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CHALLENGES OF ARABICA COFFEE MARKETING: A CASE STUDY IN KERINCI REGENCY, INDONESIA

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ABSTRACT

Indonesia has several Arabica coffee varieties that are well known in the domestic and world markets. However, marketing challenges exist for the domestic market and few cooperatives are able to export. Arabica Coffee Kerinci, a cooperative that exports, is an exception; nevertheless, marketing challenges persist for this cooperative too. Our objectives are to examine a case study of a successful cooperative that focuses on the export market and to clarify the challenges remaining for Arabica coffee marketing. Descriptive statistics were employed to capture the complexities of these marketing challenges. Semi-structured interviews using simple random sampling were conducted with the cooperative's leader and with 51 farmers. We find that the fundamental challenges are quality inconsistency, price fluctuations, lengthy and bureaucratic export administration, absence of bank loans, and lack of government support. We recommend the following key steps: (1) focusing on improvements in producing and maintaining superior quality that meets export standards and provides capital stimulus; and (2) through greater government and industry synergy, encouraging governments to provide support to farmers and cooperatives alike. Further, other Indonesian regions could adopt Arabica coffee for rural development. This study contributes by formulating a better understanding of the major challenges facing producers of agricultural commodities.

Contribution/Originality: This study is one of very few studies to have focused on Arabica coffee, sales from a cooperative where there is no intermediary, and the export market. Previous studies in Indonesia have focused on Robusta coffee, the domestic market, and the role of intermediaries.

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1. INTRODUCTION

Coffee, as a key plantation commodity, is a significant mainstay of the Indonesian economy because it is a source of foreign exchange and farmer income, contributes to the production of raw industrial materials, and leads to job creation and regional development (Saragih, 2013). Therefore, locally produced coffee has become a key export commodity for Indonesia and a government priority for agricultural development (Putu Yudhia Kurniawan, Halil, Rasid bin Abdul Razzaq, & Jumintono, 2020).

Globally, two main varieties of coffee are planted: Arabica and Robusta. Since 2016, the production of Arabica coffee (102 million bags; one bag equals 60 kg) has been significantly higher than that of Robusta coffee (56 million bags). Nevertheless, Indonesian Arabica coffee production is still relatively low, at approximately 8% of world production, amounting to 637,000 tons in 2017 (Sedana & Astawa, 2019).

Various Arabica specialty coffees are produced by farmers within different regions in Indonesia—for example, Bali Kintamani Coffee, Flores Bajawa Coffee, Gayo Coffee, Toraja Coffee, and Arabica Kerinci (Belachew, Teferi, & Gidisa, 2015; Fadhil, Maarif, Bantacut, & Hermawan, 2018; Sedana & Astawa, 2016). Specialty coffee has serious potential to generate higher income for farmers and exporters through more effective processing and strong quality product standards (Poltronieri & Rossi, 2016). Aknesia, Daryanto, and Kirbrandoko (2015) confirm that the specific taste of each coffee type is strongly influenced by the harvesting and processing techniques at the farmer level. Arabica coffee also has a higher selling price on the international market compared with other coffee types because of its lower caffeine content of 0.8–1.4%, lower bitterness, higher acidity level, and usual fragrant fruit or flower aroma (Novitasari, 2019).

Indonesian coffee has become very popular globally because of its rich taste and strong aroma (Faradillah, Saany, & El-Ebiary, 2019). However, when international export coffee prices fell in 2000, Indonesian coffee producers were significantly affected and have not recovered since (Rahayu, Chang, & Anindita, 2015). Thus, the management of coffee farming in Indonesia generates relatively little income at the farmer level. There are several additional reasons for this, including low productivity, poor product quality, low local price, and limited access to information, technology, and markets (Lamare, Ngome, Eyenga, Mbassi, & Suh, 2017; Minh, Trang, & Chen, 2016).

One of the fundamental problems for agricultural products, including coffee, is marketing. (Valkila, 2009) finds that farmers' incomes depend on two major factors: market prices and premium prices at the farmer level (both marketing problems). One way to solve coffee marketing problems is to increase coffee exports to international markets. However, exporting from Indonesia remains a major challenge (Dirjenbun/Directorate General of Plantation, 2018). Over 65% of Indonesian coffee exports are grade IV, which is categorized as inferior coffee quality and is subject to an export ban. If not addressed, the quality of Indonesian coffee will remain as it is today and thus coffee will remain uncompetitive on the international market.

The Alam Kerinci cooperative was formed in 2016. Its establishment was the result of a joint decision between 13 coffee farmer associations in the area; the cooperative is an example of the successful empowerment of small local farmers in Kerinci Regency to export Arabica coffee. Figure 1 illustrates the progress of the cooperative.

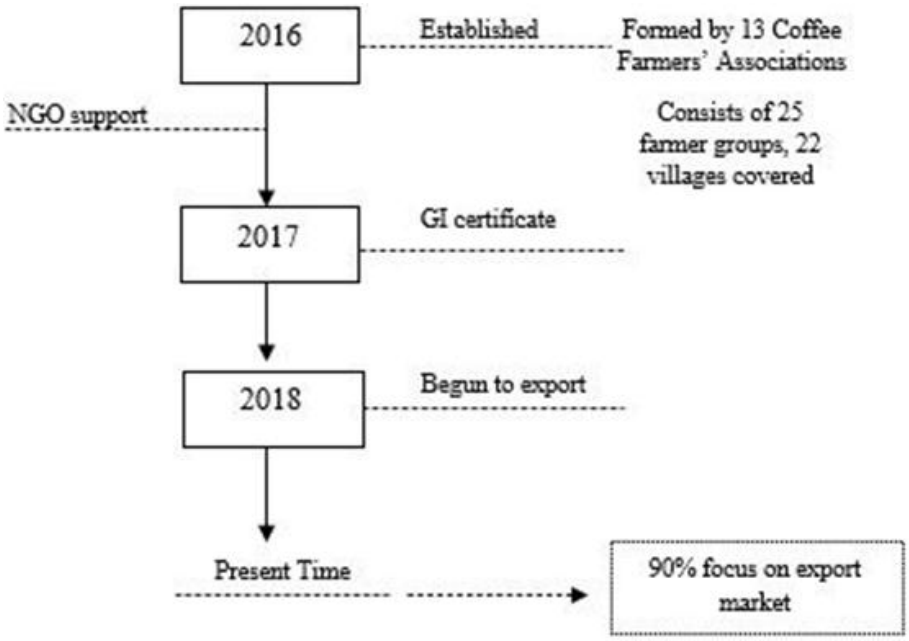

Figure-1. Development of the Alam Kerinci cooperative.

Business activities of the Alam Kerinci cooperative include the development of coffee entrepreneurs, sustainable farming practices, the establishment of a mini coffee-processing factory, and coffee tourism development.

Many studies have been conducted on specific coffee marketing problems in Indonesia. Desiana, Rochdiani, and Pardani (2017), Hariance, Febriamansyah, and Tanjung (2016), and Winarno and Harisudin (2018) studied Robusta coffee marketing problems. Their studies examine past problems, focusing on the domestic market and the significant role of intermediaries. Our study differs in that our focus is on a situation wherein the role of intermediaries does not exist—this role is replaced by that of cooperatives, which have succeeded in exporting Arabica coffee and cutting out intermediaries. We pay attention to the problem of marketing Indonesian Arabica coffee to the international market. This work's first objective is to study a successful cooperative that focuses on the export market; the second is to clarify the remaining challenges in Arabica coffee marketing.

The remainder of this paper is organized as follows. Section 2 summarizes the methods, explaining the research site and qualitative data collection approach. Section 3 presents the results and a discussion, detailing the characteristics of sample respondents and their statements on Arabica coffee farming. Additionally, the flow of the production and marketing is presented, along with the challenges to Arabica coffee export. Section 4 presents our conclusions and recommendations.

2. MATERIALS AND METHODS

Owing to the characteristics of our study area and respondents, a case study approach was used to capture the complexities of the marketing challenges of Arabica coffee farming in Indonesia. Kerinci Regency, Jambi Province, Indonesia was chosen as the study area. In January 2020, semi-structured questionnaire interviews were conducted with the leader of the Alam Kerinci cooperative and 51 farmers (using simple random sampling). A summary of the questionnaire survey is presented in Table 1. The survey focused on the marketing challenges faced by the cooperative and individual farmers. Socioeconomic data, including age, ethnicity, education, farming size, and coffee farming experience, were also collected, and descriptive statistical analysis was performed using SPSS version 25.0 (2017).

Table-1. Summary of questionnaire survey.

Parameters	Cooperative	Farmers
Enterprise/land ownership (%)		
Group	100	
Private		98
Lease		2
Marketing challenges (%)		
Capital		19.6
Bank loan		100
Price	90	72.6
External challenges (%)		
Government support	60	96.2
Infrastructures	30	15.7
Administration	47	7.8
Foreign language ability	60	
Price fixing (%)		
Cooperative		
International buyer	100	94.1
Domestic buyer		
Local milling		5.9
Capacity production (kg)	7700	212
Employees (no.)	72	3

Kerinci Regency is the largest producer of Arabica coffee in Jambi Province, accounting for approximately 67% of Arabica coffee production. There are only two areas with large Arabica coffee production centers in the province—Kerinci Regency, with a planted area of 809 ha and 144 t of Arabica coffee production, and Sungai Penuh City, with a planted area of 601 ha but production of only 70 t. Arabica coffee from Kerinci Regency is focused on the export market, with only a small proportion sold domestically (BPS/Statistic Central Bureau, 2018). Table 2 provides an overview of total production, land size, and market destinations of Arabica coffee in Jambi Province.

Table-2. Total production, land size, and market destinations of Arabica coffee in Jambi Province.

Area	Land size	Production	Market (%)	
	(ha)	(t)	Domestic	Export
Kerinci Regency	809	144	10	90
Merangin Regency	0	0	0	0
Sarolangun Regency	0	0	0	0
Batanghari Regency	0	0	0	0
Muaro Jambi Regency	0	0	0	0
East Tanjung Jabung Regency	0	0	0	0
West Tanjung Jabung Regency	0	0	0	0
Tebo Regency	0	0	0	0
Bungo Regency	0	0	0	0
Jambi City	0	0	0	0
Sungai Penuh City	601	70	98.57	1.43
Indonesia total	22,8709	11,9378	27.16	72.84

3. RESULTS AND DISCUSSION

The cooperative has 25 farmer groups with 514 farmers, spread evenly over 22 villages and 5 subdistricts ranging from Kayu Aro, Gunung Tujuh, West Kayu Aro, Sulak, Gunung Raya, and Semurup, to the East Air Hangat District. This cooperative also supports four female groups who are committed to empowering and equalizing gender in Arabica coffee farming. The cooperative covers a land area of 310 ha, with plantations at an average height of 1,300–1,600 m above sea level, for Arabica coffee production. The cooperative prioritizes the use of labor resources from around the Kerinci Regency area and employs 72 workers to run the cooperative. The characteristics of the cooperative are summarized in Table 3.

Table-3. Characteristics of the cooperative.

Characteristics	Description
Ownership	Group
Farmer group	25
Female farmer group	4
Villages covered	22
Subdistricts covered	5
Land area (ha)	310
Established (year)	2016
Employees (no.)	72
Farmer members (no.)	514
Height of planted land (m above sea level)	1,300–1,600

According to the research survey, the purpose of using local labor is to help villagers continue to generate income and encourage the young to stay and develop their villages rather than migrate to cities. The research findings reveal that the success factors of the Alam Kerinci cooperative are the cohesive goals of the coffee farmer association (most of the members are well-educated indigenous youth) to increase the economy of Kerinci Regency through Arabica coffee and initial support by NGOs for cooperative formation and export training.

As part of the commitment as a member of the cooperative, to ensure the preservation of the environment and protected forests, all farmers who join confirm that they will not plant Arabica coffee in protected forest areas or national parks. The sociodemographic statistics of the respondents are shown in Table 4 and the characteristics of Arabica coffee farming in Table 5.

Table-4. Sociodemographic statistics of respondents.

Sociodemographics	Number	Mean
Sex ratio (%)		
Male	96.1	-
Female	3.9	-
Age (years)	-	45.7
Ethnicity (%)		
Javanese	96.1	-
Bataknese	2	-
Indigenous	2	-
Education (%)		
Elementary school	54.9	-
Junior high school	29.4	-
High school	15.7	-
Land ownership (%)		
Own land	98	-
Lease	2	-
Secondary job (%)		
No	15.7	-
Yes	84.3	-
Farming experience (years)	-	7
Number of observations: 51		

Table 4 shows that over 96% of the respondents were men and less than 4% were female. The average age was around 45 years. In terms of ethnicity, about 96% of the respondents were from a Javanese tribe not native to Kerinci Regency. Respondents had low levels of education, with only about 55% completing elementary school. Experience was the key driver of improved agricultural production and efficiency (Bozoglu, Baser, Eroglu, & Topuz, 2020), with the average farming experience being >7 years. Most land for Arabica coffee growing was private (98.04%) and most of the planted Arabica coffee did not come from certified seed (96.07%).

Table-5. Characteristics of Arabica coffee farming.

Characteristic	Number	Mean	Std. dev.
Crop failure (%)			
Ever	80.4	-	-
Never	19.6	-	-
Form on sale (%)			
Red cherry	86.3	-	-
Mix of green and red cherry logs	13.4	-	-
Price information (%)			
From cooperative	94.1	-	-
From others	5.9	-	-
Sales destination (%)			
Cooperative	94.1	-	-
Powder coffee mill	5.9	-	-
Farmer group (%)			
Joined	54.9	-	-
Not joined	45.1	-	-
Price determination (%)			
Cooperative	94.1	-	-
Others	5.9	-	-
Reason for sales to cooperative (%)			
Safe	27.5	-	-
Higher price	72.6	-	-
Coffee varieties (%)			
Sigarar utang	60		
Andung sari	20		
P-88	20		
Farming size (ha)	-	1.1	1.1
Employees (no.)	-	3	1.34
Production (kg/ha)	-	212	195.5
Harvest numbers (year)	-	22	3.4
Certified seed applied (%)	3.9		
Intercropping applied (%)	90.2		
Number of observations: 51			

Of the respondents, about 90% followed intercrop planting by also growing vegetables that were quick to harvest. These were frequently planted between coffee plants not yet producing fruit. In this way, farmers were able to gain some income while waiting for coffee plants to produce fruit. Saragih (2013) shows how the intercrop system contributes significantly to higher productivity and income on coffee farms. Among Arabica coffee, Sigarar utang (60%) is the dominant variety planted by farmers. This variety is said to be grown widely in the Simalungun district as well, and its development is considered an interesting phenomenon (Saragih, 2013).

Among the respondents, about 84% also held secondary jobs (e.g., a small grocery store in their house) but relied mainly on Arabica coffee as their source of income. The level of crop failure was calculated at around 20%; one factor that minimized coffee harvest failure was the experience of respondents with Arabica coffee cultivation. Because not all farmers were able to produce harvested coffee beans in the form of red cherries to fulfill the quality requested by the cooperative, about 14% continued to sell coffee beans in the form of a red cherry mix and green logs of Arabica coffee beans. To acquire money quickly for urgent needs, such as children's school fees, farmers picked the green log beans of the coffee fruit to sell directly. These green log beans were sold not to the cooperative, but to the local coffee powder mill in Kerinci Regency (5.88%), which does not require red cherry.

From the interview conducted, this situation of selling to the powder mill compounds the low selling prices the farmers are receiving, coupled with the fact that there is no official binding contract between farmers and the cooperative requiring the former to deliver a certain quota of coffee beans.

Conversely, the prime advantage of a contractual agreement for farmers is that the sponsor will normally purchase all produce grown, within specified quality and quantity parameters. Generally, contract farming ensures the marketing of produce while farmer organizations reduce the cost of the farming business, provide more bargaining power to farmers – which results in higher profits for them – and help farmers achieve higher returns by increasing product quality and targeting market niches (Sokchea & Culas, 2015).

Farmers are free to determine the selling destination of their Arabica coffee and its quality. Of the respondents, 72.55% indicated their reason for selling to the cooperative as their ability to acquire a higher price, and 27.45% stated that it felt safe selling to the cooperative (farmers trust the price given and that there is no price game). In general, the survey reflected low awareness of the benefits of the cooperative, as 45.1% of respondents stated that they had not joined the farmers' group in the cooperative. This finding – regarding the number of farmers that had not joined farmer groups – contrasts with that of previous studies that the existence of coffee farmers' groups creates an inclusive business. Strong social interaction among the members of the farmers' group could generate strong

social capital to achieve the group's aims, as well as increase the productivity of farmers (Sedana, Ambarawati, & Windia, 2014).

Arabica coffee farm sizes in Kerinci Regency are generally classified as small – only around 1.12 ha. This drives the small size of the required workforce, which is around three people during peak harvesting time. The Arabica coffee harvest season usually starts in May and June and ends around August or September. The harvest period lasts four to five months, with coffee picking taking place every 10–14 days in a rotation system. Thus, the total harvest can span 22 times per year with a production rate of 211.9 kg/ha.

3.1. Challenges of Arabica Coffee Marketing

3.1.1. Overview of Channel Marketing

Based on the study interviews, we were able to identify the production and marketing flow. Figure 2 presents these findings.

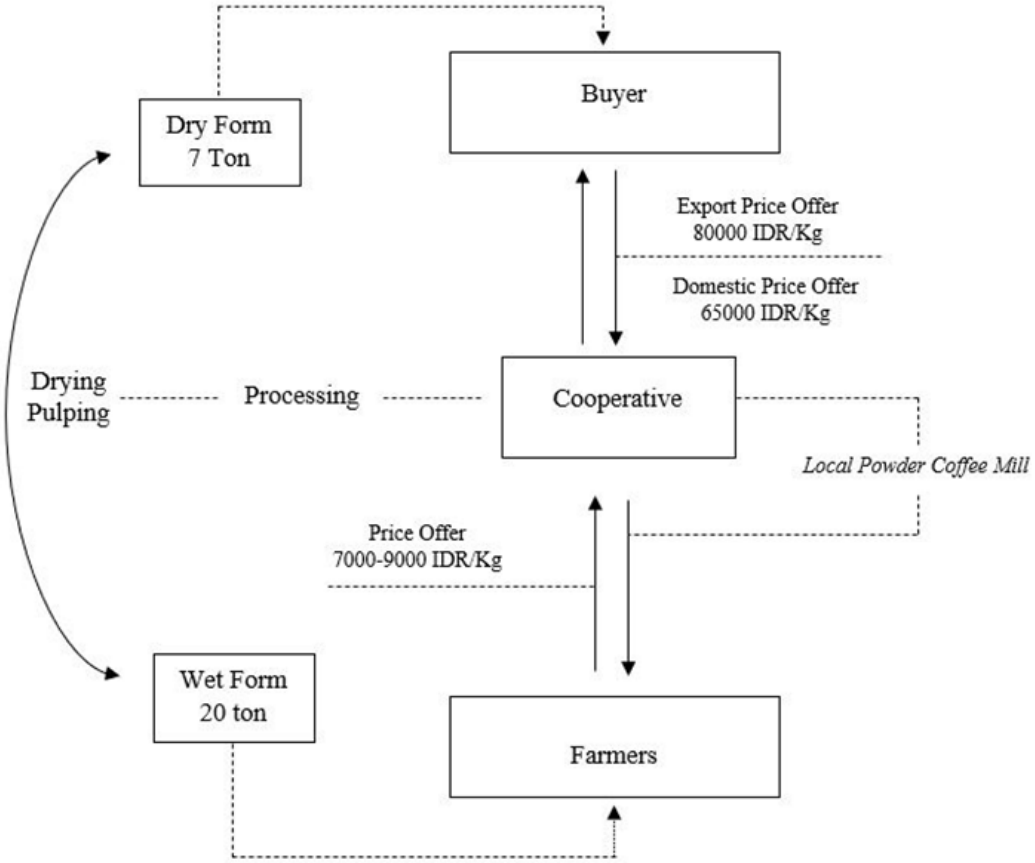

Figure-2. Arabica coffee production/market flow in Kerinci Regency.

The farmers sell Arabica coffee beans in the form of red cherry fruit directly to the cooperative, which then sells the dried green beans directly to either the domestic market or the export market. There is no intermediary in this process in Kerinci Regency. Thus, farmers are able to enjoy a fair price for their Arabica coffee beans in this direct marketing process (see Table 6).

Table-6. Price, coffee form, and market.

Characteristics	Market description	%
Export (t/month)	7	-
Domestic (t/month)	0.7	-
Export price (IDR)	80,000	-
Domestic price (IDR)	65,000	-
Price purchase (IDR)	8,500	-
Price fixing (farmers)	By cooperative	100
Price fixed (buyer)	By buyer	100
Coffee form	Red cherry	100
Coffee form for export	Dry green bean	100
Coffee form for domestic market	Green bean, roasted	30-70
Export market	-	90
Domestic market	-	10

Few farmers are able to meet the quality required by the cooperative's standards of picking red Arabica coffee fruit (red cherry). As farmers indicate their need for cash to pay for urgent living requirements (such as daily needs and education fees), ultimately, they choose to harvest Arabica coffee fruit not in the form of red cherry and sell to the local powder coffee mill that does not have this requirement.

3.1.2. Challenges for the Cooperative

The cooperative acts as both processor and seller. There are many obstacles faced by the cooperative in running the production and marketing processes for farmers' coffee yields in Kerinci Regency. The obstacle of buying and selling an uncertain quality of coffee beans harvested by farmers makes it difficult for the cooperative to ensure the higher quality of Arabica dry green coffee beans required by export market standards. This situation opens the door for the emergence of intermediary traders. Intermediary traders take advantage of inconsistencies in the quality of Arabica coffee produced by farmers. As stated by Fafchamps and Hill (2005), the lack of information on prices, quality, and linkages between farmers and other market actors, credit constraints, and other market imperfections push peasants to sell their crops (coffee) at the farm gate to intermediaries, often at a low price. Thus, they do not take advantage of market opportunities; they are willing to accommodate all kinds of quality coffee produced by farmers at lower prices than those offered by the cooperative. Because Kerinci Regency is still a developing regency with a geographical location far from the city, obtaining proper technology for processing and marketing also remains an obstacle for the cooperative.

Based on the research survey, the main destination of Arabica dry coffee green products from the cooperative is the export market, but a key obstacle in this process is the fulfillment of documents from the customs board and government agencies that need to accompany the products. This process is complicated, lengthy, and bureaucratic, thus causing a long waiting period for marketing of Arabica coffee beans from the cooperative. Yet, the cooperative does not focus on the domestic market because of the low local consumption of Arabica coffee per capita in Indonesia. Therefore, these challenges make it difficult for the cooperative to provide higher prices to farmers. This situation relates to the need for government support to provide training and technical improvements in Arabica coffee cultivation to produce coffee beans of equal size (homogeneous) and higher quality. From the interview conducted with the cooperative leader, this role is met more by NGOs and private companies (e.g., World Wide Fund for Nature and EMURGO) that support the cooperative and farmers.

For the certification process, the cooperative faces the same challenges – an inconsistent supply of red cherry Arabica coffee from farmers. This makes it difficult to meet the export quota demand from international buyers. There is also a lack of knowledge and experience among those in the cooperative in filing the necessary documents to export dry green bean Arabica coffee abroad. In the end, the high standards of international buyers, both in terms of quality and standard administrative documents, make it difficult for the cooperative to export coffee to meet the demands of international buyers. Further details on the challenges of the cooperative are summarized in Figure 3.

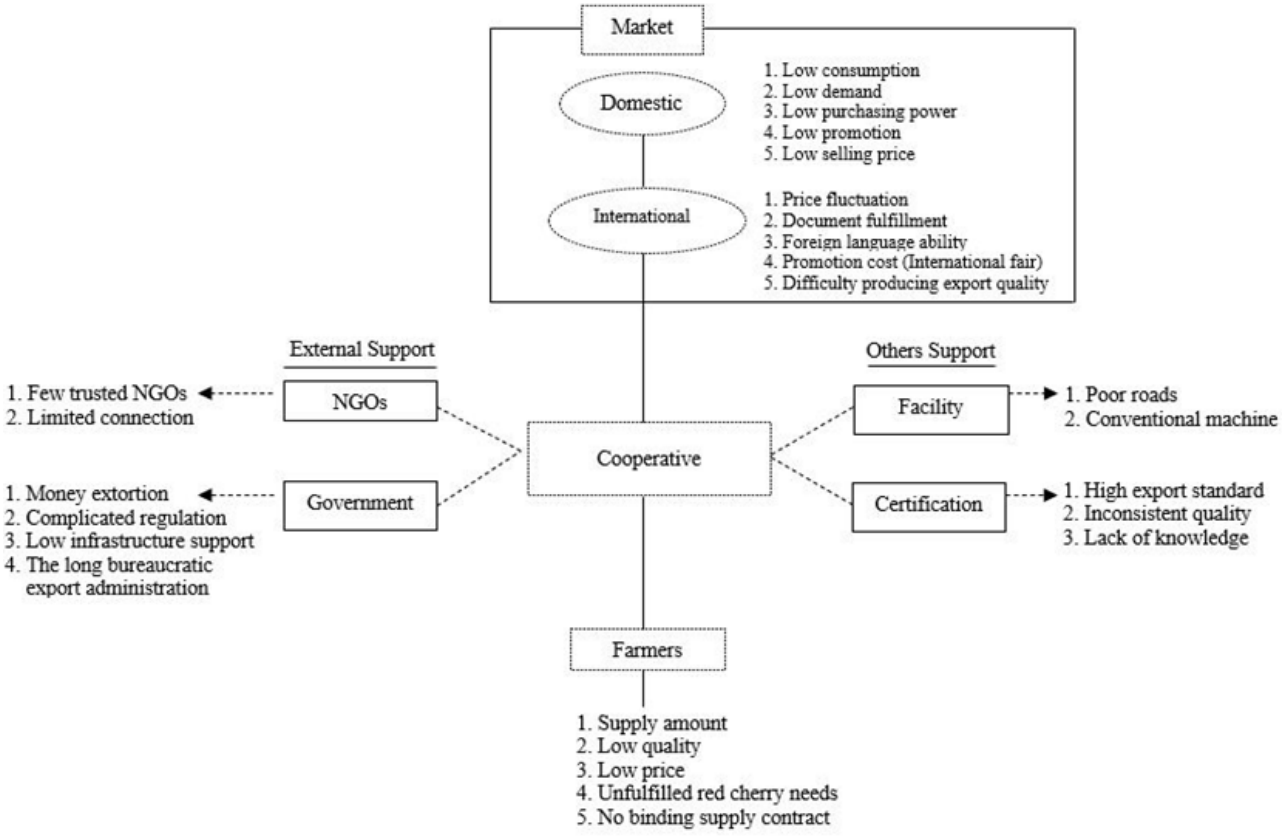

Figure-3. Challenges for the cooperative.

3.1.3. Challenges for Farmers

Table 7 lists the main challenges faced by farmers.

Table-7. Challenges for farmers.

Challenge	Number	%
Difficulty in selling		
None	46	90.2
Cumulation yields	1	2
Payment delay	3	5.9
Dickering	1	2
Government support		
None	49	96.2
Seed and fertilizer	1	2
Shade plant	1	2
Bank loan		
No	51	100
Yes	0	0
Financial hurdles		
Price	37	72.6
Capital	10	19.6
Administration	4	7.8
Certification		
Low awareness	32	69
No socialization	14	27.5
Never heard	5	9.8
Production pathway		
Good	31	60.8
Adequate	12	23.5
Poor	8	15.7
Internet usage		
Applied	26	51
Not applied	12	23.5
Unable to use	13	25.5
Welfare, basic facilities		
Good	30	58.8
Adequate	7	13.7
Poor	14	27.5
Number of observations: 51		

The data in Table 7 show that price instability was considered a crucial and sensitive challenge for farmers in Kerinci Regency. Among respondents, 72.55% indicated that there was often a problem of price fluctuation during the peak harvesting season when farmers had an abundant supply of Arabica coffee (Table 8). They stated that this made it difficult to market to the cooperative, and 10% of the those surveyed referenced capital problems as a challenge. Another important challenge was the problem of the availability and affordability of agricultural materials and tools for farmers. Among respondents, 54.9% reported that the materials and agricultural equipment needed to produce higher-quality Arabica coffee yields were expensive for farmers.

Table-8. Quality, price range, and actors.

Quality wet form	Price range (IDR)	Market actors involved
High	7,000–9,000	Cooperative
Low	4,000–5,500	Intermediary trader

Availability of bank loans was another crucial marketing challenge in Kerinci Regency. None of the respondents had received loan support from banks to extend farming land size or support their cultivation and post-harvest facilities and infrastructure. In terms of the certification process, 69% of respondents had little awareness of the certification process – either for the quality of the coffee they produced or their cultivation process. Among respondents, 27.45% explained that they never participated in any socialization or communication around the certification of the cultivation process or the quality of Arabica coffee yield. Although the role of local and central governments is critical in the advancement of farmers' livelihoods and in improving their standard of living through Arabica coffee farming, over 96% of respondents stated that they received no support from the government.

Fortunately, with the advent of the Internet era, farmers are well acquainted with using Internet technology to find information and support their coffee-related cultivation process. Thus, over 50% of farmers indicated that they have used the Internet to supplement their knowledge about Arabica coffee. It has also become a source for farmers to

gain unbiased information about prices and the latest knowledge on coffee cultivation. These findings are in line with those of previous studies stating that farmers should accumulate better knowledge, attitudes, and skills on coffee cultivation practices (Megerssa, Michael, & Teshome, 2012). The findings provide information about the success factors of the Alam Kerinci cooperative: the cohesive goals of the coffee farmer association to increase the economy of Kerinci Regency through Arabica coffee, and initial support by NGOs for cooperative formation and export training.

However, our study is limited because we do not clarify the income level of the farmers and the cooperative owing to data constraints. Therefore, it is unknown whether the problems of marketing Arabica coffee have a significant effect on income; we focus only on the marketing challenges faced by farmers and the cooperative. Detailed data on income level and the costs of all economic actors involved in Arabica coffee marketing should be extracted in future research. Other rural areas could adopt our novel findings from the Alam Kerinci cooperative's success in revealing major Arabica coffee marketing problems and promoting Indonesian rural development.

4. CONCLUSION

Our findings contribute to a better understanding of the major challenges facing agricultural commodities, particularly Arabica coffee in rural areas, thereby providing a basis for improvements that can increase productivity of. Based on the results, we recommend strategies that ease Arabica coffee marketing challenges by focusing on improvements in the production and quality of the coffee to meet international market standards and on the provision of capital stimulus to farmers to increase their farming output.

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