

ABSTRACT

This study analyzes the feasibility of transitioning from traditional to machine-based production at CV BAS, a Micro, Small, and Medium Enterprise (MSME) engaged in organic fertilizer production in North Sumatra. The research was motivated by the company's challenges in meeting market demand due to limited production capacity and inconsistent quality caused by conventional production methods. This feasibility analysis combines market, technical, and financial aspects to assess the viability of establishing new mechanized production facilities. The market aspect was analyzed through sales and demand forecasting for 2025–2029, projecting an increase from 1,655 tons to 2,322 tons of fertilizer. The technical aspect included designing production layouts, estimating raw material needs, labor requirements, and machinery procurement. Financial analysis evaluated investment feasibility using Net Present Value (NPV), Internal Rate of Return (IRR), and Payback Period (PBP). The results showed a positive NPV of Rp2,715,752,352, an IRR of 106.10%, and a payback period of 1.21 years, confirming that the project is financially viable. Additionally, a sensitivity analysis was conducted to assess project resilience to changes in cost and demand variables. Overall, transitioning to mechanized production at CV BAS is deemed feasible and can enhance production efficiency, meet increasing market demand, and support sustainable agricultural practices. The study provides valuable insights for MSMEs, policymakers, and academics in promoting the development of the organic fertilizer sector in Indonesia.

Keyword : Feasibility Analysis, Organic Fertilizer, MSME, Mechanization, Financial Analysis