

## INTISARI

Gunung berapi merupakan fenomena alam yang dapat memicu berbagai bencana, seperti gempa vulkanik, aliran lava, dan banjir lahar. BPBD (Badan Penanggulangan Bencana Daerah) Lumajang mencatat, sejak 1895 – 2023 terdapat 30 kejadian banjir lahar. Hal itu menjadi peringatan adanya upaya mitigasi bencana agar tidak terjadi korban jiwa maupun kerugian di masa mendatang. Pembuatan peta risiko adalah salah satu dari upaya mitigasi bencana banjir lahar. Pembuatan peta risiko menghasilkan area yang memiliki risiko bencana rendah, sedang, dan tinggi. Proyek akhir ini memiliki tujuan untuk menyajikan lokasi desa dengan tingkat risiko sekaligus potensi jiwa terpapar, kerugian fisik, ekonomi, dan lingkungan yang terdampak banjir lahar di Kabupaten Lumajang.

Pembuatan peta risiko bencana banjir lahar di Kabupaten Lumajang diawali dengan pengumpulan data dari berbagai sumber dan diolah menggunakan *software* ArcMap 10.8.2. Data yang diperlukan dalam penyusunan peta risiko bencana ini meliputi data Kawasan Rawan Bencana (KRB) Gunung Semeru, DEMNAS, data *history* banjir lahar, batas administrasi desa, data InaRISKpop, data jumlah penduduk berdasarkan jenis kelamin, umur renta, disabilitas, dan kemiskinan, data PDRB (Produk Domestik Regional Bruto), data sebaran sekolah, data sebaran rumah sakit, data sebaran puskesmas, data penutupan lahan, data daerah kawasan hutan, data kapasitas. Peta risiko bencana tersusun dari parameter bahaya, kerentanan, dan kapasitas. Proses pengolahan peta risiko menggunakan metode *dasymeric* sesuai dengan Peraturan Kepala Badan Penanggulangan Bencana Nasional Nomor 02 Tahun 2012 tentang Pendoman Umum Pengkajian Risiko Bencana.

Hasil proyek akhir menunjukkan total area terdampak risiko banjir lahar di Kabupaten Lumajang seluas 16.115,58 ha, terdiri atas risiko rendah (2.202,03 ha atau 13,6%), sedang (14.021,19 ha atau 87%), dan tinggi (0,09 ha di Desa Condoro). Mayoritas wilayah memiliki bahaya sedang, dengan luas terbesar di Desa Pronojiwo (2.213,06 ha) dan Pasrujambe (2.045,54 ha), sementara bahaya tinggi terdapat di Desa Bago (133,07 ha) dan sekitarnya. Kerentanan dominan pada kategori sedang (11.949,1 ha), terbesar di Desa Supiturang (1.536,12 ha). Kapasitas wilayah bernilai 0,54 (kategori sedang). Sebanyak 57.854 jiwa terdampak, dengan potensi kerugian fisik Rp48,7 miliar, kerugian ekonomi Rp251,5 miliar, dan kerusakan lingkungan 1.862 ha.

**Kata Kunci:** Kabupaten Lumajang, Banjir Lahar, Risiko Bencana, Peta Risiko, Mitigasi Bencana, *Dasymeric*.

## ABSTRACT

*Volcanoes are natural phenomena that can trigger various disasters, such as volcanic earthquakes, lava flows, and lahar floods. The Lumajang Regional Disaster Management Agency (BPBD) recorded 30 lahar flood incidents from 1895 to 2023. This should serve as a warning to implement disaster mitigation efforts to prevent casualties and losses in the future. Risk mapping is one of the efforts to mitigate lahar flood disasters. Risk mapping can identify areas with low, medium, and high disaster risk levels. This final project aims to present the location of villages based on their risk levels, as well as the potential exposure of populations, physical damages, economic losses, and environmental impacts caused by lahar floods in Lumajang Regency.*

*The development of the lahar flood disaster risk map in Lumajang Regency began with data collection from various sources, which were processed using ArcMap 10.8.2 software. The data required for creating this disaster risk map included the Hazard-Prone Areas (KRB) of Mount Semeru, DEMNAS, lahar flood history data, village administrative boundaries, InaRISKpop data, population data categorized by gender, age, disabilities, and poverty levels, Gross Regional Domestic Product (PDRB) data, school distribution data, hospital distribution data, health center distribution data, land cover data, forest area data, and capacity data. The disaster risk map was composed of hazard, vulnerability, and capacity parameters. The risk map processing utilized the dasymetric method in accordance with the Indonesian National Disaster Management Agency Regulation No. 02 of 2012 on General Guidelines for Disaster Risk Assessment.*

*The final project results indicate that the total area affected by lahar flood risk in Lumajang Regency covers 16,115.58 hectares, consisting of low risk (2,202.03 ha or 13.6%), medium risk (14,021.19 ha or 87%), and high risk (0.09 ha in Condro Village). Most areas fall under medium hazard, with the largest coverage in Pronojiwo Village (2,213.06 ha) and Pasrujambe Village (2,045.54 ha), while high-hazard areas are found in Bago Village (133.07 ha) and its surroundings. Vulnerability is predominantly in the medium category (11,949.1 ha), with the largest area in Supiturang Village (1,536.12 ha). The region's capacity index is 0.54 (medium category). A total of 57,854 people are affected, with potential physical losses of IDR 48.7 billion, economic losses of IDR 251.5 billion, and environmental damage covering 1,862 hectares.*

**Keywords:** *Lumajang Regency, Lahar Flood, Disaster Risk, Risk Mapping, Disaster Mitigation, Dasymetric.*