ABSTRAK

Flood Disaster Risk Management di wilayah kerja Daerah Aliran Sungai Seluna Kabupaten Pati, Kabupaten Kudus, dan Kabupaten Demak dilakukan karena adanya frekuensi kejadian banjir yang paling tinggi diantara daerah aliran sungai lain di Jawa Tengah yaitu 71 kejadian selama 1 tahun. Adanya penelitian banjir di wilayah DAS Seluna bertujuan untuk mengetahui daerah dengan risiko potensi paling tinggi, menentukan strategi preventif dan mitigatif, serta menyusun upaya penanggulangan risiko bencana banjir di wilayah DAS Seluna. Terdapat beberapa metode yang digunakan yaitu berdasarkan Perka. BNPB No. 02 Tahun 2012 melalui pendektan ancaman, kerentanan, dan kapasitas, Bow-Tie Analysis, metode Simple Additive Weightning (SAW), dan Risk Management Road Map. Terdapat variabel ancaman, kerentanan, dan kapasitas yang digunakan dengan parameter yang ditentukan. Hasil penilaian risiko yaitu terdapat 8 kecamatan yang memiliki potensi tinggi terhadap bencana banjir yaitu Kecamatan Tambakromo, Kayen, Gembong, Cluwak, Margorejo, Sukolilo, Gajah, dan Karanganyar. Penggunaan tools Bow-Tie Analysis mempermudah dalam menganalisis hubungan sebab-akibat dari strategi preventif dan mitigatif faktor yang menyebabkan tingginya wilayah yang memiliki potensi banjir. Strategi tersebut dibobotkan menggunakan metode Simple Additive Weightning (SAW) untuk mengetahui prioritas pengendalian berdasarkan kriteria komitmen politik, keberlanjutan, dan efisiensi biaya. Terdapat 3 priortas utama yaitu penguatan kapasitas tim relawan bencana, penguatan ketahananan pangan bagi masyarakat berpenghasilan rendah, dan normalisasi sungai. Prioritas tersebut dijabarkan menggunakan Risk Management Road Map untuk mengetahui tahapan pelaksanaan pengendalian prioritas yang akan berpengaruh pada wilayah yang memiliki potensi tinggi terhadap bencana banjir.

Kata kunci*: Pengurangan Risiko Bencana, Ancaman, Kerentanan, Kapasitas, Bowtie Analysis, SAW, Risk Management Road Map.*

Abstract

[Title: Flood Risk Mapping of the Seluna River Basin Based on Hazard, Vulnerability, and Capacity, and Its Mitigation Using the Bow-Tie Analysis Method] *Flood Disaster Risk Management in the Seluna Watershed, covering Pati, Kudus, and Demak Regencies, is conducted due to the high frequency of flood occurrences, which is the highest among other watersheds in Central Java, with 71 incidents recorded in a year. This study aims to to identify areas with the highest potential flood risk, determine appropriate preventive and mitigative strategies, and develop effective flood disaster risk reduction efforts in the region. Several methods are applied, including the guidelines from BNPB Regulation No. 02 of 2012 using the threat–vulnerability–capacity approach, Bow-Tie Analysis, the Simple Additive Weighting (SAW) method, and the Risk Management Road Map. The variables used in the assessment are threat, vulnerability, and capacity, each with predetermined parameters. The results indicate that eight sub-districts— Tambakromo, Kayen, Gembong, Cluwak, Margorejo, Sukolilo, Gajah, and Karanganyar—are highly prone to flooding. The Bow-Tie Analysis tool facilitates the examination of cause-effect relationships in preventive and mitigative strategies addressing flood risk factors. The prioritization of these strategies is determined using the Simple Additive Weighting (SAW) method, based on criteria such as political commitment, sustainability, and cost efficiency. Three key priorities emerge: strengthening disaster volunteer team capacity, enhancing food resilience for low-income communities, and river normalization. These priorities are further detailed in a Risk Management Road Map to determine the stages of implementation for prioritized control efforts, which are expected to significantly impact the areas with high flood risk.*

Keywords: *Disaster Risk Reduction, Hazard, Vulnerability, Capacity, Bow Tie Analysis, SAW, Risk Management Road Map.*