

INTISARI

Peningkatan jumlah penduduk sejalan dengan peningkatan penggunaan sumber daya, diantaranya kebutuhan lahan sebagai ruang aktivitas manusia dalam memenuhi kebutuhannya. Alih fungsi lahan utamanya lahan pertanian menjadi lahan non pertanian dapat menurunkan kemampuan ekosistem lahan dalam menyediakan bahan pangan. Disamping itu peningkatan kebutuhan pangan yang semakin tinggi dan tidak diimbangi oleh tingkat produksi bahan pangan dapat mengancam ketahanan pangan. Hal tersebut dapat memengaruhi daya dukung pertanian. Penelitian ini bertujuan untuk (1) Mengkaji dan menilai kinerja jasa ekosistem untuk penyediaan bahan pangan padi di Kabupaten Malang; (2) Mengkaji status daya dukung pertanian padi di Kabupaten Malang; dan (3) Merumuskan strategi peningkatan produksi padi berdasarkan tipologi hubungan antara kinerja jasa ekosistem dan daya dukung pertanian untuk penyediaan bahan pangan padi di Kabupaten Malang.

Penelitian dilakukan dengan menggunakan metode *Simple Additive Weighting* (SAW), yakni pembobotan dan skoring metode penskoran sederhana dari parameter penggunaan lahan, ekoregion bentuklahan, jenis vegetasi alami, jenis tanah dan curah hujan untuk penentuan jasa ekosistem penyedia pangan. Selanjutnya penentuan status daya dukung pangan dilakukan dalam sistem grid ukuran 150mx150m dengan tahapan penentuan distribusi penduduk, perhitungan kebutuhan pangan, perhitungan ketersediaan pangan, dan status daya dukung pangan. Strategi peningkatan produksi padi dirumuskan menggunakan matriks berdasarkan tipologi hubungan kinerja jasa ekosistem dan daya dukung pangan beras.

Hasil Penelitian menunjukkan wilayah Kabupaten Malang terdiri dari 5 kelas indeks kinerja jasa ekosistem (IKJE) penyedia bahan pangan padi, diantaranya kelas Sangat Tinggi, Tinggi, Sedang, Rendah, dan Sangat Rendah. Kelas Sedang merupakan kelas IKJE dengan luas tertinggi yaitu 117.452,85 hektar atau 34% dari total luas kabupaten. Hasil analisis status daya dukung bahan pangan beras diketahui jumlah kebutuhan pangan beras Kabupaten Malang sebesar 241.275,90 ton dan ketersediaan bahan pangan beras eksisting di Kabupaten Malang sebesar 312.916,66 ton. Beberapa kecamatan teridentifikasi berstatus defisit pangan beras, namun secara umum status daya dukung pangan beras di Kabupaten Malang masih surplus, yaitu masih mampu memenuhi kebutuhan bahan pangan domestik secara baik. Strategi peningkatan produksi pertanian di Kabupaten Malang adalah melakukan intensifikasi pertanian sawah dengan memanfaatkan teknologi pertanian sertaantisipasi alih fungsi lahan pertanian dengan penegakan hukum ketat pada lahan sawah yang produktif.

Kata Kunci: Jasa Ekosistem, Daya Dukung Pertanian, Bahan Pangan Beras, Malang

ABSTRACT

The increase in population is in line with the increase in the use of resources, including the need for land as a space for human activities to meet their needs. The conversion of land, mainly agricultural land to non-agricultural land, can reduce the ability of the land ecosystem to provide food. In addition, the increasing need for food which is increasingly high and not balanced by the level of food production can threaten food security. This can affect the carrying capacity of agriculture. This study aims to (1) Study and assess the performance of ecosystem services for the provision of rice food in Malang Regency; (2) Study the status of the carrying capacity of rice agriculture in Malang Regency; and (3) Formulate a strategy to increase rice production based on the typology of the relationship between ecosystem service performance and agricultural carrying capacity for the provision of rice food in Malang Regency.

The study was conducted using the Simple Additive Weighting (SAW) method, namely the weighting and scoring of simple scoring methods from land use parameters, landform ecoregions, types of natural vegetation, types of soil and rainfall to determine the ecosystem services of food providers. Furthermore, the determination of the food carrying capacity status is carried out in a 150mx150m grid system with the stages of determining population distribution, calculating food needs, calculating food availability, and food carrying capacity status. The strategy for increasing rice production is formulated using a matrix based on the typology of the relationship between ecosystem service performance and rice food carrying capacity.

The results of the study showed that the Malang Regency area consists of 5 classes of ecosystem service performance index (IKJE) for rice food providers, including Very High, High, Medium, Low, and Very Low classes. The Medium class is the IKJE class with the highest area, namely 117,452.85 hectares or 34% of the total area of the district. The results of the analysis of the rice food carrying capacity status show that the amount of rice food needs in Malang Regency is 241,275.90 tons and the availability of existing rice food in Malang Regency is 312,916.66 tons. Several sub-districts were identified as having a rice food deficit status, but in general the rice food carrying capacity status in Malang Regency is still a surplus, which is still able to meet domestic food needs well. The strategy for increasing agricultural production in Malang Regency is to intensify rice field farming by utilizing agricultural technology and anticipating the conversion of agricultural land by enforcing strict laws on productive rice fields.

Keywords: *Ecosystem Services, Agricultural Carrying Capacity, Rice Food Ingredients, Malang*