

## **ANALISIS MATERIAL FLOW COST ACCOUNTING (ISO 14051: 2011) PADA BUDIDAYA MELON DI GREENHOUSE WANADELIMA ORCHARD**

### **INTISARI**

Penggunaan *greenhouse* selain berpotensi meningkatkan hasil panen, juga dapat meningkatkan biaya produksi serta penurunan mutu lingkungan akibat *material loss*. Penelitian ini bertujuan untuk mengukur dan mengidentifikasi limbah bahan/energi pertanian serta biayanya dengan *Material Flow Cost Accounting* (MFCA) pada budidaya melon Sweet Hami di di Wanadelima Orchard, Kulon Progo. Pendekatan ini menggabungkan data fisik dan moneter untuk menghitung biaya dari material yang berubah menjadi produk jadi maupun yang menjadi limbah. Untuk itu, dilakukan analisis terhadap penyebab kerugian material pada setiap titik penggunaan material (*Quantity Center*) dalam proses produksi guna mengenali area pemborosan. Analisis ini dilakukan pada dua *greenhouse* (GH) dengan tipe yang berbeda yaitu GH A (struktur material bambu) dan GH B (struktur material baja). Dari hasil analisis tersebut, kemudian dirancang langkah-langkah perbaikan untuk mengurangi limbah material dan biaya yang tidak perlu. Hasil penelitian menunjukkan bahwa GH B memiliki tingkat kerugian yang lebih rendah (12,27%) dibanding GH A (14,53%) yang sebagian besar disebabkan oleh inefisiensi penggunaan material. *Losses* paling banyak terjadi pada *Quantity Center* (QC) 5 atau proses pemanenan dan pascapanen dimana kerugiannya sebesar Rp879.948/100m<sup>2</sup> untuk GH A dan Rp779.014/100m<sup>2</sup> untuk GH B. *Losses* yang dihasilkan berupa limbah *cocopeat*, *polybag*, limbah organik, serta nutrisi. Hal ini dikarenakan tidak adanya proses penanganan limbah, tidak ada SOP serta *guidance* terkait perawatan tanaman dan *greenhouse*, serta kurangnya keterampilan pekerja dalam pengelolaan proses pascapanen secara efisien. Sehingga diperlukan perbaikan seperti pemanfaatan kembali produk negatif, pembuatan SOP, serta pelatihan kepada pekerja.

**Kata Kunci:** *Greenhouse*, *Material Flow Cost Accounting* (MFCA), *Material Loss*, Melon, *Quantity Center*

## **ANALYSIS OF MATERIAL FLOW COST ACCOUNTING (ISO 14051: 2011) ON MELON CULTIVATION IN GREENHOUSE WANADELIMA ORCHARD**

### **ABSTRACT**

The use of greenhouses has the potential to increase crop yields, but it may also lead to higher production costs and environmental degradation due to material loss. This study aims to measure and identify agricultural material and energy waste, along with their costs, using Material Flow Cost Accounting (MFCA) in the cultivation of Sweet Hami melons at Wanadelima Orchard, Kulon Progo. This approach combines physical and monetary data to calculate the costs of materials that become finished products as well as those that turn into waste. An analysis of the causes of material loss was conducted at each material usage point (quantity center) in the production process to identify areas of waste. The analysis was performed on two greenhouses (GH) with different structures: GH A (bamboo material structure) and GH B (steel material structure). Based on the analysis results, improvement measures were designed to reduce material waste and unnecessary costs. The results showed that GH B had a lower loss rate (12,27%) compared to GH A (14,53%), mostly caused by inefficiencies in material usage. The largest losses occurred at Quantity Center (QC) 5, during harvesting and post-harvesting processes, with losses amounting to IDR879.948 per 100 m<sup>2</sup> for GH A and IDR779.014 per 100 m<sup>2</sup> for GH B. The losses included cocopeat waste, polybags, organic waste, and nutrients. These losses were due to the absence of waste handling procedures, lack of Standard Operating Procedures (SOPs) and guidance related to plant and greenhouse care, as well as insufficient worker skills in managing post-harvest processes efficiently. Therefore, improvements such as reusing negative products, establishing SOPs, and providing worker training are necessary.

**Keywords:** Greenhouse, Material Flow Cost Accounting (MFCA), Material Loss, Melon, Quantity Center