THE IMPACT OF PROGRAM FOR INCREASE PRODUCTION AND HORTICULTURAL ADDED VALUE TO THE COMPETITIVENESS OF SHALLOT FARMING IN SERANG REGENCY

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Abstract

Shallots are a strategic commodity in Indonesia. The potential and benefits that shallot have caused the demand for shallots to increase along with the increasing population. Serang Regency has not been able to meet its high demand. The shortage of local shallot production is met by bringing in shallots from outside Serang Regency. One of the government's efforts to increase shallot production is the implementation of Program Pof the increase in Produces and Value-Added Horticulture, the purpose of the program is to increase shallot production and farmers' income. How the government intervention is assessed, this research aims to analyze the impact of the Horticultural Production and Value-Added Increase Program on the competitiveness of shallot farming in Serang Regency. This research is descriptive analytic. The sampling method used is purposive. Data collection was carried out through interviews, observations, and documentation. Data analysis using a policy analysis matrix (PAM). The results showed that the program generates private and social benefits of positive value so that the development of the shallot area can continue to run which is beneficial to farmers and the community, the program is also able to increase farmers' income by 57.17 percent. The value of the government protection indicator is positive, which means that the government has effectively protected shallot farming. In addition, result research shows that shallot farming under Program P leveling Produces and Value-Added Horticulture has competitiveness through competitive and comparative advantages so that the development of shallot areas in Serang Regency deserves to be prioritized in its development. recommended policy recommendations to increase farmers' income and competitiveness through the efficient use of production inputs that refer to technological advice and increase the capacity of human resources and farmer institutions

Keywords: shallot; government programs; income; competitiveness,

INTRODUCTION

Shallots are one of the strategic commodities in Indonesia that have an important role in supporting national food security, sources of income and employment opportunities, as well as affecting inflation and cannot be substituted by other commodities (Permentan No.46 of 2019). These issues indicate that Indonesia should have sufficient production of strategic commodities (rice, corn, soybeans, sugarcane, beef, chili, and shallots) and reduce the number of imports for these

commodities as well (Strategic Plan of the Ministry of Agriculture). The potential and benefits that shallot have caused the demand for shallots to increase along with the increasing population. Due to the high demand for commodities, it has caused an increase in the price of shallots so that changes in the price of shallots can affect inflation (www.bi.go.id). Based on statistical data, in 2020 shallot production in Serang Regency reached 1,161.7 tons. If it is assumed that the need for shallots is 2.50kg/capita/year (Pusdatin Kementan, 2020) then with the total population of Serang Regency as many as 1,622,630 people (BPS, Population Census 2020) require shallots approximately 4,061 tons/year. However, the local shallot supply of Serang Regency has not been able to meet its high demand.

The development of shallot commodities in Serang Regency still has government interference through policies on the input of production facilities, regulations, and facilities policies. Various policies have been carried out by the government in order to increase production, including: Intensification programs such as pest and disease control, cultivation training in accordance with Good Agriculture Practice (GAP) and Standard Operating Procedures (SOP) to farmers, and good post-harvest handling through Good Handling Practice (GHP) training as well as the procurement of post-harvest ward facilities and processing equipment, as well as coaching farmers both through counseling or demonstrations or experiments. The second is the extensibility program, which is to expand the onion crop area through a production facilities assistance program for the unity of hectares. Government policies are carried out through the Horticultural Production and Value-Added Program in the development of shallot commodities in Serang Regency.

RESEARCH METHODS

Research Location and Time

The choice of location was carried out on the consideration that Serang Regency has the potential to produce shallots with good quality and the highest production in Banten Province. The study was conducted February-June 2022 in Serang Regency.

Data Type and Sources

This type of research is in the form of analytical descriptive research with a quantitative approach, which is a type of research that seeks to develop certain objects or the frequency of occurrence of certain aspects of certain social phenomena, and to describe certain phenomena in detail using *survey* methods and using questionnaires as the main data collectors (Singarimbun and Sofian Effendi, 2008). In determining respondents, it was carried out intentionally (purposive) by the survey method of farmers who implemented the Horticultural Production and Value-Added Increase Program for 40 shallot farmers. Regarding the inputs traded; prices of non-subsidized seeds, fertilizers, and pesticides are used to represent social prices. Since domestic factors are *non-tradable* variables that do not have international prices as their opportunity costs, the social prices of domestic factors must be calculated by direct evaluation. In Serang District it can be assumed that there is no policy distortion or market failure to the cost of land and labor, so the private value of domestic factors can be regarded as a reflection of their true social prices.

Data Analysis

This study examines agricultural policies through the Hortikutura Production And Value Added Program on the competitiveness of shallot farming in Serang Regency by applying the Policy Analysis Matrix (PAM) approach to analyze the economic impact of the Horticulture Production And Value Added Improvement Program on farmers' incomes which is shown through financial and economic analysis, each indicator represents private profits and social benefits and indicators of government protection against shallot production in Serang Regency which are expressed by protection ratios such as *Nominal Protection Coefficient on Output* (NPCO), *Nominal Protection Coefficient on Input (*NPCI)*, Effective Protection Coefficient* (EPC), and *Subsidy Ratio to Producers* (SRP), and to find out whether the program improves competitiveness through competitive advantage and comparative advantage is illustrated by the value of *Private Cost Ratio* (PCR) and *Domestic Resources Cost Ratio* (DRC). The PAM model can be seen in Table 1.

Table 1 *Policy Analysis Matrix Calculations*

	Acceptance	Input *costs Tradable*	Cost *factor Domestic*	Advantage
Private	A	B	C	D
Social	And	F	G	H
Divergence	I	J	K	L

Source: Monke & Pearson 1989

Information:

Private Advantage (D)= A-(B+C)

Social Advantage (H)= E-(F+G)

NPCO (*Nominal Protection Coefficient Output*) = A/E

NPCI (*Nominal Protection Coefficient Input*) = B/F

EPC (*Effective Protection Coefficient*) = (A-B)/(E-F)

SRP (*Subsidy Ratio to produce*) = L/E

PCR (*Private Cost Ratio)* =C/(A-B)

DCR *(Domestic Cost Ratio)* =G/(E-F)

RESULTS AND DISCUSSION

The development of shallot areas in Serang Regency in 2020 was in the form of onion seed assistance of 700 kg per hectare, the assistance was as a stimulus to farmer groups in cultivating shallots as well as assistance in the form of GAP field schools/onion SOPs. Farmers can directly learn management processes or practices and the application of new technologies in the production system both from the aspect of using inputs and technology management by participating in adult non-formal education with the "learning by doing" method. Specifically, field schools are basically an approach to accelerate the process of technology transfer through the process of direct learning from field laboratories with farmers as the main subject of activity (Asiabaka, 1994). Referring to the Ministry of Agriculture, the field laboratory has various functions: as a school where farmers can learn about the application of inputs and efficient farm business management, as a meeting point for farmers to discuss all issues related to agriculture, and as a technology adaptation laboratory, the GAP field school or shallot SOP as a form of assistance in the implementation of onion area

development activities in Serang Regency.

Financial and Economic Analysis and The Impact of Government Policies

Private and Social Advantages
Two PAM matrices resulted from this study, the first matrix describes the practice of onion farming in agricultural (*existing*) locations, while the second matrix describes the existing farming efforts in research locations with the input of the Horticulture Production and Value-Added Program in the development of shallot areas in the form of assistance for onion seed production facilities as much as 700 kg per hectare. The two matrices have an accounting identity describing the differences in the structure of their farming business. The results of the PAM analysis to determine the impact of the Horticultural Production and Value-Added Program on shallot farming income in Serang Regency can be seen in Table 2 below.

Table 2. Financial and Economic Analysis of Shallot Farming in Serang Regency

PAM 1		Cost		
Existing	Acceptance	*Input* Traded	*Domestic Factors*	Advantage
Private Pricing	106.369.000	42.242.820	25.483.856	38.642.324
Social Pricing	104.964.262	42.496.506	27.303.014	35.164.742
Divergence	1.404.738	(253.686)	(1.819.158)	3.477.582
PAM 2		Cost		
Program	Acceptance	*Input* Traded	*Domestic Factors*	Advantage
Private Pricing	106.369.000	20.151.820	25.483.856	60.733.324
Social Pricing	104.964.262	42.496.506	27.303.014	35.164.742
Divergence	1.404.738	(22.344.686)	(1.819.158)	25.568.582

Source: Primary Data (processed).

Based on Table 2 presenting the results of the Policy Analysis Matrix (PAM) on shallot production, it shows that onion farming is financially profitable for farmers by obtaining a private profit of Rp. 38,642,324 per hectare using existing practices, namely without the implementation of the program. This practice is also economically beneficial based on the added value results for the community to obtain a social benefit of Rp. 35,164,742 per hectare. Through the program, the activity is financially profitable by generating a private profit of Rp. 60,733,324 per hectare for farmers. In addition, it also obtained a social benefit of Rp. 35,164,742 per hectare as an added value for the community. From the information above, the Horticultural Production and Value-Added Program for shallot farming in Serang Regency was able to increase farmers' income by 57.17 percent. This increase in income is due to the influence of subsidies and government assistance received through the Horticultural Production and Value-Added Increase Program.

Impact of Government Policies
Using several indicators from the PAM analysis, you can find out the magnitude of the impact of government policies as can be seen in Table 3 below.

Tabel 3. Indicators of the Impact of Government Policies on Shallot Farming Through the Program to Increase Production and Horticultural Value Added in Serang Regency in 2020

Policy Indicators	Formula	Value
Nominal Protection Coefficient at Output (NPCO)	= A/E	0,013
Nominal Protection Coefficient at Input (NPCI)	= B / F	0,47
Coefficient of Effective Protection (EPC)	= (A - B) / (E - F)	1,38
Subsidy Ratio for Producers (SRP)	= (D – H) / E	0,244

Source: Primary Data (processed).

Table 3 the result analysis shows that shallot production in Serang Regency has been protected by the government which is indicated by the value of the Nominal Protection Coefficient at *Output* (NPCO) of more than 1. The NPCO value exceeding one shows that in Serang Regency, the domestic (local) price of shallots is higher than the import price. The NPCO value of shallot farming under the Horticulture Production and Value-Added Program is 1,013. This means that with the implementation of the Horticultural Production Increase and Value-Added Program, the price of shallots is 1.3 percent higher than the price of its imports.

The value of the Nominal Protection Coefficient on *Input* (NPCI) which is smaller than 1 indicates that shallot production in Serang Regency has been subsidized by the government. In other words, the price of the *traded input* (local) is lower than its social price (world price). The NPCI value of 0.47 means that through the Horticultural Production and Value-Added Increase Program, the price of *input* traded is only 47 percent of the world price. The smaller the value of NPCI indicates the higher the subsidy provided by the government. From these results, shallot production in the Horticulture Production and Value-Added Program received subsidies from the government in the form of shallot seeds and fertilizers.

The Coefficient of Effective Protection (EPC) worth 1.38 shows that the Horticulture Production and Value-Added Increase Program has a positive impact on shallot production in Serang Regency, shallot production has been protected at an added value of 38 percent. In other words, it means that there is an incentive from government policy for ethnic groups to continue producing.

Furthermore, the Value of the Subsidy Ratio for Producers (SRP) of the Horticulture Production Increase and Added Value Program of 0.24 means that the value of the SRP > 0 shows that the government's policy through the Horticultural Production Increase and Value-Added Program causes shallot farming in Serang Regency to incur production costs smaller by 24 percent of the *opportunity cost* to produce.

Competitive and Comparative Advantage

Competitive Advantage

Competitive advantage analysis is used to measure financial feasibility. Competitive advantage can be analyzed using the *Private Cost Ratio* (PCR) indicator calculated from the PAM matrix.

Table 3. The Value of *Private Cost Ratio* (PCR) of Shallot Farming Through a Program to Increase Production and Add Value of Horticulture in Serang Regency in 2020

| Description | Acceptance | Cost | | Advantage | PCR |
		Input Traded	Domestic Factors		C/(A-B)
Private Pricing	A	B	C	D	
	106.369.000	20.151.820	25.483.856	60.733.324	
Social Pricing	And	F	G	H	0,296
	104.964.262	42.496.506	27.303.014	35.164.742	
Divergence	I	J	K	L	
	1.404.738	(22.344.686)	(1.819.158)	25.568.582	

Source: Primary Data (processed).

Based on Table 4, shallot farming in Serang Regency has a PCR value of < 1 which is 0.296, which means that in this practice, the domestic resources needed are Rp. 296 to get an income of Rp. 1,000. The Value of Private Cost Ratio (PCR) which is less than 1 indicates that Serang Regency has a competitive advantage in producing shallots, this shows that shallot farmers in Serang Regency can generate financial benefits from their farming efforts. The smaller the PCR value indicates the higher the competitiveness of onion farming.

Comparative Advantage
Comparative advantage is a measure of the competitiveness of a commodity assuming the economy does not experience any disruption or distortion at all. Comparative advantage is related to economic feasibility, which means the economic feasibility of society in general or, regardless of who is involved in the economic activity.

Table 5. The Value *of Domestic Resources Cost* (DRC) of Shallot Farming Through a Program to Increase Production and Add Value of Horticulture in Serang Regency in 2020

| Description | Acceptance | Cost | | Advantage | DRC G/(E-F) |
		Input Traded	Factor Domestic		
Private Pricing	A	B	C	D	
	106.369.000	20.151.820	25.483.856	60.733.324	
Social Pricing	And	F	G	H	0,437
	104.964.262	42.496.506	27.303.014	35.164.742	
Divergence	I	J	K	L	
	1.404.738	(22.344.686)	(1.819.158)	25.568.582	

Source: Primary Data (processed).

Based on Table 5, the value of the Domestic Resource Cost Ratio (DRC) of shallot farming in Serang Regency is 0.437. A value smaller than 1 indicates that Serang Regency has a comparative advantage in producing shallots. This means that it will be more profitable to meet the demand for shallots by producing this commodity domestically than through imports. The DRC value of 0.437 means that shallot production requires domestic resources of only 43.7 percent of its import price. In other words, by implementing a program to increase production and add value to horticulture to produce shallots in Serang Regency as an import substitution, the government will be able to save the country's foreign exchange equivalent to 56.3 percent of the amount of funds needed for its imports.

The interview results show that most farmers have not implemented onion farming patterns that are in accordance with the recommendations. Knowledge of mastered cultivation techniques and processing of yields still can be improved. Farmer education is one of the problems that arise at the farmer level which can result in low quality of shallot production and will have an impact on reducing onion prices.

CONCLUSIONS AND SUGGESTIONS

The results of the analysis showed that onion farming through the Horticulture Production and Value-Added Program was able to increase farmers' income by 57.17 percent. The indicators of policy impact through the value of the government protection ratio obtained from the matrix show that through this program, it has an NPCO value of 1.013, NPCI of 0.47, EPC of 1.38, and SRP of 0.244, which means that the government has carried out protection of shallot farming effectively. The Policy Analysis Matrix also shows that shallot farming under the Horticultural Production and Value-Added Improvement Program has competitive and comparative advantages, namely the PCR value is 0.296 and the DRC value is 0.437.

The increase in farmers' incomes is influenced by productivity caused by differences in the use of inputs. Therefore, it is recommended to farmers to increase the efficiency of the use of production inputs and guide farmers to refer to technological advice so that the income generated is more optimal and shallot production in Serang Regency is sustainable.

To increase the competitiveness of shallot commodities, the development of human resources and farmer institutions needs to be considered. Therefore, the government must maintain and improve technical assistance to improve farmers' knowledge, for example by developing extension methods, training/field schools and assistance to farmers to improve the cultivation system and farmer institutions that are most needed in shallot development including financial institutions, marketing institutions and communication and information institutions.

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