

PEMETAAN DAYA DUKUNG EKOLOGIS DI KABUPATEN GIANYAR

Oleh

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ABSTRAK

Perubahan iklim, alih fungsi lahan, dan degradasi lingkungan menyebabkan sektor pertanian di Kabupaten Gianyar menghadapi tekanan ekologis dan penurunan produktivitas. Penelitian ini bertujuan untuk (1) menganalisis karakteristik jejak ekologis (JK) di Kabupaten Gianyar, dan (2) memetakan pola sebaran daya dukung ekologis (DDE) pada sektor pertanian padi. Pendekatan deskriptif-kuantitatif digunakan dengan membandingkan antara biokapasitas (BK) dan Jejak Ekologis (JK). Data terdiri dari data sekunder (tutupan lahan, produktivitas, dan jumlah penduduk) serta data primer hasil survei konsumsi beras dan produktivitas padi. BK dihitung berdasarkan luas lahan, faktor panen, dan ekuivalen ekologis (2,51), sedangkan JK dihitung dari konsumsi dan produktivitas. DDE diperoleh dari rasio BK terhadap JK dan dianalisis secara spasial menggunakan Sistem Informasi Geografis (SIG). Hasil penelitian menunjukkan seluruh kecamatan berada dalam kondisi defisit ekologis dengan nilai DDE rata-rata 0,82 gHa. Kecamatan Gianyar, Sukawati, dan Blahbatuh mencatat JK tertinggi, menunjukkan tekanan ekologis yang besar akibat alih fungsi lahan dan kepadatan penduduk. Sebaliknya, kecamatan di wilayah utara seperti Payangan dan Tegalalang menunjukkan tekanan yang lebih rendah. Nilai DDE tertinggi terdapat di Blahbatuh 0,94 gHa, sedangkan nilai terendah di Tampaksiring 0,64 gHa.

Kata Kunci : Daya Dukung Ekologis, Jejak Ekologis, Biokapasitas

ECOLOGICAL CARRYING CAPACITY MAPPING IN GIANYAR REGENCY

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ABSTRACT

Climate change, land-use conversion, and environmental degradation have caused the agricultural sector in Gianyar Regency to face increasing ecological pressure and declining productivity. This study aims to: (1) analyze the characteristics of the ecological footprint (EF) in Gianyar Regency, and (2) map the spatial distribution patterns of ecological carrying capacity (ECC) in the rice farming sector. A descriptive-quantitative approach was employed by comparing biocapacity (BC) and ecological footprint (EF). The data consisted of secondary data (rice field land cover, land productivity, and population size) as well as primary data from field surveys on rice productivity and community rice consumption. BC was calculated based on productive land area, yield factor, and ecological equivalence factor (2.51), while EF was calculated from consumption and productivity data. ECC was obtained from the ratio of BC to EF and spatially analyzed using Geographic Information Systems (GIS). The results showed that all districts in Gianyar Regency were in an ecological deficit condition, with an average ECC value of 0.82 gHa. The districts of Gianyar, Sukawati, and Blahbatuh recorded the highest EF values, indicating greater ecological pressure due to land conversion and high population density. In contrast, northern districts such as Payangan and Tegalallang showed lower ecological pressure. The highest ECC value was found in Blahbatuh 0.94 gHa, while the lowest was in Tampaksiring 0.64 gHa.

Keywords: *Ecological Carrying Capacity, Ecological Footprint, Biocapacity*