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Distribution and Efficiency Analysis of Commodity Trading of Robusta Coffee in Silo District, Jember Regency

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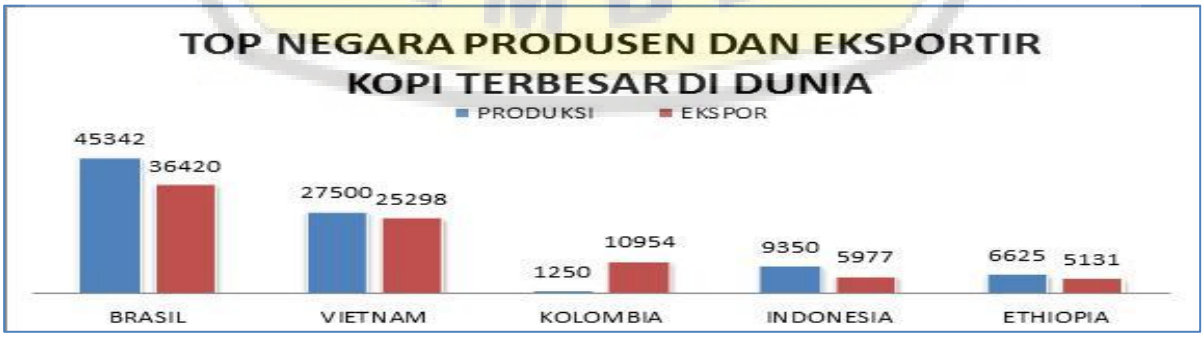
ABSTRACT

The need for coffee in the world is increasing every day, especially in developed countries like Germany, Japan and America. One of the largest producers of Robusta coffee in the world is Indonesia, producing the same from various regions such as the Silo District, Jember Regency. Silo coffee is certified by Bank Indonesia. However, the rapid growth of coffee demand is inversely proportional to the situation of coffee farmers in Jember Regency. One of the prime challenges of coffee farmers in the Silo district is the inefficiency of the trade value chain, from upstream to downstream. The farmers here mainly adopt three trading channels/systems; each trade system has different efficiency levels, whereby the price offered to the farmers varies according to the quality of the Robusta coffee beans sold. The drier the water content, the higher the price that is offered to the farmer.

Keywords: Value Chain, Trade Efficiency, Coffee Commodity.

INTRODUCTION:

Today, the culture of drinking coffee has become routine for everyone in the world. One of the largest Robusta coffee producing countries is Indonesia.



Picture 1.1: world coffee producing country

The Robusta coffee is produced in the Silo district, at Jember Regency; its quality certification has been issued by Bank Indonesia, and it has a promising export quality (Center for Coffee and Cocoa Research, 2004). In terms of the production capacity of Robusta coffee, it should be noted that it contributes the highest coffee

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quantity in the Eastern Java region after Malang and Banyuwangi (General Directorate of Plantation, 2017). However, the rapid growth of Robusta coffee is inversely proportional to the situation of the coffee farmers in Silo District. This is because the commerce and trading systems still use a simple value chain trading path. The reasons farmers choose this path are: 1) there is no guarantee and established policies from the government on coffee marketing, (2) the human resources (labor force) aren't necessarily thoroughly professional, (3) insufficient facilities and infrastructure, (4) undeveloped farmers (Indopuro, April: 2012). However, there are five value chain paths that these coffee farmers in Silo adopt:

a. Farmers - Cooperatives - Supplier I – Factory
b. Farmers - Village Collectors - District Collectors - Supplier II - Factory
c. Farmers - Village Collectors - Supplier II – Factory

Most farmers choose a second trading path (B) to market their crops because the price offered by the village collectors is more than the price offered by the cooperative. Additionally, as these farmers do not have a network of partners with the district collectors, they prefer to sell the harvest to the village collectors first. The drawback in the second trading path is that unlike other commercial systems, it does not for instance set high standards like the first trading system. In the first trading system, the Robusta coffee sold must meet some compliance requirements, such as maximum moisture content should be of 17%, maximum impurity content shouldn't exceed 0.5%, the coffee grains should be free from living insects, and the beans on an average should have a diameter of 7.5 mm. Many farmers can't fulfill these stringent requirements, because the natural moisture content level of Robusta coffee beans from the harvest is higher than the requirements determined by the cooperative. Therefore, the farmers prefer to sell these beans to the collectors rather than to the cooperative. Thus, it is evident that the efficiency levels in the three trading systems vary. It can only be standardized with government intervention having fixed policies and procedures; this in turn would ensure that the farmers get the maximum returns, and also ensure higher quality in coffee production. However, it should be noted that maximizing production while maintaining the quality of Robusta coffee requires a fairly high cost. Additionally, the farmers do not have any means to market their products directly to factories and/or exporters; thus, the only feasible option they have is to go via the medium of the collector. If the government can bridge this path, then the farmers can directly connect with factories and/or exporters directly, thereby ensuring that their returns are maximized and quality enhanced. This change in the trade cycle would certainly increase the overall efficiency along with the farmers' welfare. The purpose of this study is to analyze the efficiency level of commodity trading of Robusta coffee in Silo District, Jember Regency.

LITERATURE REVIEW:

Value Chain:

Value chain is an approach introduced by Michael Porter to analyze processes employed by companies that add value to their customers. The analysis further urges companies to support its processes in making them more customer-centric, especially in the manufacturing sector, wherein the processes virtually by default are directed to the customer, handled therein by the service department. (Hutabarat, 2006: 113). There are two activities in Michael Porter's theory: primary activities and supporting activities. Primary activities consist of (Pearce, 2002:208):

a. Logistics procurement within the company, which includes activities, costs and assets related to obtaining fuel, energy, raw materials, spare parts, merchandise, and other equipments from suppliers; receiving, storing and distributing inputs from suppliers; along with inspection and inventory management.
b. Operations include activities, costs and assets related to the conversion of inputs into the final product form (encompassing production, assembling, packaging, equipment maintenance, operating facilities, while maintaining quality assurance of environmental protection).
c. Logistics procurement outside the company include activities, costs and assets related to the physical distribution of the product to the buyer (i.e. storage of finished goods, processing of orders, packing of orders, shipping and operation of the vehicle).
d. Orders and sales: consisting of activity costs and assets relating to the efforts of salespeople, advertising and promotion, research and market planning, and support for distributors/suppliers.
e. Services include activities, costs and assets related to providing assistance to buyers; for instance installation, spare parts delivery, maintenance and repairs, technical assistance, handling of services and buyer complaints.

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The supporting activities consist of:

a. General administration: comprising of activities, costs and assets related to general management, accounting and finance, law and regulatory issues, safety and security, management information systems, and other overhead functions.
b. Human resource management: encompassing cost and asset related to recruitment, training, development, and compensation of all types of employees, relationship activities with all employees, development of knowledge-based skills.
c. Technology research and development is a system of cost and processing activities, processing process improvements, equipment design, computer software development, telecommunications systems, computer assistance design and engineering, new database capabilities, development of computerized support systems
d. Purchases consist of activity costs, and assets related to the purchase and supply of raw materials, the services of other external parties services and services used to support the company and other activities. Often this activity is used for physical procurement and company logistics.

The core of this analytical thinking simply defines helping a company's management to find activities or steps that are not competitive; where transaction costs can be lowered, and third parties are involved for trading activities. Holistically, the benefits gained from this value chain can in turn increase value for customers.

The Trade Efficiency:

The trading system includes marketing or distribution in economic activities that function to bring or deliver goods from producers to consumers. As trading is done in the market, the trading system is also called marketing (Mubyarto, 1989: 166). Efficient trading arrangements are also capable of fair distribution of all sales results to parties participating in production activities within the trading system. The trading system includes three main functions: transportation, storage and processing. Further development of the three functions would advance and expand the marketing scope of agricultural commodities. The first function (i.e. transportation) is crucial in agricultural commodities; the other trade arrangements (i.e. storage, financing and processing of agricultural products) logically follow suit (Swadaya, 2008: 64).

Robusta Coffee Commodity:

Coffee commodities are one of the plantation sub-sectors that have a significant role in the Indonesian economy. For developing countries, coffee is the second source of foreign currency after oil (J. Spilaine). This was confirmed by an analysis in 1985, which showed that the amount of coffee trade in the world amounts to more than US $ 10 billion coming only from exports of developing nations. In addition, BPS also noted that from 2008 – 2012, the export value of the primary plantation sub-sector was US $ 25,021.92 million on an average, where the share of Robusta coffee export alone reached 3.9 percent, ranking fourth after palm oil, rubber, and cocoa with a share of 56.8 percent, 28.4 percent and 5.2 percent respectively. Not only quantity, Robusta coffee commodities also have a pretty good quality standard as compared to other countries. Raharjo (2013) conducted a study on the determinants of Indonesian coffee exports. The results of his research show that real GDP, the rupiah exchange rate against the dollar, and the retail price of coffee of importing countries have a positive influence on the volume of demand for Indonesian coffee exports, while the monetary crisis has no significant effect on the volume of Indonesian coffee exports. The positive sign of the retail price regression coefficient of the importing country coffee is not in accordance with the demand theory.

DATA ANALYSIS METHOD:

Population And Sample:

The research location (i.e. Silo District, Jember Regency) was determined purposively (purposive method). The main reason for choosing the location was that the Silo District is the biggest coffee production center in Jember Regency. The research method used has been analytic–descriptive. For sampling each value chain, Snowball, Simple Random Sampling and Triangulation Techniques have been used. Simple Random Sampling Technique was also used to determine the sample size of coffee farmers, wherein the sampling was done randomly without considering the population strata (Firdaus, 2012). The number of coffee farmer population in the study area reached 3339 people. The number of samples was determined in accordance with Slovin's opinion in (Umar, 1999) by the formula:

$$n = N/[1+N(e^2)]$$

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Description:
n = the number of taken samples N = the number of population
e = the incompetence degree of 5%

From the above calculation, it can be seen that the number of samples that can be taken from the population of 3339 is 95 people. Meanwhile, the Snowball technique was used to know the institutions or links that were involved in the value chain. From the research, it may be concluded that marketers related with the value chain of coffee in Silo are;

Table 1.1: Institutions Involved in the Coffee Trade Value Chain in Silo

No	The Involved Marketers	Amount
1	Kertakasi Cooperative	1
2	Village Collectors	10
3	District Collectors	2
4	Dampit Collectors	2
5	Surabaya Collectors	1
6	Factory	1

Meanwhile, the triangulation technique was used as a tool to check the correctness of the data, and also to enrich the data. Some of the steps used in the triangulation technique are:

1. Comparing the data of observation result with the data of interview result
2. Comparing what people said in public with what they said personally.
3. Comparing what people said about the research situation with what they said all the time.
4. Comparing the situation and perspective of a person with different opinions and views of the community from various classes.

This research has both primary data and secondary data. The secondary data was obtained through the Central Bureau of Statistics (BPS) and the Department of Agriculture and Forestry in Silo District. The primary data was obtained directly from the farmers and the coffee marketers in Silo District. At the time of the research, the price of coffee was 26,000 rupiahs/kg (price was valid from July 2017 to February 2018, at the time of harvest and stockpiling of coffee by the farmers).
Robinson and Sudino (2001) research has inspired the data analysis method that was used to analyze the efficiency level adapted.

$$M = Pr - Pf$$

One could draw the conclusion by looking at the shared value. The value of the shared value is related to the acceptance of value as being reciprocal to the contribution provided by each link involved in this supply chain, where the criteria of the decision-making has been:

- Efficient, if *share of profit> share of cost*
- Inefficient, if share of profit <share of cost

In addition, based on Prayitno et. Al. (2013) study, the determination of the marketing efficiency can also be done with the following decision-making criteria:

- If % Pf (PS)> 70%, then the marketing of big red chili in Jember District is efficient.
- If % Pf (PS) ≤ 70%, then the marketing in Jember Regency is inefficient.

As regards the cost on the margin distribution in implementing the i-marketing function by the j-marketing institution is:
Sbij = [cij / (Pr – Pf)] * 100%
cij = Hjj – Hbj – Iij

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While the profit of j-marketing institution is:
Skj = [Πij / (Pr -Pf)] * 100%
Πij = Hjj – Hbj – cij

Descriptions:
Sbij : the cost part to implement the i-marketing function by j-institution (%)
cij : the cost to implement the i-marketing function by j- institution (rupiah)
Pr : the retailer price (rupiah)
Pf : the farmer level price (rupiah)
Hjj : the selling price of j-marketing institution (rupiah)
Hbj : the purchase price of j-marketing institution (rupiah)
Ij : the profit of j-marketing institution (rupiah)
Skj : the profit percentage of j-marketing institution (%)

Based on this calculation and data collection, the efficiency level of every Robusta coffee commodity trading system in Silo District, Jember Regency can be known. From this level of efficiency, one could deduce a policy whereby the farmers can prosper by minimizing their costs incurred, and increase their profit margins.

RESEARCH RESULTS:

The Efficiency Level of Robusta Coffee Commodity Trading System in Silo District, Jember Regency:
Based on this study, the value of margin that exists in every trading system of Robusta coffee commodity in Silo District, Jember Regency can be known. The margin obtained doesn't signify only the farmer's share, but also from each collector and trader involved in the value chain.

Tabel 1.2: Marketing Margin, share value, and Margin Distribution on trading system I

No	Institution	Price	Share (%)		Margin (%)		π/C
			Ski	Sbi	Ski	Sbi	
1	**Farmer**						
	Harvest Cost	4.168,33					
	Selling	26.250,00	82,03				
	Profit	22.081,67					5,30
2	**Cooperative**						
	Buying	26.250,00					
	Selling	26.750,00					
	Transport	20,00		0,06		0,36	
	Packing	11.11		0,03		0,19	
	Grading	5.56		0,02		0,09	
	Sorting	11.11		0,03		0,19	
	Profit	452.22	1,41		7,86		9,46
3	***Supplier* I**						
	Buyying	26.750					
	Selling	32.000					
	Transport	225		0,70		3,91	
	Sorting	300		0,93		5,21	
	Grading	500		1,55		8,69	
	Oven	200		0,62		3,48	
	Packing	22,22		0,06		0,37	
	Unloading	11,11		0,03		0,19	
	Profit	3992	12,47		69,42		3,17
4	**Factory**						
	Buying	32.000					
	MP	5750					
		Total	**95,91**	**3,4**	**77,28**	**22,49**	**18,17**

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From the table 1.2., it may be seen that the marketing margin for every kilogram of coffee is 5750 rupiahs. The profit share of trading system I is 95.91% and the cost share is 3.4%, with the profit at the farmer level (PS) equal to 82.03%.

Tabel 1.3: Marketing Margin, share value, and Margin Distribution on trading system II

No	Lembaga	Harga	Share (%)		Distribusi Margin (%)		π/C
	Pemasaran		SKI	SBI	SKI	SBI	
	Farmer						
1	Harvest Cost	4.161,22					
	Selling	26.350,00	79,85				
	Profit	22.188,78					5,33
2	**Village Collector**						
	Buying	26.350,00					
	Selling	26.800,00					
	Transport	6,25		0,02		0,09	
	Packing	11,11		0,03		0,16	
	Unloading	11,11		0,03		0,16	
	Grading	5.56		0,02		0,08	
	Drying	30,00		0,09		0,45	
	Saving	55,00		0,17		0,82	
	Sorting	11.11		0,03		0,16	
	Profit	319,86	0,97		4,80		2,45
3	**District Collector**						
	Buying	26.800					
	Selling	27.350					
	Transport	51,42		0,15		0,77	
	Packing	22,22		0,07		0,33	
	Grading	27,78		0,08		0,42	
	Sorting	22,22		0,07		0,33	
	Saving	50,00		0,15		0,75	
	Unloading	11,11		0,03		0,16	
	Profit	365,25	1,106		5,49		1,97
4	**Supplier II**						
	Buying	27.350					
	Selling	30.550					
	Transport	22,86		0,07		0,34	
	Packing	22,22		0,07		0,33	
	Grading	250		0,75		3,75	
	Sorting	300		0,90		4,51	
	Saving	5,55		0,02		0,08	
	Oven	200		0,60		3,01	
	Profit	2.399,37	7,27		36,08		2,9
5	**Factory**						
	Buying	33.000					
	MP	6650					
	Total		**89,196**	**3,35**	**46,37**	**16,7**	**18,17**

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From the table 1.3, it may be seen that the marketing margin for every one kilogram of coffee is 6650 rupiahs. The profit share of trading system II is 89.16%, and the cost share is 3.35%, with the profit at the farmer level (PS) equal to 79.85%.

Tabel 1.4: Margin Pemasaran, *Share Value*, dan Distribusi Margin pada saluran tata niaga III komoditas kopi di Kecamatan Silo Kabupaten Jember

No	Lembaga	Harga	Share (%)		Margin (%)		π/C
			SKI	SBI	SKI	SBI	
1	**Farmer**						
	Harvest Cost	3.549,22					
	Selling	25.500,00	79,68				
	Profit	21.950,78					6,18
2	**Village Collector**						
	Buying	25.500					
	Selling	27.000					
	Transport	200		0,63		3,07	
	Packing	22,22		0,06		0,34	
	Grading	35,00		0,11		0,53	
	Sorting	30,00		0,09		0,46	
	Unloading	11,11		0,03		0,17	
	Saving	55,00		0,17		0,84	
	Profit	1.146,67	3,58		17,64		1,45
3	**Supplier II**						
	Buying	27.000					
	Selling	32.000					
	Transport	125		0,39		1,95	
	Sorting	300		0,94		4,61	
	Grading	500		1,56		7,69	
	Oven	200		0,66		3,07	
	Packing	22,22		0,06		0,34	
	Saving	200		0,62		3,07	
	Unloading	11,11		0,03		0,17	
	Profit	3441,67	10,75		52,95		2,21
4	**Factory**						
	Buying	32.000					
	MP	6500					
Total			**94,01**	**6,01**	**70,59**	**29,38**	**9,84**

From the table 1.4, it may be seen that the marketing margin for every one kilogram of coffee is 6500 rupiahs. The profit share of trading system III is 94.01%, and the cost share is 6.01% with the profit at the farm level (PS) equal to 79.68%.

DISCUSSION:

The Efficiency Level of Robusta Coffee Commodity Value Chain in Silo District, Jember Regency:

A value chain may be considered to be successful if the system is able to achieve a certain level of efficiency with maximum profits gained by every trader (Wardhani 2013). In this study, the phenomenon encountered was the diverse price that was offered to the coffee farmers by both the sellers and buyers alike. This certainly affected the margins each trader earned, consequently affecting the efficiency gained in each trading system, which also became varied. Usually, the price differences were influenced by the quality of the coffee beans sold by farmers, the contractual agreement between the farmers and the collectors, and the convenience given by large collectors to the farmers, so that it could save them some formalities and procedures. While the purchase price (i.e. from the farmers) of Robusta coffee beans was usually around 100 – 850 rupiahs per kilogram, its selling price skyrocketed to whooping 25,500 – 26,250 rupiahs per kilogram. The prices quoted are that of

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January to May 2018. The results of Robusta coffee commodity margin analysis in Silo District, Jember Regency may be interpreted as follows:

1. The Analysis of Efficiency Level and Marketing Margin on Trading Sytem I:

The trading system I consists of the farmers as producers - Kertakasi Cooperative - big collectors. The value of marketing margin for every kilogram of Robusta coffee is 5,750 rupiahs. The profit of share value from trading system I is 95.91%, while the cost share incurred per kilogram of coffee is 3.4%. It could thereby be stated that trading system I is profitable, because the profit share is greater than the cost share incurred. Further, in the trading system I, farmers have legally binding contractual obligations with the Kertakasih Cooperative that must be fulfilled. For instance, at least 8 tons of coffee beans need to be sent during the first season until the third. The coffee beans must meet the basic quality standards like they should be 7.5 mm in diameter, have maximum water content of 17 Ka, and the maximum number of coffee beans destroyed and/or damaged should not exceed 12%. As seen earlier, this is the primary reason that farmers do not sell their crops to cooperatives. In addition, the price offered by the cooperative tends to be cheaper than the middleman in which 26,250 rupiahs per kilogram. This price tends to be lower than the purchase price of the middleman in which 26,350 rupiahs per kilogram. Of course, it is a driving factor for farmers to prefer to sell their crops to middlemen rather than the Kertakasih Cooperative. On the other hand, there is a pull factor that makes the farmers sell their crops to cooperatives; one of those reasons is the assistance provided by the government to members of the cooperative such as agricultural equipment, counseling, and financial aid. Although the price of coffee offered is 26,250 rupiahs per kilogram, the percentage of profit earned by the farmers is 5.30% from the price of the last consumer, i.e. the coffee factory, in which it becomes 32,000 rupiahs per kilogram. Meanwhile, the profit share obtained by the cooperative is 452.22 rupiahs per kilogram or about 1.41%. Some costs incurred for share are 20 rupiahs per kilogram or 0.06% for transport, 11 rupiahs per kilogram or 0.03% for packaging, 5.56 rupiahs or 0.02% for grading, and 11 rupiahs or 0.03% for sorting; while the margin distribution of the cooperative profit obtained from the profit value is equal to 7.84%. The margin obtained from the expense cost contains the margin of transportation cost, i.e. 0.33%, packing 0.18%, grading 0.09%, and sorting 0.18%. Additionally, in the trading system I, every 1.00 rupiahs incurred by the cooperative produces profit of 9.46 rupiahs per kilogram. In the Supplier I, the profit earned from trading system I is 3,992 rupiahs per kilogram or about 12.47%; and the costs incurred by cooperatives includes the transport cost of 225 rupiahs or 0.70%, the packaging cost of 22.22 rupiahs or 0.06%, the grading cost of 500 rupiahs or 1.55%, the sorting cost of 300 rupiahs per kilogram or 0.93%, the loading and unloading cost of 11.11 rupiahs or 0.03%. The Margin Distribution of the profit here is 3.992 rupiahs, i.e. 69.42%. The margin was obtained from the cost incurred such as 3.91% of transportation, 0.37% packaging, 8.69% of grading, 5.21% of sorting and 0.19% of loading and unloading.

2. The Analysis of Efficiency Level and Marketing Margin on Trading System II:

The trading system II consists of the farmers – village collectors - district collectors - Supplier II. This trading system is the trading system widely held by many farmers. This is because the farmers can sell coffee at a higher price than to the cooperative, whereby the quality of the sold coffee is not too binding, and the village collectors can lend funds for agricultural and personal needs of the farmers. The farmers choose to sell their crops first to the village collectors than the district collectors, because they do not have access to directly sell their coffee to the district collectors. In addition, the district collectors also have quite stringent conditions in order to be able to enter the district collecting market. Although this system is perceived to facilitate the farmers' access, it tends to be inefficient because it is the longest trading system in Silo District. The marketing margin on the trading system II is 6,650 rupiahs per kilogram. The profit share value is 89.16% and the cost share is 3.35%. Thus, it can be concluded that the trading system II is still profitable. The average selling price received by the farmers is 26,350 rupiahs per kilogram. Meanwhile, the farmer Share is 79.85% of the last price at the factory level, which is 33,000 rupiahs per kilogram. The profit share obtained from the village collectors is 319.86 per kilogram equivalent to 0.97%. The cost share incurred consists of the transport cost of 6.25 rupiahs per kilogram or 0.02%, the packaging cost of 11.11 rupiahs or 0.03%, the loading and unloading cost of 11.11 rupiahs or 0.03%, the grading cost of 5.56 rupiahs or 0.02%, the drying cost of 30 rupiahs or 0.09%, the storage cost of 55 rupiahs or 0.17%, and the sorting cost of 11.11 rupiahs or 0.03%. Then, the margin received by the village collectors from the profit earned of 319.86 rupiahs includes 0.09% for transport cost, 0.16%, for packaging, 0.16% for loading and unloading costs, 0.08% for grading, 0.45% for drying, 0.82% for storage, and 0.16% for sorting. In the trading system II, every 1.00 rupiahs of the cost incurred by the collectors will generate a profit of 2.45 rupiahs. For district collectors, the

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components of the cost share incurred by them consist of the transport cost of 51.42 rupiahs or 0.15%, the packaging cost of 22.22 rupiahs or 0.07%, the grading cost of 2.78 rupiahs or 0.08%, the sorting cost of 22.22 rupiahs or 0.07%, the storage cost of 50 rupiahs or 0.15%, the loading and unloading cost of 11.11 rupiahs or 0.03%. The margin distribution obtained by the district collectors from the profit of 365.25 rupiahs per kilogram includes 0.77% of the transport cost, 0.33% packaging cost, 0.42% of grading cost, 0.33% of the sorting cost, 0.75% of the storage cost, 0.16% of the loading and unloading cost. In every 1.00 rupiahs of the cost incurred by the district collectors, will generate a profit of 1.97 rupiahs. In contrast to Supplier II, the profit gained is much greater than the village collectors and the district collectors. This is due to the processing of coffee beans received from the collectors which are being processed again by using the machine to reduce the level of water content in order to dry and sort back from the dirt and the coffee damage. The cost share value for this coffee processing contains the transport cost of 22.86 rupiahs or 0.07%, the packing cost of 22.22 rupiahs or 0.07%, the grading cost of 250 rupiahs or 0.75%, the sorting cost 300 rupiahs or 0.90%, the storage cost of 5.55 rupiahs or 0,02%, the oven cost of 200 rupiahs or 0,60%. Whereas, for margin share obtained from the cost incurred includes the transport cost of 22.86 rupiahs per kilogram or 0.34%, packaging cost per kilogram 22.22 rupiahs or 0.33%, the grading cost of 250 rupiahs or 3.75%, the sorting cost of 300 rupiahs or 4.51%, the storage cost of 5.55 rupiahs or 0.08%, the loading and unloading cost of 11.11 rupiahs or 0.16%, and the oven cost of 200 rupiahs per kilogram or 3.01%. In the trading system II, every 1.00 rupiahs of the cost incurred by the district collectors will result in a profit of 2.90 rupiahs.

3. The Analysis of Efficiency Level and Marketing Marginon the Trading System III:

In the trading system III, the quality of coffee sold to the collectors is not very good. This is caused by the unpredictability of the weather and the location of the farmers' house, which naturally is far away from the coffee fields, in effect meaning that the coffee plant treatment can't be run optimally. Additionally, this distance from the field gives the local thieves a good ground to steal the coffee beans or they could be even eaten up by the animals. Consequently, the farmers' harvest in the trading system III tends to be smaller than farmers in both the trading system I and II. The average price of the coffee sold by the farmers to the coffee collectors is 25,500 rupiahs per kilogram. The price is much lower than the trading system I and II. The farmer's share amounts to 79.68% of the last price at the last consumer level, i.e. the coffee factory, which is about 32,000 rupiahs per kilogram. From the value of the farmer share, it can be seen that the system III at the farmer level is still efficient (PS> 70%). The share (profit) received by the village collectors is 1146.67 rupiahs with a share of 3.58%. Then, some costs incurred by them include the transport cost of 200.00 rupiahs kilogram or 0.63%, the packing cost of 22.22 rupiahs kilogram or 0.06%, the grading cost of 35.00 rupiahs per kilogram or as much as 0.11%, the sorting cost of 30.00 rupiahs per kilogram or 0.09%, the loading and unloading cost of 11.11 rupiahs per kilogram or 0.03%, and the storage cost of 55.00 rupiahs or 0.1%. In addition, it can also be seen that the cost margin in the village collectors is amounted to 353.33 rupiahs per kilogram or 1.09% for once distribution of the coffee commodities. The cost margin consists of the freight cost of 200.00 rupiahs per kilogram or 0.37%, the packing cost of 22.22 rupiahs per kilogram or 0.34%, the grading cost of 35.00 rupiahs or 0.53%, the sorting cost of 30.00 rupiahs per kilogram or 0.46%, the loading and unloading cost of 11.11 rupiahs or 0.17%, and the storage cost of 55.00 rupiahs or 0.84%. In the trading system I, every 1.00 rupiahs of the costs incurred by the cooperative, there is 1.46 rupiahs of the profit earned by the cooperative from the sale of coffee commodities in Silo District. The share (profit) received by the supplier II is 3441.67 rupiahs with a share of 10.75%. Then, some costs incurred by the cooperative include the transport cost of 125.00 rupiahs per kilogram or 0.39%, the packing section of 22.22 rupiahs per kilogram or 0.06%, the grading cost of 500 rupiahs or as much as 1.56%, the sorting cost of 300.00 rupiahs per kilogram or 0.94%, the loading and unloading cost of 11.11 rupiahs or 0.03% per kilogram, and the storage cost of 200 rupiahs or 0.66%. Meanwhile, for the margin distribution on the trading system III shows that the profit margin of 3441.67 rupiahs or 52.95% is only owned by the village collectors in Silo District. In addition, it can be seen that the cost margin in the village collectors is 1500 rupiahs one kilogram or 23.97% for the distribution of the coffee commodities. The cost margin consists of the freight cost of 125.00 rupiahs per kilogram or 1.95%, the packing cost of 22.22 rupiahs per kilogram or 0.34%, the grading cost of 500 rupiahs or 7.69%, the sorting cost of 200.00 rupiahs per kilogram or 3.07%, the loading and unloading cost of 11.11 rupiahs or 0.17%, and the storage cost of 200.00 rupiahs or 3.07%. In the trading system I, every 1.00 rupiahs of the costs incurred by the cooperative, there is 2.36 rupiahs of the profit earned by the cooperative from the sale of coffee commodities in Silo District.

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CONCLUSION:

Based on the explanations above, it may be seen that the market formed in the trading systems is an imperfect competition market structure. This is because the number of sellers is more than the buyers, and the goods sold are homogeneous. Additionally, obstacles of the outgoing market is also high. This is due to entering into the robusta coffee market in Silo District, the capital and the large costs are needed. The prices circulating in the market are also determined by the trade management agency. The systems formed from the Robusta coffee trading system in Silo District have three paths, namely:

a. Farmers - Cooperatives - Supplier I – Factory
b. Farmers – Village Collectors – District Collectors - Supplier II – Factory
c. Farmers – Village Collectors - Supplier II - Factory

The three trading sytems have three streams to smoothen the process of marketing Robusta coffee beans. The streams consist of the financial stream, the product stream, and the information stream. The three streams serve like a pillar in the marketing activities of Robusta coffee beans in Silo District from the farmers (upstream) to the factory (downstream).
The three systems of Robusta coffee trading systems in Silo District, have different efficiency values. In the first trading system, the farmer's share value of 51.97% is greater than the cost share incurred by 29.64%; the whole share of the profits in one trading system amounts to 95.91% with the cost share incurred at 3.4%. In the second trading system, the farmer's share is of 50.73%, and the cost share incurred is 29.64%; the whole share of the profits in one trading system amounts to 89.19%, with the cost share incurred at 3.35%. The third trading system, the value of the farmer's share is 40.47%, which is greater than the cost share incurred, i.e. 29.64%; the whole share of the profits in one trading system amounts to 94.61%, with the cost share incurred at 6.01%. From these calculations, it may be concluded that the most efficient trading system is the first trading system. This can be seen from the margins obtained at the institutions within the trading system, wherein the share profit existed for the farmers, and one trading system has been established to be bigger than the other trade rules.

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