ANALYSIS OF FARMERS' VALUE CHAIN IN IMPROVING THE QUALITY OF COFFEE EXPORT PRODUCTS

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Abstract

Control of coffee plantations in Indonesia is dominated by small farmers who have not yet implemented the value chain. This research aims to analyze coffee farmers in implementing the value chain at each stage of cultivation and post-harvest processing activities and find out how the value chain is implemented to improve product quality. This type of research is qualitative research with a grounded theory approach. The informants in this research were five informants from several villages in Mandailing Natal Regency, North Sumatra. Data collection uses participatory observation, in-depth interviews, and documentation. The research results show that the majority of coffee farmers in Mandailing Natal Regency do not carry out cultivation and post-harvest processing to increase production and quality, so they do not get added value to the product because farmers do not receive assistance in carrying out these activities. Farmers need assistance in implementing the value chain, namely assistance with cultivation activities by carrying out conceptual planting, using superior seeds, routine fertilization, routine pruning, and harvesting red fruit and assistance with post-harvest processing by carrying out fruit sorting, standard grinding, clean washing, and standard drying. Assistance provided to farmers can be provided through exporters, farmer groups and related institutions who continuously increase the added value of coffee products.

Keywords : Value Chain, Product Quality, Coffee Farmers

1. INTRODUCTION

Coffee production in 2021/22 is estimated at 167.2 million bags, 2.1% lower than 170.83 million bags of coffee in 2020/21. Global coffee consumption will increase 3.3% to 170.3 million bags (per bag = 60 kg) in 2021/22, compared to 164.9 million bags in the 2020/21 coffee year (ICO, 2021). Coffee is one of the raw plant materials which plays an important role in Indonesia's economic activities. Coffee is also one of Indonesia's export goods which is very important as currency along with oil and natural gas (BPS, 2020). The contribution to GDP in 2020 is 3.63 percent or the agriculture, forestry and fisheries sectors are in first place. Coffee production in 2018 was 756.05 thousand tons, and in 2019 it fell to 752.51 thousand tons or a decrease of 0.47 percent. In 2020, coffee production increased to 762.38 thousand tons and experienced an increase of 1.31%. Coffee plantations in Indonesia are divided into large plantations (PB) and smallholder plantations (PR) based on the type of management. Large plantations include large state plantations (PBN) and large private plantations (PBS). Large private plantations produced 757,300 tons (99.33%), large state plantations produced 3,400 tons (0.49%), and large private plantations produced 1,400 tons (0.18%).

Coffee is one of the most important plantation raw materials and plays an important role in the national economy as the main source of farmers' income, employment, foreign exchange and raw materials for domestic industry. Apart from that, coffee also contributes to environmental protection. Over the past few years, global coffee consumption has increased by 2-5%, especially among millennials, who are increasingly becoming coffee lovers (Bern, 2015). This is because coffee cultivation at the farmer and company level faces many challenges, especially climate change which has a big impact on the development of coffee cultivation. The low quality and productivity of coffee means that by integrating the roles of exporters, suppliers/processors, collectors and farmers, we will develop a business from upstream to downstream that can solve the problem of coffee shortages. This means we have to be more innovative (Larasati, 2020).

By 2050, climate change is expected to affect Arabica and Robusta coffee equally and reduce coffee plantations by around 50%, especially in lowland and shady areas, thereby affecting the lifespan of coffee plants, which have a lifespan of around 100 years (Wintgens, 2009). Therefore, it is feared that coffee will become extinct in the future because the supply can no longer meet demand or 60% of all coffee species have disappeared due to climate change (Davis, 2019). Some regions in East Africa and Asia are more suitable for coffee cultivation, especially in forest areas (Bunn, 2015). Post-harvest production and processing at the farmer level is still affected due to the uneven quality of Indonesian coffee in many regions. The resulting products not only meet domestic coffee needs, but also fill foreign markets. This shows that domestic coffee consumption is an attractive market for entrepreneurs, which continues to offer opportunities and possibilities, and is proving to be a good choice in the coffee industry.

Challenges in the coffee supply chain include increasing demand with decreasing production due to rapid climate change, urbanization of the workforce, and land conversion due to population growth. Challenges for sustainable coffee development to date include low production and productivity of farmers due to old/unproductive plants, inadequate plantation maintenance, traditional harvest and post-harvest handling, price fluctuations, minimal infrastructure, and difficulty in accessing financing. because the position of negotiations, plantations and institutions are still slow and individual marketing/mutually beneficial cooperation has not been organized. In the coffee marketing channel pattern in North Sumatra, farmers sell more to collectors at the sub-district/district level where coffee is sold in cherry or grain form.

Meanwhile, there are farmers who sell to exporters in the form of green coffee beans. Specialty coffee can be consistently produced through people who have a dedicated commitment to making quality the highest priority. The supply chain cycle of coffee beans does not only have one role. It is not easy to do this, but it requires integration between institutions to dedicate commitment. Several countries produce specialty coffee, and one of the specialty coffee producers is Indonesia. The coffee farmer value chain must be able to work in harmony and maintain a focus on standards and excellence from start to finish. With vertical integration, all those involved will strengthen coordination in building a complex pattern or system that makes farmers more stable and able to adapt to changes that occur in the coffee value chain (Orr et al, 2018).

2. RESEARCH METHODS

The research used in this research is quantitative research using a questionnaire. The location of this research was carried out in Mandailing Natal Regency, North Sumatra Province, Indonesia with coffee plantations of around 3,679.29 hectares. Researchers used purposive techniques to determine informants (coffee farmers, coffee exporters). The selection of coffee farmers as informants uses several considerations such as cultivation, post-harvest, marketing, so that they are in accordance with the agricultural value chain concept. This research was conducted from May 2021 to September 2023 to analyze the value chain of coffee farmers in improving the quality of export products.

3. RESULT AND DISCUSSION

3.1 Descriptive Analysis of Variable Characteristics

From the description above, researchers also found that the informants were agricultural workers, consultants, or agricultural experts who provided training or improved coffee cultivation methods.

1. Treatment and Supporting Actors in Cultivation

	Pola Planting Patterns	Seedlings	Fertilization	Pruning	Harvesting	Result
Treatment	Normal	Normal	No	No	Normal	55 Kg – 35 Kg
Actor	No	No	No	No	No	Tidak Ada

Based on the table above, it can be seen that during the planting period, farmers did not receive good assistance in planting, seed care, germination, pruning, harvesting and production.

2. Treatment and Supporting Actors and Post-Harvest Processing Process

	Fruit Sorting	Milling	Washing	Drying	Yield Percentage
Treatment	No	Normal	Normal	Normal	<35%
Actor	No	No	No	No	No

Based on the table above, it can be seen that farmers only carry out normal post-harvest processes. Farmers work independently in carrying out post-harvest processes.

3. Treatment and Assistance in Cultivation and Post-Harvest Processing

Potency	Action	Constraint	Solution	Actor
Production	1. Planting Pattern 2. Seedlings 3. Fertilization 4. Pruning 5. Harvesting 6. Harvest Results	1. Cost 2. Limited Access to Information 3. Infrastructure limitations	1. Join a farmer's group or cooperative to expand your knowledge	1. Related Institutions 2. Exporter
Quality	1. Sorting Fruit 2. Milling 3. Washing 4. Drying 5. Yield Percentage	1. Limited Access to Training 2. Working Conditions 3. Equipment Limitations	1. Join a farmer's group or cooperative to expand your knowledge	1. Related Institutions 2. Exporter

Based on the table above, it can be seen that there are two things that can be done and managed to form a value system for coffee farmers. Meanwhile, in the agricultural sector, the activities carried out are quality seeds, fertilization and pruning, both of these activities affect the plants planted on the trees planted by farmers, so farmers must get further information or in-depth advice at this time because of the results of this agriculture. . this section will Influence the next section.

4. CONCLUSION

Based on the research results and discussions that have been described, it can be concluded as follows:

1. Cultivation
    a. Planting Patterns: Farmers must be able to know the coffee planting pattern according to the area or place where the farmer grows coffee, such as parallel planting patterns, double triangle planting in order to increase the number of trees in the coffee plantation.
    b. Nursery: Farmers must be able to identify superior seeds or germplasm seeds that are appropriate to the analysis of the area of the plantation planted with coffee.
    c. Fertilization: Farmers must be able to know the portion of compost and chemical fertilizer used for coffee plants.
    d. Pruning: Farmers must be able to carry out post-harvest pruning methods according to the variety of seeds planted.
    e. Harvesting: Farmers must be able to harvest by picking red fruit in order to maintain tree branches that continue to flower
2. Post-Harvest Processing
    a. Fruit Sorting: Farmers must be able to separate good fruit from defective fruit by soaking, good fruit will be submerged and processed for the next stage, while defective fruit will float and be processed separately.
    b. Wet Milling: Farmers must be able to know wet milling methods such as using water in milling, controlling the grinding speed by not forcing the fruit into the grinding machine.
    c. Washing: Farmers must be able to wash after processing the cherries into grain, processed cherries produce gummy grain, the sap from the grain must be washed to avoid mold on the coffee grain.
    d. Drying: Farmers must be able to dry properly, drying wet coffee grains must not be directly on the ground, drying good coffee must be on a tarpaulin or using a parapet and can be exposed to direct sunlight.

Farmers cannot work alone to implement cultivation and post-harvest processing activities. The model of increasing production by cultivation and improving quality by post-harvest processing for farmers is a way for exporters to convey supply needs and quality improvements to farmers. Implementation so that exporters and farmers can increase production and quality by having institutions such as farmer groups or cooperatives. With the existence of institutions it is directed to be able to carry out production activities and quality activities at the farmer level. Exporters will integrate with farmer groups in an effort to improve production and quality, then farmer groups will send agronomists to farmers to improve production by handling cultivation, farmer groups will send quality assurance to improve coffee quality, for example by handling post-harvest processing. This integration will continue to make improvements so that the farmer's value chain can be implemented and can increase to Value Chain Development.

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