

**IMPLEMENTASI *MATERIAL FLOW COST ACCOUNTING* (MFCA)
UNTUK MENGETAHUI EFISIENSI BIAYA PADA PRODUKSI BERAS
(*Oryza sativa* L.) ORGANIK DAN ANORGANIK DI DESA SRIHARDONO,
KECAMATAN PUNDONG, KABUPATEN BANTUL**

INTISARI

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Sektor pertanian beras di Kabupaten Bantul menghadapi tantangan penurunan produksi akibat konversi lahan, inefisiensi sistem, serta diperparah oleh dampak lingkungan dari pertanian anorganik dan kurangnya transparansi aliran material. Penelitian ini bertujuan menganalisis aliran material dan biaya pada setiap tahapan produksi beras organik dan anorganik dengan pendekatan *Material Flow Cost Accounting* (MFCA) sesuai ISO 14051:2011, serta membandingkan persentase biaya produk positif (hasil utama) dan produk negatif (limbah dan kerugian hasil) dari keduanya. Beras organik yang dianalisis telah tersertifikasi oleh Lembaga Sertifikasi Organik Seloliman (LeSOS). Penelitian dilakukan di Desa Srihardono, Pundong, Bantul (September 2024 - Juni 2025) dengan pemilihan lahan menggunakan *purposive sampling* (organik 320-360 m² dan anorganik 245-472 m²). Pengambilan sampel dilakukan dengan teknik ubinan diagonal pada 3 petak lahan per kelompok produksi untuk data representatif. Hasil MFCA menunjukkan titik inefisiensi tertinggi pada pemanenan (QC 7) dan perontokan (QC 8) untuk kedua kelompok produksi beras yang disebabkan oleh tingginya kehilangan material dan limbah yang tidak termanfaatkan secara optimal. Analisis menunjukkan bahwa produksi beras organik relatif lebih efisien dengan proporsi biaya produk positif yang lebih tinggi (64,59%) dan biaya produk negatif lebih rendah (35,41%) dibandingkan produksi beras anorganik (61,22% biaya produk positif dan 38,78% biaya produk negatif). Meskipun secara statistik terdapat perbedaan signifikan pada biaya sistem, tetapi hasil tidak dapat digeneralisasikan secara luas. Rekomendasi perbaikan meliputi pelatihan petani dalam teknik budidaya efisien, penerapan kehati-hatian, dan optimalisasi limbah pertanian untuk nilai tambah ekonomi yang sejalan dengan prinsip ekonomi sirkular dan mendukung SDGs 12.

Kata kunci: *Material Flow Cost Accounting* (MFCA), Beras organik dan anorganik, Efisiensi biaya, Pemborosan, Pertanian Berkelanjutan

**IMPLEMENTATION OF MATERIAL FLOW COST ACCOUNTING
(MFCA) TO UNDERSTAND COST EFFICIENCY IN ORGANIC AND
INORGANIC RICE (*Oryza sativa* L.) PRODUCTION IN SRIHARDONO
VILLAGE, PUNDONG DISTRICT, BANTUL REGENCY**

ABSTRACT

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The rice farming sector in Bantul Regency faces challenges, including declining production due to land conversion, system inefficiencies, and environmental impacts from inorganic farming, as well as a lack of material flow transparency. This study aims to analyze the material flow and costs at each stage of organic and inorganic rice production using the Material Flow Cost Accounting (MFCA) approach in accordance with ISO 14051:2011, and compare the percentage costs of positive products (main yield) and negative products (waste and yield losses) of both. The organic rice analyzed has been certified by the Seloliman Organic Certification Institute (LeSOS). The research was conducted in Srihardono Village, Pundong, Bantul (September 2024 - June 2025) with land selection using purposive sampling (organic 320-360 m² and inorganic 245-472 m²). Sampling was conducted using the diagonal sampling technique on three plots per production group for representative data. MFCA results show the highest inefficiency points at harvesting (QC 7) and threshing (QC 8) for both rice production groups due to high material losses and waste that are not optimally utilized. The analysis reveals that organic rice production is relatively more efficient, with a higher proportion of positive product costs (64.59%) and lower negative product costs (35.41%), compared to inorganic rice production (61.22% positive product costs and 38.78% negative product costs). Although there were statistically significant differences in system costs, the results cannot be widely generalized. Recommendations for improvement include training farmers in efficient cultivation techniques, application of prudence, and optimization of agricultural waste for economic value addition in line with circular economy principles and in support of SDG 12.

Keywords: Material Flow Cost Accounting (MFCA), Organic and inorganic rice, Cost efficiency, Waste, Sustainable agriculture