

## **ABSTRAK**

### **STRATEGI PENGEMBANGAN DAS SEMANGKA BERKELANJUTAN BERDASARKAN KONDISI BIOFISIK DAN SOSIAL EKONOMI**

**Oleh**

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DAS Semangka merupakan salah satu DAS yang sangat penting dalam WS Semangka, Secara umum penggunaan lahan di DAS Semangka saat ini didominasi oleh pertanian lahan kering campuran dan pertanian lahan kering. Potensi pendayagunaan sumberdaya air DAS Semangka cukup tinggi. Namun, saat ini keberadaan sumberdaya air DAS Semangka juga cenderung mengkhawatirkan, yang disebabkan oleh berbagai faktor seperti misalnya pencemaran, penggundulan hutan, kegiatan pertanian yang mengabaikan kelestarian ekosistem, berubahnya fungsi lahan, berubahnya fungsi daerah- daerah kantong air, dan lain sebagainya. Perlu dilakukan kegiatan identifikasi kemungkinan kerusakan ekosistem DAS Semangka. Penelitian ini memiliki tujuan ingin mengembalikan fungsi DAS Semangka dengan mengidentifikasi dilihat dari aspek ekologi yaitu tutupan lahan, erosi dan rasio curah hujan yang mempengaruhi aliran permukaan DAS Semangka, sehingga dapat dilakukan konservasi DAS Semangka yang efektif. Penelitian ini melakukan penghitungan daya dukung DAS Semangka dengan melihat kondisi biofisik dan sosial ekonomi DAS. Hasil penelitian terhadap DAS Semangka terkait kondisi lahan, kondisi tata air dan kondisi sosial ekonomi diperoleh informasi mengenai persentase lahan kritis pada DAS Semangka sebesar 44,37%, Persentase penutupan vegetasi 9,46%, dan nilai indeks erosi sebesar 3,35 dengan erosi sebesar 129,69 (ton/ha/tahun) dengan ini maka kondisi lahan DAS Semangka dalam kelas Sangat tinggi. Kondisi tata air DAS Semangka pada sub kriteria 1. Koefisien regim aliran (KRA) dalam kategori sedang, koefisien aliran tahunan (KAT) termasuk dalam kategori tinggi, sedangkan untuk muatan sedimen kategori rendah, untuk banjir dan indeks penggunaan air DAS Semangka dalam kategori sangat tinggi. Kondisi sosial ekonomi DAS Semangka dalam kelas kategori sedang. Kondisi daya dukung DAS Semangka dalam kelas kategori buruk dengan nilai daya dukung

sebesar 125 Nilai daya dukung DAS Semangka mendekati nilai daya dukung maksimal wilayah DAS sehingga DAS Semangka perlu dipulihkan. Upaya perbaikan DAS dengan melakukan Rehabilitasi Hutan dan Lahan.

Kata kunci: Daya Dukung, USLE, Biofisik DAS, DAS Semangka.

## ***ABSTRACT***

### ***SUSTAINABLE WATERSHED DEVELOPMENT STRATEGY BASED ON BIOPHYSICAL AND SOCIO-ECONOMIC CONDITIONS***

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Semangka Watershed is one of the most important watersheds in the area Watershed River. In general, land use in the Semangka Watershed is currently dominated by mixed dryland farming and dryland farming. The potential for the utilization of water resources in the Semangka Watershed Basin is quite high. However, currently the existence of water resources in the Semangka Watershed also tends to be worrying, which is caused by various factors such as pollution, deforestation, agricultural activities that ignore ecosystem sustainability, changes in land use, changes in the function of watershed areas, and so on. It is necessary to identify the possibility of damage to the Semangka watershed ecosystem. This study aims to restore the function of the Semangka Watershed by identifying from an ecological perspective, namely land cover, erosion and rainfall ratio that affect the runoff of the Semangka Watershed, so that effective Semangka Watershed conservation can be carried out. This study calculated the carrying capacity of the Semangka Watershed by looking at the biophysical and socio-economic conditions of the Watershed. The results of research on the Semangka Watershed related to land conditions, water system conditions and socio-economic conditions obtained information regarding the percentage of critical land in the Semangka Watershed of 44,37%, the percentage of vegetation cover was 9,46%, and the erosion index value was 3,35 with an erosion of 129,69 (tons/ha/year) with this, the condition of the Semangka Watershed land is in the Very high class. Water system conditions in the Semangka watershed in sub-criteria 1. The flow regime coefficient (KRA) and annual flow coefficient (KAT) are included in the moderate category, while the sediment load, flood and water use index in the Semangka watershed are in the very high category. The socio-economic conditions of the Semangka Watershed are in the medium category. The carrying capacity of the Semangka Watershed is in the bad category with a carrying

capacity of 125. The carrying capacity of the Semangka Watershed is close to the maximum carrying capacity of the Watershed area so that the Semangka Watershed needs to be restored. Efforts to improve the watershed by conducting Forest and Land Rehabilitation.

Keywords: Carrying Capacity, USLE, Watershed Biophysics, Semangka Watershed.