Strategy Directions for the Potential Development of Robusta Coffee Based on Social Forestry with Value Chain and Added Value Approaches

R. P. Yekti A[1], O. J Anggraeni[2], R. Perlambang CNAWP[3], R. A. Djamali[4], D. E. Putra[5]

[1,2,3,4,5]*Agribusines Management Departement, Politeknik Negeri Jember, Jember 68101 East Java, Indonesia*
abdoel_djamali@polije.ac.id

Abstract

LMDH "Rengganis" Pakis Village, Panti Subdistrict, Jember Regency is one of the social forestry programs that involves forest village communities to use it for productive activities and to improve the economy of rural communities around the forest. However, along the way, it faces many obstacles, including the lack of knowledge of farmers, the facilities for developing agro-industry and cooperative institutions at the village level are still limited. The purpose of this study is to design a strategy for developing the Value Chain of coffee products and Added Value of coffee products, as well as to identify opportunities to increase the economic value of coffee products. The method used is descriptive exploratory by determining the area purposively. The analysis technique used is Value chain analysis (VCA) and added value analysis (AVA). The method of collecting data is using a questionnaire through in-depth interviews. The data used consists of primary data and secondary data. Conclusions: (a) Based on the value chain analysis where the main and supporting activities to build the value chain are carried out entirely in the LMDH "Rengganis" work area including inbound logistics, operations, outbound logistics, marketing, and services. While the supporting activities include: firm infrastructure, HRM, Technology development and procurement that are integrated and coordinated to achieve value added from each coffee product processing segment, (b) The value chain is built from processing cherry coffee to ground coffee as follows: (1) The yield of processing green bean coffee is 48%, roasted coffee 72% and coffee powder 70.25% (from green bean coffee), (b) The added value of processing green bean coffee is Rp. 6,690/kg, roasted coffee is Rp. 58,500/kg and Rp. 20,251 /kg, (c) Percentage of added value for processing green bean coffee 49.78%, roasted coffee 65%, and roasted coffee 13.97%, (d) Labor income for green bean coffee Rp 2500/kg, roasted coffee Rp 1,000/kg , and roasted coffee Rp. 694.44/kg, and (e) Margin to the company's profit from processing green bean coffee Rp. 6.940/kg (60.37%), roasted coffee Rp. 62.000/kg (92.74%), and roasted coffee Rp. 27,041/kg (73.39%).

I. Introduction

The concept of social forestry can be implemented on traditional forest lands, namely state forest areas and other lands, such as yards, fields, or gardens. Therefore, first of all, the aim of developing social forestry is to involve the people who live in and within the forest area to participate in empowering existing forest resources. The concept of "social forestry"

_____

29840

that social forestry is the science and art of planting trees and or other plants on land that is possible for certain purposes, inside or outside forest areas, and managing them intensively by involving the community. This management is integrated with other activities, so that there is a balance and complement each other's land use with a view to providing goods and services widely to both individual cultivators and the community (Djamali, 2022). In accordance with the confirmation by the President of the Republic of Indonesia in April 2017 regarding the declaration of a government program for economic equity, the Ministry of Environment and Forestry (KLHK) issued Permen LHK Number 39 of 2017, namely Social Forestry in the working area of Perum Perhutani. Based on data from Perhutani Forest Management Unit (KPH) Jember, there are 59 villages spread across 16 sub-districts in the Forest area (San Afri, 2008).

One of the Forest Village Community Institutions (LMDH) in Jember Regency which has received a Decree from the Indonesian Ministry of Environment and Forestry concerning the Recognition and Protection of Forestry Partnerships (KULIN KK) Number 4298/MENLHK/-PSKL/PKPS/PSL.0/4/2019 between LMDH "Rengganis" Pakis Village, Panti District, Jember Regency and the Jember Forest Management Unit (KPH) covering an area of ± 1,032.19 hectares. The forest area managed by LMDH "Renggaris" is cultivated by 536 households or an average of 1.93 hectares per family. What is meant by the issuance of the KULIN KK is for: (a) area utilization business, (b) timber forest product utilization business in permanent production forest area (HP), (c) non-timber forest product utilization business (NTFP) in the form of utilization of intercropping plants, use of land under stands (PLDT), (d) business of utilizing environmental services, and (e) rehabilitation of protected areas or protected forests.

Considering that the social forestry program carried out by LMDH Rengganis is very strategic which includes 3 main things, namely: (a) economic aspects, namely the area of the land has been planted with several types of plants namely Robusta coffee/Coffea canephora (85%) and durian (7%) , avocados (3%), bananas (3%), and bananas (2%), which of course have made a real contribution to regional economic growth and have a multiplier effect in other development fields, (b) social aspects, from 536 households as sharecroppers Perhutani land has been able to boost the welfare of forest village farmers who have usually been indicated to be one of the pockets of poverty in Jember Regency, and (c) the legal aspect, the issuance of the KULIN KK is of course very important as a strong legal basis for doing cultivation. plants in the use of production forest areas and protected forests.

The existing conditions of coffee agribusiness for farmers working on this social forestry program are: (a) low productivity of robusta coffee plantations under industrial forest stands at 0.8 quintals of ose coffee per hectare and for robusta coffee under protected forests 1.3-1.5 quintals of ose coffee per hectare, (b) types of robusta coffee varieties grown are not superior varieties, (c) coffee cultivation methods that are still traditional, (d) the low level of knowledge of farmers in mastering harvest technology and post-harvest handling is still low which results in low coffee quality, (e) 100% of coffee products are marketed in ose form to middlemen (middlemen) at the village level, (f) there is no roasted coffee and ground coffee processing agro-industry at the village level, (g) there is no coffee farmer cooperative that acts as an institution joint economic support for coffee farmers.

Seeing the gap between the potential business opportunities and the existing conditions of coffee farmers in the "Rengganis" LMDH, it is necessary to make concrete efforts and deliver them to increase robusta coffee agribusiness productivity through social engineering, economic engineering, and engineering technology for integrated use. One of them is by analyzing the value chain and added value of robusta coffee products at LMDH Panti Village.

Value chain is an activity that exists in the company to support the company, such as designing, designing, and marketing (Porter, 1985). The value chain model is used to increase the business value of coffee products in each value chain as well as opportunities for economic improvement.

Hayami's method in analyzing added value is often and commonly used in processing subsystems in agribusiness systems. Added value is the difference between the values of the commodity that is treated at a certain stage minus the value of the sacrifice used during the process. The supporting concepts in this method are: (1) Conversion factor (2). Labor coefficient, and (3). Output Value (Lailia, 2020; Hidayat, 2012).

The specific objectives of this research are: (a). determine the value chain and value chain model according to the needs of the "Rengganis" Forest Village Community Institution, (b). determine the Added Value of coffee products, and identify opportunities to increase the economic value of coffee products. This research was conducted in Jember Regency in Panti Subdistrict, Pakis Village.

II. Research Methods

2.1. Method of Determining Research Locations and Implementation Time

The location of the research was determined purposively, namely at the Village Community Institution (LMDH) "Rengganis" Pakis Village, Panti District, Jember Regency. The time of the research was carried out for 8 months starting from April to November 2022. The main consideration for choosing the location was that the LMDH was the only LMDH that was successful in forest village coffee agribusiness in KPH Perhutani Jember.

2.2 Design Research

The research method used is exploratory descriptive aiming to describe the state of a phenomenon, in this study it is not intended to test certain hypotheses but only describes what a variable, symptom or situation is (Sugiyono, 2022). The method used in data collection is observation and survey. This study uses primary and secondary data. Primary data were obtained through in-depth interviews from LMDH and secondary data obtained from LMDH, literature studies, and Perum Perhutani Jember Regency.

2.3 Analysis Techniques
a. Value Chain Analysis (VCA)

The analytical technique used in this research is value chain analysis, which is a collection of activities within the company that are carried out to design, produce, market, deliver, and support products (Sugiyono, 2022). The value chain generally consists of supporting activities and main activities that will add value to the product. Supporting activities consist of company intrastructure, human resource management, technology development, and procurement. The main activities consist of inbound and outbound logistics, operations, marketing and sales, and service

From Figure 1. It can be seen that all activities affect the added value of the product. The explanation of each activity is as follows:

The main activities consist of:
1. Inbound logistics related to the receipt, storage, distribution of raw materials.
2. Operations, converting raw materials into finished goods
3. Outbound logistics, collection, storage and distribution of products to consumers.
4. Marketing and Sales (Marketing and Sales) to attract consumers
5. Services, which relate to the provision of services to increase and maintain product value.

Figure 1. *Value Chain Michael Porter's*

Support activities consist of:
1. Firm Infrastructure, consisting of management, finance, legality, and planning
2. Human Resource Management, consisting of HR development, recruitment, training, employee relations, compensation
3. Technology Development, consisting of integration of supply chain systems and things that improve the company's products.
4. Procurement, consisting of activities to purchase raw materials, inventory of supporting goods, and current inventory

b. Added Value Analysis

Value Added Analysis Analysis of the added value of coffee agroindustry products using the Hayami method. According to Hayami (1990) in Sudiyono (2004), there are two ways to calculate added value, namely added value for processing and added value for marketing. The procedure for calculating added value according to the modified Hayami method can be seen in the following table:

Table 1. Hayami Method of Value Added Calculation Framework

Variable			
I. Output, Input, and Price			
1	Output	kg/th/ha	(1)
2	Raw Material Input (coffee harvest weight)	kg/th/ha	(2)
3	Direct Labor	HKP/ha	(3)
4	Conversion Factor		(1/2)
5	Labor Coefficient	HKP/kg	(5)=(3/2)
6	Product Price	Rp/kg	(6)
7	Direct Labor Wages	Rp/HKP	(7)
II. Revenue and Profit (Rp/kg raw material)			
8	Raw material prices	Rp/kg	(8)

9	Other Input Donations	Rp/kg	(9)
10	Output value	Rp/kg	(10)=(4x(6)
11a	Value-added	Rp/kg	(11a) = (10)-(9)-(8)
11b	Value Added Ratio	%	(11b) = (11a) / 10)x100%
12a	Labor Rewards or Income	Rp/kg	(12a) = (5)x(7)
12b	Labor Section	(%0	(12b)=(12a/11a)x100%
13a	Profit	Rp	(13a)=(11a)-12a)
13b	Profit Ratio	%	(13b)=(13a/10)x100%
III. Retribution for Factors of Production			
14	Margin	Rp/kg	(10)-(8)
	a. Labor Income	Rp	(12a)/(14)x(100%)
	b. Other input contributions	Rp	(9)/(14)x(100%)
	c. Company Advantage	Rp	(13a)/(14)x100%

Source: Hayami, *et al (1987)* (Modified)

III. Discussion

3.1 Value Chain Analysis (VCA)

In discussing VCA as offered by Porter, it can be seen that all activities affect the added value of the product. The explanation of each activity is as follows:

a. The Main Activities Consist

1. Inbound logistics related to the receipt, storage, distribution of raw materials
   LMDH "Rengganis" which consists of 536 robusta coffee farmers spread across 3 villages at the foot of Mount Argopuro, Panti District, Jember Regency, namely Pakis Village, Kemuningsari Village and Suci Village. More than 80% of the LMDH members are in Pakis Village, which is the highest village position at the foot of Mount Argopuro. Farmers cultivate robusta coffee which is traditionally managed with a spacing of 3x2 meters under forest stands. The spacing causes the intensity of light received by coffee plants is very less, causing relatively low productivity. Ideal in this partnership pattern with a spacing of 6x2 meters so that there is sufficient space for the growth and development of coffee under forest plantation stands. Coffee plants that produce or produce that are managed by farmers have an average age of more than 7 years. The productivity of Robusta coffee cherry harvest produced by LMDH members is on average 1 ton per hectare per year. The production facilities needed are only labor and 60 HKP per hectare per year, NPK fertilizer worth Rp 1 million.
2. Operations, converting raw materials into finished goods. In the processing of coffee cherry harvests carried out by LMDH farmer members, there are three options, namely (a) dry system (dry system) and wet system (wet system), natural pulp (honey process)

b. Dry Process

This dry process is the most widely used green bean processing method in Indonesia. For some coffee-producing areas such as Sumatra and Java, the dry process has been believed to produce a better taste and aroma of coffee. In this dry method, the drying process on average takes about 3-4 weeks and the coffee must be rotated frequently so that all parts of the coffee cherries are completely dry. In the dry method, the coffee beans are dried without first removing the mucus from the coffee cherries. The dry method may involve absolutely no

water at all. In Pakis Village, almost 85% of farmers apply dry process coffee processing. There are two options in the Dry Process method, namely:

c. Honey Process

1. Picking coffee cherries from trees.
2. Performing the "pulping" process or separating the horn-skinned coffee beans from the coffee flesh. The pulping process is usually carried out using a special machine.
3. Ferment the coffee beans in the sack for 1×24 hours to remove all the coffee mucus.
4. Clean the coffee beans from mucus by using running water.
5. Drying the coffee beans for approximately 8 hours until the water content is 12-13% in accordance with export standards.
6. After the coffee beans are dry, the next step is the "Huller" process or the separation of the horn skin from the green beans.
7. After the huller process is complete, the green bean has been obtained, then the green bean sorting process is carried out according to the desired grade.
8. Green beans are then sold to the market according to the sorting grade that has been done.

d. Natural Pulp Method (Natural Process)

The stages are as follows:
1. Coffee cherries are picked from the tree.
2. Dry coffee cherries to dry.
3. Dried coffee cherries, huller directly with coffee beans inside.
4. Then you will get green coffee beans that have been separated from the coffee fruit flesh and horn skin.
5. Green bean coffee with the Natural Pulp method still has mucus from the coffee cherries attached. Because of this sticky mucus, the Natural Pulp process is commonly called the "Honey Process".
6. Green beans that are still slimy are then dried in the sun to a moisture content of 12-13% in accordance with export standards.

Coffee from the Dry Method, this natural pulp process is considered to be able to give fruity notes to coffee, with general hints such as blueberries, strawberries or tropical fruits. Coffee also tends to have low acidity, exotic flavors and more body. If you look at the 2 processes above, the main difference between the Dry process and Natural Pulp is the Huller process. The dry process is pulped first and then the huller, but for Natural Pulp, the coffee cherries are directly hullered together with the coffee beans. Another difference is in the fermentation process where the Dry process has gone through a fermentation process, while Natural Pulp does not go through a fermentation process.

d. Wet Process

In the Wet Method, this process must completely remove the sap and the parchment by friction, fermentation, and water. After harvesting, the coffee cherries are sliced open, and the beans taken from the fruit are whole, leaving only the outermost layer. Then the coffee can be fermented naturally breaking down the outer layer within six hours or four or it can be removed by machine.

There are two process options that can be carried out in the wet method:
1. Semi Wash
   This process is very commonly used in Indonesia and Brazil. In this process, the mucus attached to the horn skin is removed by putting the seeds in a sack for 12-24 hours. When stored in this sack, the mucus of the coffee fruit will begin to peel off. The semi-

wash process will produce coffee beans that are rough, not slippery and slimy anymore. Then the coffee beans are rinsed with water and start the drying process. The semi-wash process will reduce the sour taste of the coffee beans. The result will be a stronger body making it suitable for espresso.

2. Full Wash

   This process removes mucus by immersing it in water. The soaking process will take 12 hours. At the 6th hour, the immersion water was replaced with new water. After the soaking process, the coffee beans will be free from this mucus, rinsed and then begin to dry in the sun. The taste character of coffee that is processed in full-wash is light and mild.

3. Coffee from the Wet Method generally has a cleaner character, is light, has a slightly fruity taste, the body tends to be light and soft with more acidity. The production cost of the wet process is more expensive than the dry process. Wet process is often used to process Arabica coffee. The reason is because this type of coffee is priced quite high. So that the processing costs incurred are still proportional to the price to be received. Here are the steps for processing coffee with a wet process.

4. The coffee cherry processing method in the field carried out by farmers in Pakis Village where almost 85% use the dry method (natural process) while the remaining 15% apply the semi wash method

5. Outbound Logistics; where the green bean coffee produced by LMDH Rengganis coffee farmers is completely sold in the form of ose coffee or random coffee to middlemen traders at the village level. collection, storage and distribution of products to consumers

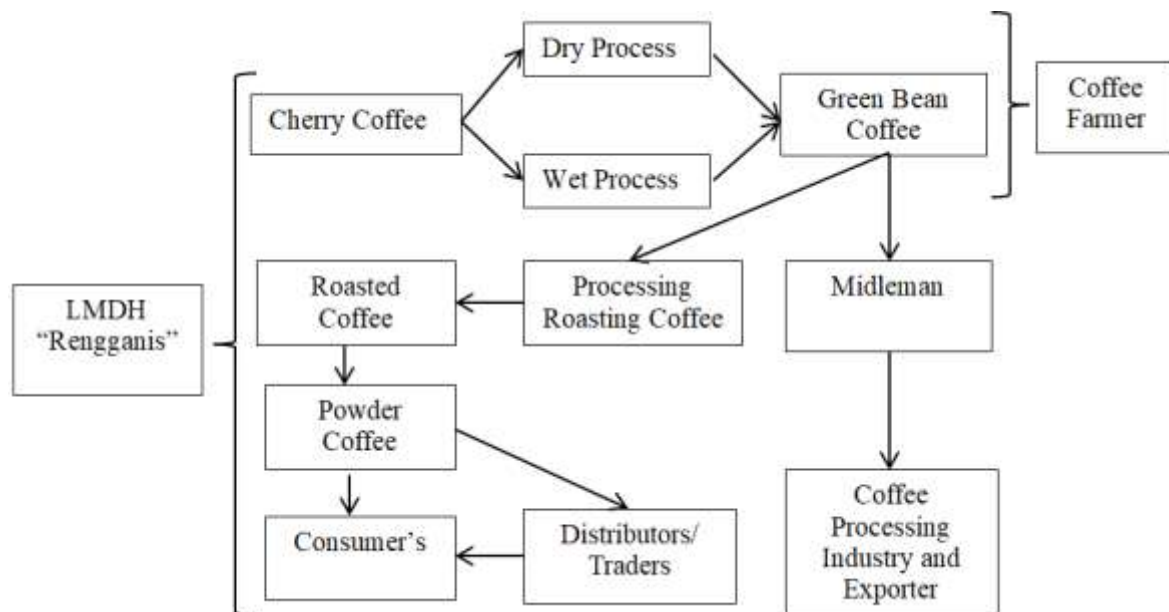6. Marketing and Sales (Marketing and Sales) to attract

Figure 2. *Chain of Processing and Marketing of Coffee Products in LMDH "Rengganis" Pakis Village, Panti District, Jember Regency*
Source: Primary Data Processed, 2022

7. Services, which relate to the provision of services to increase and maintain product value. The services provided by LMDH "Rengganis" are managing and fostering members of coffee farmers who are members of forest village community groups in utilizing land under forest plantation stands. Through the work program arranged in

LMDH, it is a concrete effort to optimize the Recognition and Protection of the Forestry Partnership (KULIN KK) where forest village communities at the foot of Mount Argopuro can use it for the cultivation of annual plants under forest plantation stands, both protected forests and industrial forests.

Support activities consist of:

8. Firm Infrastructure, consisting of management, finance, legality, and planning. The infrastructure managed by LMDH "Rengganis" is still very limited, consisting of: office facilities and infrastructure, a durian tourist area, and a coffee roasting processing installation consisting of roastery, blending, grinder, and sealer.

9. Human Resource Management, consisting of human resource development, recruitment, training, employee relations, compensation. What can be done by LMDH "Rengganis" so far is only to foster and direct members to take part in various trainings from agencies/offices/departments/PT that have programs to increase and develop the productivity of smallholder coffee farmers.

10. Technology Development, consisting of integration of supply chain systems and things that improve the company's products. What is needed by LMDH "Rengganis" members is to build a supply chain (supply chain management) starting from farmers, traders, coffee processing industries, until the final product reaches the hands of consumers into a series of Vertical Interactions with the most efficient business chain system. The presence of universities together with local governments and industry to want to design business networks that are mutually beneficial to all business people.

11. Procurement, consisting of activities to purchase raw materials, supplies of supporting goods, and current inventory. The main problems faced by forest village coffee farmers are difficulty in obtaining fertilizer and prices that are far above the ability of farmers. In the last 5 years, it has shown a worsening development which of course resulted in a decrease in coffee productivity which overall decreased by up to 50%. This happens because farmers are only able to obtain and buy only 50% of fertilizer, which is 1-2 quintals per hectare.

So it can be concluded in the development of kopu product value chain that:

1. The main and supporting activities to build the value chain are carried out entirely in the working area of LMDH "Rengganis", Desa Pakis, Kecamatan Panti, Kabupaten Jember. The main activities include inbound logistics, operations, outbound logistics, marketing, and services. While supporting activities include: firm infrastructure, HRM, Technology development and procurement that are integrated and coordinated to achieve value added from each segment of coffee product processing.

2. The value chain that is built from coffee production and processing includes activities (1) harvesting and post-harvesting coffee at the on-farm level which is very dependent on the plant maintenance process that uses especially labor and fertilizers. Harvest and post-harvest handling consists of two methods, namely wet process and dry process to obtain green bean coffee

3.2 Value Added Analysis

The product from harvest and post-harvest processing of coffee is in the form of green bean coffee or known as random coffee/ose coffee, which is processed in a dry system. Where almost 85-90% of LMDH farmers' ose coffee products are sold to middlemen traders at the village level

Figure 3. *Value Chain and Added Value of Green Bean, Roasted Coffee, Ground Coffee at LMDH "Rengganis" Pakis Village-Panti Sub-district, Jember Regency in 2022*

Until now, farmers in processing coffee still rely on habits and relatively very little innovation in processing and developing processed coffee products. To measure the added value of coffee from ose coffee to roasted coffee and ground coffee, Hayami's analysis technique is modified as follows:

Table 2. Added Value of Coffee in Green Bean, Roasted Coffee, Powdered Coffee with the Hayami Method at LMDH "Rengganis" Pakis Village-Panti Sub-district, Jember Regency in 2022

	Variabel			Value		
I. Output, Input, and Proce Harga				**Green Bean Coffee**	**Roasted Coffee**	**Coffee powder**
1	Output	kg/th/ha	(1)	480.00	72.00	70.58
2	Raw Material Input (coffee harvest weight)	kg/th/ha	(2)	1,000.00	100.00	72.00
3	Direct Labor	HKP/ha	(3)	50.00	2.00	1.00
4	Conversion Factor		(1/2)	0.48	0.72	0.98
5	Labor Coefficient	HKP/kg	(5)=(3/2)	0.05	0.02	0.01
6	Product Price	Rp/kg	(6)	28,000.00	125,000.00	150,000.00
7	Direct Labor Wages	Rp/HKP	(7)	50,000.00	50,000.00	50,000.00
II. Revenues and Profits (Rp/kg of raw materials)						
8	Raw material prices	Rp/kg	(8)	6,500.00	28,000.00	120,000.00
9	Other Input Donations	Rp/kg	(9)	250.00	3,500.00	6,500.00
10	Output value	Rp/kg	(10)=(4x(6	13,440.00	90,000.0	147,041.6

				0	7
11a	Value-added	Rp/kg	(11a) = (10)-(9)-(8)	6,690.00	58,500.00	20,541.67
11b	Value Added Ratio	%	(11b) = (11a) / 10)x100%	49.78	65.00	13.97
12a	Labor Rewards or Income	Rp/kg	(12a) = (5)x(7)	2,500.00	1,000.00	694.44
12b	Labor Section	(%)	(12b)=(12a/11a)x100%	37.37	1.71	3.38
13a	Profit	Rp	(13a)=(11a)-12a)	4,190.00	57,500.00	19,847.22
13b	Profit Ratio	%	(13b)=(13a/10)x100%	31.18	63.89	13.50
III. Retribution for Factors of Production						
14	Margin	Rp/kg	(10)-(8)	6,940.00	62,000.00	27,041.67
	a. Labor Income	%	(12a)/(14) x(100%)	0.36	0.02	0.03
	b. Other input contributions	%	(9)/(14)x(100%)	0.04	0.06	0.24
	c. Company Advantage	%	(13a)/(14) x100%	60,37	92,74	73,39

Source: Hayami, *et al* (1987) Modified

Based on table 3 above, it shows that:

a. The added value of green bean coffee starts from the production level of cheery robusta coffee produced by LMDH member farmers "Rengganis" which averages ±1 ton per hectare per season, which is then processed into green bean coffee as much as ±480 kg of ose coffee/hectare/season. With the purchase price of cherry coffee of Rp. 6500 per kg, it turns out that after being processed into green bean coffee, the value increases to Rp. 13,440 per kg or an added value of Rp. 6,690 per kilogram (49.78%). a profit of 31.38% of the output value. Meanwhile, the remuneration for the production factors used in the processing of ose coffee is Rp. 6.940/kg and contributes 60.37% to the company's profits. The added value produced is highly dependent on the price of cherry coffee, the yield of ose coffee produced ± 48%, the quality of the coffee, the price of ose coffee, the number of workers and other supporting production inputs.

b. Ose coffee produced by LMDH "Rengganis" coffee farmers is around 500 tons per year or Rp. 3.2 billion per harvest season. It turns out that from the number of ose coffee harvests that are processed into ground coffee, there are no more than 400 kg of ose coffee per season (only 0.081 percent). Processing of ose coffee into roasted coffee at LMDH "Rengganis" until now has only been carried out at the coffee processing working group (Pokja) level because until now there has only been one set of coffee roasting processing. The added value (added values) of roasted coffee is obtained from the processing of ose coffee for further roasting using a roastery owned by LMDH "Rengganis". The yield of roasted coffee beans produced is highly dependent on the

level of brewing and the quality of the ose coffee produced. If the raw material for Ose coffee comes from 100% cherry coffee, the yield can increase up to 5%. The yield level of sangai coffee beans against ose coffee beans is 72%, so the higher the yield, the more profitable the company will be. With a selling value of Rp 125,000/kg, an added value of Rp 58,500 (65% margin from ose coffee) and a profit of Rp 57,500 per kg (63.89%). So that the profit margin for the company is Rp 62,000/kg or around 92.74%.

c. c. The roasted coffee produced enters the next stage of grinding, namely the flouring process using a grinder machine. At this stage there is a maximum shrinkage of about 2% as a result of evaporation in the flouring and enrichment process. The only costs required are labor, electricity, and packaging materials. The added value ratio achieved was 13.97% or Rp 20,541 per kg. The contribution to the company's profit margin is 73.39% or Rp 27,041 per kg.

d. So it can be concluded from the value chain built from processing cherry coffee to ground coffee at LMDH "Rengganis" Pakis Village-Panti Jember District as follows:
   1. Processing yield of green bean coffee 48%, roasted coffee 72% and coffee powder 70.25% (from green bean coffee)
   2. The added value of green bean coffee processing is Rp. 6,690/kg, roasted coffee is Rp. 58.500/kg and Rp. 20.251/kg
   3. Percentage of added value for processing green bean coffee 49.78%, roasted coffee 65%, and roasted coffee 13.97%
   4. Labor income for green bean coffee is Rp. 2500/kg, roasted coffee is Rp. 1,000/kg, and roasted coffee is Rp. 694.44/kg
   5. Margin on company profits from processing green bean coffee Rp 6,940/kg (60.37%), roasted coffee Rp 62,000/kg (92.74%) and roasted coffee Rp 27,041/kg (73.39%)

The strategic directions that need to be developed to increase the value chain and added value of robusta coffee produced by farmers at LMDH "Rengganis" are as follows:

a. There is a need for consistent and comprehensive regulatory support from the local government and central government in order to protect the interests of farmers in utilizing forest areas for the economic activities of forest village communities.

b. Integrating and synchronizing all stakeholders in economic empowerment and strengthening programs and institutions for smallholder coffee farmers in forest village areas

c. There is a need for comprehensive technical assistance to coffee farmers from on-far to off-farm

d. On the processing side of harvested coffee, processing equipment for roasting ground coffee is needed so that it is ready to be marketed to consumers in sufficient quantities to process at least 5% of the total green beans produced.

e. It is necessary to organize and develop the marketing of green bean coffee and ground coffee products based on digital marketing

IV. Conclusion

1. Development of the coffee product value chain as follows:
a. The main and supporting activities to build the value chain are carried out entirely in the work area of LMDH "Rengganis", Pakis Village, Panti District, Jember Regency. The main activities include inbound logistics, operations, outbound logistics, marketing, and services. While supporting activities include: firm infrastructure, HRM, Technology development and procurement that are integrated and coordinated to achieve value added from each segment of coffee product processing.

b. The value chain that is built from coffee production and processing includes activities (1) harvesting and post-harvesting coffee at the on-farm level which is very dependent on the plant maintenance process that uses especially labor and fertilizers. Harvest and post-harvest handling consists of two methods, namely wet process and dry process to obtain green bean coffee

2. The value chain built from cherry coffee processing to ground coffee at LMDH "Rengganis"

    Pakis Village-Panti Jember District is as follows:

    a. Processing yield of green bean coffee 48%, roasted coffee 72% and coffee powder 70.25% (from green bean coffee)
    b. The added value of processing green bean coffee is Rp. 6,690/kg, roasted coffee is Rp. 58.500/kg and Rp. 20.251/kg.
    c. The percentage of added value for processing green bean coffee is 49.78%, roasted coffee is 65%, and roasted coffee is 13.97%
    d. Labor income for green bean coffee is Rp. 2500/kg, roasted coffee is Rp. 1,000/kg, and roasted coffee is Rp. 694.44/kg
    e. Margin on company profits from processing green bean coffee Rp 6,940/kg (60.37%), roasted coffee Rp 62,000/kg (92.74%) and roasted coffee Rp 27,041/kg (73.39%)

References

Arikunto, Suharsimi. 2010. Prosedur Penelitian: Suatu Pendekatan Praktik. PT. Rineka Cipta.

Awang, San Afri., dkk. 2008. Panduan Pemberdayaan Lembaga Masyarakat Desa Hutan (LMDH). Center for International Forestry Research. Bogor. Indonesia.

Djamali R. A. Cahyaningrum, D.T. Putra, D.E. 2022. Determinants and strategies of social forestry development for integrated coffee agribusiness in the foot of mount Argopuro area, Jember regency. IOP Conference Series: Earth and Environmental Science. https://iopscience.iop.org/article/10.1088/1755-1315/980/1/012053

Fauziah, Ulfah. Andri Ikhwana. 2015. Analisa Rantai Nilai Distribusi Kopi Di Kabupaten Garut. Jurnal Kalibrasi.

Fransiska, Futri Bella. 2020. Analisis Global Value Chain Kopi Sumatera Selatan Studi Pada Perkebunan Kopi Muara Enim. Tugas Akhir. Universitas Sriwijaya. Palembang.

Hayami Y, Kawagoe T, Morooka Y, Siregar M. 1987. Agricultural Marketing and Processing in Upland Java. A Perspective from a Sunda Village. Bogor: The CPGRT Centre.

Hidayat, S. Suryani, M.A. Sukardi, and Yani, M. 2012. Modification of Hayami's Value Added Method for the Palm Oil Agroindustry Supply Chain. Vol. 22 No. 1 (2012): Jurnal Teknologi Industri Pertanian. Https://Journal.Ipb.Ac.Id/Index.Php/Jurnaltin/Article/View/5593

Ikhwana, Andri. 2017. Analisis Dan Strategi Penambahan Nilai Jual Komoditas Kopi Melalui Penataan Rantai Nilai Komoditas Kopi.Jurnal Kalibrasi.

Lailia N., Rondhi M. & Soejono D. (2020). Analisis Rantai Pasok dan Strategi Pengembangan Susu Kambing Pasteurisasi di Goatzilla Farm & Cafe. Forum Agribisnis: Agribusiness Forum, 10(1), 11-26. https://doi.org/10.29244/fagb.10.1.11-26

Pearce, J. A., & Robinson, R. B. 2013, Manajemen strategis: formulasi, implementasi, dan pengendalian, Salemba Empat, Jakarta.

Porter, M. E. 1998, Keunggulan bersaing: menciptakan dan mempertahankan kinerja unggul, Penerbit Erlangga, Jakarta.

Porter, Michael E. 1985. Competitive Advantage: Creating and Sustaining Superior Performance. New York. Simon and Schuster.

San Afri Awang, et al. 2008. Panduan Pemberdayaan Lembaga Masyarakat Desa Hutan (LMDH). French Agricultural Research Centre for International Development (CIRAD). Center for International Forestry Research (CIFO, dan Pusat Kajian Hutan Rakyat (PKHR).

Sugiyono, 2022. Metode Penelitian Kuantitatif Kualitatif dan R& D. Penerbit: Penerbit Alfabeta. Bandung.