

# Assessment on Bed load in Chameliya and Tadi river of Nepal

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## ABSTRACT

Intense rainfall, winds and tectonic activities are the main causes of sedimentation whereas rivers are the main carriers of sediments. Rugged topography, soft fractured rocks, unstable slopes of hills, terrace cultivation, loose soil, and thin vegetation cover favored soil erosion and landslides. There are not long and sufficient measured data series on suspended as well as bed loads on rivers in Nepal. Continuous measurement of both bed and suspended load is difficult and time consuming. The fast flowing rivers of the mountainous regions of Nepal pose serious problems for bed load measurements. Indirect assessment and reference of representative basin are considered as source data for similar studies. About 15 to 25 percent of the suspended load is considered as the bed load. The analysis is based on observed bed load, discharge and relevant section properties. A simple model with only three variables is used for the analysis and assessment of bed loads. Bed load transport in Chameliya and Tadi river during June to September, 2001 is estimated to be 0.050 million tons and 0.186 million tons respectively. Bed load transport in Tadi river is found to be about three times the transport load in Chameliya where as the ratio of basin area, monsoon flow, annual flow, monsoon precipitation and annual precipitation of Tadi river with Chameliya river are about 0.56, 0.78, 0.77, 1.32 and 1.26 respectively.

*Key words:* Bed load, suspended load, Sediment sampler, river discharge, Sediment transport

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