

**Soil and Water Conservation Strategies to Extend Life Time
Jatigede Reservoir**
(Case Study at Upper Cimanuk Watershed)

Abstract

Impacts of erosion and sedimentation in the catchment area can be a threat to the sustainability of the plan functions of Jatigede Reservoir. The high rate of erosion in the catchment area will increase the rate of reservoir sedimentation, which can reduce the life of the plan itself reservoir. Therefore, we need a plan of protection against age Jatigede Reservoir sustainability through conservation of soil and water in the reservoir catchment plan. This study aims to determine the capacity of the sediment carrying capacity plan Jatigede Reservoir on the rate of erosion in the catchment area of the reservoir and to get soil and water conservation strategies Jatigede Reservoir management plan to extend the life of the reservoir. The method used in this study is a quantitative and qualitative. Data collection using documentation and interviews with agency BBWS Cimanuk Cisanggarung, BPDAS Cimanuk Citanduy, Garut and Sumedang, community leaders, and experts. Analysis is conducted watershed condition analysis Jatigede Reservoir plan "without" and "with" activities of soil conservation and water management, service life analysis Jatigede Reservoir plan based on the capacity of the sediment and Promethee analysis. Based on the condition "without" and "with" soil and water conservation activities, the results of the erosion rate forecasts in the catchment area plan Jatigede Reservoir is 57,038,437.89 tons / yr ("without") and 33,378,157.89 tons / th ("with"). From this, forecasts deposit sediment into the reservoir capacity will exceed the capacity of the reservoir sediment on 21st year at the state of "without" and on the 29th year in the state "with" water soil conservation activities. Percentage of service life reservoirs to irrigation activities reached 80.72% at the state of "without" and 90.91% in the state "with" water soil conservation activities. Results obtained are forecasting strategy sedimentary deposits into the reservoir capacity will exceed the capacity of the reservoir sediment on the 34th year and the percentage of the life time of the reservoir to the irrigation activity reached 94.73%. To extend the service life of the reservoir which is based on the activities of soil conservation and water management, we need a strategic effort, which involves the participation of the community in response to the proposed activities of soil and water conservation management and expansion of the activities of soil conservation and water management by prioritizing alternative activities.

Keywords: erosion, sedimentation, life time, soil and water conservation