KAJIAN INDEKS KEKRITISAN AIR SECARA METEOROLOGIS DI DAS GANDU KABUPATEN JEPARA

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abstrak

Air sebagai salah satu sumberdaya terpenting bagi kelangsungan kehidupan, jumlah ketersediaan air masing-masing wilayah berbeda-beda yang dipengaruhi oleh siklus hidrologi. Wilayah DAS Gandu berada di Kabupaten Jepara yang diketahui terdapat riwayat bencana kekeringan. Kajian indeks kekritisan air di DAS Gandu bertujuan untuk melihat nilai ketersediaan air secara meteorologis di DAS Gandu dan nilai kebutuhan air dari sektor domestik, peternakan, dan pertanian dalam kurun waktu 10 tahun. Kajian nilai indeks kekritisan air di DAS Gandu digunakan untuk mengetahui neraca air di wilayah DAS Gandu dalam kurun waktu 10 tahun. DAS Gandu memiliki luasan sebesar 12,75 km^2 dan didominasi oleh penggunaan lahan permukiman, nilai ketersediaan air didapatkan dengan metode neraca air meteorologis Thornthwaite – Matter yang membutuhkan nilai hujan wilayah, evapotranspirasi potensial dan *Water Holding Capacity* (WHC). Nilai kebutuhan air sangat dipengaruhi oleh luasan wilayah dan jumlah penduduk, perbandingan kebutuhan air dan ketersediaan air akan mendapatkan nilai indeks kekritisan air wilayah DAS Gandu. Nilai ketersediaan air pada tahun 2012 merupakan nilai terendah yang dipengaruhi oleh curah hujan bulanan, sedangkan nilai tertinggi ialah pada tahun 2017. Nilai kebutuhan air setiap tahunnya terus mengalami peningkatan dan didominasi oleh kebutuhan air untuk sektor pertanian. Perhitungan indeks kekritisan air menunjukan pada tahun 2012 DAS Gandu masuk dalam klasifikasi sangat kritis karena nilai indeksnya melebihi angka 100%, sedangkan pada tahun-tahun lainnya DAS Gandu memiliki nilai indeks dibawah 75%. Kajian indeks kekritisan air bermanfaat dalam perencanaan pengelolaan sumberdaya air dan acuan kebijakan sumberdaya air.

Kaca Kunci : neraca air meteorologis, ketersediaan air, kebutuhan air, kekritisan air, DAS Gandu

METEOROLOGICAL WATER CRITICALITY INDEX RESEARCH IN GANDU WATERSHED JEPARA REGENCY

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abstract

Water as one of the most important resources for survival, the amount of water in each region varies according to the hydrological cycle. The Gandu watershed is located in Jepara Regency which is known to have a history of drought. The study of the criticality of water in the Gandu watershed aims to look at the value of meteorological water availability in the Gandu watershed and the value of water needs from the domestic sector, livestock, and agriculture within 10 years. The study of the criticality index of water in the Gandu watershed was used to determine the water balance in the Gandu watershed within a period of 10 years. The Gandu watershed has an area of 12.75 km^2 and is dominated by residential land use, the value of water availability is obtained by Thornthwaite - Matter meteorological water balance method that requires regional rainfall values, potential evapotranspiration and Water Holding Capacity (WHC). The value of water needs is strongly influenced by the area and population, the comparison of water requirements and water availability will get the critical water index value of the Gandu watershed area. The value of water availability in 2012 is the lowest value that is influenced by monthly rainfall, while the highest value is in 2017. The value of water needs every year continues to increase and is dominated by water requirements for the agricultural sector. The calculation of the water criticality index shows that in 2012 the Gandu watershed was classified as very critical because the index value exceeded 100%, whereas in other years the Gandu watershed had an index value below 75%. Water criticality index study is useful in water resource management planning and water resources policy reference.

Key words: meteorological water balance, water availability, water requirements, water criticality, Gandu watershed