

Analysis of The Competitiveness of Coffee Agroindustry in Sleman Regency

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ABSTRACT

Coffee is one of the commodities that are growing and popular today, especially with the rise of coffee shops and cafes along with the improvement of the tourism sector after the covid-19 pandemic subsided. This research aims to find out the competitiveness of merapi coffee agroindustry in Sleman regency. Competitiveness analysis is done quantitatively with the Policy Analysis Matrix (PAM) method approach to find out comparative advantage and competitive advantage, while qualitative analysis uses the Porter Diamond model method. Data collection is done by snow ball sampling through interviews and from secondary sources. Qualitative competitiveness analysis of Sleman coffee agroindustry is carried out on conditions, demand conditions, supporting industries and strategies, competitive structures and conditions. The results showed that coffee agroindustrials in Sleman have a comparative advantage in the absence of policies or added value generated beyond the cost (DRCR value) (Domestic Resources Cost Ratio) = 0.83. Coffee Agroindustry in Sleman also has a competitive advantage, indicated by a PCR (Private Cost Ratio) value = 0.41. The competitiveness of the merapi coffee agroindustrial industry is supported by soil fertility in the Mount Merapi area, increased demand for coffee due to the development of coffee shops and cafés, support from the Sleman tourism industry and local governments. Sleman coffee agroindustrials need to be developed from the marketing side to increase brand equity.

Keywords: merapi coffee, policy analysis matrix, porter diamond model, tourism

INTRODUCTION

Coffee is one of the leading plantation commodities in Indonesia that makes a real contribution to the economy in Indonesia. Coffee commodities in Indonesia are one of the sources of foreign exchange, farmers' sources of income, as industrial raw materials, play a role in creating jobs and supporting the community economy directly or indirectly. Indonesia occupies the fourth position as a coffee producing country with a total production of 720 thousand tons per year and as the second largest

coffee consuming country in the world of 228 thousand tons. Coffee production in Indonesia in Yogyakarta Special Region Province is relatively small, amounting to 483 tons or about 0.06% of coffee production in Indonesia. In 2019 it was recorded that coffee production in Sleman amounted to 50.34-tons occupying an area of 250 ha while in Kulon progo district of 479-tons occupied an area of 1400 ha [1].

Merapi coffee is coffee produced from coffee plantations in the slopes of Merapi. Merapi coffee land is not only in the Sleman region, but also in the

districts of Magelang, Boyolali and Klaten. The slope area of Merapi is a fertile volcanic area and becomes coffee cultivated in the region has distinctive flavor characteristics. The type of coffee that is cultivated is robusta coffee that is cultivated in an area higher than 1000 mdpl conventionally.

In general, coffee farmers in Sleman cultivate coffee not as the main income, but as additional income. So that coffee cultivation has not been done optimally. To increase income, coffee farmers do coffee cider rides with other plants that provide additional income. One of the efforts to improve the economy of farmers is to develop merapi coffee into agroindustry by setting up coffee shops for tourists of Mount Merapi. Kopi Merapi is now increasingly known by tourists and the surrounding community, so it is starting to realize to increase the production and quality of Merapi coffee.

Sleman's coffee production is mostly sold by farmers in the form of dried beans (green bean), which are sold to middlemen, direct consumers (café) or further processed to business units that have further processing (roasting, grinding and packing). Processing by farmers for generations has the potential to produce different quality coffees due to differences in the quality of coffee fruit picked and the way of processing and level of hygiene [2]. In addition, coffee farmers are divided into various groups that are institutionally uncoordinated so that the arrangement of demand and supply is carried out by each group. The process of processing Merapi coffee is carried out according to the experience of each farmer group. The type of processing is also done in accordance with consumer demand. This condition causes the resulting Merapi coffee products to be divided into many types that each race to menda Merapi in Sleman Regency, research on the

competitiveness of coffee agroindustrials is very important to know the extent of its advantages and weaknesses.

MATERIALS AND METHODS

The research was conducted by way of surveys and in-depth interviews with actors involved with coffee agroindustrials. Footage taken with the snow ball method, the initial footage amounted to 5 respondents, then from 5 respondents it grew to 30 respondents as farmers and coffee businesses in Sleman regency, D.I.Yogyakarta Province . Competitiveness analysis is carried out by quantitative and qualitative methods. Quantitative methods use the Policy Analysis Matrix (PAM) method to analyze competitive advantage and comparative advantage, while qualitative methods with the Diamond Porter model [2].to determine the factors that affect the competitiveness of the commodity.

RESULTS AND DISCUSSION

Analysis of Competitive Advantage

Private profit (D) indicates the actual profit received by the farmer. Private gain (D) indicates the difference between receipts and actual prices or costs incurred in the market. A positive D value indicates the coffee agroindustry in Sleman and the policies applied to the commodity provide benefits for farmers. Agroindustrial coffee in Sleman when further developed will provide benefits for farmers. From the survey results obtained information that farmers are able to sell dried coffee beans at a price of Rp. 18,700, - per kg. Most of the coffee in Sleman is absorbed by cafés and coffee shops around Merapi, so farmers get a better price than when sold to middlemen who cost around Rp 8000, - per kg. The survey results also showed the additional income of

Sleman coffee farmers was about 22% if income from the ride was also taken into account.

Competitive advantage can be seen from the value of the Private Cost Ratio (PCR) which is the ratio between private domestic input costs and private added value. If the value of a PCR is less than one, it means that the commodity is financially efficient or has a competitive advantage. Conversely, if the value of the PCR is greater than or equal to one indicates that the commodity does not have a competitive advantage because the additional cost of domestic factors is greater than the added value generated. From pam analysis obtained a PCR value of 0.41 (less than one) which shows that Sleman coffee agroindustrials have competitive competitiveness. Pcr value from other research for coffee commodities, among others, 0.55 for coffee farming business in Tlatar Kaloran Temanggung village [3]. 0.37 for coffee farming business in Rejang Lebong [4] and 0.49 in PTPN XII Kalisat Jampit Bondowoso Jatim garden. The lower the PCR value indicates the competitive advantage of the business is higher. The pcr value of agroindustrial coffee farming businesses is usually affected by higher domestic costs.

Some of the factors that affect the value of PCR are aspects of productivity, product quality, and the problem of unstable prices of both output and the continued increase in the price of production inputs. The level of agricultural productivity, which is strongly related to the application of technologies such as nursery, cultivation, and post-harvest technology, as well as agricultural technology for conservation.

Coffee beans in Sleman are mostly absorbed by

the café around Merapi, in addition, because the land is limited, causing the supply of coffee beans to be limited. From the results of the survey showed that cafés and coffee shops around Merapi use Merapi coffee by 60% only, the rest use coffee from other regions. The consideration of the café using coffee from other regions is due to considerations of the supply, price and variety of coffee.

Comparative Advantage Analysis

Analysis of comparative advantage in the PAM table is indicated by social benefit parameters (H) and DRC. Social gain (H) indicates the difference between acceptance and costs assessed by social prices. If the value of H is positive (greater than zero), under perfect competitive market conditions, the agroindustry activities of the commoditization are profitable or have a comparative advantage. If the value of H is less than or equal to zero then the business activity is not economically profitable. Social price is the cost incurred by outside consumers to buy from local farmers, or the cost incurred by outside farmers to bring in or enter commodities into local consumers.

The social advantage (H) of agroindustrials in Sleman Regency shows positive numbers. Social benefits come from social income minus social costs both tradable and domestic costs (such as labor costs, land rent). Tradable social costs are the cost of tradable components (such as seedling costs, fertilizers and so on) that are generally accepted in the market (e.g. non-subsidized fertilizers). This shows that the agroindustrial coffee industry in Sleman will still provide an advantage to perfect competition conditions and if various policies applied to this agroindustry are revoked.

Table 1. Policy Analysis Matrix agroindustry Coffee Sleman Regency

		Income	Tradable inputs	Domestic Input				Profit
				Labor	Land	CapitalCost	Total	
	Private	A 13.350.000	B 3.670.700	2.250.000	4.000.000	688.335	6.938.335	D 2.740.965
	Social	E 13.125.000	F 5.114.000	2.250.000	4.000.000	406.950	6.656.950	H 1.354.050
	Divergences	I 225.000	J (1.443.300)	-	-	281.385	281.385	L 1.386.915

D
PCR [C/(A-B)] 2.740.965
0,41

H
DRC [G/(E-F)] 1.354.050
0,83

Comparative advantage can be seen from the value of domestic resource cost ratio (DRC). If the value of the DRC is less than one then the commodity has a comparative advantage in the absence of policies or added value generated in excess of the cost of domestic resources used. Whereas if the value of DRC is more than one then the use of resources is inefficient or in other words the social value of domestic factors used to produce these commodities exceeds the value used to produce the commodity beyond its social added value.

The comparative advantage of coffee agroindustrials in Sleman is indicated by a DRCR value of 0.83. Factors that affect comparative competitiveness in Sleman include labor costs and land rental costs. In this case domestic costs (such as labor costs, land rent etc.) are the same as private domestic costs assuming that there is no government intervention in relation to those domestic costs. When compared to the results of other studies from coffee farming business, the value of coffee DRCR in Tlatar village, Kaloran, Temanggung is 0.55 DRCR coffee business in Jember is 0.44 [4] and DRCR coffee farming business in PTPN XII Kalisat-Jempit Garden of 0.400. Lower DRCR values indicate higher comparative competitiveness. The

results of the coffee industry's agro DRCR above indicate that the comparative competitiveness of coffee agroindustry in plantation companies is better than people's plantations.

Factors related to the comparative advantage of agroindustry in the Sleman region include the development of merapi and surrounding areas into increasingly popular tourist areas and relatively close to the city of Yogyakarta so that it becomes a separate attraction from the public to visit. This condition causes labor costs to be high because people have the option to work in the tourism sector in addition to being farmers. In addition, increasingly limited land conditions and used for tourist purposes cause land rental prices in the Sleman region to continue to increase .

In this study also calculated other income related to coffee cultivation, namely income from the results of the ride. Table 4 shows that the DRCR figure from agroindustrials that includes the result of a sari ride is 0.61. This shows that the utilization of crops can increase the comparative competitiveness of coffee agroindustrials widely. Nevertheless, ride-hailing activities can lead to a decrease in competitive competitiveness, which is indicated by an increase in PCR from 0.41.

Qualitative Competitiveness Analysis

The Porter Diamond model (figure 1) describes the four principal determinants that make up diamonds and collaborate with each other. The four determinants are (1) condition factors, (2) domestic demand conditions, (3) related and supporting industries, (4) corporate strategies, structures, and competition. Other supporting determinants are opportunity factors and government factors. The model will create a structure that determines the long-term competition model [5]. The condition factor is the operational input of production and the infrastructure necessary to compete in a particular industry. Condition factors are related to the condition of available resources in the region. The key to the condition factor is innovation. Limited resources in a region can be an attraction to develop creativity in creating creative solutions. This will actually encourage the creation of new, more competitive resources [6].

Coffee agroindustrials in the Sleman region are strongly supported by natural resources such as place heights and volcanic soil conditions that support soil fertility in coffee plantation areas. The location of the coffee garden is a tourist destination. Many cafés, coffee shops and shops by it were established to serve tourists and become a potential market for Merapi coffee. The challenge of natural resources is because the agro location of Sleman coffee industry is in a disaster-prone area so that the existence of coffee plantations in Sleman has a high risk of damage due to disasters.

The availability of human resources both quantitatively and qualitatively is one of the challenges for the agro development of the coffee industry in Sleman. This is because the coffee farming business system in Sleman is a people's

plantation. Capabilities and skills in agro-industrial management are carried out for generations, both in terms of cultivation, processing and marketing. The role of plantation agencies and other related agencies in providing assistance to farmers is needed in order to improve human resource competence in the agro coffee industry [7]. Another challenge in terms of human resources is the competition for the availability of human resources working in the agro coffee industry. Farmers have alternatives to working in other fields such as by growing rice or other commodities. In addition, because the location of coffee plantations is located in tourist areas, many farmers are turning into business people in the field of tourism, for example by opening stalls or becoming providers of tourist services such as lava tours, tour guides and so on.

The application of coffee cultivation and processing technology in Sleman is supported by the merapi farmer and coffee processing program. Mentoring is very useful because of the application of new methods in cultivation, seed selection and good propagation methods, maintenance methods to increase coffee productivity. In addition, the mentoring program is also carried out by applying technology in processing such as with the help of peelers, dryers, coffee roasters and grinders. This help is very important to improve the quality of coffee.

The challenge in technology is the application of cultivation and continuous processing technology. Therefore, sustainable technology coaching and transfer programs need to be improved. This can be done among others by educating pioneering change agents for the improvement of processing and product development. Agro coffee industry in Sleman has a lot of access to capital such as soft

credit lending schemes, equipment grants and production facilities, seed assistance and so on. Unfortunately, not all farmers are members of the farmer group formally so they have limitations in getting access to capital. In general, the condition of infrastructure in the coffee farming business area in Sleman is quite adequate. The location of the plantation area which is a tourist destination also supports the provision of infrastructural such as improving road access and transportation [8].

Conditions of Demand

Domestic demand conditions are a determining factor in the competitiveness of the industry, especially the condition of the level of competition. There are three factors of demand conditions that affect the competitiveness of national industries, namely: 1) Composition of domestic demand 2) Amount of demand and growth patterns, 3) Internationalization of domestic demand [3]. The composition of coffee commodity demand in the Sleman region is divided into several segments, namely the demand segment for coffee products that have quality with certain specification requirements. This demand comes from cafés, coffee shops and coffee resellers. The demand segment of coffee with general quality and potluck comes from middlemen for resale through traditional markets or supplied to coffee processing plants.

The demand for quality Merapi coffee with certain specifications in the Sleman area is relatively high. Demand from the consumer segment of cafés and coffee shops can not be partially met due to continuous constraints in product supply and product quality. In addition, the production of Merapi coffee is mostly absorbed by cafés and coffee shops around Merapi, so the supply of coffee outside the area is still

relatively small. The number of domestic demand for Merapi coffee continues to increase. From the results of the survey obtained data that cafés and coffee shops around Merapi that provide merapi coffee only about 60%. This is likely because the demand for Merapi coffee in Sleman is constrained by supply or there is price competition with coffee from other regions. Market demand from outside the region and abroad, is a potential market. Unfortunately, this potential has not been worked on in a structured and coordinated manner to ensure supply sustainability and quality consistency. Some businesses strive to meet the demand of foreign markets and foreign markets but are still done on an ad hoc basis [9].

With the development of tourism in Sleman and surrounding areas, many cafés, coffee shops and other culinary businesses have sprung up. This is a potential market for Coffee. The development of this domestic market needs to be anticipated by agro coffee industry businesses to increase the availability of product supply both through improved productivity and the addition of garden areas. Provides a range of product quality portfolios structured to meet various demand segments. This can be done by improvement of coffee processing and technology. The increase in coffee demand is a potential source to increase the economies of scale of coffee agroindustrials so that they become more efficient and have higher competitiveness.

Related Industries and Supporters

The tourism industry is a sector that strongly supports the existence of agro coffee industry in Sleman. The rapid development of the tourism sector in the Yogyakarta region needs to be anticipated by coffee agroindustry businesses in Sleman to not only take part in the Sleman region but also in other

regions. Upstream industries supporting coffee agroindustry include the industry of providing suitable and quality coffee seeds, providers of coffee garden management facilities (fertilizers, agricultural equipment) and improvements in coffee garden management [10]. Support from the upstream industry for Merapi coffee comes more from assistance from agencies and companion organizations in the form of seed aid, processing equipment, technical guidance on garden management and so on.

The downstream industry that has the potential to support the agro coffee industry in Sleman is the coffee processing plant. Currently the role of the coffee processing plant is still limited to the supply of products through middlemen. Increased cooperation with the coffee industry through direct supply is a potential market for Merapi coffee. In addition, some coffee traders develop their own portfolio of coffee products to serve the downstream industry.

Business Structure, Competition and Strategy

The agro-business structure of the coffee industry in Sleman is mostly a group of farmers and cooperatives that jointly manage coffee plantations. Coffee production is managed individually by to be supplied to cooperatives or sold to middlemen [11]. With the business structure, it does not rule out the possibility of competition between farmers, especially in price. During the harvest season, coffee prices are relatively depressed due to high supply positions and competition between farmers. But in the off-harvest season, there is competition between consumers because of limited availability. This condition causes the availability of supplies to be disrupted.

The level of competition in terms of brand equity is caused, among others, because Merapi coffee has not been included in the taste map and aroma of Indonesian coffee. Therefore, the increase in the equity of the Merapi coffee brand needs to be increased by conducting an integrated promotion from all Merapi coffee businesses in Sleman. This needs further production development so that Merapi coffee can also serve other consumer segments continuously. Focus on working on export markets although on a smaller scale can increase the equity of the Merapi coffee brand, because it is increasingly known so that the potential to increase demand.

Role of government

The role of the Government on coffee agroindustrials in Sleman Government has a significant influence on the agro development of the Sleman coffee industry. The government's policy to support the condition of other anta resources by making infrastructural improvements, creating a new economic center in the Sleman region, especially in the Tourism sector, led to an increase in demand for coffee products. The development and assistance to coffee farmers in the form of assistance such as seedlings, processing equipment, technical guidance and the provision of production and institutional facilities will improve the agro competitiveness of the Sleman coffee industry, especially in lowering domestic input costs, increasing productivity and product quality. Sleman's coffee marketing system so far is still done with market mechanisms. The role of the government to be a facilitator in efforts to increase brand equity, foster to improve the ability to access export markets or create cooperation with coffee processing companies will greatly help in creating high-value and sustainable coffee demand.

Opportunities

Opportunities in the development of Merapi Coffee in Sleman are carried out, among others, by increasing public confidence in Merapi coffee both in terms of supply, and product quality. Various forms of recognition from the public and the standards of product quality, production processes and supply chains will have the potential to increase

market demand. Some forms of recognition and fulfillment of standards include recognition from coffee experts about the quality and uniqueness of Merapi coffee, good agricultural practice standards, good manufacturing practice standards, quality control system standards, food safety standards and so on [12].

Table 2. Policy Analysis Matrix agroindustry Coffee Sleman Regency

		Income	Tradable inputs	Domestic Input				Profit
				Labor	Land	Capital Cost	Total	
	Private	A 16.287.000	B 3.670.700	2.250.000	4.000.000	688.335	C 6.938.335	D 5.677.965
		E 16.062.000	F 5.114.000	2.250.000	4.000.000	406.950	G 6.656.950	H 4.291.050
	Social	I 225.000	J (1.443.300)	-	-	281.385	K 281.385	L 1.386.915
	Divergences							
		D PCR [C/(A-B)]	5.677.965 0,55	H DRC [G/(E-F)]		4.291.050 0,61		

CONCLUSION

Agroindustry coffee in the Sleman district area is a commodity that is strategic enough to be developed, has a competitive advantage and comparative advantage. In an effort to improve its competitiveness, it is necessary to better manage the supply chain from upstream to downstream to create a sustainable balance between supply and demand. More in-depth research needs to be done to provide recommendations for measures to increase productivity and quality of coffee merapi so as to produce products with competing quality and prices. The research topics include cultivation techniques, harvesting methods, studies of production land addition and improvement of processing processes in an integrated manner. To increase competitiveness, it is necessary to increase collaboration from all stakeholders in order to promote Merapi coffee and increase public recognition of the existence of

Merapi coffee.

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