorfologi yang berkembang di daerah penelitian, yaitu, Satuan Perbukitan Intrusi Gumingsir, Satuan Zona Sesar Gumingsir, dan Satuan Punggungan Aliran Lahar Gumingsir. Kemudian satuan geologi yang terdapat di daerah penelitian terdiri dari Satuan Intrusi Diorit (MA), Satuan Intrusi Diorit (PA), Satuan Breksi Laharik, dan Satuan Perselingan Batulempung-Batupasir. Identifikasi zona kerentanan tanah di daerah penelitian dilakukan dengan 8 indikator parameter pendukung berupa data kemiringan lereng, elevasi, tutup lahan, litologi, massa batuan, *buffer* jalan, *buffer* sungai, dan aspect. Selanjutnya diperoleh peta kerawanan dengan 4 zona kerentanan dengan tingkat rendah, sedang, tinggi, dan sangat tinggi. Sehingga diperoleh korelasi kesebandingan antara kondisi geologi dan faktor kerentanan longsor yang memengaruhi daerah penelitian.

Kata kunci : SMCE, kerentanan tanah, spasial, zona kerentanan, Gumingsir

ABSTRACT

Geology And Landslide Susceptibility Analysis Using Spatial Multi-Criteria Evaluation (SMCE) Method Of Gumingsir And Surrounding Areas, Pagentan Subdistrict, Banjarnegara District, Jawa Tengah

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Gumingsir and its surroundings are one of the areas with a high potential for landslide disasters in Banjarengara Regency. The geographical form of Banjarnegara consists of three divisions, namely the northern zone which includes an area with a steep and undulating relief, the central part consists of the Serayu Depression zone, and in the southern part there is the Serayu Mountains with the appearance of a steep relief. This study aims to determine the geological conditions of the research area, apply the Spatial Multi-Criteria Evaluation (SMCE) method in mapping soil movement vulnerability, and identify factors that affect soil vulnerability in the study area. Based on the results of studio and laboratory analysis that has been carried out, it is known that the geomorphological units that developed in the study area, namely, the Gumingsir Intrusion Hills Unit, the Gumingsir Fault Zone Unit, and the Gumingsir Lava Flow Ridge Unit. Then the geological units contained in the study area consisted of the Diorite Intrusion Unit (MA), the Diorite Intrusion Unit (PA), the Laharik Brexit Unit, and the Sandstone-Sandstone Interspersion Unit. Identification of soil vulnerability zones in the study area was carried out with 8 indicators of supporting parameters in the form of data on slope, elevation, land cover, lithology, rock mass, road buffer, river buffer, and aspect. Furthermore, a vulnerability map was obtained with 5 vulnerability zones with very low, low, medium, high, and very high levels. So that a comparative correlation was obtained between geological conditions and landslide vulnerability factors that affect the research area.

Keywords : SMCE, soil vulnerability, spatial, vulnerability zone, Gumingsir