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Raw Material Procurement on Agroindustrial Supply Chain Management: A Case Survey of Fruit Processing Industries in Indonesia

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Abstract

In sub-system of Indonesian agribusiness, fruit processing industries are major component of agroindustrial activities. In term of economic development, these fruit processing industries contribute significant amount to employment and income generation. The objective of this research was to evaluate present condition of procurement system as a part of supply chain management in fruit processing industries. Based on a purposive sample survey in in East Java province, Indonesia, this research paper illustrated raw material procurement factors and problems encountered in these fruit processing industries. The data used for analysis was obtained through a survey conducted in the study area. Direct visit to 63 the fruit processing industries and discussion with key persons were implemented to reach deep information. Most fruit processing industries used more than one raw material supplier to reach more alternatives and more guarantees to procure large quantity of raw material. Most of big industries used contract system in raw material procurement to reduce risk because of large amount of raw material requirement for large number of production. Continuity and resource of raw material were identified as very strong and strong factors in raw material procurement of fruit processing industries.

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1. Introduction

Agroindustrial sector as a sub-system of agribusiness has unique advantages of utilizing agricultural raw material in agro-product processing. These fruit processing industries, one of agroindustrial sector, are commonly available in East Java. These industries can be seen as an important to create employment and generate income particularly in fruit producer areas.

Related to agroindustrial system, some problems associated with the food industry found in other countries, are the shortage of raw material, quality, lack of continuous supply of seasonal raw material, inadequate trained labor force, costly imported packing material, infrastructure and technological deficiencies (Hicks, 1991). The study in Philippine, Aquino (1991) revealed that some of the frequency problems of large food processing industries are lack of adequate raw material, poor quality of available supply, and variety of fruit and vegetable.

Suryaningrat (2003) explained that raw material is the most important factor for sustaining processing activities in an agroindustrial system. Especially for big processing industries undertaking a large amount of processing, raw material issues, including quantity, quality and continuity, are a critical factor for supporting their daily activities. Related to food supply chain, they have some unique characteristics. Food supply chains can be distinguished into “fresh agricultural products” such as vegetables or fruits, and “processed food products” such as convenience food or soft drinks (Apaiaha et al., 2006). It has a large variety of different supply chain partners such as retailers, wholesalers/distributors, various traders, processors, marketers/storage, and farmers or farm as raw material suppliers (Roth et al., 2008).

In term of specific characteristic of food supply chain network, agri-food chain for processed food product (such as portioned meats, snacks, juices, desserts, canned food products). In these chains, agricultural products are used as raw materials for producing consumer products with higher added value. In some industries spends approximately 60% of total income from sales on procurement of material such as raw material, intermediate parts, and components (Krajewski et al., 2007). Furthermore, procurement of goods and services constitutes up to 70% of product cost (Ghodspour and O'Brien, 1998).

Regarding to the procurement process, out of the 23 factors of supplier selection on raw material procurement process considered, Dickson (1966) concluded that quality, delivery, and performance history are the three most important criteria. Weber et al (1991), based on a comprehensive review of vendor evaluation methods, surmised that price was the highest-ranked factor, followed by delivery and quality. It is important for industrial producers to contract suppliers to guarantee the supply of raw materials with the right volume, right quantity, right quality, at the right place and at the right time. Furthermore, they coordinate the timing of the supply of goods with suppliers to match capacity availability (Jack G.A.J.et al, 2007).

Suryaningrat (2015) found that common problems in processed cassava industries such as formality of raw material procurement contract with wholesalers or retailers to maintain information about price, number and quality of product because of high numbers of raw materials requirement. In term of contract system in food industries, Grimm J.H. et al, (2014) explained that trust between focal firm and direct supplier and also trust between direct supplier and sub-supplier were critical factor to support long term relationship of procurement system. Guritno et al (2015) found that in term of fresh vegetable, supplier has a strong bargaining power, because they have many suppliers (more than 50 farmers) to support customers.

These facts indicate that procurement of raw materials and components is one of the most important components of a supply chain, which facilitates any organization for achieving its goal of increasing the value creation by minimizing the cost. In procurement management, supplier selection is one of the important decision-making areas that enhance the purchase value in term of cost, quality and on-time delivery of the items purchased. Furthermore, companies are also facing tough competition from their rivals. Regarding problems of agroindustrial supply chain above, the analysis of supply chain should ideally take place or be evaluated within context of complex network of food chain. This study was to evaluate the flow of raw material, role of actors and critical factors in procurements activities of fruit processing industries.

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