

Factors affecting logistics costs of durian export process abroad

Weerachet Mangwaen^{1*}, Chonticha Jansang² and Supamit Srisawat³

^{1*–3}College of Logistics and Supply Chain, Suan Sunandha Rajabhat University

e-Mail: weerachet.ma@ssru.ac.th^{1*}, chonticha.Ja@ssru.ac.th², supamit.sr@ssru.ac.th³

*Corresponding author

Abstract

This study aimed to 1. Study the factors affecting the logistics cost of durian export abroad. 2. Propose guidelines for reducing the logistics cost of durian export abroad. This research was conducted using a qualitative research method. The key informants were specifically selected from 3 farmers, 3 durian collectors, and 3 exporters, totaling 9 people. The researchers used the criteria for selection from the group of durian producers and exporters who had at least 10 years of export experience in Chanthaburi Province. The research instruments were structured interviews and content analysis.

The results of the study found that the factors affecting the logistics cost of durian export abroad mostly started from the calculation of costs from the upstream (farmers, companies, and transportation), which could be analyzed by shipping routes using container transportation as the main factor for packaging products. The guidelines for reducing logistics costs for durian export can be summarized as follows: 1. Upstream farmer groups should reduce fertilizer costs urgently to reduce production costs and use more organic fertilizers as appropriate for planting. 2. Collection: Since there are currently multiple collection steps, those involved should check before collection to make the collection management system faster and more efficient. 3. Labor in the process from upstream to downstream The use of necessary labor should be controlled because it will help reduce farmers' costs more. 4. Quality: Adjust the quality of durian to meet customer needs. Entrepreneurs focus on inspecting the quality of durian. 5. Try to improve the ability to estimate the ripening period of durian. 6. Preparing documents such as plant disease certificates, residues, or insects requested from the Department of Agriculture. This is for convenient and easy transportation to the destination. To improve service and maintain good relationships with exporting goods abroad By inviting importers to visit the production site to select strains according to needs, including visiting the factory and jointly finding ways to develop durian exports together for sustainable business growth.

Keywords: Logistics costs, durian export, activity base

1. Introduction

Logistics costs play a critical role in international trade, influencing the competitiveness and profitability of export activities (Aunyawong et al, 2018, Aunyawong et al., 2020a). These costs encompass a wide range of expenses, including transportation, warehousing, customs duties, packaging, and handling fees, all of which can vary significantly depending on the destination, mode of transport, and efficiency of the supply chain (Aunyawong et al.,

2021; Nualkaw et al., 2021). For exporters, especially in highly perishable goods like durian, mangosteen, and longan, managing logistics costs effectively is essential to ensure timely delivery and maintain product quality (Aunyawong et al., 2020b; Soonthornpipit et al., 2021). A deep understanding of these factors is vital for businesses aiming to optimize their export processes and supply chain performances as well as enhance their presence in global markets (Pintuma et al., 2020; Tirastittam et al., 2020; Waiyawuththanapoom et al., 2020; Pintuma & Aunyawong, 2021; Waiyawuththanapoom et al., 2022; Kerdpitak et al., 2022; Kerdpitak et al., 2023)

Thailand is a source of durian for hundreds of years with over 200 durian varieties. Currently, Thailand is the world's largest exporter of fresh durian. The Ministry of Commerce stated that it is worth 3 billion US dollars or approximately 100 billion baht. From February 1, 2023 to the present, 25,000 containers of fresh durian have been exported to China, weighing 450,000 tons, generating a value of over 100 billion baht. Exports are smooth on all routes, whether by land, sea, air, or rail. In addition, Thailand is not the only exporter of fresh durian in China, but there are new competitors continuously entering the market, such as Vietnam and the Philippines. Therefore, the situation of importing fresh durian to China in 2023 will be more competitive. All relevant sectors should give more importance to controlling the quality of Thai durian before exporting to China, including controlling and preventing problems with quarantine pests, and strictly complying with import standards and conditions. The issue of creating a Thai durian brand and developing a traceability system (QR CODE) is an issue that Chinese consumers are very concerned about and creates added value for the product. Since consumers can trace the product back to its source, it can build confidence and create awareness of durian originating from Thailand amidst the current competition for fresh durian from many countries (Thansettakij, 2023).

In addition, the freight rates between water and road are not much different. However, water transport has a disadvantage: it cannot be transported directly to the distribution center in China. It is necessary to use road transport by truck or train, which may result in higher transportation costs than road transport. Meanwhile, air transport takes the least time but has high transportation rates. It also has a limitation: it cannot be transported to the distribution center in China. It is necessary to use multimodal transportation, similar to water transport. Water transport from Laem Chabang Port in Thailand to Shanghai and Qingdao Ports in China has the lowest freight rate at 12 baht/kilogram, while road transport by truck has the freight rate at 14-22 baht/kilogram, depending on the route used. If using route R3A from Chiang Khong Customs Checkpoint, Chiang Rai Province Through Boten checkpoint (Laos), Mohan checkpoint (China) to Yunnan Province, the starting rate is 14 baht/kg. If using route R12 from Nakhon Phanom Customs Checkpoint, through Nam Phrao checkpoint (Laos), through Chalo checkpoint (Vietnam), through Youyiguan checkpoint (China) to Nanning Province, the rate is 22 baht/kg. Air transport has the highest freight rate at 65 baht/kg. Bangkok Bank (2022) Therefore, in order to manage transportation costs to be worthwhile and most efficient, Long should choose a transportation method that is appropriate for the amount of produce according to the production season and the consumption demand of the foreign market. In the early season when there is less produce on the market, consumers want to consume good quality, premium grade fresh durian. Long should choose air transport to ensure that fresh durian reaches its destination quickly to meet consumer demand and can also sell fresh durian at a high price. This transportation method is suitable for the target group of consumers who have purchasing power and have a consumption demand regardless of the

price. In the middle of the season, there is a lot of fresh durian on the market. Long wants to export a large amount. Road transport should be chosen in conjunction with water transport. To reduce traffic congestion at the border checkpoint, to enable continuous transportation of goods to the international market, coupled with the decrease in consumption demand and prices of durian in the international market, the longan should choose a water transport mode to manage transportation costs to the lowest (Moryadee et al., 2019).

The researcher recognizes the importance and problems in logistics cost factors for durian export from Thailand to foreign countries because the production process, collection, and transportation have management steps that must be controlled to reduce unnecessary transportation burdens. However, the researcher studies the main costs of durian farmers from upstream to downstream, which are calculated using activity-based cost analysis to make cost control more effective. Furthermore, it can also allow relevant groups to analyze potential cost control for transportation according to the specified measures.

1.1 Research Objective

1. Study the factors affecting the logistics cost of durian export abroad.
2. Propose guidelines for reducing the logistics cost of durian export abroad.

2. Methods

The research method in this research is a qualitative research method by defining the key informants as follows: those involved in the supply chain from upstream to downstream to analyze data on factors affecting logistics costs for durian exports abroad.

The researcher determined the key informants as those involved in the supply chain from upstream to downstream, namely durian farmers, durian collectors or warehouses, and durian transporters. The main informants were selected as 3 farmers, 3 collectors, and 3 transporters, totaling 9 people. The researcher used the selection criteria from those who had durian production and exported abroad and had at least 7 years of experience. The study interviewed key informants and conducted in-depth interviews.

The research instruments were interview forms, with an in-depth interview structure and structured interviews with open-ended questions. The data obtained from the interviews using activity-based costing system data were used as a model for calculating activity-based costing by creating work processes and analyzing activity-based costing classified by resources used and specified in this study.

Data collection used in this study consisted of 1. Primary data and 2. Secondary data obtained from academic journals, textbooks, websites, etc. Data analysis The researcher analyzed the data using content analysis that was consistent with the variables and objectives used in the study. In addition, the data analysis had to check the completeness of the answers obtained from the interview forms for accuracy and convenience for further analysis.

3. Results and Discussion

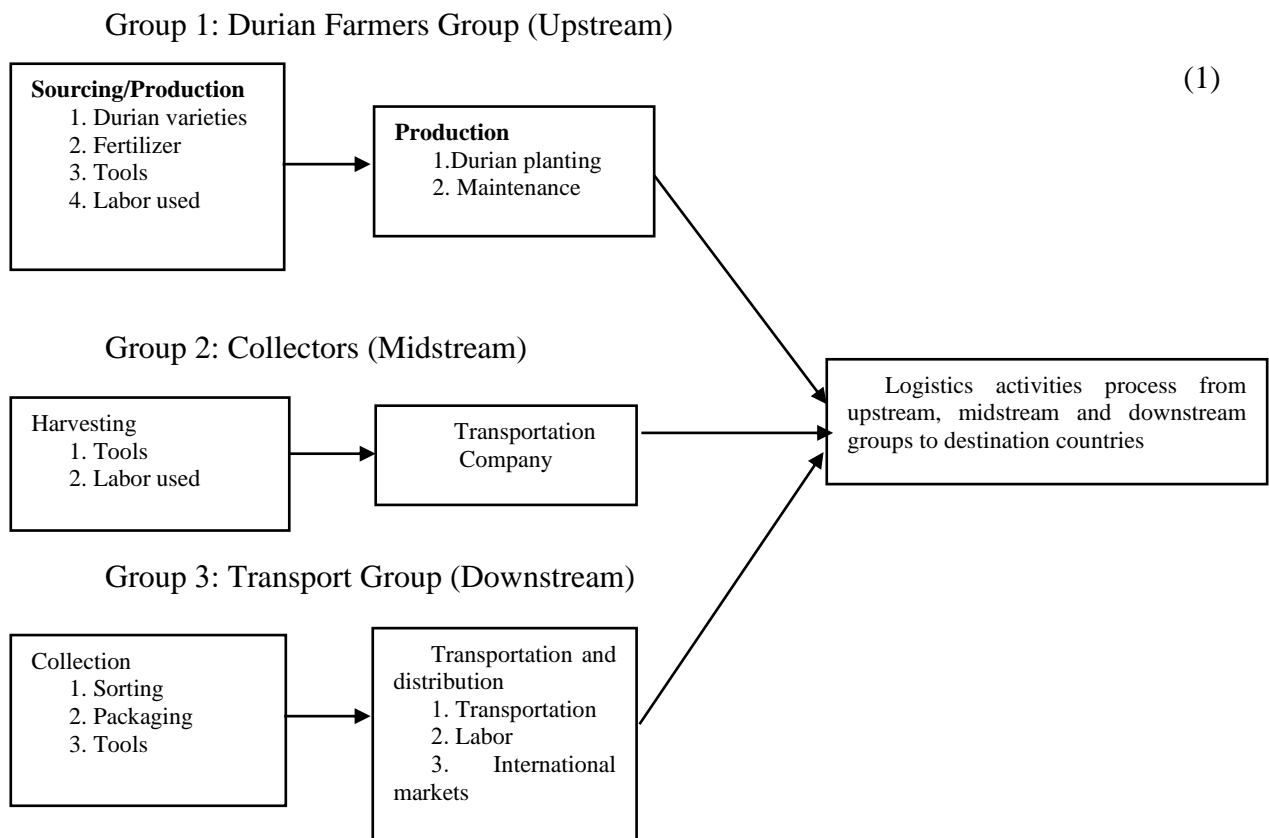
Results of the study according to objective 1 found that General information of durian farmers Farmers Durian planting area Land type Experience Average annual income (million baht) Purpose of planting Farmers produce at a low level 10 units Less than 5 years 2 Send to

collectors Farmers produce at a moderate level 60 units More than 5-10 years 20 Send to collectors

Results of the study according to objective 2 found that the guidelines for reducing logistics costs for durian exports from Thailand found that

1. Upstream farmer groups should reduce fertilizer acceleration costs to reduce production costs and turn to using organic fertilizers
2. Collection Because at present, there are multiple steps of collection to make the collection management system faster and more efficient
3. In terms of labor in the process from upstream to downstream, there should be control over the use of necessary labor because it will allow farmers to reduce their expenses even more.
4. Try to improve the ability to estimate the time for durian to ripen
5. Prepare various documents such as certificates of freedom from plant diseases, residues or insects requested from the Department of Agriculture for easy and convenient transportation to the destination

Figure 1. Summary of the transport process analysis.



4. Conclusion

The results of the study according to objective 1 found that the farmer group that grows durian at a low level, from production, collection, harvesting and transportation to foreign countries, by procuring production factors, found that the cost of procuring durian varieties has an average cost of 0.7200 baht/kg, consisting of Monthong varieties, the cost of procuring fertilizer/medicine has an average cost of 1.1461 baht/kg, the cost of purchasing equipment The average cost was 1.072 baht/kg. The labor cost for maintenance was found to have an average cost of 1.098. The depreciation cost of cars used in production was found to have an average cost of 1.453. Harvesting included the cost of equipment used for harvesting, which was found to have an average cost of 0.201. Labor cost was found to have an average cost of 3.935. The cost of tools for moving was found to have an average cost of 0.099. The depreciation cost of moving was found to have an average cost of 0.974. The cost of fuel used for moving was found to have an average cost of 1.054. The selection cost was found to have an average cost of 1.686. Collection included the cost of tools, which was found to have an average cost of 0.685. The cost of depreciation of equipment was found to have an average cost of 0.685. The cost of packaging equipment was found to have an average cost of 9.121. Labor cost was found to have an average cost of 0.395. And packaging/transportation included the cost of equipment used for packaging, which was found to have an average cost of 2.373. Labor cost was found to have an average cost of 0.023. And the cost of storage was found to have an average cost of 0.997, the cost of labor in transportation was found to have an average cost of 0.843, the cost of vehicle depreciation was found to have an average cost of 0.846, and the cost of fuel was found to have an average cost of 3.023. Consistent with the research of Pornthip Tantivejsak (2023) studying the adaptation strategies of Thai durian exporters to China to support the economic recovery from COVID-19, durian is the main income-generating fruit for Thailand, with the most exports to China. The spread of COVID-19 has affected the operations of Thai durian exporters to the main target countries. When the situation changes, businesses need to adapt. The results of the study are as follows: 1) Entrepreneurs adjust the quality of durian to meet customer needs, adjust management to meet standards at the desired time, adjust the ability to deal with various problems that arise during COVID-19, improve reputation and credit, strengthen human resources and networks, adjust services, and maintain good relationships with foreign importers. 2) The process of operating a durian export business is to purchase and select durian, control the method of using chemicals, the time of setting up the bulge, packing durian in boxes, loading durian into containers, notifying agricultural officials to inspect, adjust the temperature of the container, release the container and transport. Most of them use indirect export methods. Exporters must have documents that comply with agricultural product inspection measures. 3) The use of organizational strategies of durian export businesses is vertical and horizontal growth. 4) The use of competitive strategies is a focus on creating differences. There is a major competitor, durian from Malaysia. 5) Using front-end strategies that adjust various functions, namely production, marketing, human resource management, finance and logistics, to support the economic recovery from COVID.

The results of the study according to objective 2 found that the approach to reduce logistics costs for durian exports 1. Upstream farmer groups should reduce the cost of fertilizer acceleration to reduce production costs. 2. Collection, because currently there are multi-step collection methods. 3. Labor in the process from upstream to downstream should control the use of necessary labor because it will reduce farmers' costs even more. 4. Try to improve the

ability to estimate the time for durian to ripen. And 6. Prepare various documents such as plant disease, residue or insect free certificates requested from the Department of Agriculture for easy and convenient transportation to the destination. Which is consistent with the research of Thaniya Tongmak (2022) studying the topic of Increasing the potential of Thai durian exports through the SCOR Model: Thailand to China. Because it is significant to Thai durian exports, but there are obstacles from some related factors that are linked to external and internal perspectives. This article aims to be a guideline for increasing the potential of Thai durian exports through the SCOR model. The SCOR model is important to the business chain because it can be assessed and shows related business activities from the assessment of customer needs. Sourcing creative materials for products and meeting customer satisfaction. SCOR model to enhance Thailand's durian export capability consists of 6 main processes: planning, sourcing, producing, delivering, returning and enabling. Strengthening the potential of Thai durian exports successfully with SCOR model can create advantages for durian exporters.

5. Suggestions

Suggestions for this research

1. From the study, there should be an outsourcing of collection by transportation to reduce the cost of high-cost containers.

2. There should be a plan for packaging to reduce the wasted space that will occur in the transportation back and forth.

Suggestions for the next research

1. There should be a study on increasing the efficiency of service quality that affects the transportation of durian from Thailand to foreign countries.

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