

MIGRASI SEDIMEN KALI PROGO RUAS JEMBATAN KEBONAGUNG - TRISIK

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ABSTRACT

Progo River has been degraded up to the damaging level. The revealed pile of Kebonagung, Bantar, and Srandakan Bridges indicates this; even Srandakan Bridge does not function at all because of settlement of the foundation. Another indication is the Sapon Free Intake that fails because of the water elevation drop below the intake. This problem is caused by the change of the sediment balance that makes the erosion of the riverbed uncontrolled. From this case, there comes up a question about the causes of the degradation, whether it because of the sand mining, which is uncontrolled along Progo River, or the decreasing of sediment supply from upstream, or by the impact of geometry of the river itself.

To learn further about the degradation, studying the sediment balance along Progo River is necessary. The river reaches between Kebonagung Bridge up to the downstream of the river end was considered. Empirical equations of sediment transport were used together with the cross section measured in 1996 and 2000.

Quantitatively, the discharge, which caused aggradation and degradation at that period, is the one having 70% of probability of exceedance. All existing structures have been degraded. The degradation of Kebonagung Bridge is 101 cm/year, Bantar Bridge is 20 cm/year, Kamijoro Free Intake is 0,91 cm/year, Sapon Free Intake is 57 cm/year, and for Srandakan Bridge is 33 cm/year.

Key word: River, sediment, degradation