

ANALISIS KEBUTUHAN AIR DAN KETERSEDIAAN AIR DI SUBDAS PUSUR KLATEN, JAWA TENGAH

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INTISARI

SubDAS Pusur merupakan tempat dari makhluk hidup seperti manusia, tanaman, dan hewan yang membutuhkan air. Populasi manusia di SubDAS Pusur semakin meningkat seiring waktu, populasi hewan ternak yang tinggi serta penggunaan lahan yang didominasi oleh lahan pertanian, menjadikan urgensi untuk menghitung kebutuhan dan ketersediaan air di SubDAS Pusur. Tujuan dari penelitian ini adalah Menganalisis kebutuhan air di SubDAS Pusur, Menganalisis potensi ketersediaan air permukaan dan airtanah di SubDAS Pusur, dan Menghitung Kebutuhan dan Ketersediaan Air di Sub-SubDAS Pusur. Metode perhitungan kebutuhan air domestik dan peternakan menggunakan SNI 19-6728.1-2002, sedangkan kebutuhan air pertanian menggunakan metode dari FAO-56 dan *Netto Field Water Requirement* (NFR). Metode perhitungan ketersediaan air permukaan menggunakan Thornwaite-Mather, sedangkan perhitungan ketersediaan airtanah dengan SNI 19-6728.1-2002. Kebutuhan air domestik 2.615.552 m³/tahun, kebutuhan air peternakan 147.838,93 m³/tahun, dan kebutuhan air pertanian 38.218.350,75 m³/tahun. Ketersediaan air permukaan 44.277.557,35 m³/tahun dan ketersediaan airtanah 23.638.897,57 m³/tahun. Saldo air dari skala SubDAS dan skala Sub-SubDAS mengalami surplus. Kesimpulannya ketersediaan air di SubDAS Pusur dapat memenuhi seluruh aspek kebutuhan air untuk skala yang luas maupun detail. Saran penelitian dan melakukan pengukuran debit sungai, pengukuran ketersediaan airtanah, dan kebutuhan air domestik dan peternakan secara langsung.

Kata Kunci : Air, Kebutuhan Air, Ketersediaan Air, Thornwaite-Mather

ANALYSIS OF WATER DEMAND AND WATER AVAILABILITY IN THE SUB-WATERSHED, KLATEN, CENTRAL JAVA

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ABSTRACT

The Pusur Subwatershed is a place for living things such as humans, plants, and animals that need water. The human population in the Pusur Subwatershed is increasing over time, the high livestock population and land use dominated by agricultural land, making it urgent to calculate the need and availability of water in the Pusur Subwatershed. The purpose of this study is to analyze the need for water in the Pusur Subwatershed, analyze the potential availability of surface water and groundwater in the Pusur Subwatershed, and calculate the need and availability of water in the Pusur Subwatershed. The method for calculating domestic and livestock water needs uses SNI 19-6728.1-2002, while agricultural water needs use the method from FAO-56 and Netto Field Water Requirement (NFR). The method for calculating surface water availability uses Thornwaite-Mather, while the calculation of groundwater availability uses SNI 19-6728.1-2002. Domestic water needs are 2,615,552 m³/year, livestock water needs are 147,838.93 m³/year, and agricultural water needs are 38,218,350.75 m³/year. Surface water availability is 44,277,557.35 m³/year and groundwater availability is 23,638,897.57 m³/year. The water balance from the Sub-DAS scale and the Sub-Sub-DAS scale is in surplus. In conclusion, the water availability in the Pusur Sub-DAS can meet all aspects of water needs for a broader and more detailed scale. Research suggestions and conducting measurements of river discharge, measurement of groundwater availability, and domestic and livestock water needs directly.

Keywords: Water, Water Demand, Water Availability, Thornwaite-Mather