

## **KAJIAN NERACA AIR SECARA HIDROMETEOROLOGI DI KABUPATEN BANTUL**

### **INTISARI**

Ketersediaan air dipengaruhi oleh curah hujan, tanah, dan pengelolaan penggunaan lahan. Kajian ini membahas hubungan antara ketiga macam faktor tersebut untuk mengetahui neraca air dan indeks kekeringan di Kabupaten Bantul khususnya di Kecamatan Sedayu, Kecamatan Pundong, Kecamatan Dlingo, dan Kecamatan Jetis.

Penelitian ini menggunakan metode Thornthwaite dan Mather untuk menghitung neraca air seperti evapotranspirasi potensial, evapotranspirasi aktual, *storage*, surplus air, defisit air serta *run off* berdasarkan data curah hujan, suhu, tekstur tanah, dan panjang zona perakaran.

Hasil penelitian menunjukkan bahwa daerah yang mempunyai evapotranspirasi potensial terbesar terdapat di dua kecamatan yaitu Kecamatan Jetis pada kisaran curah hujan 1500-2000 mm pertahun, dan Kecamatan Pundong pada wilayah kisaran curah hujan 2500-3000 mm pertahun, dengan nilai evapotranspirasi potensial sebesar 1789,93 mm per tahun. Evapotranspirasi aktual terbesar terdapat di Kecamatan Sedayu pada wilayah kisaran curah hujan 2500-3000 mm per tahun, sebesar 1308,92 mm per tahun. *Storage* terbesar terdapat di Kecamatan Dlingo pada wilayah kisaran curah hujan 1500-2000 mm per tahun, sebesar 1946,143 mm per tahun. Surplus dan defisit terbesar terdapat di Kecamatan Jetis yang berada di wilayah dengan kisaran curah hujan 1500-2000 mm per tahun, dengan nilai surplus sebesar 988,089 mm per tahun dan defisit sebesar 507,681 mm per tahun. *Run off* terbesar terdapat di Kecamatan Jetis pada wilayah dengan kisaran curah hujan 1500-2000 mm per tahun, yaitu sebesar 986,501 mm per tahun. Penggunaan lahan berupa hutan mampu meningkatkan kemampuan menyimpan air di dalam tanah dan mengurangi *run off* di Kecamatan Dlingo menurut analisis neraca air Thornthwaite dan Mather. Semua kecamatan di daerah penelitian memiliki tingkat kekurangan air sedang dengan nilai indeks kekeringan 16,7 – 33,3 %.

Kata Kunci : neraca air, evapotranspirasi potensial, evapotranspirasi aktual, *storage* surplus, defisit, *run off*, indeks kekeringan.

## **THE STUDY OF WATER BALANCE USING HYDROMETEOROLOGY IN BANTUL REGENCY**

### **ABSTRACT**

The availability of water influenced by rainfall, soil, and management of land use. This study discussed the relationship among three kinds of these factors to determine water balance and aridity index in Bantul Regency, especially in Sedayu District, Pundong District, Dlingo District, and Jetis District.

This study used Thornthwaite and Mather method to calculate the water balance, such as potential evapotranspiration, actual evapotranspiration, storage, water surplus, water deficit, run off, aridity index and based on data of rainfall, temperature, soil texture, and root zone depth.

The results of research showed that the region that have the largest potential evapotranspiration are located in two districts, the Jetis District on the 1500-2000 mm per year range of rainfall, and the Pundong District on 2500-3000 mm per year range of area rainfall, with potential evapotranspiration value as 1789.93 mm per year. The largest actual evapotranspiration found at Sedayu District on 2500-3000 mm of rainfall per year, as 1308.92 mm per year. The largest storage founded at Dlingo District on the 1500-2000 mm per year range of rainfall, as 1946.143 mm per year. The largest surplus and deficit are founded at Jetis District on the 1500-2000 mm per year range of rainfall, with the surplus value 988.089 mm per year and deficit 507.681 mm per year. The largest run off placed at Jetis District on the 1500-2000 mm of rainfall per year, as 986.501 mm per year. According to the analysis of water balance Thornthwaite and Mather, forest land use can improve the ability to save water in the soil and also reduce run off at Dlingo District. All districts in the research area has been the level of water shortage in aridity index value of 16.7 to 33.3%.

**Key words :** water balance, potential evapotranspiration, actual evapotranspiration, storage, surplus, deficit, run off, aridity index.