

ABSTRACT

Shrimp is a fishery commodity favored by many people. The high nutritional content and taste of shrimp are the reasons why shrimp are favored by all lines of society. In Indonesia, shrimp is the main commodity for export trade in the aquaculture sub-sector with the highest export volume and value compared to other fishery commodities. The abundance of resources from the catch and cultivation of shrimp commodities as well as the high market share for shrimp commodities has made the Indonesian government target an increase in the volume of shrimp exports every year. To meet the government's target and be able to compete in the global market, this indirectly becomes a demand for the shrimp processing industry which is engaged in export scale to continuously improve the competitiveness and performance of the company, both in production capacity and quality of production.

PT. XYZ is one of the parties in the shrimp processing industry, especially frozen shrimp for export scale, which is located in the province of Lampung. In general, a series of business process activities undertaken by PT XYZ, starting from procurement to the process of product delivery to buyers through various activities that are long and complex and involve many parties. The entire series of activities are part of the supply chain or generally known as the Supply Chain. A long and complex series of supply chain activities and involving many parties makes the supply chain not free from risk. Risk is the possibility of an event resulting in a loss when it occurs over a certain period of time. Risks in the supply chain can occur in every part of the supply chain and result in losses for the company. Risks that arise in the supply chain can disrupt the smooth flow of the supply chain such as the smooth movement of goods, delays in the production and delivery process, damage to goods, etc. Several things cannot be avoided in PT XYZ's business processes that have the potential to trigger risks in the company's supply chain starting from the high level of cold chain complexity in supply chain activities implemented by PT XYZ, processed products are vulnerable to damage and quality degradation (perishable product), and the uncertainty resulting from the make-to-order system applied by PT XYZ. Control and handling of things that

trigger risks in the PT XYZ cold chain should be carried out through the implementation of a supply chain risk management system. However, until now PT XYZ does not have a risk management system in its cold chain, thus making PT XYZ's cold chain vulnerable to risk. Therefore, the purpose of this study is to design a risk management system in the PT XYZ cold chain which includes the risk identification process, risk analysis through risk assessment and measurement, risk mitigation, and risk monitoring.

In this final project, the stages of risk identification in PT XYZ's cold chain activities are mapped using the SCOR model, the risk analysis stage is carried out by determining the priority risk through an assessment of each risk factor using the Fuzzy FMEA method, the mitigation stage is carried out through the identification of alternative strategies mitigation and determination of the selected mitigation strategy using the Fuzzy AHP method, as well as designing a dashboard monitoring system based on the waterfall framework using Ms. Excel as an effort to monitor, control and evaluate existing risks. The results obtained through this final project include; There are 6 priority risk causes from 77 risk events (potential risks) and 100 risk agents (risk factors) which are divided into 6 risk categories including market/demand risk, supply risk, technical risk, facility risk, human resources risk, and environmental risk. and obtained 19 alternative mitigation strategies to deal with existing priority risks.

Keywords— [Risk Management, Cold Chain, SCOR, Fuzzy FMEA, Fuzzy AHP]