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STRATEGY FOR DEVELOPING THE SIAM BANJAR ORANGE COMMODITY THROUGH IMPROVING SUPPLY CHAIN PERFORMANCE IN TIDAL LANDS

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ABSTRACT

Oranges are one of the state-produced horticultural crops in South Kalimantan. The cultivation of these oranges is widespread across all districts and cities in South Kalimantan. The Siam orange crop is abundantly cultivated in Barito Kuala Regency, which is a tidal swamp region located in South Kalimantan. In 2022, the production of Siam oranges in South Kalimantan is projected to reach 1,153,595 quintals. Out of this, the orange production in Barito Kuala Regency will account for 754,950 quintals, which is equivalent to 65.44% of the overall output in South Kalimantan. In light of the numerous hazards that arise within the distribution channel of the Siam Banjar orange supply chain, it is imperative to examine the development plan by assessing the performance of said supply chain. The aims of this study are twofold: 1) to identify the internal and external factors that contribute to the production of high-quality horticultural goods; and 2) to devise a strategy for the development of such goods by analyzing data using the EFE and IFE matrix analysis tools to identify the internal and external factors involved in commodity development. To address the second objective, we will create a commodities development strategy by utilizing the SWOT analysis tool. The analysis reveals that the internal factor evaluation of the development of the Siam Banjar orange commodity indicates a significant strength in the form of the price of Siam Banjar orange fruit, scoring 0.45. On the other hand, a notable weakness is identified in the absence of modern storage technology, scoring 0.08. Regarding examination of factors affecting the growth of the Siam Banjar Orange commodity, the primary potential is in the advancement of farmer groups, scoring 0.36. On the other hand, the biggest hazard is posed by competition from imported fruit, scoring 0.105. The Siam Banjar orange commodity has an IFE score of 2.115 and an EFE value of 2.015. According to the IE Matrix, the Siam Banjar orange commodity is classified under division V, specifically in the category of defense and maintenance. The preparation of alternative strategies for developing the Siam Banjar orange commodity in Barito Kuala Regency involves the use of SWOT analysis. These strategies can be categorized into four types: 1) S-O Strategy: This involves selecting superior varieties, diversifying and innovating product. 2) W-O Strategy: This strategy focuses on implementing a corporate model, utilizing technology-based markets and marketing, and providing special financing program for orange farmers. 3) S-T Strategy: This strategy aims to enhance technical cultivation capabilities, adopt green technology, and establish sustainable spatial planning. 4) W-T Strategy: This strategy focuses on managing post-harvest activities and mitigating risks.

KEY WORDS

EFE and IFE matrix, Siam Banjar, oranges, SWOT, tidal land.

Horticulture is one of the sub-sectors of the agricultural sector that can be developed, both through efforts to increase production for domestic needs and for export needs. Basically, horticultural commodities are grouped into four main groups, namely fruits, vegetables, ornamental plants and biopharmaceuticals (medicinal plants). According to BPS terms, fruit plants are plant sources of vitamins, salts, minerals and others, which are consumed from plant parts in the form of fruits are generally annual plants (Suri, 2017).

Horticultural commodities are faced with risks and uncertainties, especially with their perishable commodity characteristics (deKeizer et al., 2015). Weather changes are also a



factor that affects consumer demand. Perishable product characteristics, pests, traffic and other factors also influence the supply chain of crop commodities (Bokelmann, 2009; Verdouw, Beulens, van der Vorst, 2013). Proper supply chain management of the horticultural commodity market plays a critical role in competitive advantage.

People cultivate the Siam orange crop extensively in Barito Kuala Regency, a tidal swamp region in South Kalimantan. Barito Kuala Regency is a Siamese orange producing area with the highest production among other regencies/cities. In 2021, it shows that Siamese orange production in South Kalimantan is 1,139,182 quintals with a production contribution from Barito Kuala Regency of 643,601 quintals or 56.50% of South Kalimantan's total production. The total production of Siamese oranges in South Kalimantan will increase in 2022 to 1,153,595 quintals, of which orange production in Barito Kuala Regency is 754,950 quintals, or 65.44% of production in South Kalimantan (BPS South Kalimantan, 2023).

The community cultivates Siamese citrus plants extensively in Barito Kuala Regency, a tidal swamp area in South Kalimantan. In 2021, Siamese orange production in South Kalimantan was 1,139,182 quintals with a production contribution from Barito Kuala Regency of 643,601 quintals or 56.50% of South Kalimantan's total production. Total Siamese orange production in South Kalimantan will increase in 2022 to 1,153,595 quintals, where orange production in Barito Kuala Regency is 754,950 quintals or 65.44% of production in South Kalimantan (BPS South Kalimantan, 2023).

The abundant cultivation of Siam Banjar oranges in Barito Kuala Regency establishes them as a superior commodity within the region. The Siam Banjar orange farming business relies heavily on large production volume, which serves as the primary driver for product promotion. The extent of the product's distribution network, spanning from the producer, or farmer, to the ultimate customer, greatly influences the marketing of the product.

Research on the distribution risk analysis of the Siam Banjar Orange supply chain reveals that the distribution route for the oranges comprises farmers, collecting dealers, wholesalers, and retailers. There exist five distinct categories of supply chain distribution structures. The risks present in the distribution channel of Siam Banjar Orange supply chain are assessed using the WFMEA (Weight Failure Mode and Effects Analysis) method. These risks, ranked from highest to lowest, include price risk, transportation risk, supply risk, quality risk, production risk, and risk environment (Shafriani and Hartoni, 2021).

METHODS OF RESEARCH

The study will be carried out in Barito Kuala Regency. The research location was intentionally chosen due to its status as the district with the highest output of Banjar Siamese oranges in South Kalimantan.

The participants in this study consisted of respondents and informants. Respondents are individuals selected to provide information about them or who have firsthand experience with the socio-economic topic under investigation. Informants are individuals who possess the ability to furnish details pertaining to their own experiences, as well as those of others and the surrounding milieu. The entities being studied in this research are the farmers cultivating Banjar Siam oranges, the local individuals who gather these oranges, and the larger entities involved in collecting and trading orange commodities in Barito Kuala Regency. The employed sample technique was snowball sampling.

Data reduction involves the processing of qualitative and quantitative data by sorting, concentrating, and simplifying it. This procedure enables the data to be effectively used in order to address research objectives. The purpose of the IFE matrix is to succinctly assess and appraise the primary strengths and weaknesses across different functional domains, while also serving as a foundation for identifying and assessing interconnections across related areas. The EFE matrix enables strategists to condense and assess economic, social, cultural, demographic, environmental, technological, and competitive data.

The divisions or enterprises located in cells I, II, or IV of the IE matrix can be characterized as being in the growth and development phase. An optimal approach at this



junction would be to implement an intense plan, encompassing market penetration, market development, and product development. Furthermore, retain and maintain strategy group encompasses divisions in cells III, V, or VII. This strategy encompasses market penetration and product development. Furthermore, for divisions categorized under cells VI, VIII, or IX, the recommended course of action is to harvest and divest, while conducting portfolio business is the suitable approach at this juncture.

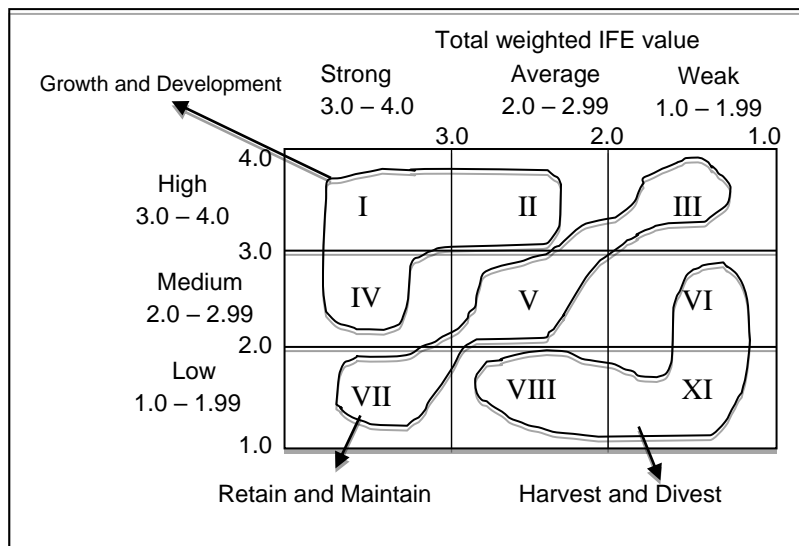


Figure 1 – The Internal – External (IE) Matrix (David, 2006)

In order to devise alternative methods for the development of the Siam Banjar orange commodity in Barito Kuala Regency, a SWOT matrix analysis was conducted. In order to conduct the analysis, the business objectives are established or the objects to be analyzed are identified. Strengths and weaknesses are categorized as internal elements, whilst opportunities and threats are seen as external factors (Rangkuti, 2014).

RESULTS AND DISCUSSION

The identification of internal factors influencing the development of Siam Banjar orange commodities and their impact on supply chain performance was derived from interviews conducted by researchers. These interviews involved various stakeholders involved in the development of orange commodities in Barito Kuala Regency, including farmers, collecting traders, wholesalers, retail traders, agricultural instructors, and the head of horticulture at the Barito Kuala agricultural service. The objective of the internal factor assessment is to assess the strengths and weaknesses associated with the development of the Siam Banjar orange commodity, with the ultimate goal of enhancing supply chain performance. This evaluation involves analyzing the strengths in order to address and mitigate the shortcomings that arise during the development process of the Siam Banjar orange commodity.

There are several notable advantages associated with the cultivation and development of Siam Banjar orange commodities: 1) The sustained production, 2) The presence of extensive land resources, 3) Offered at a highly competitive price, 4) The land available is well-suited for farming orange commodities, 5) The taste quality of the oranges is exceptional, 6) Farmers possess extensive knowledge in the cultivation, 7) Certified seeds for orange cultivation are readily available.

Subsequently, the vulnerabilities in the cultivation of Siam Banjar orange commodities are elucidated: 1) The aesthetic quality of the oranges' outer look; 2) Variations in fruit size; 3) Capital investment in farming; 4) Limited farmer expertise and access to marketing channels; 5) Insufficient utilisation of modern storage technology.



The internal review procedure aims to identify the primary strengths and shortcomings in the development of Siam Banjar orange commodities in Barito Kuala Regency. The IFE (Internal Factors Evaluation) approach is utilised to do this process. The outcomes of the IFE processing are presented as a score, which is derived from the multiplication of the weight and the internal rating. The subsequent information presents the outcomes of the internal factor evaluation of the Siam Banjar orange commodity, which is regarded as a superior horticultural commodity in Barito Kuala Regency.

Table 1 – Results of Internal Factor Evaluation of Siam Banjar Orange Commodity Development

Internal Factors	Weight	Rating	Score
Strength			
The sustained production	0.08	3	0.24
The presence of extensive land resources	0.07	3	0.21
Offered at a highly competitive price	0.12	3.75	0.45
The land available is well-suited for farming orange commodities	0.06	2.5	0.15
The taste quality of the oranges is exceptional	0.11	2	0.22
Farmers possess extensive knowledge in the cultivation	0.08	2.5	0.20
Certified seeds for orange cultivation are readily available	0.06	2.25	0.135
Sub Total	0.58		1.605
Weakness			
The aesthetic quality of the oranges' outer look	0.09	1	0.09
Variations in fruit size	0.07	2	0.14
Capital investment in farming	0.08	1.25	0.10
Limited farmer expertise and access to marketing channels	0.1	1	0.10
Lack of modern storage technology	0.08	1	0.08
Sub Total	0.42		0.51
Total	1		2.115

Source: Primary data processing, 2023.

The assessment of external factors seeks to determine the orange commodity development's capability to exploit opportunities and the orange supply chain's capacity to address risks. The subsequent are the prospects available in cultivating Siam Banjar orange commodities: 1) Orange fruit demand; 2) Farmer group organisations; 3) Technological advancements; 4) Government assistance. The external evaluation approach aims to identify the primary opportunities and threats associated with the development of Siam Banjar orange commodities in Barito Kuala Regency.

The following obstacles to the development of the Banjar Siam Orange commodity are highlighted: 1) competition from imported fruit; 2) change of land use; 3) Unavailability of processing industry in the region; 4) climate change factors; 5) pest and plant disease attacks; and 6) Increase in costs of production facilities.

Tabel 2 – Result of External Factors Evaluation of Siam Banjar Orange Commodity Development

External Factors	Weight	Rating	Score
Opportunity			
Orange fruit demand	0.09	3	0.27
Farmer group organizations	0.12	3	0.36
Technological advancements	0.13	2	0.26
Government assistance	0.09	3.5	0.315
Sub Total	0.43		1.205
Threat			
Competition from imported fruit	0.07	1.5	0.105
Change of land use	0.07	2.5	0.175
Unavailability of processing industry in the region	0.12	1	0.12
Climate change factors	0.11	1.5	0.165
Pest attacks and plant diseases	0.09	1.5	0.135
Increase in costs of capacity cost	0.11	1	0.11
Sub Total	0.57		0.81
Total	1		2.015

Source: Primary data processing, 2023.

The EFE (External Factors Evaluation) approach is employed to do this process. The output of the EFE processing is a score derived from the multiplication of the weight and internal rating.



According to the findings from the analysis of external factors, it is evident that farmer group organizations present potential chances for the advancement and development of Siam Banjar orange commodities. The score assigned to this opportunity was 0.36. Moreover, a significant challenge faced in the Siam Banjar orange industry is the competition from imported fruits, which has been assigned a score of 0.105. The aggregate external score for the Siam Banjar orange commodity is recorded as 2.015.

The Internal and External Matrix (IE Matrix) is formed by aggregating the cumulative scores obtained from evaluations of both internal and external factors. The IE matrix was developed by David in order to evaluate the company's current state and identify appropriate strategic alternatives. Presented here is the Industry-Environment (IE) matrix pertaining to Siam Banjar orange commodities.

		Internal Factors		
		Strong (4.00 - 3.00)	Medium (2.99 - 2.00)	Weak (1.99 - 1.00)
External Factors	High (4.00 - 3.00)	I	II	III
	Medium (2.99 - 2.00)	IV	V	VI
	Low (2.99 - 2.00)	VII	VIII (2,115; 2,015)	IX

Figure 2 – Siam Banjar Orange Commodity IE Matrix

Table 3 – SWOT Matrix

		Strengths		Weakness	
		n/n	Internal	1 Production continuity 2 The Available of land is still large 3 Very competitive orange prices 4 Land suitable for citrus commodities 5 Orange flavor quality 6 Farmers' knowledge in cultivating 7 Availability of certified seeds	1 The quality of the outer appearance of oranges 2 Inconsistent fruit size and quality 3 Venture capital 4 Farmers' low knowledge of information and access to marketing channels, 5 Lack of modern storage technology
External	Opportunities	Strategy S-O	Strategy W-O		
	1 Demand for oranges	1 Selecting of superior varieties (S1, S4, S6, S7, O3, O4)	3 Implementation Corporate model (W2, W4, O1, O2, O4)		
	2 Farmer group institutions	2 Product diversification and innovation (S3, S5, O3, O4)	4 Technology-based Markets and Marketing (W4,O1,O3, O4)		
	3 Technology advances		5 Special financing program for orange farmers (W3, O4)		
	4 Government support	Strategy S-T	Strategy W-T		
	Threats	6 Increasing Cultivation Technical Capabilities (S1, S6, T4, T5, T6)	9 Managing post-harvest processes (W1, W2, W5, T3)		
	1 Competition from imported fruit	7 Adopting green technology (S4, S6, T4, T5, T6)	10 Mitigating Risk (W1, W2, W4, W5, T1, T4, T5, T6)		
	2 Change of land use	8 Developing sustainable spatial planning (S2, T2)			
	3 Unavailability of processing industry in the region				
	4 Climate change factors				
5 Pest attacks and plant diseases					
6 Increase in costs of production facilities					

Siam Banjar orange commodities have an IFE total of 2.115 and an EFE total of 2.015. According to the IE matrix, Siam Banjar orange commodities are classified under division V. This situation arises from the cultivation and advancement of high-quality agricultural products (namely oranges) in Barito Kuala during the growth and development phase. The



SWOT matrix study was utilised to prepare alternative plans for the growth of Siam Banjar orange commodities in Barito Kuala Regency.

There exist four distinct strategies: the S-O strategy, which involves leveraging internal strengths to capitalise on external opportunities; the S-T strategy, which entails leveraging internal strengths to mitigate the effects of external threats; the W-O strategy, which involves addressing internal weaknesses to capitalise on external opportunities; and the W-T strategy, which entails addressing internal weaknesses to mitigate the effects of external threats.

CONCLUSION

The development of the Siam Banjar orange commodity is influenced by internal variables, which encompass both strengths and limitations. The Siam Banjar Orange commodity exhibits seven notable attributes, with the most prominent being its highly competitive price, scoring at 0.45. In the process of producing the Siam Banjar orange commodity, several shortcomings have been identified, encompassing a total of five areas. Among these problems, the lowest score is attributed to the absence of contemporary storage technology, which has been rated at 0.08.

The development of the Siam Banjar Orange commodity is influenced by external variables, which can be categorized as opportunities and dangers. The Siam Banjar Orange commodity exhibits four distinct potential for development, with the farmer group institutions scoring the highest at 0.36. In the context of developing the Siam Banjar Orange commodity, it is necessary to acknowledge the existence of six distinct dangers. Among these threats, the one with the least significant impact is the rivalry posed by imported fruit, which has been assigned a score of 0.105.

The Siam Banjar Orange commodity has an overall IFE score of 2.115 and an overall EFE score of 2.015. According to the IE Matrix, the Siam Banjar Orange commodity is classified under division V. According to the SWOT analysis, the strategies can be categorized into four types: 1) S-O Strategy, which involves selecting superior varieties, diversifying and innovating products; 2) W-O Strategy, which focuses on implementing corporate models, targeting technology-based markets and marketing, and providing special financing programs for orange farmers; 3) S-T Strategy, which entails enhancing technical cultivation capabilities, adopting green technology, and developing sustainable spatial planning; and 4) W-T Strategy, which involves managing post-harvest processes and mitigating risks.

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