

PEMETAAN TINGKAT KERAWANAN DAN JALUR EVAKUASI BENCANA BANJIR (Studi Kasus Kecamatan Cawas, Kabupaten Klaten)

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INTISARI

Kecamatan Cawas merupakan salah satu kecamatan di Kabupaten Klaten yang rawan akan bencana banjir. Pembangunan tanggul sudah diupayakan dalam meniasasi banjir, namun berdasarkan hasil dari kegiatan susur sungai pada Januari 2018 ditemukan puluhan titik tanggul dalam keadaan kritis. Penelitian ini bertujuan mengetahui tingkat kerawanan banjir di Kecamatan Cawas serta menentukan arahan titik dan jalur evakuasi bencana banjir yang efektif. Citra penginderaan jauh yang digunakan adalah citra Quickbird perekaman tahun 2015. Selain itu data lain yang digunakan diantaranya data rerata curah hujan tahunan (2010-2017), kemiringan lereng (%), tekstur tanah, dan kerapatan aliran

Metode yang digunakan pada penelitian ini adalah metode penginderaan jauh dengan pendekatan kuantitatif berjenjang tertimbang untuk memberikan skor dan bobot setiap parameter kerawanan banjir. Peta tingkat kerawanan banjir diperoleh dengan menerapkan teknik tumpang susun (*overlay*) dari parameter-parameter yang digunakan. Sedangkan dalam menentukan arahan jalur evakuasi yakni dirancang berdasarkan kondisi kerawanan banjir di Kecamatan Cawas. Penentuan titik evakuasi memperhatikan sebaran permukiman, fasilitas publik, dan aksesibilitas jalan. Pemrosesan jalur evakuasi menggunakan *network analyst: closest facility* berdasarkan jarak terdekat

Berdasarkan pengolahan pemetaan tingkat kerawanan banjir, diketahui bahwa kondisi tingkat kerawanan banjir di Kecamatan Cawas didominasi oleh kelas rawan dengan luas 2465,391 ha (68,61%), sedangkan kelas agak rawan seluas 69,784 ha (1,94%) serta kelas sangat rawan dengan luas total 1058,295 ha (29,45%). Pemrosesan *network analyst* dihasilkan 18 jalur evakuasi dengan jarak terdekat menghubungkan Kantor Desa Japanan menuju ke SD N Balak sejauh 980,4 m, sedangkan untuk jarak tempuh terjauh yakni 3099,9 m menghubungkan SD N 3 Nanggulan menuju ke Kantor Desa Jambakan yang berlokasi di Kecamatan Bayat.

Kata kunci: Banjir, Kerawanan, *Overlay*, Jalur Evakuasi, *Closest Facility*.

MAPPING THE LEVEL OF VULNERABILITY AND EVACUATION ROUTES OF FLOOD DISASTER (Case Study of Cawas Subdistrict, Klaten District)

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ABSTRACT

Cawas Subdistrict is one of the subdistricts in Klaten Regency which is vulnerable to flood. Construction of embankments has been attempted to deal with flooding, but based on the result of river survey activities in January 2018, dozens of embankment points were found in a critical condition. The aim of this research is knowing the level of flood vulnerability in Cawas Subdistrict and determining the direction of effective flood assembly points and evacuation route. Remote sensing imagery that used in this research is quickbird. In addition, another data that used include annual average rainfall (2010-2017), slope (%), soil texture, and flow density

This research is using remote sensing method with a weighted tiered quantitative approach to give scores and weights for each flood vulnerability parameter. The map of flood vulnerability level is obtained by applying the overlay technique of the parameters. Whereas in determining the direction of the evacuation route it is designed based on conditions of flood vulnerability in the Cawas Subdistrict. The evacuation points determination by observing the distribution of settlements, public facilities, and road accessibility. The evacuation route is processing by using network analyst: closest facility based on the closest distance.

Based on the process of mapping the level of flood vulnerability, it's known that the level of flood vulnerability condition in Cawas Subdistrict is dominated by vulnerable classes with an area of 2465,391 ha (68,61%), while classes are rather vulnerable with an area of 69,784 ha (1,94%) and very vulnerable classes with a total area of 1058,295 ha (29,45%). Network analyst processing produced 18 evacuation routes with the closest distance is connecting the Japanan Village Office to Balak Elementary School for 980.4 m, while for the farthest distance of 3099,9 m connecting Nanggulan III Elementary School to the Jambakan Village Office that located in Bayat Subdistrict.

Keywords: Flood, Vulnerability, Overlay, Evacuation Route, Closest Facility.