

INTISARI

Hulu Daerah Aliran Sungai (DAS) Cisanggarung merupakan bagian dari kawasan Taman Nasional Gunung Ciremai (TNGC) yang memiliki nilai penting salah satunya sebagai kawasan tangkapan air yang *mensupply* dan menopang keberlanjutan pemanfaatan air mulai wilayah Kabupaten Kuningan dan Cirebon di Propinsi Jawa Barat sampai sebagian Kabupaten Brebes di Wilayah Propinsi Jawa Tengah. Penelitian ini bertujuan untuk melakukan kajian terhadap karakteristik ekologi, penilaian potensi dan pemanfaatan air, kajian karakteristik sosial masyarakat yang berpengaruh terhadap keberlanjutan pemanfaatan air berbasis masyarakat, dan menyusun model serta strategi pemanfaatan jasa lingkungan air di wilayah hulu DAS Cisanggarung TNGC berbasis masyarakat.

Pengambilan data dilakukan melalui teknik survey untuk data-data biofisik, teknik wawancara untuk data-data sosial serta studi literatur untuk data-data biofisik iklim dan debit, peta tutupan lahan, peta kelerengan, peta tanah, peta das, dan peta batas administrasi. Analisis data dilakukan secara deskriptif kuantitatif dan spasial untuk data biofisik dan peta-peta. Penghitungan rata-rata aritmetik untuk menilai potensi air, persamaan selang nilai untuk data-data sosial dan analisis *Structural Equation Modelling* (SEM) untuk menyusun model keberlanjutan pemanfaatan jasa lingkungan air berbasis masyarakat. Penyusunan strategi didasarkan pada model hasil analisis SEM serta dengan mempertimbangkan aspek ekologi, potensi air dan sosial.

Karakteristik ekologi hulu DAS Cisanggarung didominasi oleh kelerengan landai dan curam, jenis tanah andosol, tutupan lahan hutan alam, dan sifat curah hujan normal sebanyak 19 tahun, di atas normal 5 tahun dan di bawah normal 6 tahun, dengan tipe iklim agak basah. Status sensitifitas kawasan hulu DAS Cisanggarung didominasi oleh kelas agak sensitif. Potensi sumberdaya air di hulu DAS Cisanggarung diprediksi rata-rata $1,37 \text{ m}^3/\text{detik}$ dan untuk tingkat kebutuhan/pemanfaatan airnya diprediksi rata-rata sebesar $4,01 \text{ m}^3/\text{detik}$, dengan status indeks kekritisannya yaitu sangat kritis. Karakteristik sosial masyarakat di sekitar wilayah hulu DAS Cisanggarung terkait modal sosial, ketersediaan air, kelembagaan, kebijakan, teknologi, permintaan air, partisipasi dan tingkat keberlanjutan pemanfaatan air umumnya berada pada tingkatan sedang dan kuat. Model pemanfaatan jasa lingkungan air di hulu DAS Cisanggarung berbasis masyarakat menunjukkan bahwa keberlanjutan pemanfaatan air berbasis masyarakat dipengaruhi oleh permintaan air masyarakat dan partisipasi masyarakat. Permintaan air masyarakat dipengaruhi oleh kebijakan pemanfaatan air dan karakteristik individu, sedangkan partisipasi masyarakat dipengaruhi oleh modal sosial masyarakat dan kebijakan pemanfaatan air. Strategi pemanfaatan jasa lingkungan air berbasis masyarakat disusun untuk mencapai tujuan adanya jaminan finansial, jaminan akses, peningkatan kelola kelembagaan masyarakat dan efiseinsi dalam pemanfaatan air, dengan langkah strategi didasarkan pada dua pendekatan yaitu dari sisi ekologi (aspek *supply*) dan dari sisi sosial (aspek *demand*).

Kata kunci: Daerah Aliran Sungai, Jasa Lingkungan Air, Taman Nasional

ABSTRACT

The upper Cisanggarung watershed is part of the Mount Ciremai National Park area which has important values, one of which is as a water catchment area that supplies and supports the sustainable use of water starting from the Kuningan and Cirebon Regencies in West Java Province to parts of Brebes Regency. This study aims to conduct a study of ecological characteristics, assess the potential and use of water, study the social characteristics of communities that influence the sustainability of community-based water use, and develop a community-based model and strategy for utilizing water environmental services in the upper Cisanggarung watershed.

Data collection was carried out through survey techniques for biophysical data, interview techniques for social data and literature studies for biophysical climate and discharge data, land cover maps, slope maps, soil maps, watershed maps, and administrative boundary maps. Data analysis was carried out in a quantitative and spatial descriptive manner for biophysical data and maps. Calculation of arithmetic averages to assess water potential, value interval equations for social data and Structural Equation Modeling (SEM) analysis to develop models for sustainable use of community-based water environmental services. The formulation of the strategy is based on the results of the SEM analysis model and by considering ecological, water potential and social aspects

The ecological characteristics of the upper Cisanggarung watershed are dominated by gentle and steep slopes, andosol soil types, natural forest land cover, and normal rainfall for 19 years, 5 years above normal and 6 years below normal, with a slightly wet climate type. The sensitivity status of the upper Cisanggarung watershed was dominated by the moderately sensitive class. The potential for water resources in the upper Cisanggarung watershed was predicted to be an average of 1.37 m³/second and for the level of water demand/utilization it was predicted to be an average of 4.01 m³/second, with a water criticality index status of very critical. The social characteristics of the community around the upper Cisanggarung watershed related to social capital, water availability, institutions, policies, technology, water demand, participation and the level of sustainability of water use are generally at moderate and strong levels. The model for community-based utilization of water environmental services in the upper Cisanggarung watershed shows that the sustainability of community-based water use was influenced by community water demand and community participation. Community water demand is influenced by water use policies and individual characteristics, while community participation was influenced by community social capital and water use policies. The strategy for utilizing community-based water environmental services was structured to achieve the objectives of financial guarantees, guaranteed access, increased management of community institutions and efficiency in water utilization, with strategic steps based on two approaches, namely from the ecological side (supply aspect) and from the social side (demand aspect).

Keywords: Watersheds, National Park, Water Environmental Services