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(RESEARCH ARTICLE)

The analysis Marketing Margin of Crumb Rubber in Rambang Kuang District, South Sumatra, Indonesia

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Abstract

This research aims to determine the cost, margin, profit share and rubber trading system in the District Rambang Kuang, South Sumatra. The research was conducted from June to August 2021 in the District Rambang Kuang, South Sumatra. Sampling is done by: (1) simple random method for farmers and (2) the snowball method for merchants. Analysis of the data using the formula and share margin trading system. The results showed that the first trading model was the marketing of rubber from farmers to collectors and then to factories. Meanwhile, the second trading system is where farmers sell rubber to retailers first, then to collectors then to factories. The largest marketing margin was shown by the trader collecting III, amounting to Rp 3.400/kg. The average marketing margin for all intermediate traders was Rp 3.333/kg. The marketing margin for retailers is Rp 1.900/kg. The average share received by farmers is 64,67 percent. The share that was received by the largest farmer was in the trading system model 1, amounting to 70,85 percent.

Keywords: Black Pempek; Marketing Margins; Cost; Profits

1. Introduction

Indonesia is the world's leading producer and exporter of natural rubber after Thailand. Natural rubber is a strategic commodity due to its contribution to foreign exchange earnings (USD 7.3 billion), employment, and income for 2 million rural farming families [1]. Rubber plantations in Indonesia are dominated by smallholder rubber plantations. In 2020, smallholder rubber plantations covered 863,455 hectares, or approximately 81% of the total national rubber area, with production accounting for approximately 80% of total national natural rubber production (BPS, 2015). The agricultural sector plays a crucial role in the Indonesian economy. This is due to Indonesia's inherent agricultural nature, which has led to its reputation as an agrarian nation rich in natural resources. Given this, it's undeniable that the agricultural sector deserves attention in every aspect of Indonesia's development. Consequently, development priorities have consistently focused on the agricultural sector and other supporting sectors, including improvements to the agricultural commodity marketing system. One agricultural commodity that requires attention to its marketing system is rubber [2].

Rubber plants are perennials with a relatively long life cycle (25-30 years), and the time it takes for a rubber plant to be ready for tapping is also relatively long, nearly five years. Therefore, selecting planting material or seedlings is the primary factor in this agribusiness. Using good and correct seedlings is crucial; making mistakes in selecting seedlings can result in failure throughout the entire life cycle [3]. South Sumatra has a rubber plantation area of 622,686 hectares, with smallholder plantations accounting for 614,021 hectares, private plantations for 24,007 hectares, and state-owned plantations for 21,741 hectares. The smallholder plantations in South Sumatra produce 840,000 tons, which is not commensurate with the existing rubber plantation area. The main cause is that the planting material used by smallholder rubber is different from that of large plantations, coupled with less intensive maintenance applied to smallholder plantations. With various predictions of the potential availability and consumption of natural rubber in the world, the future of natural rubber is still quite bright, especially considering the rapid development of the automotive

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industry in China which requires a large supply of natural rubber. With these conditions, the South Sumatra government needs to pay attention to the rubber plantation sector, how these rubber plantations can produce abundant rubber latex, so that the government can carry out a rejuvenation program with plantation revitalization that can increase productivity and people's welfare [4]. In South Sumatra (Sumsel), natural rubber is a leading export commodity that contributes significantly to non-oil and gas revenues, in addition to its strategic role as a source of income for the community, absorbing a large workforce, and contributing to environmental sustainability. Data from 2012 shows that the area of rubber plantations in South Sumatra has reached 1.2 million hectares with a total production of around 850 thousand tons, and nearly 500 thousand families (KK) or 46% of the population of South Sumatra depend on rubber for their livelihoods [5].

As global demand for crumb rubber increases, the number of rubber factories in South Sumatra continues to grow, now reaching 27. This situation creates competition among factories for processed rubber (Bokar), which in turn encourages farmers to provide as much raw material as possible without paying attention to the quality of the rubber. Weak quality control and the absence of price incentives for quality have led farmers to mix processed rubber with contaminants to increase the weight of the rubber, hoping to gain higher revenues from the sale of the rubber [6]. Farmers market their smallholder rubber in the form of bokar to factories through existing marketing institutions, both through collectors and wholesalers. This smallholder natural rubber trading channel involves many parties and plays a role, placing farmers at a relatively disadvantage in transactions conducted at smallholder rubber production centers. This weakens their position because their greater number of farmers is dependent on a smaller number of traders [7]. Rambang Kuang District is one of the districts with significant plantation potential for development. The most widely cultivated commodity in the plantation subsector is rubber. Rubber plantations cover 4,245 hectares of immature rubber plants, 3,580 hectares of mature rubber plants, and 1,250 hectares of old/damaged rubber plants (8).

If increased production is not accompanied by good trade practices, it will be impossible to increase farmers' income. Therefore, the quality of a trade strategy significantly determines the level of farmers' income. Trade strategy is an important component of farming. Farmers need to allocate trade costs as efficiently as possible and achieve substantial profits. Based of the description of the background above, the researchers are interested in conducting research on Rubber Trading Strategies to Improve the People's Economy in Rambang Kuang District, Ogan Ilir Regency, South Sumatra Province.

2. Material and methods

The population in this study were rubber farmers in Rambang Kuang District, which has the largest rubber plantation area, then, to calculate the sample size, the researchers took a sample of 565 rubber farmers. The sample size was calculated using the Rule of Thumb. Based on the Rule of Thumb theory, every study whose data will be analyzed statistically requires a sample size of at least 30 respondents or research subjects (9). Furthermore, according to Nurdin and Hartati (10), the minimum sample size for correlational research to obtain the best results is 30 samples or subjects. The analysis model used to determine the marketing margin and farmer's share in the trading model are as follow:

$$Mp = \Pr - Pf$$

Explanation:

Mp = Margin share (Rp/kg)

Pr = Price at the consumer (Rp/kg)

Pf = Price at the producer (Rp/kg)

Marketing costs are costs incurred during the marketing process, starting from the hands of farmers until they are received by the factory, the amount of costs incurred depends on the length and shortness of the marketing process which is expressed in the form (Rp/kg) with the formula Soekartawi, 1993 dalam Alfira (2019):

$$Bp = Bp1 + Bp2 + \ldots Bpn$$

Explanation:

Bp = Rubber Marketing Costs (Rp/kg)

Bpn = Marketing Costs for each Marketing Agency (Rp/kg)

The total cost can be formulated mathematically as follows:

$$Bp = X_1 + X_2 + X_3 + X_4 + X_5$$

Explanation:
X_1 = Rubber Pieces
X_2 = Rubber Shrinkage
X_3 = Unloading
X_4 = Tax
X_5 = Transportation

To find out the amount of marketing profit obtained by each marketing agency, the formula is used (14):

$$\prod = M - C$$

Explanation :
$\prod$ = Marketing Advantages (Rp/kg)
M = Marketing Margin (Rp/kg)
C = Rubber Marketing Costs (Rp/kg)

The profit received by farmers (farmer's share) uses the formula:

$$F's = \frac{Pf}{Pr} \times 100\%$$

Explanation:
F's = *Farmer's share* (%)
Pf = Price at the farmers (Rp/kg)
Pr = Price at the consumers (Rp/kg

3. Results and discussion

3.1. Rubber Trading System Model

Marketing is crucial for farming. Good marketing can increase farmers' income (15). Although high rubber production doesn't guarantee profits if the market isn't supportive, marketing plays a crucial role in rubber farming. Rubber in Lubuk Tunggal Village is sold in thick strips. Farmers in Rambang Kuang District market rubber through two channels: retailers and collectors. The two models of processed rubber trading in Lubuk Tunggal Village are shown in Figure 1:

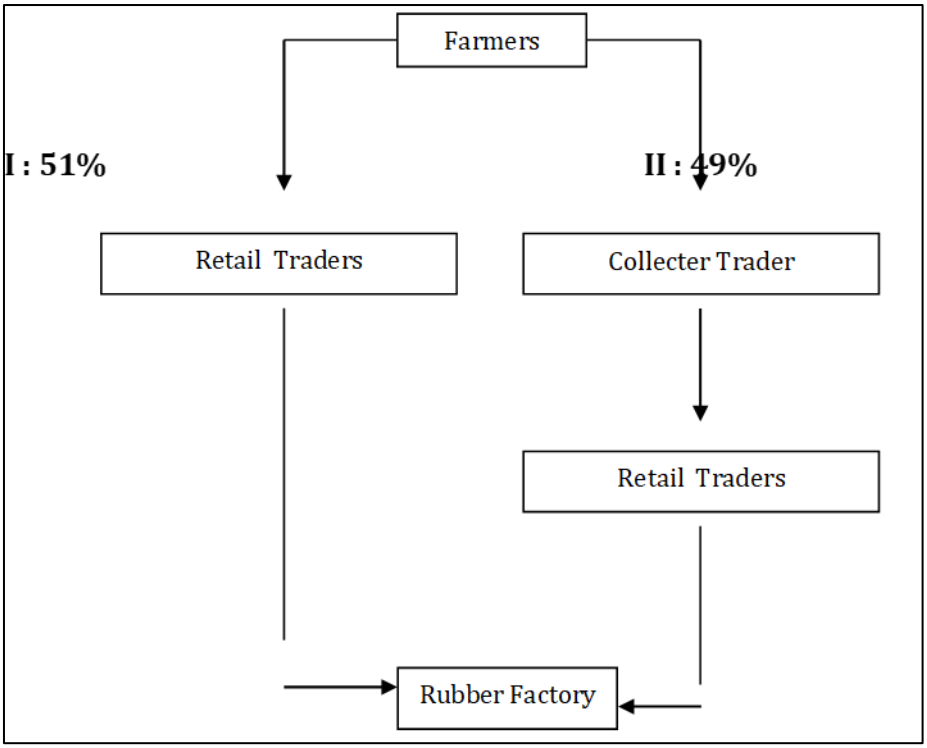

Figure 1 Marketing Rubber Models in Muara Kuang Destrict, South Sumatra

3.1.1. Trading System Model-1

In this trading model, rubber farmers sell their processed rubber directly to retailers. In Muara Kuang Destrict, retailers sell their rubber directly to the factory. Retailers purchase the processed rubber from farmers by collecting it on Thursdays at the retailers' premises. Three families in Muara Kuang Destrict work as retailers; all of them sell their processed rubber directly to the factory. However, these three retailers sell their rubber to different factories, resulting in different marketing costs and prices. Trading Model I can be seen in Figure 2.

Figure 2 Marketing Model I

The rubber to be sold by farmers is brought to retailers by motorcycle taxis or by themselves. The pricing used by retailers is determined by the factory where the retailer will sell it. The three retailers' buying prices from farmers vary. Retailer I offers farmers a purchase price of Rp 7,700/kg. Retailer II offers farmers a purchase price of Rp 8,000/kg. Retailer III offers farmers a purchase price of Rp 8,600/kg. Currently, the sales of processed rubber from farmers are relatively low, but farmers still sell to retailers. Retailers sell processed rubber to factories once a week. The difference in prices given by retailers to farmers is caused by marketing costs such as transportation costs, security costs, taxes/levies, loading and unloading costs, and depreciation costs determined by the factory. Farmers have their own reasons for selling their processed rubber to retailers. One reason is that they have been selling their processed rubber to these retailers for a long time and feel the price they offer is adequate, despite the current situation.

3.1.2. Trading System Model-2

In this trading model, rubber farmers sell their processed rubber to collectors and then to retailers. First, farmers sell their rubber to collectors, then to retailers, and finally to factories. Collectors purchase the processed rubber from farmers by collecting it one day before selling it to retailers. In Muara Kuang Destrict, there is only one collector. Trading Model II can be seen in Figure 3.

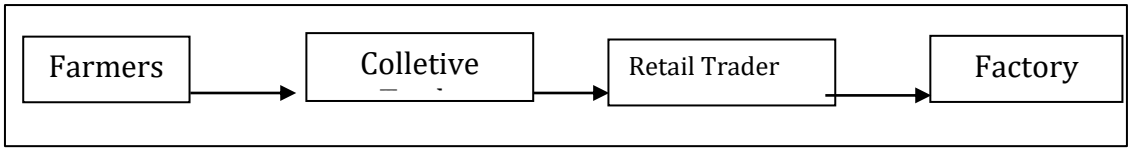

Figure 3 Marketing Model 2

The rubber to be sold by farmers is transported by motorcycle to the collectors. The collectors' prices are determined by the retailer's price set by the collectors. The farmer's price is Rp 6,200/kg. Retailer I offers the collector a purchase price of Rp 7,700/kg. Retailer II offers the collector a purchase price of Rp 8,000/kg. Retailer III offers the collector a purchase price of Rp 8,600/kg. Currently, the sales of processed rubber from these collectors are quite low. However, the collectors still sell to retailers, not directly to the factory, due to several factors. Collectors sell processed rubber to retailers once a week. The similarity in prices offered by retailers to farmers and collectors is due to several factors. First, collectors can accept production of less than 100 kg per sale, while retailers accept more than 100 kg of rubber per week.

3.1.3. Marketing Costs

Marketing costs are all costs incurred for marketing rubber production. These costs include all costs required for marketing activities related to the sale of production. Marketing costs incurred by each marketing agency vary due to the different cost components. Marketing costs at the collecting trader level include transportation costs, loading and unloading costs, security costs, and depreciation costs, as shown in Table 1

Table 1 Marketing Cost to Retail Trader

Component Cost	**Marketing Cost per Weeks (Rp)**			**Average**
	PP I	PP II	PP III	
Loading	195.000	50.000	300.000	181.667
Transportation	1.000.000	1.350.000	1.200.000	1.183.333
Retribution	550.000	678.000	300.000	509.333
Savety fee	20.000	25.000	10.000	18.333
Depreciation	8.800.000	23.052.000	18.000.000	16.617.333
Total Marketing Cost	10.565.000	25.155.000	19.810.000	18.510.000
Total Marketing Cost per kg	1.057	2.096	1.981	1.711

Source: Primer Data, 2024

At retailer I, the depreciation cost is 8%, retailer II 17%, and retailer III 15%. Some price differences occur due to the distance between the retailer's location and the location of the factory where the rubber will be sold. Retailers I, II, and III use trucks to deliver their products to the factory. The large depreciation cost depends on the number of bokar sold by the trader. The greater the number of bokar, the greater the depreciation cost. Shrinkage occurs due to the reduction in water content in the rubber during storage before being sold to the factory. Retailer I incurs a cost of Rp 1,057 for every kg of rubber sold. Retailer II incurs a cost of Rp 2,096 for every kg sold, while retailer III incurs a cost of Rp 1,981 for every kg of rubber sold. The average cost incurred by retailers when selling rubber is Rp 1,711 per kg of rubber. Collectors also incur marketing costs, even when selling to retailers. However, there are also transportation, loading, and unloading costs, and depreciation costs. Marketing costs at the collector level can be seen in Table 2.

Table 2 Marketing Cost to Collectif Trade Level

Component Cost	**Marketing Cost per weeks (Rp)**
Loading	50.000
Transportation	150.000

Depreciation	121.500
Total Marketing Cost	277.575
Total Marketing Cost per kg	925

Source: Primer Data, 2024

Table 2 shows that the marketing costs for collectors are Rp 277,575, with a 5% depreciation cost of Rp 121,500. Each kilogram of processed rubber sold carries a marketing cost of Rp 925 per kilogram. Marketing costs for collectors are not particularly high, so farmers don't experience significant losses. Farmers can also sell small amounts of rubber, especially those who are new to tapping and whose rubber production is still low. Furthermore, farmers can transport the rubber themselves using motorbikes, eliminating transportation costs because they don't transport a large amount of rubber.

3.1.4. Marjin Marketing

Marketing margins indicate the price difference between levels in the marketing chain. Marketing margins are influenced by the selling price and the purchase price of rubber. Marketing margins represent the difference between the price paid by consumers and the price received by farmers. Marketing margins in Lubuk Tunggal Village can be seen in Table 3

Table 3 Marketing Cost Average to Retail Trade

	HB (Rp/Kg)	**HJ (Rp/Kg)**	**MP (Rp/Kg)**	**BP (Rp/Kg)**	**MK (Rp/Kg)**	**VP (Rp/Kg)**
PP 1	7.700	11.000	3.300	1.057	2.244	10.000
PP II	8.000	11.300	3.300	2.096	1.204	12.000
PP III	8.600	12.000	3.400	1.981	1.419	10.000
Average	8.100	11.433	3.333	1.711	1.622	10.667

Source : Primire Date 2024; Keterangan: HB= Purchase Price; BP= Marketing Cost;bHJ= Selling Pricel; MK = Profit Marjin; MP = Price Margin VP= Sales Quantty; PP= Retail Trade

Table 3 shows differences in marketing margins at the retailer level. The average marketing margin at the retailer level is Rp 3,333 for every kilogram of processed rubber. The average marketing cost at the retailer level is Rp 1,711 per kg, with an average profit margin of Rp 1,622 per kg. The marketing margin at the collector level is Rp 1,900 per kg, with a marketing cost of Rp 925 per kg. The profit margin at the collector level is Rp 975 per kg, with a sales volume of 300 kg.

3.1.5. Farmer's Share

The share received by farmers is the ratio of the price received by rubber farmers to the price paid by the final consumer, the rubber processing factory, to the marketing agency. The farmer's share calculation is expressed as a percentage. The distribution of rubber sales to farmers can be seen from the farmer's share calculation. The distribution of rubber farmers' profits from retailers can also be seen from the farmer's share calculation in Table 4.

Table 4 Farmer's Share

Marketing Model	**Selling price at the producer (Rp/kg)**	**Selling price at the consumers (Rp/kg)**	***Farmer's share (%)***
I	8.100	11.433	70.85
II	6.200	10.600	58.49
Average	7.150	11.017	64.67

Source : Primire Date 2024

Based on Table 4.12, the largest share received by farmers is in trading model I, at 70.85 percent. In this trading model, farmers sell their processed rubber directly to retailers, meeting the rubber criteria set by the factory, resulting in retailers offering high prices to rubber farmers. In trading model II, the share received by farmers is 58.49 percent.

Farmers sell their processed rubber to collectors first, then the collectors sell it to retailers, and finally to the factory. The average farmer's share received by farmers is 64.67 percent. This means that 64.67 percent is the share received by farmers, while the remaining 35.33 percent represents the selling price from the trader to the rubber processing factory, which is the share received by the trader.

4. Conclusion

The results showed that the first trading model was the marketing of rubber from farmers to collectors and then to factories. Meanwhile, the second trading system is where farmers sell rubber to retailers first, then to collectors then to factories. The largest marketing margin was shown by the trader collecting III, amounting to Rp 3.400/kg. The average marketing margin for all intermediate traders was Rp 3.333/kg. The marketing margin for retailers is Rp 1.900/kg. The average share received by farmers is 64,67 percent. The share that was received by the largest farmer was in the trading system model 1, amounting to 70,85 percent.

Compliance with ethical standards

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Disclosure of conflict of interest

Authors disclose conflict of interest with rubber farmers that compete with mentioned in this manuscript.

Statement of informed consent

"Informed consent was obtained from all individual participants included in the study".

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