

PENGELOLAAN SEDIMEN KALI GENDOL PASCA ERUPSI MERAPI JUNI 2006

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ABSTRACT

The Gendol River, with its catchment area of 66 km² and the river length of about 22 km, originates from the south east of Mount Merapi. Nineteen sabo dams have been built in order to anticipate and control sediment disaster. The most upstream dam is Kaliadem (+1.100 msl) and the most downstream dam is consolidation dam of GE-C0 (+163 msl). Sand mining occurs at several points along the river and cause environmental damage. In order to conserve environment and to maintain sediment balance a proper sediment management is required.

The research is conducted based on sediment balance. The analysis of transportable sediment volume (VS) is conducted using empirical formula of Takahashi (1991) and Mizuyama (1977). Over flow sediment volume (VE) was analyzed using empirical equation of Shimoda (1995). Sediment balance was analyzed based on maximum daily rainfall (R24) with 25 years return period.

The result of the study shows that the sabo system in Gendol River effectively works to control lahar flow. As a conclusion, the existing sabo dams are able to maintain sediment balance in Gendol River. The possible amount of sand mining is estimated about 1.253.422 m³ and the allowable daily sand mining volume is estimated about 836 m³ per day.

Keywords : *sediment management, sabo dam, sand mining, sediment balance.*