

KAJIAN SEDIMENTASI WADUK SEMPOR DI KEBUMEN JAWA TENGAH MELALUI EROSI DAERAH TANGKAPAN

Siwi Subekti

9832/PS/MPBA/02

Telah dipertahankan di depan Dewan Penguji
Pada tanggal 18 Februari 2004

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ABSTRACT

Sempor dam creates a reservoir of water that is used for irrigation as fundamental media for improvement of food production especially at dry season. Beside that, Sempor Dam also used for the hydro electric power plant (PLTA) and drinking water to district of Gombong, Karanganyar and Kebumen. The investment of dam construction need a lot of money, hence the economic calculation of dam construction becomes important. The advantage of being able to hold water in wet season and releasing it in dry season will be detained if the life storage of the reservoir can be utilized effectively, but sedimentation problem will decrease its volume which can influence the life time of dam. Finally the dam becomes less effective, so it is very important to study.

The method which is used to predict an average erosion rate in the catchment area considers factors of rain erosivity, soil erodibility, ground inclination of slope or slope length, management of crop and land, soil conservation. In the analysis, the map of land unit have been constructed by superposition all the necessary maps (erosivity map, erodibility map, slope length map and land use map). Calculation was done by using the USLE equation (Universal Soil Loss Equation) which was developed by Wischmeier and Smith (1965, 1978).

From this research result, the prediction of surface erosion rate in the basin catchment area in the year 2000 is equal to 10.831 mm/year or equivalent with 441,635.50 m³ /year, and the value of Sediment Delivery Ratio (SDR) is equal to 75.63 %. The number of material which eroded is equal to 194.95 ton/ha/year so it is classified into the heavy erosion class category. Hence, it is necessary to take some possible alternatives of intensive counter measures, so that the reservoir still has optimal function.

Key word : Sediment, Sempor Dam, Erosion Catchment Area, USLE