

## Model spasial kerentanan terhadap tsunami di Kecamatan Buleleng = Spatial vulnerability to tsunami models on the northern coast of Buleleng sub-district

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### Abstrak

Kecamatan Buleleng merupakan pusat kegiatan di Kabupaten Buleleng yang berbatasan langsung dengan Laut Bali di bagian utara yang dilewati oleh patahan naik Flores. Mengingat aktivitas patahan naik Flores yang pernah mengakibatkan gempa dan tsunami di Flores pada tahun 1992 dan menewaskan hingga 2100 jiwa, serta sejarah bencana gempa bumi pada tahun 1976 di Kabupaten Buleleng, maka dibuatlah model spasial kerentanan terhadap tsunami di Kecamatan Buleleng. Tujuan dari penelitian adalah untuk menganalisis model kerentanan terhadap tsunami, dan menganalisis intensitas kerugian wilayah terpapar tsunami terhadap distribusi penduduk dan lahan terbangun di Kecamatan Buleleng. Model spasial kerentanan terhadap tsunami di Kecamatan Buleleng menggunakan metode analisis kuantitatif dan analisis spasial, dengan menggunakan Analytical Hierarchy Process (AHP) dalam menentukan harkat, bobot, skor. Variabel lahan terbangun membedakan jenis bangunan permukiman serta perdagangan dan jasa. Variabel distribusi menggunakan estimasi per 10 ha dengan menggunakan grid. Terdapat tiga skenario ketinggian gelombang yang dilakukan untuk melihat sejauh mana wilayah terpapar tsunami di Kecamatan Buleleng. Hasil skenario 6 meter menunjukkan jumlah korban mencapai 2.493 jiwa dengan 482 lahan terbangun yang terpapar tsunami. Skenario 9 meter menunjukkan 147.276 jiwa korban dan 8.052 bangunan yang terpapar tsunami, dan yang terakhir skenario 20 meter menunjukkan 161.199 jiwa korban dengan 18.293 bangunan yang terpapar tsunami

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Buleleng Subdistrict is the activity center in Buleleng Regency. It is adjacent to the Bali Sea in the northern part, which is crossed by the Flores back arc thrust fault. Considering the fact that the fault activities in Flores had caused an earthquake and tsunami in 1992 in Flores which killing up to 2100 people and in 1976 in Buleleng Regency, hence a spatial modelling for tsunami vulnerability in Buleleng Subdistrict was developed. The aim of this study is to analyze the tsunami elevation model, and to analyze the integration of tsunami-exposed areas with the distribution of populations and buildings in Buleleng Subdistrict. The methods used for making a spatial modelling for tsunami vulnerability in Buleleng Subdistrict were quantitative analysis and spatial analysis. Analytical Hierarchy Process (AHP) used to determine the value, weight, and score. Built land variables distinguished the residential buildings, and trade and service areas. Distribution variables used an estimation of per 10 hectares in the grid. Based on the results, there are three wave height scenarios to identify how big the tsunami exposure area is in Buleleng Subdistrict. The scenario of 6-meter shows the number of victims will reach up to 2,493 people and around 482 buildings will affect. While, the 9-meter scenario estimates that there will be 147,276 victims and 8,052 buildings will affect. The last scenario is the 20-meter that estimates around 161,199 people and 18,293 buildings will affect