

**KAJIAN DAYA DUKUNG AIR DAN PENGELOLAAN AIRTANAH BEBAS
DI DUSUN KALIWARU, DESA CONDONGCATUR, KECAMATAN DEPOK,
KABUPATEN SLEMAN, DIY**

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INTISARI

Desa Condongcatur khususnya Dusun kaliwaru merupakan kawasan yang cukup padat penduduk. Peningkatan penggunaan air akan mengakibatkan intervensi manusia terhadap sumberdaya air semakin besar. Meningkatnya pembangunan sarana kehidupan dan pertumbuhan penduduk memicu perubahan tata guna lahan yang menyebabkan berkurangnya lahan terbuka sebagai lahan resapan. Tujuan Penelitian ini adalah untuk mengetahui potensi ketersediaan air dan kebutuhan air untuk menentukan daya dukung sumber daya air dan teknik pengelolaan airtanah bebas.

Metode yang digunakan dalam penelitian ini yaitu survei, pemetaan, matematis dan deskriptif. Variabel daya dukung air yang digunakan adalah ketersediaan air, luas wilayah, kebutuhan air dan jumlah penduduk. Pendekatan metode neraca air secara meteorologis digunakan untuk mengetahui ketersediaan air. Metode Turc Langbein digunakan untuk mencari jumlah Evapotranspirasi aktual. Parameter yang digunakan adalah curah hujan tahunan dan temperatur rata-rata tahunan. Analisis kebutuhan air dilakukan dengan menjumlah total kebutuhan air domestik dan non domestik.

Berdasarkan hasil kajian diketahui bahwa potensi ketersediaan air di Desa Condongcatur adalah 1.852.696,5 m³/tahun. Total kebutuhan air untuk memenuhi kebutuhan air di Desa Condongcatur 3.077.376,69 m³/tahun. Desa Condongcatur mengalami defisit sumberdaya air sebanyak 1,224,677.19 m³/tahun. Daya dukung sumber daya air Desa Condongcatur yaitu 0.42 kapita/km², artinya ketersediaan hanya mampu memenuhi 42% kebutuhan air dan terjadi “overshoot”. Jumlah sumur resapan yang dibutuhkan di lokasi penelitian sebanyak 6.835 sumur sebagai teknik pengelolaan airtanah untuk meningkatkan imbunan air di Dusun Kaliwaru, diameter 1 meter kedalaman sumur mulai 3 sampai maksimal 10 meter tidak melebihi muka air tanah.

Kata Kunci: Daya Dukung Dusun Kaliwaru, Ketersediaan Air, Kebutuhan Air, Defisit, Neraca Air, Sumberdaya Air, Sumur Resapan.

**CARRYING CAPACITY OF WATER RESOURCES AND GROUNDWATER
MANAGEMENT AT DUSUN KALIWARU, DESA CONDONGCATUR,
DEPOK SUB-DISTRICT, SLEMAN DISTRICT, SPECIAL REGION OF
YOGYAKARTA**

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ABSTRACT

Condongcatur village, especially Dusun Kaliwaru, including Dabag, Gorongan and Sanggrahan are quite densely populated. The rate of growth and development results in increased water demand. Increased water use will result in greater human intervention on water resources. The increase in the construction of means of living and population growth triggers changes in land use which results in the reduction of open land as infiltration land. The purpose of this study is to determine the potential availability of water and water needs to determine the carrying capacity of water resources and free groundwater management techniques.

The methods used in this research are survey, mapping, mathematical and descriptive. Water carrying capacity variables used are water availability, area, water needs and population. The meteorological water balance method approach is used to determine water availability. The Turc Langbein method is used to find the actual number of Evapotranspiration. The parameters used are annual rainfall and annual average temperature. Water demand analysis is done by adding up the total domestic and non-domestic water needs.

Based on the results of the study, it is known that the potential availability of water in Condongcatur Village is 1,852,696.5 m³/year. The total water needs to meet the water needs in Condongcatur Village is 3,077,376.69 m³/year. Condongcatur village has a water resource deficit of 1,224,677.19 m³/year. The carrying capacity of water resources in Condongcatur Village is 0.42 capita/km², meaning that availability is only able to meet 42% of water needs and there is an "overshoot". The number of recharge wells needed at the study site was 6,835 wells as a groundwater management technique to increase water recharge in Kaliwaru Hamlet, diameter of wells are 1 meter, depth from 3 to 10 meters and not exceed ground water level.

Keywords: Water Resources, Carrying Capacity Dusun Kaliwaru, Water Availability, Water Needs, Infiltration Wells, Water Balance, Deficit.