

PENGENDALIAN SEDIMEN AKIBAT LONGSORAN KALDERA GUNUNG BAWAKARAENG DI SUNGAI JENEBERANG

Binga

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ABSTRACT

Jeneberang River is one of the rivers having upstream at Mount Bawakaraeng. The collapse of Mount Bawa karaeng caldera that was happened on March 26 th 2004 has resulted on landslide volume of + 235 million m³ and the increase of sediment supply potential along Jeneberang River up to Bili-Bili Reservoir. The reservoir has dead storage capacity of 29 million m³. This sediment can generate river aggradation and decrease Bili-Bili Reservoir inundation capacity. Consequently, countermeasure of sedimentation based on systematically analysis is urgently required.

This research is aimed at forecasting sediment transport volume at the upstream of Bili-Bili Reservoir catchment area, particularly at reach of Lengkesa up to Sabo No 4. The result of sediment transport volume analysis is applied to compile alternative of sediment controller structure scheme at the reach of Lengkesa up to Sabo No 4 in Jeneberang River. Sediment volume transport is analyzed using empirical equation of Mizuyama and sediment balance is analyzed using empirical equation of Shimoda.

The analysis result of sediment volume as it flows at minimum daily rainfall ($R_{critical} = 30$ mm 0.5 annual) reveals that incoming sediment volume (input) equals to 12.5 million m³. Sediment balance analysis reveals some alternatives of check dams with the considered height of check dam (H) of 14.00 m. Percentage of controlled volume of each alternative are: (1) alternative I, 6 check dam units of 40.08 %; (2) alternative II, 8 check dam units of 33.37 %; and (3) alternative III, 10 check dam units of 18.19 %. From those options, aspect to be controlled (technical aspect) covers: (1) transported sediment volume, (2) sediment flow velocity, and (3) degradation/aggradation process.

Keywords: *input, check dam, overflowed volume*