POTENSI LAJU EROSI DAS WADUK RANDUGUNTING BERDASARKAN METODE MUSLE

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ABSTRAK

Waduk Randugunting Blora yang terletak di Desa Kalinanas, Kecamatan Japah, Kabupaten Blora dengan kapasitas tampungan total 10,40 juta m^3, luas genangan 187,19 Ha, yang berfungsi mereduksi banjir dari luas area 4.604 Ha menjadi 2.285 Ha dan mengairi 650 Ha sawah di Kabupaten Blora, Pati dan Rembang. Ada beberapa masalah yang terjadi pada waduk terutama sedimentasi. Besarnya sedimentasi yang terus meningkat dapat mempengaruhi kinerja pada waduk yang disebabkan laju erosi yang tinggi. Tujuan penelitian ini adalah menadapatkan nilai laju erosi menggunakan metode MUSLE (*Modified Universal Soil Loss Equation*). Dan sedimentasi pada DAS Waduk Randuguting, serta membuat peta kriteria sebaran erosi dibantu dengan sistem informasi geografis (SIG) berupa ArcGis 10.4. Pada metode MUSLE dibutuhkan beberapa parameter seperti faktor erosivitas hujan (R), faktor erodibilitas tanah (K), faktor panjang dan kemiringan lereng (LS), dan faktor penggunaan lahan dan pengolahan tanah (CP). Berdasarkan hasil Analisa, didapatkan nilai *sediment yield* DAS Waduk Randugunting sebesar 155,85 ton/ha/tahun.dengan klasifikasi tingkat bahaya erosi sangat berat. Dan di dapatkan peta kriteria sebaran erosi DAS Waduk Randugunting dengan 5 klasifikasi dan presentase sebesar sangat ringan 44%, ringan 8%, sedang 43%, berat 2%, dan sangat berat 3%, dimana nilai terbesar di dapatkan laju erosi sebesar 77233,81 ton/tahun dengan kategori sangat berat, dan nilai terkecil dengan kategori 0 sangat ringan dengan rata-rata 4327,67 ton/tahun yang masuk dalam kategori sangat ringan. Dengan penggunaan lahan pada DAS di dominasi oleh tegal/ladang dengan luas 769,21 Ha.

Kata Kunci: Erosi, GIS, Musle, Sedimentasi

POTENTIAL EROSION RATE RANDUGUNTING WATERSHED BASED ON MUSLE METHOD

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ABSTRACT

Randugunting Blora Reservoir located in Kalinanas Village, Japah District, Blora Regency with a total storage capacity of 10.40 million m3, inundation area of 187.19 Ha, which functions to reduce flooding from an area of 4,604 Ha to 2,285 Ha and irrigate 650 Ha of rice fields in the Blora, Pati and Rembang Regency. There are several problems that occur in the reservoir, especially sedimentation. The amount of sedimentation that continues to increase can affect the performance of the reservoir due to high erosion rates. The purpose of this study was to obtain the value of the erosion rate using the MUSLE (Modified Universal Soil Loss Equation) method. And sedimentation in the Randuguting Reservoir watershed, as well as making a map of erosion distribution criteria assisted by a geographic information system (GIS) in the form of ArcGIS 10.4. The MUSLE method requires several parameters such as rain erosivity (R), soil erodibility factor (K), slope length and slope (LS), and land use and tillage (CP) factors. Based on the results of the analysis, the sediment yield value of the Randugunting Reservoir watershed is 155.85 tons/ha/year, with a very heavy erosion hazard classification. And get a map of the erosion distribution criteria for the Randugunting Reservoir with 5 classifications and the percentage of very light 44%, light 8%, moderate 43%, heavy 2%, and very heavy 3%, where the largest value is the erosion rate of 77233.81 tons/year in the very heavy category, and the smallest value with category 0 is very light with an average of 4327.67 tons/year which is included in the very light category. The land use in the watershed is dominated by fields/fields with an area of 769.21 Ha.

Keywords: Erosion, GIS, Musle, Sedimentation