THE SEDIMENTATION STUDY OF SAGULING RESERVOIR, WEST JAVA

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ABSTRACT

Saguling reservoir with catchment area ± 5382 ha and 982 million m^3 of water volume at maximum surface elevation + 643 m serves as a water reservoir and a source of energy to drive turbines with a total capacity of 700 MW and can be scaled up to 1400 MW of electricity to supply the needs of Java-Bali Island. Besides that, Saguling also serves as a tourist, freshwater fish farming and agriculture. From year to year Saguling reservoir sedimentation has increased sedimentation rate exceeds the threshold of 4.0 million m^3/yr plans that affect the capacity of the reservoir. If the sedimentation could not be controlled, would interfere with the operation of reservoirs and will shorten the life of the reservoir because subject will be filled with sediment. Therefore it is necessary to study how much longer useful life of Saguling reservoir

The research was conducted by calculating the rate of erosion in the catchment area with USLE method. Then calculate the value of SDR by comparing the volume of sediment yield from land erotion with sediment yield from echosounding, assess sediment compaction by grain analysis. Furthermore, the remaining service life of the reservoir will be calculated by dead storage method.

From calculations showed that the rate of surface erotion by land-use map 1994 was 6.74 mm / yr with a value of SDR 0.284, while based on the land use map in 2009 amounted to 6.96 mm / yr with a value of SDR 0.296. With dead storage method is known that the reservoirs Saguling service life is 33 years away, starting from the year 2009. If land conservation efforts with a success rate 75%, then the reservoir service life can be extended for 11 years, so that the reservoir can still operate for 44 years starting in 2009.

Keywords: soil erosion, SDR, deposition of reservoir sedimentation, life of service reservoirs