

SARI

Indonesia memiliki kondisi geografis yang tidak bisa dilepaskan dari bencana alam. Salah satu bencana alam yang sering terjadi yaitu gerakan tanah. Dalam studi kasus ini dilakukan penelitian pemetaan kerentanan gerakan tanah di Gunung Lasem, tepatnya di Kecamatan Lasem, Kabupaten Rembang, Provinsi Jawa Tengah. Menurut Badan Penanggulangan Bencana Daerah Kabupaten Rembang, gerakan tanah sering dijumpai di Kecamatan Lasem. Penelitian ini dilakukan untuk mengetahui kondisi geologi dan persebaran zona kerentanan gerakan tanah di Kecamatan Lasem.

Tahapan utama dalam penelitian ini yaitu persiapan data sekunder, pengecekan dan pemetaan langsung di lapangan untuk mendapatkan data primer, dan pengolahan data. Faktor pengontrol gerakan tanah yang diidentifikasi berupa kemiringan lereng, jenis litologi batuan, jarak dari struktur geologi, jarak dari penyaluran, tata guna lahan, dan sebaran curah hujan. Didapatkan 40 titik gerakan tanah pada daerah penelitian, dimana 80% (32 titik gerakan tanah) akan digunakan untuk perhitungan *frequency ratio* dan 20% (8 titik gerakan tanah) akan digunakan untuk validasi *area under curve*. Perhitungan *frequency ratio* dilakukan dengan pembobotan masing-masing kelas faktor pengontrol. Kemudian hasil nilai pembobotan tersebut ditumpang-tindihkan menjadi data *Landslide Hazard Index* (LHI). Nilai LHI tiap faktor pengontrol akan diklasifikasikan menjadi 4 zona kerentanan gerakan tanah. Peta kerentanan gerakan tanah kemudian divalidasi menggunakan beberapa titik gerakan tanah lainnya untuk mendapatkan tingkat akurasi kevalidan peta gerakan tanah tersebut.

Dihasilkan 4 zona kerentanan gerakan tanah berupa zona kerentanan gerakan tanah sangat rendah dengan nilai LHI 0,489-2,327, zona kerentanan rendah 2,327-5,431, zona kerentanan sedang 5,431-8,576, dan zona kerentanan tinggi 8,576-10,905. Zona kerentanan gerakan tanah tinggi terdapat di Desa Gowak, Kajar, Ngargomulyo, dan Sendanyoyo dengan persentase gerakan tanah sebanyak 80% (32 titik gerakan tanah). Hasil validasi *area under curve* didapatkan nilai akurasi 85% dan termasuk dalam kelas *good* (Tape, 2010), sehingga peta layak untuk digunakan.

Kata kunci : gerakan tanah, metode *frequency ratio*, validasi *area under curve*, Kecamatan Lasem

ABSTRACT

Indonesia has a geographical condition that cannot be separated from natural disasters. One of the natural disasters that often occurs is ground movement. In this case study, a mapping study of the vulnerability of landslides was carried out on Mount Lasem, precisely in Lasem District, Rembang Regency, Central Java Province. According to the Regional Disaster Management Agency of Rembang Regency, landslides are often found in Lasem District. This research was conducted to determine the geological conditions and the distribution of the soil movement vulnerability zone in Lasem District.

The main stages in this research are secondary data preparation, checking and mapping directly in the field to obtain primary data, and data processing. The soil motion control factors identified are the slope, the type of rock lithology, the distance from the geological structure, the distance from the river, land use, and the distribution of rainfall. There are 40 ground motion points in the research area, of which 80% (32 ground motion points) will be used for the calculation of the frequency ratio and 20% (8 ground motion points) will be used for validation of the area under curve. Frequency ratio calculation is done by weighting each class of controlling factor. Then the results of the weighting values are superimposed into LHI (Landslide Hazard Index) data. The LHI value of each controlling factor will be classified into 4 zones of vulnerability to ground motion. The landslide susceptibility map is then validated using several other ground motion points to obtain the level of accuracy of the ground motion map validity.

The resulting soil movement susceptibility zones consist of very low landslide susceptibility zones with LHI values of 0.489-2.327, low vulnerability zones 2.327-5.431, moderate vulnerability zones 5.431-8.576, and high vulnerability zones 8.576-10.905. Zones of high ground movement vulnerability are found in the villages of Gowak, Kajar, Ngargomulyo, and Sendanycoyo with the percentage of ground movement as much as 80% (32 points of ground motion). The results of the validation of the under curve area obtained an accuracy value of 85% and included in the good class (Tape, 2010), so the map is feasible to use.

Keywords: ground motion, frequency ratio method, validation of area under curve, Lasem District