

KAJIAN JASA EKOSISTEM MATAAIR SEBAGAI PENYEDIA AIR BERSIH DI DAERAH ALIRAN SUNGAI MERAWU, KABUPATEN BANJARNEGARA

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Intisari

DAS Merawu sebagai salah satu bagian hulu dari DAS Serayu memiliki peran penting sebagai daerah tangkapan air (*catchment area*), daerah imbuhan air (*recharge area*) yang menyediakan jasa ekosistem air bagi kawasan. Secara alami kondisi perkembangan bentanglahan di DAS Merawu yang diiringi dengan pertumbuhan jumlah penduduk berpotensi mempengaruhi potensi jasa ekosistem mataair sebagai penyedia air bersih kawasan. Kajian penelitian ini dilakukan untuk mengetahui potensi jasa ekosistem mataair sebagai penyedia air bersih di kawasan DAS Merawu, mengetahui status jasa ekosistem mataair serta menganalisis strategi pengelolaan jasa ekosistem mataair. Metode analisis yang digunakan pada penelitian ini adalah analisis pemetaan spasial menggunakan software Arc. GIS dan atas dasar metode skoring sederhana *simple additive weighting (SAW)*, analisis neraca air, analisis Indeks Pencemaran (IP) dan strategi pengelolaan mataair. Terdapat 12 sumber mataair yang ditemukan pada penelitian ini dengan debit terbesar berada pada mataair Kasimpar, 5,01 liter/detik. Mataair paling banyak muncul pada satuan ekoregion bentuklahan jenis S1p-Tmr dan S1p-Qjo, dengan lokasi penggunaan lahan umumnya berupa kebun campur / agroforestry dan kawasan dekat hutan. Status jasa ekosistem mataair secara keseluruhan berada pada kondisi surplus air / belum terlampaui daya dukung airnya (nilai rasio Dda >1), dan berada pada kondisi baik yang memenuhi standar baku mutu air (nilai IP < 1). Strategi pengelolaan lingkungan untuk melindungi jasa ekosistem mataair di kawasan DAS Merawu adalah mengimplementasikan konsep imbal jasa lingkungan (*payment for ecosystem services*) dengan konsep hulu-hilir terpadu dan berlandaskan asas kelestarian.

Kata kunci: Jasa Ekosistem Penyedia Air, Mataair, DAS Merawu, Imbal Jasa Lingkungan, Satuan Ekoregion Bentuklahan, *Simple Additive Weighting (SAW)*

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STUDY OF WATER ECOSYSTEM SERVICES AS A CLEAN WATER PROVIDER IN MERAWU WATERSHED, BANJARNEGARA REGENCY

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Abstract

Merawu watershed is one of the upstream areas of Serayu Watershed that serves as recharge area and protects the downstream area. In addition, the condition of natural landscape development which is accompanied by population growth with associated by behavior potentially affects water ecosystem services, particularly spring ecosystem services. This study aims to determine the potential condition of spring ecosystem services as water providers in Merawu Watershed, then also to analyze the status of spring and develop an environmental management strategy for supporting spring ecosystem services. Spatial mapping analysis using Arc GIS software based on simple additive weighting (SAW) scoring method, water balance analysis, Pollution Index (IP) analysis, and spring ecosystem services management were used in this research. In this study, 12 springs were discovered with the Kasimpar spring having the highest discharge (5,01 liters/second). Most springs appear in the ecoregional unit types of landforms S1p-Tmr and S1p-Qjo, with land use locations generally in agroforestry system and areas close to forest. the overall condition of the spring ecosystem services is one of surplus water / carrying capacity has not been exceeded (Dda ratio > 1), and the condition appropriate with water quality standards (IP <1). In conclusion, this study plays an important thing to figure it out about the existence of water ecosystem services in this area, as well as being a pioneer study on Payment for Ecosystem Services (PES) model in Banjarnegara Regency with an integrated upstream-downstream concept and based on the principle of sustainability.

Keywords: Water Ecosystem Services, Spring, Meerawu Watershed, Payment for Ecosystem Services, Landform Ecoregion Unit, *Simple Additive Weighting (SAW)*

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