

# Pemetaan potensi bencana gerakan tanah dengan menggunakan metode analytical hierarchy process (AHP) di Kabupaten Bandung Barat = Landslide susceptibility mapping using analytical hierarchy process (AHP) in West Bandung Regency

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## Abstrak

Gerakan tanah merupakan bencana alam yang banyak menimbulkan kerugian harta benda, korban jiwa maupun luka-luka, kerusakan properti dan juga infrastruktur. Salah satu cara untuk mengurangi kerugian tersebut adalah dengan melakukan pemetaan potensi bencana gerakan tanah (slide hazard zonation). Pemetaan potensi bencana gerakan tanah dilakukan di Kabupaten Bandung Barat yang merupakan salah satu daerah di Indonesia dengan frekuensi keterjadian gerakan tanah yang tinggi. Metode yang digunakan adalah dengan menggunakan Analytical Hierarchy Process (AHP). Pada penelitian ini digunakan 15 faktor pemicu terjadinya gerakan tanah, yaitu sudut lereng, arah lereng, kelas lereng, elevasi, elevasi relatif, Stream Power Index (SPI), Topographic Wetness Index (TWI), Normalized Differential Vegetation Index (NDVI), kerapatan liniasi, jarak terhadap liniasi, litologi, jenis tanah, curah hujan, kerapatan sungai, dan juga jarak terhadap sungai. Sedangkan faktor risiko gerakan tanah berupa penggunaan lahan, kerapatan bangunan, dan juga jarak terhadap jalan. Kabupaten Bandung Barat secara umum memiliki potensi kerentanan gerakan tanah moderate dengan persentase area sebesar 17,37%. Sedangkan kelas very low menyusun sekitar 15,97% luas daerah penelitian, low 16,96%, moderately high 16,75%, high 16,73%, dan juga very high 16,19%. Sedangkan untuk risiko gerakan tanah Kabupaten Bandung Barat didominasi area dengan tingkat moderately high dengan persentase area sebesar 22,36%. Sedangkan kelas very low menyusun sekitar 15,95% luas daerah penelitian, low 16,79%, moderate 18,70%, high 15,57%, dan juga very high 10,59%. Untuk potensi bencana gerakan tanah, Kabupaten Bandung Barat didominasi oleh tingkat moderate dengan persentase area sebesar 18,41%. Sedangkan kelas very low menyusun sekitar 15,22% luas daerah penelitian, low 15,20%, moderately high 16,88%, high 17,14%, dan juga very high 17,12%.

.....Landslide is a natural disaster that causes a huge loss in properties, fatalities, and public utilities. One of the ways to decrease those loss is by mapping the landslide susceptibility area (landslide hazard zonation). The landslide susceptibility mapping was applied in West Bandung Regency because the area has high landslide occurrence frequency. The method used in this research is the Analytical Hierarchy Process (AHP). There are 15 landslide triggering factors considered in this research, such as: slope angle, slope aspect, slope curvature, elevation, relative elevation, Stream Power Index (SPI), Topographic Wetness Index (TWI), Normalized Differential Vegetation Index (NDVI), lineaments density, distance to lineaments, lithology, soil types, rainfall intensity, drainage density, and distance to drainage. As for the risk triggering factors, there are land use, building density, and distance to roads. In general, landslide hazard in West Bandung Regency is in moderate class with 17,37% total area. The very low class is about 15,97% of total area, low 16,96%, moderately high 16,75%, high 16,73%, and very high 16,19%. Besides, the landslide risk in West Bandung Regency dominated by moderately high class with 22,36% total area. The very low class is about 15,95% total area, low 16,79%, moderately 18,70%, high 15,57%, and very high 10,59%. Finally, the landslide susceptibility in West Bandung Regency dominated by moderate class with 18,41% total area. The

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