

## **KAJIAN DAYA DUKUNG LINGKUNGAN HIDUP BERBASIS JASA EKOSISTEM PENYEDIAAN AIR BERSIH DI KABUPATEN SLEMAN**

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### **INTISARI**

Peningkatan jumlah penduduk dan pengembangan wilayah Kabupaten Sleman yang semakin pesat berdampak terhadap kebutuhan air, terlebih airtanah sebagai sumber air bersih dan bagian jasa ekosistem penopang kehidupan. Penelitian ini bertujuan untuk mengetahui status daya dukung lingkungan hidup berbasis jasa ekosistem penyediaan air bersih Kabupaten Sleman tahun 2023 berdasarkan kebutuhan air dan ketersediaan airtanah. Metode *Simple Additive Weighting* (SAW) digunakan dalam menghitung jasa ekosistem penyediaan air bersih dengan parameter ekoregion bentanglahan, penggunaan lahan, curah hujan, dan jenis tanah. Status daya dukung diketahui dengan membandingkan total kebutuhan air dengan ketersediaan airtanah. Perhitungan kebutuhan air dan ketersediaan airtanah berdasarkan SNI 19-6728.1:2002 dan SNI 19-6728.1:2015. Hasil menunjukkan bahwa terdapat tiga kelas jasa ekosistem penyediaan air bersih: sedang (2,72%), tinggi (21,88%), dan sangat tinggi (75,40%). Nilai tinggi-sangat tinggi dijumpai pada ekoregion bentanglahan vulkanik, sedangkan kelas rendah pada ekoregion bentanglahan struktural dan denudasional. Imbuhan airtanah sebesar 1.134.008.001,96 m<sup>3</sup>/tahun, sedangkan total kebutuhan air bersih 315.099.512,25 m<sup>3</sup>/tahun. Kondisi tersebut menunjukkan status daya dukung air di Kabupaten Sleman adalah aman.

**Kata kunci:** daya dukung, jasa ekosistem, penyediaan air, Sleman

***STUDY OF ENVIRONMENTAL CARRYING CAPACITY  
BASED ON ECOSYSTEM SERVICES FOR CLEAN WATER PROVIDING  
IN SLEMAN REGENCY***

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***ABSTRACT***

*The rapid increase in population and regional development of Sleman Regency has an impact on water demand, especially groundwater as a source of clean water and part of life-sustaining ecosystem services. This research aims to determine the status of environmental carrying capacity based on ecosystem services for clean water supply in Sleman Regency in 2023 based on water demand and groundwater availability. The Simple Additive Weighting (SAW) method is used in calculating ecosystem services for clean water supply with parameters of landscape ecoregion, land use, rainfall, and soil type. The carrying capacity status was determined by comparing total water demand with groundwater availability. The calculation of water demand and groundwater availability is based on SNI 19-6728.1:2002 and SNI 19-6728.1:2015. The results show that there are three classes of ecosystem services for clean water provision: moderate (2.72%), high (21.88%), and very high (75.40%). High-very high values were found in the volcanic landform ecoregion, while low values were found in the structural and denudational landform ecoregions. Groundwater recharge amounted to 1,134,008,001.96 m<sup>3</sup>/year, while total clean water demand is 315.099.512,25 m<sup>3</sup>/year. This condition shows the status of water carrying capacity in Sleman Regency is sustain.*

***Keywords:*** *carrying capacity, ecosystem services, water providing, Sleman*