

## ABSTRAK

Basis data yang mencakup informasi kerentanan terhadap bahaya longsor yang meliputi informasi bangunan, tingkat kerentanan, serta peta sebaran rumah terhadap tingkat kerentanan longsor masih belum tersedia di tingkat desa. Pembuatan basis data bangunan menggunakan metode sensus memerlukan waktu relatif lama serta biaya yang mahal. Perkembangan teknologi *orthophoto* dan *Digital Elevation Model* (DEM) sebagai sumber data dalam pembuatan basis data bangunan dapat digunakan sebagai alternatif metode sensus.

Tujuan penelitian ini adalah (1) menilai kerentanan rumah terhadap longsor di Desa Ngasinan berdasar interpretasi visual *orthophoto* dan analisis *Digital Terrain Model* (DTM). (2) mengetahui sebaran kerentanan rumah terhadap longsor di Desa Ngasinan. Tahapan pengolahan yang dilakukan yaitu meliputi akuisisi foto udara serta membangun *Digital Terrain Model* (DTM), DTM diperlukan untuk memperoleh data kelas lereng dan topografi. Proses tahapan studio meliputi interpretasi visual *orthophoto* dan interpretasi jenis bangunan.

Kunci interpretasi dalam penilaian tingkat kerentanan rumah terhadap longsor meliputi bentuk atap, jenis dinding terluas, rona atap, luas bangunan, jarak terhadap jalan yang layak, asosiasi tingkat konsumsi energi listrik, klaster topografis, ketinggian topografi, dan jarak terhadap lereng. Penilaian kerentanan rumah terhadap longsor menggunakan analisis aspek kerentanan fisik bangunan, kerentanan sosial ekonomi, dan kerentanan lingkungan.

Hasil analisis menunjukkan jumlah bangunan rumah di Desa Ngasinan sebanyak 627 rumah. Bangunan dengan kelas kerentanan rendah sebanyak 235 rumah, kelas kerentanan sedang sebanyak 315 rumah, dan kelas kerentanan tinggi sebanyak 77 rumah. Sebaran rumah yang paling rentan terhadap longsor dengan kerentanan tinggi sebesar 29,03% berada di wilayah RT 4 RW 2 Dusun Kedondong. Wilayah RW 2 Dusun Krajan memiliki kerentanan terendah dengan tingkat kerentanan longsor rendah hingga sedang. Wilayah dengan tingkat kerentanan tinggi secara spasial menyebar dengan ciri aksesibilitas terhadap jalan layak yang kurang baik. Data *orthophoto* dan *Digital Terrain Model* (DEM) dapat digunakan sebagai sumber data pembuatan kerentanan rumah terhadap longsor dengan nilai akurasi interpretasi sebesar 73,33% dan akurasi kerentanan sebesar 86,66 %.

Kata Kunci: krentanan, rumah, jarak lereng, ketinggian tempat, atap

## ABSTRACT

Databases that include information vulnerability of landslides which includes information on buildings, the level of vulnerability, and maps of the distribution of houses to the level of vulnerability to landslides is still not available at the village level. Creating a building database using the census method requires a relatively long time and is expensive. The development of orthophoto technology and Digital Elevation Model (DEM) as data sources in building database development can be used as an alternative census method.

The purposes of this study are (1) to assess the vulnerability of houses to landslides in Ngasinan Village based on the visual interpretation of the photo and the analysis of the Digital Terrain Model (DTM). (2) knowing the distribution of houses' vulnerability to landslides in Ngasinan Village. The processing steps carried out include acquisition of aerial photographs and building a Digital Terrain Model (DTM). DTM is needed to obtain slope class and topography data. The studio stage process includes the visual interpretation of the photo and the interpretation of the type of building.

Interpretation keys in assessing the level of vulnerability of a house to landslides include the shape of the roof, the widest wall type, roof color, building area, distance to a proper road, level of association of electricity consumption, cluster topography, topographical height, and distance to slopes. Assessment of house vulnerability to landslides uses an analysis of the physical vulnerability of the building, socio-economic vulnerability, and environmental vulnerability.

The results of the analysis show that there are 627 houses in Ngasinan Village. Buildings with low vulnerability class are 235 houses, medium vulnerability class are 315 houses, and high vulnerability class are 77 houses. The distribution of houses most vulnerable to landslides with a high vulnerability of 29.03% is in the RT 4 RW 2 Dusun Kedondong area. The RW 2 area of Dusun Krajan has the lowest vulnerability with low to moderate levels of landslide vulnerability. Regions with a high level of vulnerability are spatially dispersed with poor accessibility to decent roads. Orthophoto data and Digital Terrain Model (DEM) can be used as a data source for making houses vulnerable to landslides with an interpretation accuracy value of 73.33% and a vulnerability of 86.66%.

**Keywords:** vulnerability, house, slope distance, altitude, roof