



Abstract

Analisis Karakteristik Hujan Penyebab Aliran Debris Di Lereng Gunung Merapi (Studi Kasus Kali Putih Dan Kali Boyong Bagian Hulu)

Caecilia Ajeng Nindyaningrum
11/342890/PTK/08720

Telah dipertahankan di depan Dewan Penguji
Pada tanggal 2 Agustus 2013

Pembimbing Utama
Prof. Dr. Ir. Fatchan Nurrochmad, M.Agr.

Pembimbing Pendamping
Prof. Ir. Joko Sujono, M.Eng., Ph.D

Anggota Dewan Penguji Lain
Dr. Ir. Rachmad Jayadi, M.Eng.

Mount Merapi eruption that occurred on October to November 2010 gave threat of disaster to the slope area. The secondary threat came from the volcanic material deposit which will produce debris flow if mixed with storm water. The debris that flow down the slope or river bed with certain inclination will produce swift flow and become very dangerous. By considering the danger and the impact of this debris flow, and also reminding the limited data availability, it become necessary to find a simple method using rainfall data to forecast debris flow occurrence in slope of Mt. Merapi, especially in Putih River and Boyong River.

Analysis to rainfall characteristic that induced debris flow was conducted using Critical line curve which published by Ministry of Land, Infrastructure and Transport Infrastructure Development Institute – Japan. This method is based on: rainfall series that induce debris flow, working rainfall (Rw); and effective precipitation. Spatial analysis of rainfall in slope of Mt. Merapi was conducted using spline interpolation method.

The research result shows that rainfall characteristic that induce debris occurrence in Putih River has minimum rainfall value in 47.5 mm and rainfall intensity in 14.75 mm/hour (upstream), whereas Boyong River has rainfall value in 48 mm and rainfall intensity in 13 mm/hour (upstream). By relating the spatial pattern using interpolation method with rainfall value on debris flow occurrence in 2010-2011 shows that rainfall in Mt. Merapi has high rain variability.

Keywords: *debris flow, working rainfall, Putih River, Boyong River*