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Gedong Gincu mango farmer's perceptions toward the advantages and obstacles of the modern market

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Abstract. Gedong gincu mango is an exotic fruit that can become an exclusive mango to supply the modern market. This paper aims to explore the perceptions of Gedong Gincu mango farmers toward their interests, advantages, and barriers to entering the modern market. The study was conducted in Indramayu and Cirebon Districts, West Java, during Juli–Agustus 2019, with 102 farmers as respondents. This study applied a survey method for data collection using structured questionnaires. The data were descriptively analyzed with a focus on farmer's perception of the modern market. The results showed that most respondents (>50%) in Indramayu and Cirebon Districts are interested in selling their mango to the modern market. The biggest advantages of the modern market are that they will get a higher price (75%), gain access to better quality seeds/seedlings (16.50%), and get technical assistance and new skills, especially for cultivating and handling yields (15.06%). This study also reveals factors that cause farmers reluctant to sell mangoes to the modern market. The main reason is that most farmers own small-scale farms, so they cannot meet modern market criteria (28.73%). Besides, farmers feel that the mango has low-quality products. Other farmers think they do not have the ability, experience, and sufficient information related to modern markets (14.94%). This study suggests that the government could encourage mango farmers to engage in the modern market by facilitating the training to improve farmer's capability and provide a supplier who guarantees the supply's payment and sustainability.

1. Introduction

Mango is one of the superior commodities in Indonesia. It is an important fruit and contributes the third largest to national fruit production after bananas and oranges [1]. Besides being very popular among the community, this commodity can also improve farmers' welfare due to its high economic value [2].

There are various types of mangoes grown in Indonesia, one of which is the Gedong Gincu mango. This type of mango is an exotic fruit, and it has the prospect of being developed because its characteristics are in



accordance with market demand [3]. This fruit has a sweet taste and a distinctive sharp aroma and contains much fiber, with a round fruit shape and medium size. The fruit skin color is bright yellow, red, purple, and the flesh is bright orange. With such characteristics, the Gedong Gincu mango is in great demand by markets abroad, so that it becomes one of Indonesia's leading export fruit commodities. With its location-specific nature, the central area for Gedong Gincu mango production is in West Java Province, especially in Cirebon, Majalengka, and Indramayu Districts. The Gedong Gincu mango is an icon of West Java Province.

Currently, the Gedong Gincu mango has the highest price among various types of mango. The high price of Gedong Gincu mango is due to the high demand, limited production supply, and the harvesting pattern [4]. Gedong Gincu mangoes should be gradually harvested because they are picked only when they are tree-ripened. They are harvested when the tree maturity level is above 70% to release the lipstick. If the mango's maturity level is less than 70%, it will be Gedong mango (not Gedong Gincu mango) which has a lower economic value. The harvest time difference between the Gedong and Gedong Gincu mangoes ranges from 10 to 15 days [3]. These requirements lead to the need for accuracy in the mango harvesting process.

In terms of market objectives for Gedong Gincu mangoes, the domestic market is still dominant (99% of total marketing), while the rest (1%) has entered the international market, including Hong Kong, Singapore, and the Middle East [3]. In the case of Gedong Gincu mango produced by Cirebon, 30% of which is to supply the modern retail markets (malls, supermarkets), 10% is for export purposes, while 60% is for traditional retails, inter-island, and wholesale stalls [5]. Thus, the marketing of Gedong Gincu mostly goes to conventional/traditional markets. Only a small portion has been able to penetrate the modern market and export. Access to output markets is a crucial factor in creating higher incomes. Therefore, the emergence of modern markets (especially supermarkets) is generally perceived as positive for the rural poor. However, most analysts consent that there are difficulties to be overwhelmed in gaining access to such markets [6].

In the context of improving mango farmers' welfare, the modern market is considered quite potential. Nevertheless, to access modern market destinations, there must be the willingness and ability of mango farmers both individually and in groups. Farmers' perception of the role of the modern market is also essential to comprehend to know the extent of their enthusiasm about the existence of a modern market. The objective of this study is to find out farmers' interest to involve in modern markets. Besides, it also ascertained farmers' perception of the advantages of modern markets and the obstacles to accessing such markets.

2. Materials and methods

2.1. Materials

This study used primary data which were collected from a sample of 102 mango farmers selected purposively as respondents. The respondents are the farmers who participate in the ACIAR Project in Krasak, Sliyeg Lor, Jambak, and Jatisura Villages (Indramayu District) and Sedong Lor, Panongan, and Putat Villages (Cirebon District), West Java Province, Indonesia. A survey method was applied for data collecting using structured questionnaires. Data collection was carried out from July to August 2019.

2.2. Methods

The data were descriptively analyzed, focusing on farmers' perception of the modern market, its benefit, and the obstacle to engaging the market. The descriptive data were in the form of frequency or percentage of farmers who chosen a particular aspect of the modern market.

3. Results and discussion

In this section, three main aspects will be discussed: the interest of mango farmers to market their crops to modern markets, farmers' perceptions of the benefits of modern markets, and factors that cause farmers

reluctant to market their mangoes to a modern market. The term modern market refers to the four marketing nodes, i.e., supermarkets, processors, exporters, and online markets.

3.1. Interest of farmers for selling in modern market

Generally, mango farmers sold their products through the traditional market channel. Most mango farmers in Indramayu District marketed their harvest to informal/traditional institutions (collectors/middlemen). Only a small proportion of farmers sell their crops to formal institutions (modern markets/exporters) [7]. It is also a common practice in Ethiopia where most mango farmers sell their products at nearby local markets [8].

This phenomenon also occurred in the marketing of Gedong Gincu mangoes. Farmers claimed that middlemen were the most accessible markets, and they usually have already known each other closely. Most farmers sold their mango harvest to a local collector or large wholesaler and did not precisely know where the mango was marketed [9]. In total, 21.5% of the mangoes produced by smallholder farmers were sold through modern retail channels. Notwithstanding, only 9.4% was obtained directly by the modern channel from farmers, with the other 12.1% was being procured from the traditional market channel.

In terms of a modern market, this study asked mango farmers whether they will be interested in selling their products to the modern market. The answer "Yes" demonstrates that the farmers had interests and conversely for "No" response. The results showed that the majority of respondents (>50%) in each village thought that they would be interested in selling their products to the modern market (Figure 1). Krasak Village was exceptional; less than 50% of respondents stated that they were not interested in selling their mango to a modern market. This result exhibit that most respondents knew the benefits of selling products to the modern market even though many farmers had no experience selling to the modern market or seeing other farmers selling products to the modern market.

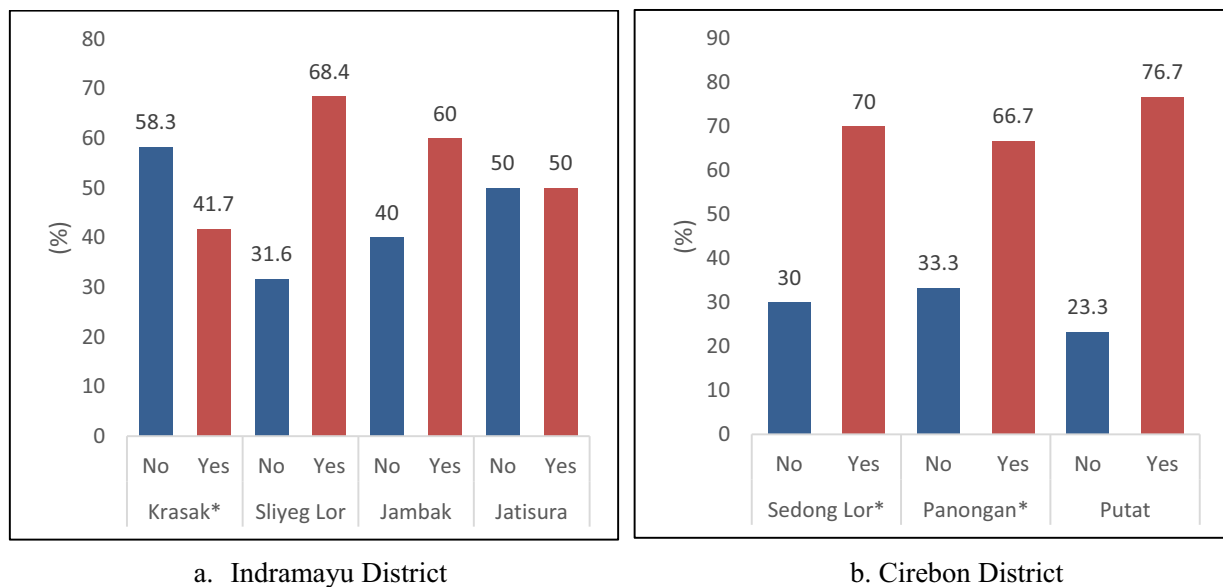


Figure 1. Percentage of farmers who interested to sell their products to the modern market.

3.2. Benefit of modern market

This study explores farmers' perception of the biggest benefit of selling their products to modern markets. As shown in Table 1, farmers perceived that the biggest benefit generated by the modern market was getting

a higher price than if they sold their products to non-modern markets. All of the respondents in both districts agreed with this reason, even in Jatisura and Putat Village got the highest score, i.e., 42.11% and 37.5%, respectively. The next biggest benefit was gaining access to better quality seeds/seedlings and getting technical assistance and new skills, especially cultivating and handling yields. Nevertheless, farmers who could not define the benefit of selling their mangoes to a modern market were dominant.

Meanwhile, the other studies found that the modern market could generate benefits for farmers. Based on the calculation of profit and net income to farmers, there is a high potential for profit from participating in the modern channel [9]. Another previous study also shows that small-scale farmers' involvement in the supermarket channels can improve their income [10]. The fast growth of supermarkets and fresh fruit and vegetable (FFV) transaction offers an opportunity for small-scale farmers to be involved in supermarket channels, which could potentially raise their income [11,12].

Table 1. The most significant benefit for farmers by selling their products to modern markets, 2019.

District	Village	%							Total
		Higher price	Get accessed to better quality seeds	Get accessed to other production inputs	Get technical assistance, learn new skills	No benefit of selling the product to modern market	Do not know	Others	
Indramayu	Krasak	25.00	0.00	12.50	0.00	0.00	32.81	29.69	100.00
	Sliyeg Lor	31.91	0.00	0.00	10.64	0.00	38.30	19.15	100.00
	Jambak	33.33	0.00	0.00	0.00	16.67	33.33	16.67	100.00
	Jatisura	42.11	0.00	15.79	15.79	0.00	0.00	26.31	100.00
Cirebon	Sedong Lor	35.00	15.00	0.00	0.00	0.00	25.00	25.00	100.00
	Panongan	27.27	18.18	18.18	27.27	0.00	0.00	9.10	100.00
	Putat	37.50	15.63	0.00	0.00	0.00	18.75	28.12	100.00

3.3. Reluctance of farmers to sell for modern market

There are still obstacles that prevent farmers (being reluctant) from selling mangoes to the modern market (Table 2). In Krasak, Sliyeg Lor, and Jatisura Villages in Indramayu District, the main reasons are lack of adequate skills, experience, or information. Meanwhile, in Jambak Village, the dominant factors are small-scale businesses and small quantity products. In Krasak Village, the main reason was far from the location of the modern market. Meanwhile, in Cirebon District, i.e., Sedong Lor Village, the primary constraints are a small-scale business and small quantity products. In Panongan and Putat Villages, the main reasons are lack of adequate skills, experience, or information about the modern market.

Some other reasons behind farmers' reluctance to engage in the modern market were lack of adequate equipment and the buyers did not immediately pay them when the products were delivered. Meanwhile, few farmers declared that they were not interested due to unsuitable prices or relationships or low absorption levels for their harvest. Based on the result, some farmers preferred to use traditional markets as the main channel to sell their mango production. In general, for both districts, not having any adequate skills, experience, or information was the most dominant reason (20.03%), followed by small-scale business and small quantity products (16.48%).

In the food value chain context, traditional food value chains still appear competitive and attractive to farmers [13]. However, expanding the modernized retail segment has not always benefited local producers (smallholder farmers) [9]. Nevertheless, at the same time, these changes create significant challenges

because supermarket procurement is more integrated than traditional channels and requires higher qualifications such as quality, timing, safety, consistency, and packaging [14,15].

Table 2. Farmers' reasons for not willing to sell mango to modern markets, 2019.

No.	Reason	Indramayu (%)				Cirebon (%)			Average (%)
		Krasak	Sliyeg Lor	Jambak	Jatisura	Sedong Lor	Panongan	Putat	
1.	Small-scale business, small quantity products	11.67	17.65	23.08	9.09	20.69	20.00	13.16	16.48
2.	Far away from the buyers	13.33	7.84	0.00	13.64	6.90	6.67	5.26	7.66
3.	Low quality of the products	10.00	7.84	7.69	13.64	6.90	6.67	11.84	9.23
4.	Can not provide products all year long	6.67	1.96	0.00	9.09	10.34	6.67	2.63	5.34
5.	Lack of any adequate skills, experience or information	23.33	25.49	7.69	18.18	13.79	33.33	18.42	20.03
6.	Too expensive required production inputs	0.00	0.00	0.00	4.55	6.90	0.00	5.26	2.39
7.	Lack of any adequate equipments	5.00	3.92	15.38	0.00	6.90	13.33	13.16	8.24
8.	The buyer is not acquainted/do not trust farmers	8.33	7.84	15.38	4.55	0.00	0.00	3.95	5.72
9.	The buyer needs accounting records	0.00	0.00	0.00	0.00	0.00	0.00	1.32	0.19
10.	The buyers want farmers to pack the products	1.67	0.00	0.00	0.00	0.00	0.00	1.32	0.43
11.	The buyers do not immediately pay when the products are delivered	1.67	9.80	7.69	9.09	6.90	0.00	5.26	5.77
12.	The buyers want product certification	1.67	3.92	0.00	0.00	0.00	6.67	2.63	2.13
13.	Farmers are not interested, e.g, due to unsuitable price or relationship, low absorption level	3.33	3.92	7.69	4.55	3.45	0.00	3.95	3.84
14.	Do not know	6.67	5.88	7.69	0.00	10.34	6.67	10.53	6.83
15.	Others	6.67	3.92	7.69	13.64	6.90	0.00	1.32	5.73
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	-

4. Conclusions

Gedong Gincu mango as an exotic fruit is still dominantly sold in traditional markets. Such mango has a great opportunity to be promoted in modern markets to increase farmers' income. However, the proportion of Gedong Gincu mangoes sold in the modern market is still relatively low. It indicates that the prospect of Gedong Gincu mangoes to access the modern market will still be significant in the future.

Based on the farmer perceptions, this study revealed that most mango farmers were enthusiastic about marketing their mangoes to modern markets, such as supermarkets, exports, and online shopping. According to them, the modern market provides a higher price and can spur the use of technology in production. However, some farmers are not confident about entering the market. Mango farmers perceived the small-scale business, low production quantity, and lack of skills and information as barriers to access the modern market.

The government can become a facilitator so that farmers can penetrate the modern market. Government can facilitate cooperation among farmers, suppliers, and modern market actors. Supplier can act as an intermediary to guarantee prices and continuity of supply. In addition, the payment system from buyers to farmers is also a crucial point for farmers to enter modern markets and needs serious attention from the government. Ideally, the supplier trader should also play as an off-taker, not only as of the buyer.

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