

SARI

“Geologi dan Analisis Zona Kerentanan Gerakan Tanah Menggunakan Metode *Frequency Ratio* Daerah Lawen dan Sekitarnya, Kecamatan Pandanarum, Kabupaten Banjarnegara, Jawa Tengah”

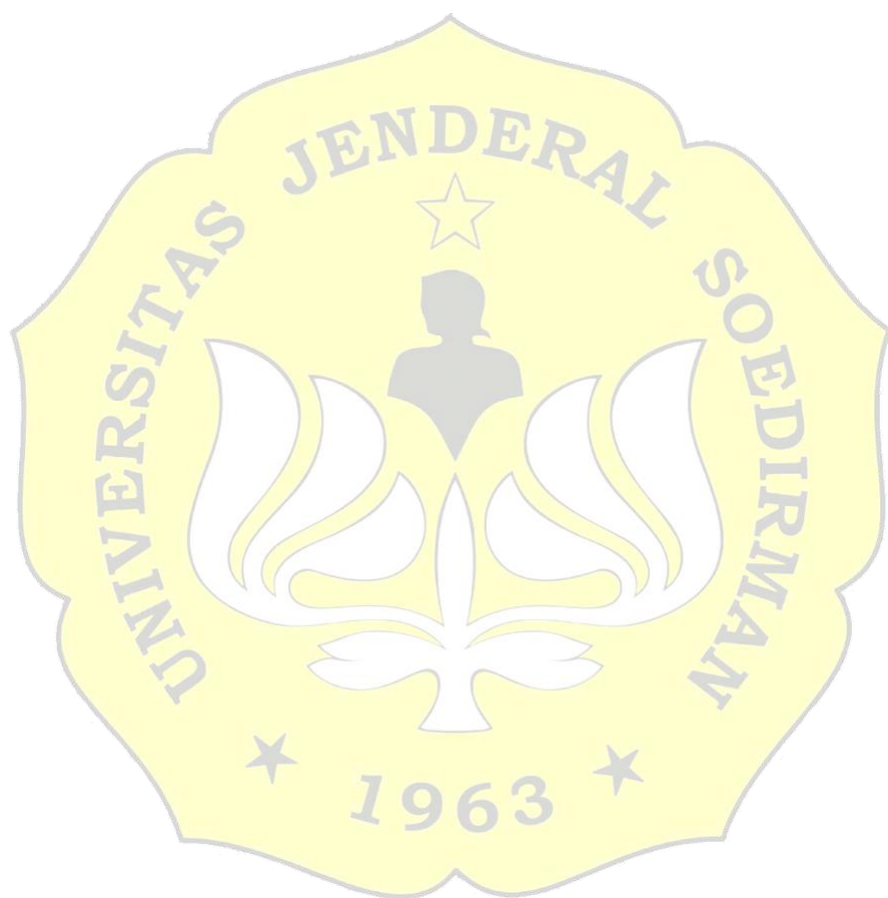
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Lokasi penelitian berada di daerah Lawen dan sekitarnya yang secara administratif berada di wilayah Kecamatan Pandanarum, Kabupaten Banjarnegara, Provinsi Jawa Tengah. Daerah ini memiliki kondisi morfologi berupa perbukitan dan punggung curam akibat pengaruh dari aktivitas struktur, serta tersusun atas material vulkanik dan sedimen sehingga meningkatkan kerawanan terjadinya bencana yakni gerakan tanah. Bencana ini dikontrol oleh beberapa faktor seperti litologi, arah hadap lereng, elevasi, kemiringan lereng, tata guna lahan, jenis tanah, curah hujan dan kurvatur. Oleh karena itu, dilakukan analisis kerentanan gerakan tanah menggunakan metode statistik bivariat yakni *Frequency Ratio* berbasis Sistem Informasi Geografis (SIG) untuk mengetahui zona kerentanan gerakan tanah dan upaya pencegahannya pada daerah tersebut. Dalam validasinya metode *Frequency Ratio* akan memperhatikan kurva AUC (*Area Under Curve*) dalam penentuan tingkat akurasi pemodelan. Berdasarkan hasil analisis studio dan laboratorium, satuan geomorfologi daerah penelitian yakni Satuan Punggung Homoklin Lawen, Satuan Perbukitan Intrusi Lawen, Satuan Perbukitan Zona Sesar Pasegeran dan Satuan Punggung Aliran Lava Pasegeran. Kemudian satuan geologi diurutkan dari umur paling tua hingga muda yakni Satuan Batulempung Perselingan Batupasir, Satuan Intrusi Diorit, Satuan Lava Andesit dan Satuan Breksi Piroklastik. Pada daerah penelitian kemudian dikelompokkan menjadi empat zona kerentanan gerakan tanah, Zona Kerentanan Sangat Rendah, Zona Kerentanan Rendah, Zona Kerentanan Menengah, dan Zona Kerentanan Tinggi.

Kata Kunci : *Frequenty Ratio*, Gerakan Tanah, GIS, Pandanarum, Zonasi Kerentanan.



ABSTRACT

***“Geology and Landslides Susceptibility Zonation Using Frequency Ratio
Method of Lawen and Surrounding Areas, Pandanarum District ,
Banjarnegara Regency, Central Java”***

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This research is located in Lawen and Surrounding Areas, administratively within the territory of Pandanarum District, Banjarnegara Regency, Central Java. This areas has a morphological condition form steep hills and ridges due to the influenced by structural activity, composed of volcanic and sedimentary materials thereby increasing the vulnerability of disasters, namely landslide. This landslides are controlled by some factor including lithology, slope direction, elevation, slope rate, land use, soil type, raindrop rate and curvature. Therefore, a landslide susceptibility analysis was carried out using a bivariate statistical method, namely Frequency Ratio based on a Geographic Information System (GIS) to determine the susceptibility zone of landslide and its prevention efforts in the area. In the validation, this method will observe AUC curve (Area Under Curve) to determine accuration of the data model. Based on studio and laboratory analysis, the geomorphological units in the study area are Lawen Homoklin Zone Ridge Unit, Lawen Intrusion Hill Unit, Pasegeran Fault Zone Ridge Unit, and Pasegeran Lava Flow Rigde Unit. Then, the geological units are sorted from old to young, namely Claystone Unit, Diorit Intrusion Unit, Andesite Lava Unit, and Piroclastic Brexit Unit. Later the location were classified as four zonation, Very Low-Susceptible Zone, Low-Susceptible Zone, Medium-Susceptible Zone, and High-Susceptible Zone.

Keywords : *Frequency Ratio, Landslide, GIS, Pandanarum, Susceptibility Zoning.*