

**EROSION AND SEDIMENTATION CONTROL IN THE DOWNSTREAM OF
NGRANCAH SUB-SUB WATERSHED, HARGOTIRTO VILLAGE,
KULONPROGO DISTRICT, DAERAH ISTIMEWA YOGYAKARTA**

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ABSTRACT

Hargotirto village is located in the area of Ngrancah Sub-watershed and has a steep slope. The livelihood in the Hargotirto village is dominated by farmers who use their farms on slopes for farming. Inappropriate land use will increase the potential of the erosion in the area. When it rains, river flow of Ngrancah Sub Watershed will bring the material of erosion and settles at the bottom of reservoir, it makes reservoir destruction. The purpose of this study is to know the level of erosion hazard and Sediment Delivery Ratio for further handling of erosion issues with land conservation in the area, so that the rate of erosion and sedimentation can be minimized.

Problem handling is done by analyzing the rate of erosion and Sediment Delivery Ratio which found in the study area. Erosion rate analysis is done by the measuring stick method by sticking a stick to measure the loss of the soil for a period of time. The analysis of Sediment Delivery Ratio is done by dividing the yield of sediment obtained with erosion occurring in the same rain event. Sedimentation value obtained with sampling of sediment suspension load with depth integrated method which then continued laboratory testing. Laboratory testing was performed to find the dry weight values from the sediment samples that had been taken. Determining the location of stick planting and sediment sampling is done by the overlay method of influential erosion parameters. These parameters include slope, landuse, rock, and soil type.

The results of the calculation of the average rate of erosion on the 1, 2 and 3 plots respectively are 492,117 Ton/Ha/Year; 531,375 Ton/Ha/Year; 327,325 Ton/Ha/Year. Based P.32/MENHUT-II/2009 (Preparation Prosedures RTk RHL-DAS) the level of erosion hazard on land 1, 2 is classified as very large and on land 3 is classified as large. Sediment Delivery Ratio. The largest SDR is in the rain event 24 January 2017 with value 66,188%. The direction of management is done with the conservation of Stone Wall Terraces combined with the vetiver system and done road side control.

Key Word: Erosion, Sedimentation, SDR, Measuring Stick, Depth Integration