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Market share of Indonesian mangosteen in China market

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Abstract. The agricultural sector is the leading sector in the Indonesian economy. Mangosteen (*Garcinia mangostana L*) or commonly called the "queen of fruits" is one of Indonesia's mainstay exotic fruits. Since the 1970s until now, demand for exports has continued to increase, so that it can be said that the mangosteen fruit is the prima donna of Indonesia's mainstay exports. One of the biggest export destination countries for Indonesian mangosteen is China. Mangosteen producing countries besides Indonesia, there are Thailand and Malaysia as mangosteen producing countries which export to China. This study aims to examine and analyze the market share of mangosteens from Indonesia, Thailand and Malaysia and to see the competitiveness of Indonesian mangosteens in the Chinese market. Market share is an indicator in reviewing the marketing performance of mangosteen fruit products. This market share is usually expressed as a percentage (%), which is used to determine the percentage of potential market for increased Indonesian mangosteen production. In addition, there are import volumes, import prices, and the total import value of mangosteen in the Chinese market in view of competitiveness between countries. This research was conducted using secondary data from 2011-2020.

1. Introduction

Agriculture is an important sector for Indonesia. The agricultural sector has become one of the sources of household income and throughout history has been a determinant of the lifestyle of the Indonesian people (including fisheries and forestry). The agricultural sector was able to employ 35.09% of the population in 2013 and generate 23.44% of GDP [1]. Horticulture, plantation and plantation products 77.07% of GDP from the agricultural sector. In the development of the agricultural sector, the government places food crops as a top priority and is followed by horticulture, plantations and plantations. However, the cultivation of food crops as a staple food is primarily aimed at meeting national food needs, while others such as horticulture, plantation crops and plantations are expected to generate foreign exchange through exports [2].

Based on the absorption capacity of the domestic market and prospects for the export market, horticulture is one of the most promising sources of income for farmers compared to food crops and plantations [3]. Of the total 40 million ha of area suitable for agriculture, 64% or 25.6 million ha has been used for paddy fields, plantations, vegetables, fruits and ornamental plants. Both tropical and subtropical fruits have been cultivated in Indonesia, but generally on a small or even subsistence scale. One of the most popular fruit commodities is mangosteen. Mangosteen fruit, nicknamed the Queen of Fruits, is a horticultural commodity that has high economic value.

Mangosteen is widely cultivated in Southeast Asian countries, including Indonesia, Thailand, Malaysia, Sri Lanka, the Philippines and Myanmar. Mangosteen has become a superior and competitive



fruit commodity in Indonesia [4]. The need for and demand for mangosteen continues to increase along with the increasing need for people to maintain health by adding nutrients to the body. Mangosteen rind contains xanthone compounds which can treat cancer, anti-inflammatory, anti-bacterial, and infections, diarrhea, stomach ache [5]. Several developed countries such as China, Hong Kong, Malaysia, Singapore, Japan, United Arab Emirates have imported mangosteen fruit from Indonesia. The export volume of mangosteen fruit from Indonesia is the largest to China. Apart from Indonesia, Thailand and Malaysia are also mangosteen producing countries and they are exported to China. China has the three largest mangosteen suppliers from Southeast Asia, namely Indonesia, Thailand and Malaysia [4].

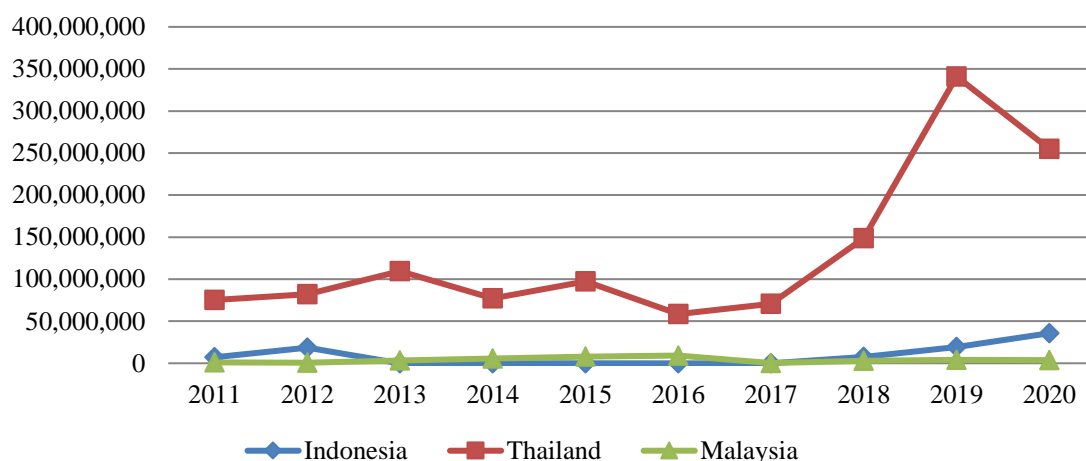


Figure 1. Graph of the volume of mangosteen imports in the Chinese market 2011-2020.

Based on the graphic data above, the market potential is an opportunity for mangosteen-producing countries which can be used as penetration to increase exports of tropical fruits that are in demand by consumers in the Chinese market. One country that can take advantage of this opportunity is Indonesia. Indonesian mangosteen and Thai mangosteen have a fairly large gap in the volume of mangosteen imports in the Chinese market. Mangosteen fruit imported from Indonesia has increased from 2018 to 2020. This statement makes the potential for leading export commodities from Indonesia. The volume level of mangosteen imports in the Chinese market is the background of this research. The purpose of this study analyzed the market share of mangosteen in the Chinese market and examine the competition between Indonesian, Thai and Malaysian mangosteens.

2. Research methods

2.1. Types and source data

The type of data used in this study is secondary data. Secondary data is data collected indirectly related to the object of research. Secondary data was obtained by collecting data on the quantity of mangosteen fruit imported to the Chinese market from Indonesia, Thailand, Malaysia in 2011-2020. The data was obtained from the Central Statistics Agency, the International Trade Center, literature studies, and other sources related to and as supporting data in accordance with this research.

2.2 Data analysis method

This study uses descriptive methods and quantitative data analysis methods. The data analysis method used in analyzing market share using data on imports of mangosteen fruit from Indonesia, Thailand, and Malaysia, is mathematically divided into:

1. The market share of the mangosteen fruit from Indonesia, Thailand, and Malaysia, can be explained mathematically in detail by calculating the formula issued from each country [6]:

$$\text{Market Potential} = Q = \sum P_i = \sum q_i \times p_i \quad (1)$$

Description:

- Q = Total market potential of mangosteen fruit in China market
 q_i = Quantity of mangosteen fruit imports from the exporting country (Tons)
 p_i = Imported price of mangosteen from exporting country (USD/Ton)
 P_i = Import revenue of mangosteen fruit from exporting country (USD)
 i = Exporting country (Indonesia, Thailand, Malaysia)

2. Market share is an indicator of improving the marketing performance of mangosteen fruit from Indonesia, Thailand, and Malaysia in Chinese market. Market share is expressed as a percentage (%), which is useful for knowing the percentage of the potential market for mangosteen fruit from Indonesia when compared to the mangosteen fruit market from Thailand and Malaysia. Market share systematically [7]:

$$\text{Market Share} = MS_i \frac{P_i}{Q} \times 100\% \quad (2)$$

Description:

- MS_i = Market share of mangosteen fruit from the exporting country (%)
 Q = Total market potential of mangosteen in China market
 P_i = Import revenue of mangosteen fruit from exporting country (USD)
 i = Exporting country (Indonesia, Thailand, Malaysia)

3. Results and discussion

Table 1 shows that Indonesia and Thailand have a sizeable gap in the volume of mangosteen imports in the Chinese market. This does not rule out the possibility of Indonesia increasing the volume of mangosteen imports to the Chinese market. From 2013 to 2015, the number of imports of Indonesian mangosteen in the Chinese market has decreased so drastically that there has been no export of Indonesian mangosteen to China. Mangosteen production traded to the Chinese market has decreased in quality, due to the suitability of mangosteen cultivation and management of pests and diseases that have not been managed properly [5].

Table 1. Import volume of mangosteen in the Chinese market in 2011-2021 (Kg).

Year	Mangosteen Import Volume (Kg)		
	Indonesia	Thailand	Malaysia
2011	7,192,289	75,428,596	913,859
2012	18,563,557	81,971,919	605,486
2013	31,544	109,483,840	3,429,298
2014	-	77,196,779	5,601,025
2015	-	97,185,030	7,295,445
2016	15,200	58,544,424	9,179,176
2017	-	70,869,153	271,490
2018	7,474,102	148,783,651	2,786,475
2019	19,489,514	341,083,542	4,010,630
2020	35,728,672	255,062,159	3,832,687
2021	20,521,179	228,102,679	221,255

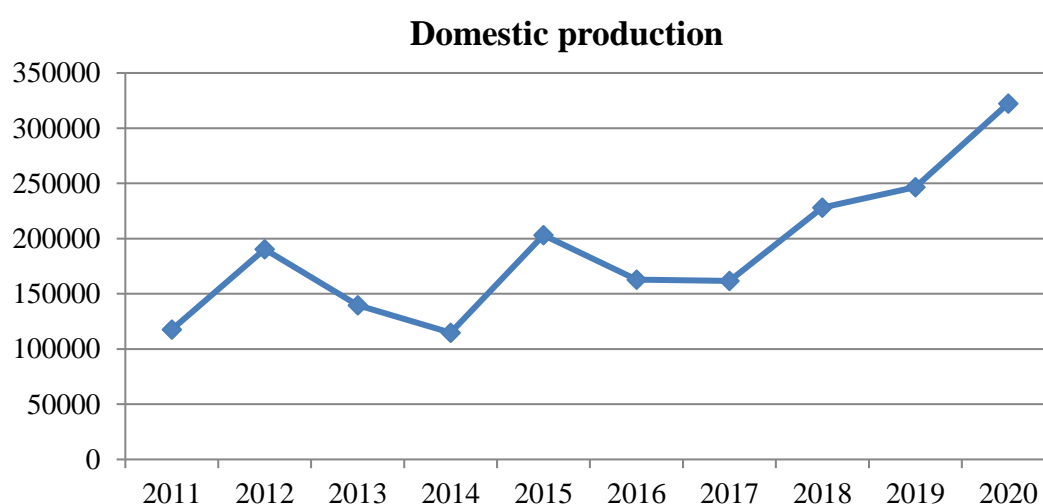
Source: Comtrade international trade statistics database, 2021 [8]

Data in Table 1 from 2013 to 2015 also shows that there was no mangosteen export activity from Indonesia to China. Based on these data it becomes a non-tariff trade barrier. The application of non-

tariff barriers can be in the form of fruit feasibility tests, such as Sanitary and Phytosanitary (SPS) and Technical Barriers to Trade (TBT). The case of export mangosteen fruit was caused by the discovery of Plant Destruction Organisms (OPT), the presence of heavy metal content in the fruit outside the standard limits, and production activities that were not in accordance with the Standard Operational Procedures for Good Agriculture Practice (SOPGAP) set by China [9].

Indonesia as the fifth largest mangosteen producing country in the world is able to encourage an increase in domestic mangosteen production. This will certainly be a business opportunity and a contribution to increasing the marketing of the Indonesian mangosteen fruit. Market share analysis is useful for determining the percentage of determining the mangosteen market potential. Based on Figure 2, 2017 and 2019 experienced a significant increase until 2020 [10]. The years 2019 - 2020 were a period of the covid-19 pandemic, where all countries experience an increase in demand for fruits, including mangosteen [11].

Indonesia has a competitive advantage in the production and export of mangosteen to the Chinese market. Fruit export activities are carried out due to differences in price levels between fruit in the local market and those exported [9]. In 2019 the local price for Indonesian mangosteen was IDR 15,000/kg [12], while the export price for Indonesian mangosteen was IDR 25,000-IDR 30,000/kg [8]. The difference in price levels is due to the difference in quality between exported fruit and those circulating in the local market, where export fruit requires more costs to improve and maintain its quality according to international standards. Good quality and quantity exceeding local demand shows that Indonesia has the ability to trade fruit in the international market.



Source: Statistic Indonesia Fruit and Vegetable 2011-2020 [13]

Figure 2. Domestic production of Indonesian mangosteen fruit in 2011-2020.

However, based on the results of the analysis of Table 2 and Figure 3, the market share of Indonesian mangosteen fruit in the Chinese market is very small when compared to domestic mangosteen production. The demand for mangosteen imports from Indonesia is very competitive with the demand for mangosteen from Thailand and is still superior to the demand for mangosteen from Malaysia in the Chinese market. The productivity of the Indonesian mangosteen fruit is still relatively low when compared to the Thai mangosteen fruit [14].

Based on table 2, that price and quantity make up the size of market share owned by competitors in the Chinese market [15]. Figure 3 shows that the percentage of market share showing the size of a country's market position in the Chinese market. Market share can also be defined as the percentage of expenditure that a country can afford to spend on supplying countries. The supplying countries act as

producing countries that are able to meet the demand for mangosteen in the Chinese market, that are Indonesia, Thailand and Malaysia. The Countries that have the highest to lowest market share values are Thailand, Indonesia, and Malaysia. The values of each market share are 90.5%; 4.2%; and 5.3%.

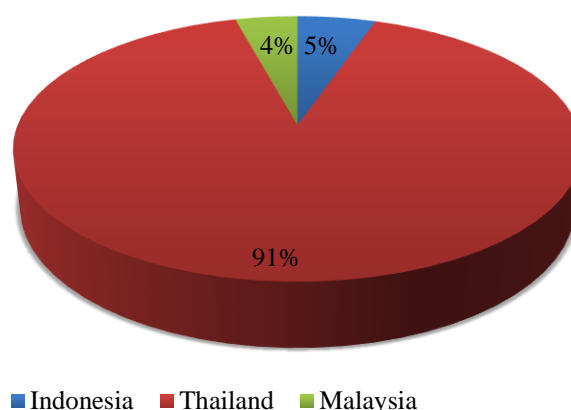


Figure 3. Mangosteen market share percentage in China market.

Table 2 shows the price competition for Indonesian, Thai and Malaysian mangosteen imports. The results of data analysis in Table 2 show that the market price of Indonesian mangosteen fruit is the lowest price of 1.637US\$/ton when compared to the market price of Thai mangosteen and Malaysian mangosteen, which are 2.065US\$/ton and 2.32US\$/ton, respectively. This statement does not make the mangosteen from Indonesia able to compete with the mangosteen fruit from Thailand and Malaysia.

Table 2. Statistical results of import demand for mangosteen.

No	Variables	Mean	Stand Dev	Minimum	Maximum
1	P Indonesia (USD/Ton)	1.637	1.1895289	0	2.950
2	P Thailand (USD/Ton)	2.065	0.1802005	1.730	2.290
3	P Malaysia (USD/Ton)	2.320	0.3780065	1.700	2.810
4	Q Indonesia (Ton)	8849.2	12135.35	0	35728
5	Q Thailand (Ton)	131560	93510.75	58544	341083
6	Q Malaysia (Ton)	3792.20	2917.26	271	9179
7	Import Value Indonesia (USD)	20626.8	28668.72	0	85032.640
8	Import Value Thailand (USD)	278973.94	212646.68	126455	736739.280
9	Import Value Malaysia (USD)	9105.72	7333.27	761.510	22855.710
10	Market share Indonesia (%)	0.053	0.066	0	0.190
11	Market share Thailand (%)	0.905	0.055	0.804	0.995
12	Market share Malaysia (%)	0.042	0.049	0.005	0.153

Source: processed data

If we look at the volume of mangosteen imports in the Chinese market, Thailand is the largest country in meeting the demand for mangosteen in the Chinese market. Thailand is able to send 131,560 tons of mangosteen fruit to China, while Indonesia is 8,849 tons and Malaysia is 3,792 tons. The revenue or value of mangosteen imports received by Indonesia was 20,626.8US\$ with a market share percentage of 5.3%. Thailand is in first position with a market share percentage of 90.5% and the import value of

Thai mangosteen is 278,973.94 US\$. The market share of the Malaysian mangosteen in the Chinese market is 4.2% and the import value received by Malaysia is 9,105.72 US\$.

Mangosteen can be a fruit that has future potential if it can be developed continuously in the international market. Purchase decisions made by China can also be an option in the purchase and use of goods. The purchase of mangosteen fruit from Indonesia, Thailand, and Malaysia made by China makes a combination of knowledge of purchasing information on mangosteen fruit [16]. Knowledge of this information can be in the form of the price of mangosteen fruit from the exporting country, the quantity of the product which is influenced by the quality of the product [5] and the policy of the mangosteen producing country [14].

4. Conclusion

This study compares Indonesian mangosteen to two selected countries Thailand, and Malaysia, all of which export mangosteen to the Chinese market. The results clearly show that Indonesia needs to increase its exports and gain market share of mangosteen in the Chinese market. The average market potential of the mangosteen in the China market (mangosteen from Indonesia, Thailand and Malaysia) is 308,706.5US\$. Thailand's market share is 90.5% with the value of import receipts from Thailand's mangosteen of 278,973.94US\$, which is bigger than the market share of Indonesian and Malaysian mangosteens. The market share of the Indonesian mangosteen fruit is 2,0626.8US\$ (5.3%) and the market share of the Malaysian mangosteen is 9,105.72 (4.2%). Suggestions that can be given are Indonesian mangosteen together to increase awareness to maintain commitment and improve performance optimally. One way that can be done is to make a written cooperation contract agreed upon by the parties concerned. This aims to improve the relationship between partners to be more closely intertwined, so that mutually agreed benefits can be realized. The partnership relationship that has been established is in the form of mangosteen marketing according to mutually agreed standards and conditions. Good performance will certainly lead to high satisfaction and it is hoped that the partnership will continue to be sustainable [17].

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