

COMPETITIVENESS AND IMPACT OF GOVERNMENT POLICIES ON THE DEVELOPMENT OF PEOPLE'S ARABICA COFFEE PLANTATIONS PARTNERSHIP PATTERN IN SOLOK REGENCY

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ABSTRACT

This study aims to analyze the competitiveness of Arabica coffee commodities and analyze the impact of government policies on Arabica coffee commodities in Solok Regency. This research data analysis method uses the Policy Analysis Matrix (PAM). The results showed that the Arabica coffee plantation business in Solok Regency has competitiveness both in terms of competitive advantage and comparative advantage, where the value of the ratio of private costs and domestic cost ratios obtained is less than one, namely 0.48 and 0.41. For the impact of the Arabica coffee output policy, the private price of Arabica coffee is lower than the social price. The impact of the production input policy causes the private price of tradable input to be higher than the social price, and the impact of the input-output policy causes a decrease in the producer surplus, meaning that there is no economic incentive to increase Arabica coffee production. The suggestion from this research is expected that farmers can increase the productivity of Arabica coffee than the government is expected to expand the planting area and facilitate the provision of superior seeds. The government is also expected to stabilize the selling price of Arabica coffee at the farmer level.

Keywords: Arabica Coffee, Competitiveness, Policy Analysis Matrix

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INTRODUCTION

The development of people's arabica coffee plantations (cultivated by farmers) in Solok Regency has increased, where previously they worked on robusta coffee. This development is supported by the Solok Regency Government in the form of providing superior seeds, assistance with production facilities (such as fertilizers), and technical assistance for Arabica coffee cultivation. On the other hand, the presence of the Solok Radjo cooperative helps farmers in developing Arabica coffee plantations through a partnership pattern.

Arabica coffee from West Sumatra Province which is famous in foreign countries is coffee from Solok Regency. This coffee has received a geographical identification certificate because it is classified as a specialty *coffee* or a typical coffee product from Solok Regency that will not find similarities in taste with coffee in other regions. This coffee has the advantage of a strong aroma in the aroma of the spices, lemon flavor, and chocolate flavor. This advantage makes Solok Regency arabica coffee specially categorized from other regional arabica coffee (Putri et al., 2018).

The development of community arabica coffee plantations in Solok Regency is experiencing a high intensity of planting carried out by farmers and young agricultural entrepreneurs and supported by the Solok Regency government in the form of quality seed assistance, agricultural input assistance and arabica coffee cultivation training, as well as the presence of the Solok Radjo cooperative which helps develop people's arabica coffee plantations through a partnership pattern. Initially in this area, robusta coffee plantations were

most cultivated by farmers and along with the development of prices and considerable market demand, and supported by farmers' understanding of the agroclimatic of this area that is suitable for the development of arabica coffee, many people switched to developing arabica coffee including young agricultural entrepreneurs.

Based on the description stated above, this study aims to: (1) analyze the competitiveness of arabica coffee in Solok Regency through competitive advantages and comparative advantages and (2) analyze the impact of government policies on arabica coffee commodities in Solok Regency.

METHOD

Research on the competitiveness and impact of government policies on the development of arabica coffee was carried out with a regional approach in the arabica coffee production center area in Solok Regency, West Sumatra Province. The location selection was carried out intentionally (purposively) in the three largest sub-districts of arabica coffee in Solok Regency, namely Danau Kembar District, Gumanti Valley District, and Bukit Sundi District. The study time is four months (July-October 2022). The sampling method used in this study was cluster *random sampling* where the population was divided first into groups based on area/region or cluster, then samples from that group were selected. The total sample was 75 farmers spread across each sub-district with a total of 25 sample farmers per sub-district.

The research approach used is *Dominant-less Dominant* (Creswell, 2012). The qualitative approach is *positioned as less dominant* and the quantitative approach is positioned *as dominant*. This study used primary data and secondary data. Primary data were obtained from direct observations (surveys) of farmers and field facts using questionnaires. Secondary data were obtained from various literature, data on agricultural agencies, plantations, and the Central Statistics Agency of Solok Regency. The data analysis method used for a qualitative approach is a descriptive method, which describes the implementation of local government support and the involvement of the Solok Radjo Cooperative as a farmer partner in working on arabica coffee, and an overview of the implementation of arabica coffee cultivation. The quantitative approach uses *Policy Analysis Matrix (PAM)* to determine the competitiveness and impact of government policies in the development of people's arabica coffee plantations in Solok Regency. *Policy Analysis Matrix (PAM)* to identify the influence of government intervention and its impact on commodity systems. The commodity system that can be influenced includes four activities, namely farm *production*, delivery of farm products to processors, processing, and marketing (Monke & Pearson, 1989).

Table 1. Policy Matrix Analysis

Description	Income	Cost		Advantage
		Input Tradable	Non-Tradable Input	
Private Pricing	A	B	C	D
Social Pricing	E	F	G	H
Divergence Effect	I	J	K	L

Source: Pearson et al., 2005

Information:

Private Advantage : $D = A - B - C$	Domestic Resource Cost Ratio: $DRCR = G / (E - F)$
Social Advantage: $H = E - F - G$	Nominal Output Protection Coefficient: $NPCO = A / E$
Transfer Output : $I = A - E$	Nominal Input Protection Coefficient: $NPCI = B / F$
Transfer Input : $J = B - F$	Effective Protection Coefficient: $EPC = (A - B) / (E - F)$
Transfer Factor : $K = C - G$	Profit Coefficient : $PC = D / H$
Net Transfer : $L = D - H = I - (J + K)$	Subsidy ratio for SRP producers: L / E
Private Expense Ratio : $PCR = C / (A - B)$	

RESULTS AND DISCUSSION

1. Overview of Research Locations

Solok Regency with a temperate climate zone is located at an altitude of 700-1,500 meters above sea level with temperatures ranging from 17.1 ° C-22 ° C in addition to being used as a cultivation land for coffee plants is also suitable for other plantation crops such as tea, quinine, coffee, rubber, chocolate, and horticultural crops. The area and production of plantation crops in Solok Regency besides being dominated by coffee plants was also followed by the development of chocolate plantation plants with a planting area of 3,966.50 hectares and production of 1,610.50 tons.

Solok Regency is a plateau with an altitude of 284m –1,458m above sea level, located at positions 00°32' and 01°46' South Latitude, and 100°25'– 101°41' East Longitude. The area of Solok Regency is in the form of a land area of 3,738 km². Land area and percentage according to the type of use in Solok Regency in 2019 which is dominated by state forests, community forests, moorlands and gardens, uncultivated land, paddy fields, and plantation land as much as 1,184 ha which has increased from 2018 which is 10,149 ha. In 2017, the largest smallholder plantation crop was in Solok Regency, namely coffee commodities with a production of 2,045.77 tons or a decrease of 17.09 percent from the previous year, this decrease in production was caused by rainfall that disrupted the flowering period of coffee plants.

Gumanti Valley District has four Nagari, namely Nagari Alahan Panjang with an area of 88.76 km², Nagari Sungai Nanam with an area of 164.54 km², Nagari Salimpat with an area of 80.03 km², and Nagari Air Dingin with an area of 126.39 km². The production of smallholder plantation crops based on the types of commodities in the Gumanti Valley District that are cultivated is cinnamon, sugarcane, coffee, and cloves. Twin Lake Subdistrict is located at 00°57'48" and 01°07'45" South latitude 100°36'55" and 100°44'55" East Longitude, with an area of 70.10 km². Rainfall in Danau Kembar District is 2,438 mm/yr and is at an altitude of 1,200 meters above sea level. The total population in Danau Kembar District is 19,893 people with a population density per km² of 283.78. The Twin Lake Subdistrict consists of two countries, namely Simpang Tanjung Nan IV and Kampung Batu Dalam. The area of plantation

land in Danau Kembar District is 94.00 hectares with a percentage of 0.49 percent. Based on production for plantation commodities in Danau Kembar District, coffee commodities are second only to tea plantation commodities.

Astronomically, Bukit Sundi Subdistrict is located between 00°54'16" and 00°58'59" South Latitude 100°40'36" and 100°46'09" East Longitude. Bukit Sundi Subdistrict consists of 6 Nagari with an area of 99.90 km². Nagari in Bukit Sundi District are Nagari Kinari, Nagari Parambahan, Nagari Dilam, Nagari Muara Panas, and Nagari Bukit Tandang. The type of land use in Bukit Sundi District on plantation land is with an area of 710 hectares and a percentage of 6.49 percent, namely commodities cultivated are rubber, cinnamon, coconut, pecan, cloves, cocoa, and coffee.

2. Characteristics of Arabica Coffee Farmer Respondents

The arabica coffee plantation business in Gumanti Valley District has been going on for a long time, in addition to other horticultural businesses. The characteristics of arabica coffee farmers in this study area include several aspects that are seen from the age of the farmer, the level of education, the area of land cultivated, the source of livelihood or the main type of work, business experience, the number of dependents, and the status of land ownership.

The area of land cultivated by farmers for arabica coffee plantations varies from 0.5 ha – 2.5 ha. In general, farmers strive for arabica coffee with an area of 0.5 ha – 1.5 ha and only a small part (10%) strive for arabica coffee above 1.5 ha. Farmers who work on arabica coffee are aged 25-65 years, and more dominated by farmers aged 25-50 years (80%), and the rest are over 50 years old. The level of education of farmers, generally with a high school education level and below, and only 10% with a higher education level (D1 –S1).

The age characteristics of farmers classified as productive in the arabica coffee business show that arabica coffee plantations in this area are considered important because they can affect the implementation of the arabica coffee plantation business. Most farmers have made the arabica coffee business the main livelihood besides the horticulture business for the needs of their families. The capital to strive for arabica coffee comes from own capital which is set aside from the results of the horticultural business. In general, farmers work on arabica coffee on land with their own status.

The main type of work aspects Arabica coffee farmers place that the arabica coffee plantation business they are engaged in is the main job. In general, (90%) of arabica coffee plantation business farmers are the main workers, and only a small percentage (10%) declare it to be another occupation. According to farmers, if they put the arabica coffee plantation business as the main job, then they will be in the garden a lot and more intensive in maintaining their gardens and the costs incurred will be lower.

3. Implementation of Arabica Coffee Cultivation

The implementation of arabica coffee cultivation by farmers is carried out starting with land clearing. The land intended for arabica coffee cultivation is new land (vacant land / no cultivation) and or land that was previously planted with horticulture. Tillage takes 5 – 7 days, depending on the land area, the type of previous use, and the amount of labor used. The average use of labor carried out in land processing is 4 days of work (HOK) with a wage of Rp. 70,000 / HOK. The land processing carried out includes clearing the land to be used as a planting area. The next activity is the creation of planting holes with a size of 40cm x 40 cm x 40 cm with a

distance between holes of 2.5 x 2.5 meters. The planting holes that have been made are given compost (manure) of as much as 5 kg per planting hole.

Planting arabica coffee seedlings is carried out by planting holes that have been fed with compost. The seeds used are superior seeds obtained from breeding arabica coffee seeds and seeds assisted by the local government and or seeds produced by the Solok Radjo Cooperative. The Solok Radjo Cooperative is always present to assist farmers in the use of seeds and planting carried out by farmers. The amount of labor required for this planting is 3 HOK with a wage of Rp. 75,000 / HOK.

Maintenance of arabica coffee plants is carried out through fertilization, weeding, pruning, and control of plant pests and diseases.

a. Fertilization

The cultivation of arabica coffee requires fertilizer as a plant nutrient. In addition to inorganic fertilizers, such nutrients are obtained from compost or organic fertilizers. Coffee plants need nutrients such as nitrogen and phosphorus. Plant needs in the form of elements including nitrogen, phosphorus, potassium, calcium, magnesium, iron, boron, and manganese can be obtained through organic fertilizers (manure). The need for coffee plant fertilizer depends on the age of the coffee plant which requires different nutrients. Plants that are relatively young (not yet producing) while plants that are already producing require more nutrients than NPK elements in a ratio of 2: 2: 2. (Murtiningrum et al., 2014).

Based on the results of research, the fertilizers used by farmers are manure, Urea fertilizer, and NPK fertilizer. The amount of fertilizer doses used is still irregular which is carried out by farmers depending on the availability of funds to buy fertilizer and the availability of fertilizer itself. The most widely used dose is manure which doses up to 100kg for each farmer's land area, but manure is widely used during the first years, namely in the planting process. The prevailing manure price in the research area is Rp. 400/kg, the contents of each sack of manure are 50kg.

Urea and NPK fertilizers used by farmers are obtained from fertilizer stalls around their coffee plantation business. For manure obtained from the Solok Radjo Cooperative, local farmers and manure providers in this area. The use of manure carried out by farmers in accordance with the recommendations of the Solok Radjo Cooperative is different according to the age of the plant. In the early days, namely the cultivation of arabica coffee seedlings, it is recommended to apply 5 kg of manure for each planting hole. The dose of fertilizer used for each sample is different, there is 10 kg for each plant hole within a period of one year. For a sufficiently large amount of plants, the dose of fertilizer used is as much as 40kg for one year. For the following year, many sample farmers do not use manure.

According to Rukmana (2014: 134), fertilizer needs are determined by two main factors, namely nutrient intake by plants and nutrient supply in the soil. Coffee plants take nutrients from the soil for vegetative growth as important as fruit formation because coffee fruits are only formed on lateral branches that are products of vegetative growth. Nutrient extraction varies depending on the type or variety of coffee.

Fertilization aims to meet the nutrient needs of plants and improve soil conditions so that the root can grow well and can absorb nutrients in sufficient quantities. The types of inorganic fertilizers that are often used for coffee plants are Urea, SP-36 and KCl which are applied twice a year, namely at the beginning and end of the rainy season. In addition, organic

fertilizers such as manure and compost are also applied. Fertilizing is carried out at the beginning of the rainy season simultaneously with the application of artificial fertilizers.

b. Weeding

Weeding activities carried out by farmers aim to clean weeds and disturbing plants around arabica coffee plants, because the presence of these nuisance plants or weeds affects the growth of coffee plants. According to Budiman (2012), weeding activities are activities of raising, removing, and controlling the growth and development of weeds found in coffee plants. Weeds are removed because they are considered a nuisance for coffee plants in absorbing nutrients, in other words, weeds are unwanted plants, therefore weeds must be eradicated, especially around coffee plants. Farmers use hoes or machetes to clean the disturbing plants around the coffee plant, weeds are sprayed first with toxins and then cleaned using a hoe or machete. The type of poison used by the sample etani is seen on top. Another function of weeding is to facilitate fertilization, pruning, and harvesting activities, therefore weeding activities must be carried out regularly, but farmers cannot carry out activities regularly.

Weeding is carried out from the third year to the final year. Pruning, weeding, and pest control activities are summarized in maintenance activities with the amount of labor used in general as much as 7-8 HOK/hectare.

c. Pest and Disease Handlers

The pests that currently plague the Arabica coffee business of cooperative member farmers are flies, leaf rust, and stem borers, according to farmers, these pests and diseases greatly affect the decline in production. The Stem Borer pest (*Zeuzera coffee*) attacks arabica coffee plants by entering the coffee stem and making holes in the coffee stem so that the plant breaks easily. This pest attack greatly affects the decline in production. This pest control is quite simple and in accordance with what arabica coffee farmers of cooperative members do by removing infested plants and burning them.

The diseases that attack are fruit rot and stem rot. The disease directly reduces production on coffee plantations, the countermeasures are also simple, namely by taking plants that are attacked by the disease and then burning them or soaking them with fungicides. Overcoming pests and plant diseases requires good synergy between the government through field extension workers and research institutions, in finding optimal solutions in overcoming these pests and diseases. In addition, farmers must also actively update their knowledge in trying to grow arabica coffee.

d. Harvesting

From the results of the research conducted, arabica coffee farmers who are members of the Solok Radjo cooperative on average start harvesting coffee at the age of 2 and 2.5 years, this is faster than the theory that usually arabica coffee begins to bear fruit when entering the age of 2.5 years to 3 years. According to farmers, this is because the variety used is a high-yielding variety, namely Siragar Utang. Harvesting time is carried out once a week with a yield of 5-10 Otherwise in the harvest season, harvesting is carried out once every two weeks. For the labor used, it is as many as two people with a wage of Rp.75,000 / day. Harvesting can be completed in one day. When the harvest season comes, the labor force used is as many as 3 people.

In the harvest season, coffee must be quickly picked otherwise the fruit will fall to the ground. The harvest usually takes place in January, February and March then the second

harvest of June, July and August This harvest schedule can also be sooner or later depending on weather conditions that affect the flowering of the arabica coffee harvest for the Gumanti Valley District area is in July or after Eid al-Fitr. Timeliness of harvesting should also be observed fruits are taken only if they are fully ripe which is characterized by the fruit turning a red color. If it is not fully cooked, it will reduce the quality of the coffee to be sold and will reduce its selling value.

During the harvest season, farmers bring additional labor to pick these coffee fruits because if they are slow to pick, the coffee will fall to the ground, but if not in the harvest season, the farmers themselves do the harvest while weeding or pruning. Harvesting is done morning to evening, and picking arabica coffee fruits is simpler than robusta coffee, this is because the trees from arabica coffee are relatively low-low and easy to reach by hand without having to climb. Picking is done by taking ripe fruit one-on-one, farmers usually wear basket bags or sarongs to collect freshly picked fruits, after which they are freshly collected into sacks.

4. Competitiveness Analysis of Arabica Coffee in Solok Regency

Analysis of competitive advantages and comparative advantages is used to determine the competitiveness of the arabica coffee business, namely the ability of a producer to produce products efficiently so that it is superior to compete with other producers on the same commodity in the international market. (Pearson, 2005) states that measuring the competitiveness of a commodity can be done with two approaches that include the level of profit and efficiency.

Private *profitability* is the production value (production x selling price), the selling price is based on the price received by farmers, which is Rp.6,500/kg. The selling price received by farmers is higher than the price set by traders, which is 5,250 / kg because farmers sell their products in the form of *Cheery* through the Solok Radjo Cooperative (as a farmer's partner). This is one of the benefits of the Solok Radjo Cooperative which guarantees the selling price of farmers' Arabica coffee. For social *profitability*, the selling price of arabica coffee is based on the shadow price, which is Rp.7,000.50/kg. Based on the private analysis and social analysis, it shows that the arabica coffee plantation business in Solok Regency is profitable as evidenced by private acceptance and social acceptance of positive value.

Financially, the arabica coffee plantation business in Solok Regency is profitable which is characterized by a positive private profit (greater than 0) of Rp. 66,377,797.57 Tanjung et al (2021) explained that the arabica coffee plantation business in Solok Regency is financially profitable as shown by the IRR of 22.4% greater than the *interest rate* that is 13%. Furthermore, the arabica coffee plantation business is also economically viable which is shown by the social benefits obtained from Rp. 82,499,294.06 (positive value). Furthermore, it can be seen in Table 2 below.

Table 2. Policy Analysis Matrix (PAM) Arabica Coffee Solok Regency

Description	Income	Cost		Advantage
		Tradable Input	Input Non-Tradable	
Private Pricing	A	B	C	D
	133,789.299,22	3.829.900,45	63.581.600,98	66.377.797,57
Social Pricing	E	F	G	H
	44.091.075,26	2.890.850,60	58.700.900,60	82.499.294,06
Divergence Effect	I	J	K	L
	-10.301.776,04	939.049.85	4.880.700,38	-16.121.496,49

The third row in the PAM table above shows the divergence between private and Social prices. The divergence obtained in the arabica coffee business by farmers is negative, namely for revenues of –Rp.10,301,776.04 which implicitly indicates tax or resource transfer that reduces system profits. Profit divergence –Rp.16,121,496.49 which is the sum of all transfer impacts, both positive and negative on the income and cost of the arabica coffee business. Meanwhile, divergence in tradable inputs and *non-tradable inputs* has a positive value of Rp. 939,049.85 and Rp.4,693,973.56. One of the causes of divergence is market *failure*.

As previously explained, the Arabica Coffee business has private profits and social benefits that are both greater than zero. This means that the presence or absence of government intervention in the business is financially and economically beneficial or has competitiveness and efficiency levels both at the business level and at the regional level.

3.1. Competitive Advantage Analysis

Competitive advantage analysis serves as a tool to measure private profits calculated based on market prices (actual prices) occurring at the farmer level where those prices are indicative of government intervention. Competitive advantage is determined by the value of Private *Profitability* (PP) and the value of the *Private Cost Ratio* (PCR).

From Table 2, a factor ratio value can be generated in the PAM of arabica coffee for the people of Solok Regency as shown in Table 3 below.

Table 3. Value and factor ratio in PAM Arabica Coffee of the people of Solok Regency.

Description	Notation	Value / Ratio
Private Benefits	$D = A - B - C$	66.377.797,57
Social Gains	$H = E - F - G$	82.499.294,06
Transfer Output	$I = A - E$	-10.301.776,04
Transfer Input	$J = B - F$	939.049.85
Factor Transfer	$K = C - G$	4.880.700,38
Net Transfer	$L = D - H = I - (J + K)$	-16.121.496,49
Private Expense Ratio	$PCR = C / (A - B)$	0,489242037
Domestic Resource Cost Ratio	$DRCR = G / (E - F)$	0,415728096
Nominal Output Protection Coefficient	$NPCO = A / E$	0,928505107
Nominal Input Protection Coefficient	$NPCI = B / F$	1,324835137

Coefficient of Effective Protection	$EPC = (A - B) / (E - F)$	0,920390878
Profit Coefficient:	$PC = D/H$	0,804586249
Subsidy Ratio For Producers	$SRP = L / E$	-0,111884074

In the PP indicator, the value of profits received by farmers in the arabica coffee plantation business is positively valued, namely Rp.32,285,406.18, which means that the arabica coffee plantation business is worth working on. Where $PP > 0$, it means that the arabica coffee commodity is able to expand because it has profits that are received directly by farmers.

The results of the analysis for arabica coffee commodities obtained a PCR coefficient value of 0.489, meaning that to get an additional output value of one unit, an additional domestic factor cost of 0.489 is required. The PCR value shows that the arabica coffee plantation business carried out by farmers is efficient and has a competitive advantage. This is also in line with the research of Murtiningrum et al (2014) which states that Rejang Lebong Regency with a coffee business has a PCR value of 0.37, and research Irfanda (2020) gets a PCR value for coffee businesses in Teeter Village, Temanggung Regency, which is 0.55. In other words, these two studies also have the ability economically to finance and produce coffee efficiently and financially the coffee produced can compete in domestic and international markets.

3.2. Comparative Advantage Analysis

Comparative advantage is related to economic viability, which is to assess economic activity for society as a whole regardless of who is involved in that economic activity. Analysis of the comparative advantage of arabica coffee commodities in Solok Regency can be measured by indicators of Social *Profitability* (SP) value and *Domestic Resource Cost Ratio* (DRCR) value.

The value of social benefits obtained in the arabica coffee business by farmers is Rp. 82,499,294.06. The value of social benefits, which are positive values greater than zero, indicates that the arabica coffee business in Solok Regency is profitable and worthy of efforts under conditions without government intervention and has a comparative advantage. Arabica coffee business in Solok Regency has a Social *Profitability* (SP) value of Rp. 82,499,294.06, this value is greater than the value of Private *Profitability* (PP) which is Rp. 66,377,797.57. The greater SP value of PP means that the arabica coffee business in Solok Regency is more profitable when there is no government intervention both on inputs and outputs than there is intervention from the government.

The DRCR value for the arabica coffee business by farmers is 0.415. The value of $DRCR < 1$ also shows that arabica coffee commodities are more profitable if cultivated domestically than imported from abroad. This condition is caused because the costs required can be greater if importing than producing yourself. The DRCR value of arabica coffee in this study was 0.415. Compared to the DRCR value in arabica coffee research in North Tapanuli Regency, which is 0.25, it shows that the arabica coffee plantation business in North Tapanuli Regency has a higher comparative advantage compared to the arabica coffee business at the research site.

4. Analysis of the Impact of Government Policies on Arabica Coffee Commodities

The purpose of government policy in trade is usually to protect domestic producers. If the price of imported products of similar commodities is lower than domestic production, it

will weaken the competitiveness of domestic commodities because consumers will tend to buy foreign products at lower prices. As a result, demand for domestic products will decrease and have implications for declining domestic production and local producer incomes. By using PAM, it can be known how much impact government policies have on the arabica coffee business in Solok Regency. Through PAM, it can be known the government's policy on inputs, outputs, and inputs in a commodity.

4.1. Government Policy on Output

Government policies in the form of subsidies or taxes on an agribusiness commodity can have a positive or negative effect on the perpetrators. Indicators of the impact of government policies on output can be seen using TO (*Transfer Output*) and NPCO (*Nominal Protection Coefficient Output*) values.

The value of TO is -Rp.10,301,776.04, meaning that the private price of Solok arabica coffee is lower than the social price. This condition shows that government intervention in the output of these businesses is more beneficial to consumers because consumers buy prices that are lower than the actual price.

The NPCO value obtained from the calculation results is 0.9285. This indicates that there are government policies that cause the private price of arabica coffee to be lower than the social price. This gives rise to the transfer of incentives from producers to consumers where consumers buy at a price cheaper than the price they should pay and producers receive a price smaller than the price they should receive.

One of the factors that allegedly caused the private price of arabica coffee to be lower than the social price was the implementation of a Value Added Tax (VAT) of 10 percent for the delivery of agricultural products produced from the agricultural, plantation, and forestry businesses.

4.2. Impact of Government Policy on Inputs

Policies in the form of input subsidies given to producers are expected to stimulate producers to use these inputs in order to increase production and productivity. The existence of this government intervention can be seen in the amount of Input Transfer (IT), *Nominal Protection Coefficient Input* (NPCI), and *Transfer Factor* (TF). The type of *tradable input* used in arabica coffee plantations is inorganic fertilizer consisting of Urea, KCL, NPK, and SP36 fertilizers.

The value of IT in the business of arabica coffee by farmers is positive. This indicates the transfer of income from farmers to *tradable input* producers amounting to Rp. 939,7049.85 per hectare. The positive divergence value for tradable inputs is due to the fact that the social price of *tradable inputs* is lower than their private prices. This condition is caused by *tradable inputs* used by Arabica coffee farmers are non-subsidized inputs.

The NPCI value in the arabica coffee business by farmers is 1,324. This indicates the existence of protection against the input producers used. This protection affects the sector that uses these inputs where users are harmed by the high price of inputs and cause high production costs. The impact of the *tradable input* policy on these two types of arabica coffee business results in higher production costs because farmers have to buy fertilizer at a price higher than the efficiency price.

The TF value in the arabica coffee business by farmers is positive, namely Rp.4,880,700.38. A positive TF value indicates that the price of non-tradable inputs issued by

the government at the private price level is higher than the price of *non-tradeable inputs* issued at the social price level.

4.3. Impact of Government Policy on Input-Output

The impact of input-output policies can be explained through the analysis of the *Effective Protection Coefficient* (EPC), *Net Transfer* (NT), *Profitability Coefficient* (PC), and *Subsidy Ratio for Producers/Subsidy Ratio to Producers* (SRP).

From the PAM analysis, the EPC value is 0.920 small from one. The EPC value is small from one, indicating that the government's policy towards input-output has not been effective or hindering farmers in the arabica coffee business which means that there is no government policy towards domestic commodities.

The value of NT is negative, namely -Rp.16,121,496.49. Indicates that there is a decrease in producer surplus in arabica coffee output. This indicates that there is no economic incentive to increase coffee production so that surplus producers are reduced by Rp. 16,121,496.49 per hectare per year.

A PC value of 0.804 indicates that the private profit received by the farmer is smaller than his social gain of 80.4%. This shows that farmers as producers have to spend 80.4% of funds on consumers, so overall government policies do not provide incentives to producers and make the profits received by farmers lower than without government policies.

The results of the SRP value analysis, -0.11, show that the government policy that has been in force so far has caused arabica coffee farmers to incur higher production costs by 11% of the *opportunity cost*.

CONCLUSION

Based on the results of the research shown by the PAM analysis, it can be concluded as follows:

1. The business of arabica coffee by farmers in Solok Regency has competitiveness shown from competitive advantages and comparative advantages. This is known from private profits and social benefits that are of positive value, namely Rp. 66,377,797.57 and Rp.82,499,294.06. Furthermore, the PCR and DRGR values are less than one, namely 0.65 and 0.48 which indicates that arabica coffee companies in this area have competitive advantages and comparative advantages.
2. The impact of government policies on the output of arabica coffee in Solok Regency causes private prices to be lower than social prices. This can be seen from the negative TO value, which is -Rp.18.508.225,04. The impact of government policies on inputs causes private prices of tradable inputs to be high compared to social prices which can be seen from the positive IT value of Rp.709,068.76. The impact of government policies on input-output causes a decrease in producer surplus, which means that there is no economic incentive to be able to increase production as seen from the negative NT value of -Rp.23,911,267.36.

Recommendations

Based on the analysis of competitiveness and the impact of government policies on the arabica coffee business by farmers through a partnership pattern, can be suggested recommendations from the results of the study as follows:

1. Farmers as producers to increase the productivity of arabica coffee and pay attention to garden management, cultivation techniques, the use of inputs, and marketing of arabica coffee products.
2. Farmers to always partner with the Solok Radjo Cooperative in carrying out cultivating, processing, and marketing activities of products so that the income of arabica coffee farmers increases through increasing coffee production and guaranteeing high selling prices.
3. The Solok Regency Government is expected to encourage farmers to increase planting area, provide superior seeds and assistance in production facilities as well as training farmers in the cultivation and processing of products.

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