PENYUSUNAN SISTEM PERINGATAN DINI ALIRAN DEBRIS BERDASARKAN PARAMETER CURAH HUJAN DENGAN METODE *CRITICAL LINE CURVE* (Studi Kasus: Kali Senowo)

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ABSTRAK

Sekitar 17% dari gunung api dunia terietak di Indonesia, dan 30% diantaranya ada di pulau Jawa. Banyaknya gunung api aktif di Indonesia terutama di Jawa mempunyai ancaman bencana, baik bencana primer (pada saat letusan) maupun bencana sekunder (aliran debris). Pada bulan Oktober hingga November 2010 terjadi erupsi gunung Merapi yang berada di wilayah provinsi Jawa Tengah dan Yogyakarta. Erupsi gunung Merapi ini berupa awan panas, lahar panas serta lahar dingin yang mengalir melalui kali yang berhulu di Merapi. Material vuklanik yang terbawa saat erupsi gunung. Metode yang digunakan dalam penelitian ini menggunakan metode *Critical Line Curve yang diterbitkan oleh Ministry of Land,* Infrastructue and Transport Infrastructure Development Institute Japan, Metode ini berdasarkan dengan rangkaian hujan penyebab aliran debris, *working rainfall (RW)* yang dikaitkan dengan kedalaman hujan saat ini dan kedalaman hujan saat terjadi aliran debris pada tahun 2011-2012. Berdasarkan hasil analisis, Curah hujan Pendahuluan 50mm dan diteruskan ke *Antecendent Working Rainfall* didapatkan nilai 37,0125 mm, Intensitas Hujan Efektif 7,25mm, dan didapatkan nilai titik *(safe area) non causing rainfall* pada Stasiun Angin – Angin yaitu 62,96 %, nilai titik *(dangerous area) causing rainfall* yaitu 37,04 %. Sedangkan untuk nilai titik *(safe area) non causing rainfall* pada Stasiun Beran yaitu 60 % dan 40 % untuk *(dangerous area) causing rainfall*.

Kata Kunci: Aliran Debris, Sabo Dam, Hujan, Kali Senowo, *Working Rainfall*

DEVELOPMENT OF AN EARLY WARNING SYSTEM FOR DEBRIS FLOWS BASED ON RAINFALL PARAMETERS USING THE CRITICAL LINE CURVE METHOD (Case Study: Senowo River)

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ABSTRACT

About 17% of the world's volcanoes are located in Indonesia, and 30% of them are on the island of Java. The large number of active volcanoes in Indonesia, especially in Java, poses a threat of disaster, both primary disasters (during eruptions) and secondary disasters (debris flows). In October to November 2010, Mount Merapi erupted in the provinces of Central Java and Yogyakarta. The eruption of Mount Merapi took the form of hot clouds, hot lava and cold lava flowing through the river that originates at Merapi. Volcanic material carried during volcanic eruptions. This research uses the Critical Line Curve method published by the Ministry of Land, Infrastructure and Transport Infrastructure Development Institute Japan. This method is based on a series of rainfall that causes debris flows, working rainfall (RW) which is associated with the current rainfall depth and the rainfall depth when the debris flow occurred in 2011-2012. Based on the results of the analysis, the Preliminary Rainfall was 50mm and was forwarded to the Antecedent Working Rainfall, the value was 37.0125 mm, the Effective Rain Intensity was 7.25mm, and the point value (safe area) of non-causing rainfall at the Wind Station was obtained, namely 62.96%, the point value (dangerous area) causing rainfall is 37.04%. Meanwhile, the non-causing rainfall (safe area) point value at Beran Station is 60% and 40% for (dangerous area) causing rainfall.

Keywords: Debris Flow, Sabo Dam, Rain, Senowo River, Working Rainfall