

ABSTRACT

PT Bandung Daya Sentosa (PT BDS), a regional agribusiness enterprise, faces significant disruptions from unpredictable environmental conditions and volatile commodity markets, resulting in underperformance in both production and profitability. This study aims to develop a comprehensive framework for assessing and mitigating supply chain risks to support PT BDS in achieving greater stability and long-term sustainability. To address this, the research adopts a hybrid methodology combining the SCOR 12.0 Racetrack model for mapping and evaluating supply chain processes and the House of Risk (HOR) model for identifying and prioritizing risk factors and mitigation strategies. Cabbage farming is used as the core case study due to its low profit realization—only 16% of its annual target—driven by climate-induced crop failures and high price fluctuations. The SCOR model highlights critical gaps in planning agility and production efficiency. Meanwhile, HOR Phase 1 identifies 11 key risk agents, with 7 accounting for over 80% of the total Aggregate Risk Potential (ARP). These are primarily linked to climate risks, pest outbreaks, and market instability. In Phase 2, five preventive strategies are evaluated based on their Total Effectiveness Value (TEK) and Effectiveness-to-Difficulty Ratio (ETD), with water conservation and flexible pricing contracts emerging as top priorities. This integrated approach shifts PT BDS from reactive to proactive risk management by establishing a validated and repeatable Risk Assessment Template. The framework allows for adaptation across commodities and business cycles, reinforcing operational resilience and decision-making under uncertainty. Overall, this project not only offers practical recommendations for PT BDS but also contributes a scalable model for managing supply chain risks in similar agribusiness contexts.

Keywords: Supply Chain Risk Management, SCOR 12.0 Racetrack, House of Risk, Environmental Uncertainty, Market Volatility