SUPPLY CHAIN AND VALUE-ADDED ANALYSIS OF LAHAT COFFEE ON COFFEE SHOP IN PALEMBANG CITY

by Desi Aryani

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ABSTRACT

Lahat is one of the Robusta coffee production centers in South Sumatra. The coffee beans produced by this district are often used as raw material in the coffee shop in Palembang because of the distinctive taste and aroma that coffee lovers love. Coffee shops opens new opportunities for Robusta coffee farming. This study aims to analyze the flow of the supply chain and the added value of Lahat coffee beans used by coffee shop. This research was conducted through a survey of four coffee shops in Palembang. The results showed that there are two supply chain lines, (1) coffee farmers - collectors - retailers - market traders - consumers; (2) coffee farmers - processors - coffee shops - consumers. The second pattern is better and more profitable than the first pattern because the quality of the coffee produced is higher. The average added value obtained from processing one kilogram of coffee cherries into ground coffee is Rp. 158,132.94, coffee bean into green bean is Rp. 427,798.55, and green bean into a cup of coffee is Rp. 1,029,269.00. This value indicates that processing the coffee cherries into powder and processing the selected coffee cherries in coffee shop are profitable.
Key word: *coffee shop, robusta coffee, supply chain*

INTRODUCTION

Indonesia is the fourth largest coffee producing country in the world, after Brazil, Vietnam and Colombia (Kementrian Perindustrian, 2017). The coffee plantations are in Indonesia reaches 1.2 million hectares (Kementerian Pertanian, 2016). As one of the best coffee producing countries in the world, the coffee business in Indonesia can develop because of the large number of coffee raw materials produced by farme. Ironically, most people in Indonesia do not know that imported coffee brands are currently using local coffee raw materials (Larasati & Amelia, 2013).

South Sumatra Province is the largest coffee producing area in Indonesia with good quality and it has been recognized by the world. The coffee plantation area in this province is 20.3% of the total coffee plantation area in Indonesia. Coffee production in South Sumatra Province continues to increase every year and it has been recognized by the world. In 2016, coffee production in this province reached 184,168 tons and all of them were robusta coffee types (Kementerian Pertanian, 2016). One of the robusta coffee producers in South Sumatra Province is Lahat Regency. The total coffee production produced by this district in 2018 was 44,953 tonnes. Lahat Regency has the largest number of coffee farmers in South Sumatra. 66,690 coffee farmers depend on this sector for their livelihoods. The robusta coffee beans produced in this regency are widely used as raw material in the coffee shop business. The coffee produced from this regency has a distinctive taste and aroma of coffee. Thus, it is widely loved coffee lovers.

The rapid development of coffee shops has resulted in many coffee shop businesses in big cities, including Palembang. Palembang City as the capital city of South

Sumatra Province is an office center. In addition, Palembang City has a high percentage of the population belonging to the youth class. The percentage of Palembang City population aged 20-39 years reaches 33.20 percent (Badan Pusat Statistik, 2018). Coffee shop consumers are dominated by young people, ranging in age from 25-35 years (Stenley, 2009). The relation between coffee farmers, coffee shops and consumers will form a supply chain. The supply chain system will run smoothly, if there is certainty in the amount of supply of raw materials and certainty in the amount of demand for coffee beans. However, coffee beans that do not bother the red picking system and scarcity of raw materials in non-harvest season will have a negative impact on the coffee supply chain system in the coffee shop. Coffee shop entrepreneurs must have a good supply chain management system to reduce risks in supply chain activities. Supply chain management can reduce uncertainty in the supply chain system. This uncertainty can result in the coffee shop business being unable to run optimally (Noviantari et al., 2015).

The coffee shop business can provide added value for coffee farmers and improve the quality of the coffee produced (Diandrino et al., 2018). It is because coffee shops have high standards for coffee beans used in processing, such as red picking and drying that must be clean so that the price of coffee beans will also be much higher. Besides being able to provide added value, coffee shops can also provide certainty for the number of requests and prices to coffee farmers. This will affect production at the farm level. According to the description, this research aims to examine the supply chain and added value of Lahat coffee used by coffee shop entrepreneurs in Palembang.

RESEARCH METHOD

To represent the coffee shop business in Palembang City, this research was limited. the coffee shops as samples were those using coffee raw materials originating from Lahat Regency. Therefore, the research location was conducted purposively with the consideration that Lahat Regency is the center of coffee production in South Sumatra. Sampling for supply chain actors was carried out by means of snowball. This method was used because the whereabouts and numbers of the coffee supply chain actors were not clear. Respondents consisted of 10 coffee farmers, 2 coffee fruit collectors, 1 large trader, 1 processor, 4 coffee shop entrepreneurs, and 15 coffee shop consumers, so there were 33 respondents.

The data collected in this research were primary data and secondary data. Primary data was the source of data obtained by direct observation by interviewing the Lahat coffee supply chain actors using a list of questions or questionnaires. Secondary data was a source of data derived from literature studies, the Central Bureau of Statistics (BPS) and agencies related to coffee consumption that can support this research.

Supply chain system analysis is used to answer the first objective. The supply chain was a system that connected coffee entrepreneurs. The method used to identify the supply chain system in this research was descriptive method. Descriptive method was a method aimed to describe or provide an overview of the state of the lahat coffee supply chain and identify the activities conducted by each actor in the lahat coffee supply chain system.

Value added analysis used the Hayami added value method to determine the added value of coffee cherries into powder, red plucked coffee chunks into green beans and green beans into ready-to-drink coffee in coffee shops, as shown in Table 1. The amount of added value obtained can indicate the existence of coffee shop provides added value or not. This can be seen based on two value added criteria, as follow:

1. If NT> 0, it means that it gives a positive added value.
2. If NT <0, it means that it does not give added value and the result is negative.

Information:
A = Output or total coffee production produced.
B = Input or raw material used to produce coffee.
C = The labor used in producing coffee is calculated in HOK units (Labor Days)
F = Product price in effect during the analysis period in April 2020
G = The average wages received by workers in one production period, that is calculated based on the wages per HOK
H = The input price of the main raw material for coffee per kilogram during the analysis period in April 2020
I = Contribution or other input costs consisting of costs for supporting raw materials, depreciation costs and packaging costs

RESULT AND DISCUSSION

Supply Chain System

The supply chain is a series of productive activities from upstream to downstream that are interconnected between activities and forming a value chain is a concept of implementing a logistics system integrated in business activities. Besides, it is a chain of supply of materials and raw goods to finished goods. There are three types of flows that must be managed in the supply chain. The first stream is the product flow from upstream to downstream. The second stream is the flow of money flowing from downstream to upstream, and the third stream is the flow of information flowing from upstream to downstream and from downstream to upstream.

From Figure 1, two flow patterns are obtained, namely:
I. First pattern: Farmers – Collectors– Retailer – Traders – Consumers
II. Second pattern: Farmers – Processor – Coffee shop – Consumers

Supply Chain Flow Pattern I

Lahat coffee supply chain actors in the first stream consist of coffee farmers as the main raw material supplier, collective trader, retailers, market traders and consumers. All of these supply chain actors conduct activities that are interconnected with operational activities. Thus, they can produce coffee in the hands of consumers.

Farmer

Lahat coffee supply chain system starts from the upstream, such as farmers as producers of raw materials who carry out coffee plant cultivation activities. After the coffee cherries are harvested, the farmers sell the coffee cherries to collectors in the form of wet logs. Wet coffee is coffee fruit that is still intact and has not undergone any processing. 90% of the coffee harvest is accommodated by collectors.

The price of wet coffee is affected by the quality and quantity. The selling price given by the collectors during the main harvest is IDR 4,000 per kilogram, while the selling price set by the collectors when there is no harvest is IDR 5,000 per kilogram. The payment method used by collectors to farmers is cash. Information flow from coffee farmers to collectors in the form of information on the number of harvests. The purchase price for coffee is set at the collector level. Farmers are only the recipients of the price

Collective Trader

Activities conducted by collective trader are to collect coffee cherries harvested by farmers in the Lahat area. In their activities, collective traders do not need to pay transformation costs because the distance is not too far. Besides, farmers will also come to sell their harvest directly. Collective traders do not process wet coffee from farmers but only collect it and immediately sell wet coffee to retailers at a price of IDR 6,000 per kilogram. There is no price selection between one collective trader and another.

Table 1. The Procedure for Calculating the Added Value of the Hayami Method

Variable	Value
I. Output, Input, and Price	
1. Output (Kg/Month)	A
1. Raw material (Kg/Month)	B
2. Labor (HOK/Month)	C
3. Conversion factor	D = A/B
4. Labor coefficient	E = C/B
5. Output price (Rp/Kg)	F
6. Average wages of labor (Rp/HOK)	G
II. Income and Profits (Rp/Kg)	
7. Raw material prices (Rp/Kg)	H
8. Other input contributions (Rp/Kg)	I
9. Output value	J = D x F
10. Value added	K= J – I – H
11. Value added ratio	L % = (K/J) x 100%
12. Labor benefits	M = E x G
13. Labor proportion	N % = (M/K) x 100%
14. Profit	O = K – M
15. Profit rate	P% = (O/K) x 100%
III. Remuneration for Production Factors	
16. Margin	Q = J – H
17. Profit	R = O/Q x 100%
18. Labor	S = M/Q x 100%
19. Other input	T = I/Qx 100%

Source: Hayami (1987)

Retailer

Retailers or wholesalers process wet coffee beans from collective trader by grinding and distributing them in powder form to retail traders. The coffee will be self-trademarked at a higher selling price. Coffee will be packaged in several packaging sizes from 50gram, 100gram, 250gram, 500gram and 1kg with different prices depending on the packaging. 50 gram is IDR 2,000.00. 100 gram packaging is IDR 4,000.00. 250 gram package is IDR 12,000.00. 500 gram package is IDR 25,000.00 and 1kg is IDR 50,000.00

Seller

Wholesalers distribute ground coffee in packs to retailers/seller, both in the market and in stalls. Seller sell coffee directly to consumers at varying prices depending on the size of the packaging of 50-gram packs at a price of IDR3,000.00. 100gram packages is Rp.6,000.00. 250 gram packages is IDR 15,000.00. 500 gram packages is IDR 30,000.00 and 1kg packages is IDR 60,000.00.

Customer

Consumers are the most downstream part of the coffee supply chain. Consumers who buy Lahat coffee come from households in Palembang for their daily consumption. Consumers buy lahat coffee directly from retailers at a price set by the seller.

Supply Chain Flow Pattern II

The second flow pattern starts from coffee farmers as providers of raw materials, processors as intermediaries for farmers and coffee shop entrepreneurs, coffee shops, and consumers.
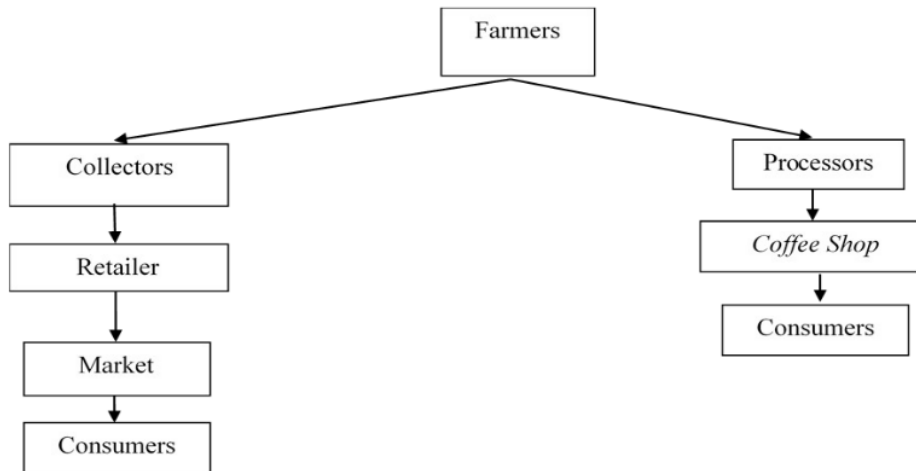
Figure 1. Lahat Coffee Supply Chain Flow
Source: Primary Data, 2020

Farmer

Lahat coffee farmers sell their robusta coffee crops to processors in the form of wet logs. Wet coffee sold to processors is only 10% of the yield. This is due to the number of requests from traders who are more than the number of requests for processors. However, the price of coffee sold to processors is higher because the harvest/crops of coffee sold to processors is selected red-picked coffee chunks of better quality than coffee beans sold to collectors. The price of red/cherry-picked wet logs is IDR 10,000 per kilogram. Farmers and processors make an agreement in determining the quality standard of coffee cherries. This agreement is based on trust and there is no written contract agreement. The benefits obtained by farmers with these two processors are accelerating the sales of coffee at a higher price than selling to collectors and increasing the skills and knowledge of farmers on better quality coffee.

Processor

The processor processes the wet coffee into green beans. The processor buys wet coffee from farmers with the standard red-pick coffee crops. Furthermore, the coffee cherries are washed and dried in the dome until the water content of the coffee beans reaches 40 percent. The processor will sell coffee in green bean form to coffee shop entrepreneurs in Palembang city. The price for green beans purchased by the coffee shop is IDR 45,000 per kilogram. The agreement between the processor and the coffee shop entrepreneur is free and trustworthy without a written agreement. Processors are free to sell to any coffee shop. Delivery of greenbeans from Lahat Regency to Palembang City via land route with the help of an expedition. Payment between the processor and the coffee shop is non-cash or bank-transfer.

Coffee shop

Coffee shop is the place to enjoy a cup of coffee with the facilities offered to consumers. In the coffee shop, green beans will be roasted and processed into roasted beans and coffee powder. The barista will make ready-to-drink coffee for coffee shop visitors based on the orders. Coffee shops in Palembang City that use coffee raw materials from Lahat Regency are Coffee Style, Doesoen Coffee, Benk Coffee and Fermented Coffee. The price per cup of coffee at the coffee shop varies depending on the coffee mix. The price of ready-to-drink coffee at the coffee shop ranges from IDR 15,000 - IDR 35,000 per cup. The coffee raw materials used by the coffee shop come from local coffee.

Customer

Consumers in this second flow pattern are coffee shop consumers. Most of the consumers are coffee lovers/coffee enthusiast. Consumers at a coffee shop do not just want to drink coffee, but also do other activities such as gathering with friends, meetings and other activities. Consumers at the coffee shop do not only enjoy the coffee but also enjoy a comfortable coffee shop atmosphere.

Supply Chain Mechanisms and Institutions

The supply chain mechanism for agricultural products can be traditional or modern. The supply chain mechanism for Lahat's robusta coffee to the Coffee Shop is modern. With the role of processors, farmers sell their coffee by standardizing well, such as red-picking coffee cherries and dry coffee beans in the dome, in which cleanliness is guaranteed and the delivery of coffee beans to the coffee shop is conducted quickly through goods-to-goods services. Thus, the quality of the coffee beans is maintained. It can overcome the weaknesses of coffee production and improve the economic welfare of coffee farmers.

Supply chain institutions are management relationship or work systems that are systematic and mutually supportive among several supply chain partnership institutions in a commodity. The purpose of supply chain institutions is to overcome the weaknesses of the harvest and improve the social welfare of farmers. The farmer and processor association is a good subscription bond without any contra-agreement, while the partnership institutional pattern is implemented by processors and coffee shop entrepreneurs by establishing a cooperative relationship using an agreement mechanism.

Value Added Analysis

Added value is the difference between the value of production and the value of raw materials and the value of other inputs besides labor. The added value of coffee in the coffee shop calculated is the result of sales for one month. The added value calculated is the added value of processing coffee cherries into ground coffee and coffee cherries into ready-to-drink coffee at the coffee shop.

Processing of Coffee Cherry into Ground Coffee

The added value obtained from processing one kilogram of ground coffee is an average of IDR 158,132.94. This added value is the gross added value because it does not include employee benefits. The added value ratio for ground coffee processing is 67.09 percent. It means that for every IDR 100.00 the value of the product will be obtained an added value of IDR 67.09. The profit for processing ground coffee is IDR 127,660.98 per kilogram with a profit rate of 80.73 percent.

Processing of Coffee Cherry into Green Bean

The added value in one kilogram of green bean is IDR 427,798.55 with an added value ratio of 86.95 percent. It means that for every IDR 100.00 the value of the product, the added value to be obtained is IDR 86.95. Profits in processing coffee cherries into green beans reached IDR 395,684.36. The amount of added value is caused by the raw materials used are selected red coffee cherries so that the quality of the coffee produced has an advantage. With good quality coffee processors can sell green beans to coffee shop entrepreneurs at high prices.

Processing of Green Beans into Ready-to-Drink Coffee at the Coffee Shop

The added value for ready-to-drink coffee in the coffee shop provides a great added value of IDR 1,029,269.00 with an added value ratio of 64.17 percent. It means that every IDR 100.00 the value of the product, the added value of ready-to-drink coffee is IDR 64, 17. The added value of ready-to-drink coffee is smaller than the added value of processing coffee into green beans, because the raw material used is not the coffee beans from the farmers, but the green beans selected by the processor.

Table 2. Analysis of the Added Value of Lahat Coffee

No	Variable	Coffee cherry into Grounded Coffee	Coffee cherry into Greenbean	Greenbean into Ready to Drink Coffee
	Output, Input, and Harga			
1	Output (Kg/Month)	300	405	330,78
2	Raw material (Kg/ Month)	70	98,78	250
3	Labor (HOK/Month)	60	93,31	117,5
4	Conversion factor	4,29	4,10	1,32
5	Labor coefficient	0,86	0,94	0,47
6	Output price (Rp/Kg)	55.000	120.000	812.000
7	Average wage of labor (Rp/HOK)	35.550,62	33.996,78	90.889,99
	Income and Value Added (Rp/Kg)			
8	Raw material prices (Rp/Kg)	4.500	10.000	45.000
9	Other input contributions (Rp/Kg)	73.081,35	54.203,88	340.000,00
10	Output value	235.714,29	492.002,43	1.074.373,44
11	a. Value added	158.132,94	427.798,55	689.373,44
	b. Value added ratio (%)	67,09	86,95	64,17
12	a. Labor benefit	30.471,96	32.114,19	42.718,30
	b. Labor proportion	19,27	7,51	6,20
13	a. Profit	127.660,98	395.684,36	646.655,14
	b. Profit rate	80,73	92,49	93,80
	Balas Jasa untuk Faktor Produksi			
14	Margin	231.214	482.002	1.029.373
	a. Profit	55,21	82,09	62,82
	b. Labor	13,18	6,66	4,15
	c. Other input	31,61	11,25	33,03

Source: Primary Data, 2020

However, the biggest profit from the added value of ready-to-drink coffee is IDR 646,655.14 with a profit ratio of 93.80 percent.

The high profit is due to the ready-to-drink coffee served by the barista in the coffee shop using coffee brewing technology and supporting facilities in the coffee shop that pamper consumers, especially coffee lovers.

CONCLUSIONS

The results of the research showed that the parties involved in the supply chain flow of lahat coffee consisted of two patterns, there are (1) coffee farmers - collectors - retailers - market traders - consumers and (2) coffee farmers - processors - coffee shops - consumers. The second pattern is better and more profitable for farmers, both from the price received by the farmer and the quality of the coffee produced. The supply chain mechanism by selling to coffee shops is also

more modern and farmer institutions can be built. Thus, they can overcome the weaknesses of the harvest and improve the welfare of farmers. The average added value obtained from processing one kilogram of coffee cherries into ground coffee is IDR 158,132.94, IDR 427,798.55, and green bean into ready-to-drink coffee at the coffee shop IDR 1,029,269.00. This value shows that processing coffee cherries into powder, red/cherry-pick coffee into green beans and green beans into ready-to-drink coffee at the coffee shop is profitable.

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