

ANALISIS DEBIT SUSPENSI PADA MDM WATUGEDE, KECAMATAN GEDANGSARI, KABUPATEN GUNUNGKIDUL, YOGYAKARTA

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INTISARI

Pengelolaan daerah aliran sungai (DAS) memerlukan data hidrologi, berupa kuantitas air, kualitas air, dan sedimentasi. Sedimentasi dapat dideteksi dengan pengeluaran suspensi. Kajian mengenai muatan suspensi mempunyai arti penting dalam pengembangan dan pengelolaan Daerah Aliran Sungai (DAS), salah satunya yaitu MDM Watugede. MDM Watugede terdiri dari 7 tipe penutupan lahan dengan didominasi oleh tegalan (76,284%), Sawah pTadah Hujan (10,150%), dan Belukar/Semak (6,499%) (RPM DAS Mikro Watugede, 2014). Pengelolaan lahan perkebunan dan pertanian yang lebih intensif dapat menyebabkan kerusakan atau gangguan pada air dan tanah, yaitu bertambah tingginya sedimentasi dan meningkatnya erosi. Untuk itu perlu dilakukan pengamatan debit dan erosi dengan kurva muatan suspensi aliran.

Penelitian dilakukan di kawasan MDM Watugede, Kecamatan Gedangsari dan Kecamatan Nglipar, Kabupaten Gunungkidul, Yogyakarta. Pengamatan dan pengukuran yang dilakukan yaitu pengambilan data hujan menggunakan ARR (merek HOB0), pengamatan tinggi muka air menggunakan AWLR (merek HOB0), pengukuran suspensi menggunakan Suspended Sampler, pengukuran vegetasi menggunakan GPS, Talley Sheet. Sedangkan olah data dengan software Microsoft Excel 2013, Arc View GIS, SE-xi FS, Sigma Plot, dan SPSS.

Hasil pengukuran dan pengamatan menunjukkan adanya berbagai penutupan lahan berupa tegakan jati, hutan campur, tegalan, dan sawah tadah hujan. Selain itu diperoleh nilai persamaan hubungan debit aliran dan debit suspensi pada saat aliran naik yaitu $Q_s = 2,6623(Q)^{1,2146}$ dengan koefisien determinasi (R^2) = 0,9163, saat aliran turun $Q_s = 0,5998(Q)^{1,6051}$ dengan koefisien determinasi = 0,8184 dan suspensi rata-rata $Q_s = 0,5126(Q)^{2,0523}$ dengan koefisien determinasi (R^2) = 0,8231. Total suspensi selama penelitian dari bulan Januari sampai Maret yaitu 52,83 ton/ha/52 hari dengan total tebal hujan sebesar 835,1 mm/52 hari.

Kata kunci: Daerah Aliran Sungai, MDM Watugede, Penutupan Lahan, Debit Aliran, Debit Suspensi.

**ANALYSIS OF SUSPENSION DEBIT ON MDM WATUGEDE,
GEDANGSARI SUB-DISTRICT, GUNUNGKIDUL DISTRICT,
YOGYAKARTA**

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ABSTRACT

Watershed (DAS) management needs hydrology data, such as water quantity, water quality, and sedimentation. Sedimentation can be detected by suspended output. The study of the load suspension is significant importance in the development and management of the Watershed (DAS), one of which is MDM Watugede. Watugede MDM consists of seven types of land cover to be dominated by the moor (76,284%), Rained paddy field (10,150%), and thicket/Shrubs (6,499%) (RPM DAS Mikro Watugede, 2014). Management of plantation land and more intensive farming can cause damage or disruption to water and soil, which increases high sedimentation and increased erosion. It is necessary for the discharge and erosion observation with suspensions cargo flow curve.

The study was conducted in the area of MDM Watugede, District and Sub-district Gedangsari Nglipar, Gunung Kidul Regency, Yogyakarta. Observation and measurement have been done were collecting of rainfall data using ARR (brand HOB0), observations of water levels using AWLR (brand HOB0), the measurement of the suspension using Suspended Sampler, vegetation measurements using GPS, Talley Sheet. While data processing with Microsoft software Excel 2013, Arc View GIS, SE-xi FS, Sigma Plot, and SPSS.

The results of measurements and observations indicate the presence of various land cover such as teak stands, mixed forest, moor, and rained paddy field. Besides the values obtained relational equation discharge flow rate and suspension at the time of upward flow is $Q_s = 2,6623(Q)^{1,2146}$ with a coefficient of determination (R^2) = 0,9163, when the flow drops is $Q_s = 0,5998(Q)^{1,6051}$ with a coefficient of determination (R^2) = 0,8184 and the average suspension $Q_s = 0,5126(Q)^{2,0523}$ with a coefficient of determination (R^2) = 0,8231. Total suspension during the study from January to March is 52,83 ton/ha/52 days with heavy rainfall total of 835,1 mm/52 days.

Keywords: Watershed, MDM Watugede, Land Cover, Water Discharge, Suspended Discharge