PENGENDALIAN BANJIR DI PADUKUHAN NUMPUKAN DAN PADUKUHAN KEMASAN, KALURAHAN KARANGTENGAH, KAPANEWON IMOGIRI, KABUPATEN BANTUL, DIY

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INTISARI

Bencana banjir pada 17 Maret 2019 melanda Kapanewon Imogiri termasuk Padukuhan Numpukan dan Padukuhan Kemasan akibat luapan Sungai Celeng. Volume air yang mengalir melebihi kapasitas sungai akibat hujan lebat selama dua hari berturut-turut. Bencana banjir tersebut mengakibatkan kerugian harta benda dan korban jiwa yaitu satu warga Numpukan. Banjir merendam pekarangan warga, kebun campur, sawah, dan permukiman warga. Penelitian ini bertujuan mengetahui tingkat risiko bencana banjir dan memberikan arahan pengendalian banjir.

Metode pengumpulan data yaitu metode suvei dan pemetaan serta wawancara. Hasil dari pengumpulan data kemudian diolah dengan metode skoring dan *overlay*. Parameter yang digunakan yaitu kepadatan penduduk, kelompok umur dan jenis kelamin, iklim, kemiringan lereng, penggunaan lahan, luas, ketinggian, dan lama genangan banjir, peringatan dini dan kesiapsiagaan. Analisis data menggunakan metode rasional dalam perhitungan debit rencana, metode gumbel dalam perhitungan hujan rencana, dan metode mononobe dalam perhitungan intensitas curah hujan. Curah hujan yang digunakan dalam perhitungan merupakan curah hujan harian maksimum yaitu 199,6 mm/hari pada 2019. Dilakukan perhitungan dimensi kolam retensi dan sumur resapan untuk arahan pengelolaan. Ketentuan lebar minimal sempadan sungai yang digunakan yaitu 10 m.

Diperoleh hasil penelitian yaitu dua kelas ancaman banjir yaitu kelas sedang dengan luas 44,9% dari total luas dan kelas rendah dengan luas 55,1% dari total luas keseluruhan. Terdapat dua kelas kerentanan banjir yaitu kelas sangat tinggi dengan luas 39,59% dari total luas keseluruhan dan kelas tinggi dengan luas 60,41% dari total luas keseluruhan. Terhadap satu kelas kapasitas terhadap banjir yaitu kelas rendah. Hasil tingkat risiko bencana banjir di daerah penelitian yaitu tinggi. Hasil perhitungan debit rencana yaitu 70,5732 m^3/s. Arahan yang dilakukan berupa pembuatan kolam retensi yang mampu menampung hingga 19.845 m^3 dengan efektivitas 70,83%, pembuatan sumur resapan dengan diameter 1 m dan kedalaman sumur resapan 3 m yang diletakkan di area permukiman, serta normalisasi Sungai Celeng. Dilakukan peningkatan kapasitas warga dengan sosialisasi mengenai banjir.

Kata Kunci: Risiko Bencana Banjir, Sungai Celeng, Kolam Retensi

FLOOD DISASTER CONTROL IN NUMPUKAN VILLAGE AND KEMASAN VILLAGE, KARANGTENGAH SUB-DISTRICT, IMOGIRI DISTRICT, BANTUL REGENCY, DIY

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ABSTRACT

The flood disaster on March 17 2019 hit Kapanewon Imogiri including the Numpukan Village and the Kemasan Village due to the overflow of the Celeng River. The volume of flowing water exceeded the capacity of the river due to heavy rains for two consecutive days. The flood disaster resulted in loss of property and loss of life, namely one Numpukan resident. The flood submerged residents' yards, gardens, rice fields, and residents' settlements. This study aims to determine the level of risk of flooding and to provide directions for flood management.

The data collection methods in this stury are survey and mapping methods, and interviews. The results of data collection are then processed by scoring and overlay methods. The parameters used are population density, age group and sex, climate, slope, land use, height and duration of flood inundation, early warning and preparedness. Data analysis used the rational method in calculating the design discharge, the gumbel method in calculating the design rain, and the mononobe method in calculating the intensity of rainfall. The rainfall used in the calculation is the maximum daily rainfall of 199.6 mm/day in 2019. The dimensions of the retention pond and infiltration wells are calculated for management guidelines. The minimum width of the river border used is 10 m.

The results obtained from the study are that there are two classes of flood threats in the form of a medium class with an area of 44,9% of the total area and a low class with an area of 55,1% of the total area. There are two classes of flood vulnerability, namely very high class with an area of 39.59% of the total area and high class with an area of 60.41% of the total area. Against one class the capacity to flood is the low class. The results of the flood risk level in the study area are high. The results of the calculation of the planned discharge are 66.702 m3/s. Flood management which applied are making a retention pond that can accommodate up to 19.845 m^3 with an effectiveness of 70,83%, as well as an infiltration well with a diameter of 1 m and a depth of 3 m infiltration wells placed in residential areas, and Celeng River normalization. Community capacity building was carried out by outreach about flooding.

Keywords:Flood Risk, Celeng River, Retention Pond