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**Analysis of Competitiveness of Shallot (*Allium cepa* L.)  
Commodities in Nagari Alahan Panjang and Nagari Air  
Dingin Kecamatan Lembah Gumanti Kabupaten Solok,  
West Sumatera**

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**Abstract**

One of the horticultural commodities that has the potential to be well developed in Indonesia is the shallot commodity, which has the potential to be traded on the international market. The main producing province of shallots on the island of Sumatra is West Sumatra, Solok Regency. This study aims to determine the competitiveness of shallot farming in Solok Regency, West Sumatra and determine the impact of government policies on outputs and inputs in onion farming. The research method is descriptive qualitative and quantitative descriptive methods. Data analysis is PAM (Policy Analysis Matrix). The analysis shows that onion farming in Solok Regency, West Sumatra has a Private Advantage of 34,269,456.00 (Competitive Advantage) and has a Social Advantage of 92,203,432.00 (Comparative Advantage), and has a competitive advantage with a yield of 0.24 (Private Profitability) and comparative advantage with a result of 0.04 (Social Profitability).

**Keywords:** Competitiveness; Policy Analysis Matrix; Shallot.

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## **1. Introduction**

Aside from being the main sector on which food security is based, the agricultural sector has other strategic functions, including to solve environmental and social problems (poverty, justice, etc.) and its function as a provider of tourism facilities (agro-tourism). Positioning the agricultural sector in national development is the main key to success in realizing a dignified, independent, developed, just and prosperous Indonesia [22]. The use of shallots in Indonesia is not only for cooking spices, but can also be processed into fried onions and medicine. The variations in their use are increasingly varied. With the increasing population of Indonesia, the need for onions has also increased. In the province of West Sumatra, more onions are dominated by imported onions, onions from Java such as Brebes, Medan. This shallot commodity is a competitor of Solok Regency's local shallot. The city of Padang only sells 5% of local shallots, the rest comes from areas outside West Sumatra. Whereas local shallots are more widely marketed to other regions such as Pekanbaru, Jambi, and regions outside West Sumatra. One of the problems is caused by the lack of coordination between agribusiness actors. This causes the institutional structure of the onion commodity agribusiness to be fragile and the linkage of supply chain management to be weak so that the competitiveness of shallot commodities becomes weak. The weak competitiveness of shallot commodities is a challenge in the implementation of agricultural development in the future so that a strategy is needed to improve the competitiveness of shallots so that they can compete in the domestic and export markets [22].

With the onion problem as described above it is necessary to conduct research on namely:

1. What is the picture of shallot agribusiness in Nagari Alahan Panjang and Nagari Air Dingin, Lembah Gumanti District, Solok Regency ?
2. How is the competitiveness of shallots in Nagari Alahan Panjang and Nagari Air Dingin Kecamatan - Lembah Gumanti, Solok Regency ?

## **2. Materials and methods**

This research was conducted in Nagari Alahan Panjang and Nagari Air Dingin Lembah Lembah Gumanti, Solok Regency. The research location was chosen purposively with the consideration that the location was one of the shallot production centers in West Sumatra. The choice of research location in Lembah Gumanti Subdistrict was also based on the consideration that the location was one of the shallot production centers in several Sub-districts in the Solok Regency. Then the selection of locations in Nagari Alahan Panjang and Nagari Air Dingin is based on the consideration that of several types of horticultural commodities developed in Nagari Alahan Panjang and Nagari Air Dingin, shallot commodities are more sought after by the community. The method used in this study is a survey method [16].

### **2.1 Description of the Study Area**

This research was conducted in Nagari Alahan Panjang and Nagari Air Dingin Lembah Lembah Gumanti, Solok Regency. The research location was chosen purposively with the consideration that the location was one of the

shallot production centers in West Sumatra. The choice of research location in Lembah Gumanti Subdistrict was also based on the consideration that the location was one of the shallot production centers in several Sub-districts in the Solok Regency. Then the selection of locations in Nagari Alahan Panjang and Nagari Air Dingin is based on the consideration that of several types of horticultural commodities developed in Nagari Alahan Panjang and Nagari Air Dingin, shallot commodities are more sought after by the community [3].

## ***2.2 Population and Sample***

The population of this research is 912 shallot farmers. Sampling using the random method. So that the number of samples of this study were 30 farmers [4].

## ***2.3 Collecting Data and Procedure Intervention***

Analysis of the data for the first purpose by describing the onion crop management agribusiness carried out by farmers in Nagari Alahan Panjang and Nagari Air Dingin Lembah Gumanti District. For the second purpose, the Policy Analysis Matrix data analysis method, which has been developed by Monke and Person since 1987, [15] is an analytical tool used to determine economic efficiency and the magnitude of incentives or impacts of interventions in the operation of various farming activities as a whole and systematically. This analysis can be used in commodity systems with various regions, types of farming and technology. In addition PAM analysis can also be used to find out whether a policy can improve competitiveness of the exploitation of a commodity produced through the creation of business efficiency and revenue growth, as follows:

Analysis of the data used is a qualitative and quantitative analysis method. The qualitative analysis aims to explain the characteristics and performance of shallot farming in Solok Regency. While the quantitative analysis aims to analyze the onion farming income. The data used in this study are primary data and secondary data. Primary data were obtained from direct interviews with farmers using a questionnaire. Whereas secondary data was obtained from relevant agencies (BPS, BPP, UPTD, etc.) [15].

## ***2.4 Data Analysis***

Data processing and analysis consists of the analysis of strategy formulation, namely:

Competitiveness analysis using the PAM (Policy Analysis Matrix) method. Analysis of the data used is descriptive analysis method and Policy Analysis Matrix. The PAM matrix consists of two identity calculations, namely: profitability identity and identity divergences, but in this study the analysis used is limited to only calculating private profit, social profit, competitiveness with comparative advantage analysis and competitive advantage [15].

**Table 1: Policy Analysis Matrix (PAM)**

Description	Income	Input Cost Tradable	Input Cost	The Profit
			Non Tradable	
Private Price	A	B	C	D
Social Price	E	F	G	H
Divergence Effect	I	J	K	L

Sources: Monke and Pearson, 1989 [15].

Information [15] :

- 1. Private Benefits :  $D = A - (B + C)$
- 2. Social Benefits :  $H = E - (F + G)$
- 3. Private Cost Ratio :  $PCR = C / (A - B)$
- 4. Domestic Resource Cost Ratio :  $DRCR = G / (E - F)$
- 5. Output Transfer :  $(OT = I) = A - E$
- 6. Input Transfer :  $(IT) = A: I = B - F$
- 7. Transfer Factor :  $(FT = K): K = C - G$
- 8. Net Transfer :  $(NT = L): D - H$
- 9. Effective Protection Coefficient :  $(A - B) / (E - F)$
- 10. Profitability Coefficient :  $D / H = (A - B - G) / E - F - G$
- 11. Subsidy Ratio to Producer :  $SRP = L / E$
- 12. Nominal Input Coefficient Protection :  $NPCI = B / F$
- 13. CNP Coefficient Protection Nominal Output :  $NPCO = A / E$

From the data in the PAM table above, it can then be analyzed with various indicators as follows:

(1) Analysis of Private Profitability (PP):  $D = A - (B + C)$ ;

Information:

D = Profit or Profit based on the actual price (Private Profit).

A = Receipt (Actual price). Revenue is obtained by multiplying the results of the average  
the amount of production per hectare (kg / ha) multiplied by the selling price (Rp).

B = Tradable Input Costs based on actual prices.

C = Domestic factor costs (non-tradable input costs) based on actual prices.

If the private profit is negative ( $D < 0$ ), the farmer suffers losses or is not worth the effort. Otherwise  $D > 0$  means onion farming.

### **3. Result and Discussion**

#### **3.1 Management of Shallot Plants**

##### **1. Land Management**

At the beginning of planting, onion farmers carry out activities to clear the area or land. The initial stage in land management is to clear the land from existing weeds or weeds. In general, farmers directly pull the weeds or weeds that grow until clean. After the cleared land from the weeds is hovered around 20 cm deep to make the soil loose and improve soil aeration. Then the beds are made in the same direction with 1.2 meters width, 20 cm height and length adjusted to the land conditions. Then in each bed the trench is 50 cm deep. Furthermore, the process carried out is to adjust the spacing and make planting holes. And the distance between beds commonly used by onion farmers is 50 cm. In general, land management and spacing arrangements conducted by farmers are in accordance with the literature.

##### **2. Planting**

The planting activities carried out by the sample farmers in the field are the spacing made by the sample farmers which is 15 x 20 cm, and 20 x 20 cm, using beds and mulch for planting, with a height of 20 cm, and 1.2 cm wide beds, some planting hole depth makes 4 cm, 5 cm, and 6 cm. Before the land is planted, the remnants of the previous plants in the land must be cleaned up first. In each bed trenches and drains are also made. The depths of the trenches are 50 cm. In each planting hole, only 1 seed is inserted per hole. The seeds used by farmers to grow shallots vary. In contrast to research in other locations (in the districts of Cirebon, Brebes and Tegal), namely after the land is ready for planting, the next step is the planting process. Before planting, farmers must prepare the onion seeds. The stage of seed preparation is usually carried out by poges or cutting the tip of the red onion benign. This is done so that the onion seeds grow quickly. Farmers also mix onion seeds with fungicides so they don't rot when planted. After the seed preparation is complete, the next step is planting. Onion planting is done by immersing the onion seeds into the planting hole that has been prepared one by one. Shallot seeds are buried three quarters with the buds not covered with soil and facing up. Spacing between lines

15-20 cm. And planting spacing in rows of 10-15 cm. Planting is done in the morning or evening to reduce evaporation.

### **3. Plant Maintenance**

Plant maintenance consists of fertilizing, weeding, controlling pests and diseases, and irrigation.

#### **a. Fertilization**

Farmers in the field generally fertilize three times, namely when the plants are 10 HST, and 30 HST fertilization is done by spreading fertilizer directly on the field. The use of fertilizers and their dosage, ie the average amount of manure 102 kg, the average amount of compost fertilizer is 53.13 kg, but with different dosages, farmers also use fertilizers in the field aftershocks with an average dose of ZA 28.97 kg / ha, Kcl 65.21 kg / ha, TSP 30.79 kg / ha, SP-36 29.09 kg / ha, and Urea 60.39 kg / ha. It is different from research in other locations (in Dolok Martumbur Village, Muara District, North Tapanuli Regency), where fertilization is first carried out before farmers make land preparation. The amount and use of fertilizers is determined by farmers based on land area, capital and soil fertility. Fertilizer requirements for each land vary depending on the condition of the shallots and the knowledge of the farmers. Fertilizers commonly used by farmers are Compost, Urea, Ponska (NPK), Za, KCl, Mutiara, and TSP. The average use of labor for fertilizing activities is  $\pm 20$  HKO / Ha and usually uses labor in the family (tkdk).

#### **b. Weeding**

Weeding activities on plants carried out by sample farmers in the field, ie weeds that need to be weeded, how to weed them is by pulling out all the weeds there. Weeding activities carried out by farmers in the field 2 times, namely at the age of plants 15 days before planting and 2 weeks after planting (15 Days After Planting). Weeding is done by farmers every week before fertilizing 2. But if weeds grow fast from the specified time, weeding will certainly continue, so as not to inhibit the growth of shallots. In contrast to research in other locations (in the districts of Cirebon, Brebes and Tegal), weeding is done 2-3 times during one planting season, namely at the age of plants 15 and 30 DAP. The purpose of weeding is to reduce weed attacks.

#### **c. Pest Control**

Pest and disease control activities in plants carried out by sample farmers in the use of spraying pests that usually carried by farmers on their backs, using effective pesticides to eradicate pests and diseases that attack on the onion plant, namely insecticides and fungicides in accordance with the HPT that is in the plant. Farmers in the field only use three types of pesticides, namely Antracol with an average dose of 6.14 kg / ha, Confidor at a dose of 3.07 kg / ha, and Dursban at a dose of 4.53 liters / ha. Spraying is done after the plants are 15 days after planting. Spraying frequency is generally 1 time a week. If the pest attack is very severe, spraying can be done 3 times a week or 24 times per planting season. Spraying will continue until the shallots are ready for harvest. It is different from research in other locations (in Dolok Martumbur Village, Muara District, North Tapanuli Regency), which is usually onion farmers in the study area using pesticides such as Antracol, BM Lamda,

Curacron, Drusban, Ripcot, Ompilor, and Trinep. The average use of labor for fertilizing activities is  $\pm 22$  HKO / Ha and usually uses labor in the family (tkdk). And in other locations (in the districts of Cirebon, Brebes and Tegal), namely pest and disease control activities carried out manually and chemically. Eradication of pests manually using female labor that is by doing pruning shallots that contain caterpillars in it. This activity is carried out as needed. If a caterpillar attack is severe, this activity can be done up to 30 times. In general, onion plants are very susceptible to pests in the dry season. In this season, more pests develop than the rainy season. Meanwhile, in the rainy season the development of diseases mainly caused by fungi is relatively more than the dry season.

#### d. Irrigation

Irrigation activities on plants carried out by sample farmers in the field are the first irrigation at the age of plants 0-10 days, with a frequency of watering 2x a day, in the study area farmers do watering plants only at the beginning growth and subsequent frequency of watering can not be determined by farmers. If dry, watering can be done 2-4 times a week. Whereas sample farmers in the field irrigate if there is a long drought, so that the frequency of watering is done 2-4 times a week. Water sources for watering are prioritized from rain water, but during the dry season, water is sourced from well water and irrigation. Watering is usually done in the afternoon. In contrast to research in other locations (in the districts of Cirebon, Brebes and Tegal), watering is done every day at the time of initial growth until the age of the plant is approximately 7 DAPs. After 7 HST watering adjusts to the needs, can be every day or an interval of one day. Watering is usually done in the afternoon.

#### **4. Harvesting**

Harvesting activities on plants carried out by sample farmers in the field, namely harvesting onions carried out by farmers at the age of the plant 60 days after planting. There are differences in the age of plants ready for harvest in the rainy season and dry season. Age of harvest in the rainy season between 50-55 days, while in the dry season 60-65 days. In the rainy season the harvest is relatively shorter than the dry season because of the abundant water availability so that plant growth is relatively faster than the dry season. Then the characteristics of plants that can be harvested are at the base of the leaves are weak, 80 percent of the leaves are yellow, the tubers are above the surface of the soil and the appearance of a deep red color and a characteristic odor. Harvesting is carried out when the weather is sunny, by pulling each plant. Then the plants are bound together in the leaves. In contrast to research in other locations (in the districts of Cirebon, Brebes and Tegal), namely Harvesting is done after the age of the plant 55-60 HST. There are differences in the age of plants ready for harvest in the rainy season and dry season. Age of harvest in the rainy season between 50-55 days while in the dry season 60-65 days. In the rainy season the harvest time is relatively shorter than the dry season because of the abundant water availability so that plant growth is relatively faster than the dry season. For the highlands, the age of harvesting shallots is longer that is 90 days after planting. The onion plants that are ready to be harvested are marked by their fallen leaves, yellowing, empty stem necks, and bulbs of the onion surfacing. Harvesting is done by carefully pulling the onion bulbs from the soil. After being extracted, the shallots are bound approximately 15 clumps per bunch and collected in one place. This shallot is then left on the ground

while being dried for 7-12 days. After the onion is dry enough, then the onion is cleaned of dirt and is ready to be sold or brought home for storage.

### 5. Post Harvest

Post-harvest activities on plants carried out by sample farmers in the field are harvested shallots which are then hung using hanging racks. The onions are not dried directly facing the bright sunlight, the onions are dried in a protected place. In contrast to research in other locations (in Dolok Martumbur Village, Muara District, North Tapanuli Regency), the red onions that have been harvested and dried are sold directly to large traders in Muara District. Then the big traders will distribute shallots to several sub-districts in North Tapanuli and Tobasa districts, namely Siborong-borong, Balige, Tarutung, Humbang Hasudutan and Parapat districts.

### 3.2 Competitiveness of Shallot Farming

#### 1. Analysis of Shallot Farming Competitiveness

Table 2 below shows the costs per hectare in shallot farming which is obtained from the total cost sharing of these inputs and then divided by the total area of all available land.

**Table 2:** Tradable and Non-Tradable Input-Output Costs per Hectare on Shallot Farming

Input / Output	Amount	Unit	Price (Rp/kg)	Value (Rp/ha)	Social Price (Rp/kg)	Value (Rp/ha)
<b>Input Tradable:</b>						
1. SP36 Fertilizer	29,09	Kg	6.982,64	203.131,31	5.000	145.454,55
2. KCL fertilizer	65,21	Kg	8.691,14	566.767,68	6.000	391.272,73
3. SS fertilizer	14,26	Kg	9.314	132.824,02	10.000	142600
4. NPK Fertilizer	201,09	Kg	2.100,00	422.290,91	2.100	422.290,91
5. Urea fertilizer	60,36	Kg	6.240,29	376.686,87	500	30.181,82
6. Fertilizer ZA	28,97	Kg	6.539,75	189,46	3.100	89.807,00
7. Fertilizer TSP	30,79	Kg	7337	225.898,99	2.400	73.890,91
8. Pesticides - pesticides:						
1. Anthracol	6,14	Kg	141.611,84	869.696,97	29.950	183.935,35
2. Confidor	3,07	Kg	33.223,68	102.020,20	7.000,00	21.494,95
3. Dursban	4,53	Liter	38.584,82	174.606,06	47.300,00	214.044,44
Seeds	528,69	Kg	16260	8.596.323,23	3500	1850404
<b>Infrastructure:</b>						
- Cutter knife	9	Unit	583,73	5.000,00	27,557	236
- Hoe	1	Unit	129.226	161.858,59	124,871	156
- Handsprayer	1,21	Unit	1.335,67	1.616,16	1.210,70	1.464,95



- Wheelbarrow	1,78	Unit	20.302,56	36.093,43	480.205	853.696,97
- Bucket	8	Unit	42.920,62	343.364,95	43.140	345.120,00
- Motorcycle pedicab	0,40	Unit	15.520.000,00	6.208.000,00	5.173,34	2.069,34
- Mulch	122,83	Unit	138.338,82	16.991.919,19	53,683	6.593,79
Total			16.082.387	33.490.499	617.685	3.479.216
Input Non – Tradable :						
1. Land	1,00	Ha	10.290.000,00	2.572.500,00	2.572.500,00	2572500
2. Manure	102,00	Karung	13.586,00	1.385.772,00	13.586,00	1385772
3. Compost Fertilizer	53,13	Karung	33.650,00	1.787.824,50	33.650,00	1787824,5
4. Labors:						
- Land Processing	59,27	HKP	111.615,00	6.615.421,05	111.615,00	6615421
- Planting	34,30	HKP	77.420,00	2.655.506,00	77.420,00	2655506
- Fertilizing	14,92	HKP	86.821,00	1.295.369,32	86.821,00	1295369,32
- Weeding	31,97	HKP	94.458,00	3.019.822,26	94.458,00	3019822,26
- Plant Pest and Disease Control	95,50	HKP	78.916,00	7.536.478,00	78.916,00	7536478
- Harvest	78,67	HKP	120,62	9.488,78	120,62	9488,78205
-Post harvest:	1,88	HKP	98,99	186,49	98,99	186,493392
a. Clean up - veins			10.786.686	26.878.368	3.069.186	26.878.368
b. Drying Onions						
c. Put in a sack						
d. Transporting Onions						
Total			37.655.759	87.247.236	6.756.056	57.235.953
Output	5.640,61		10.839,00	61.138.529	17.000	95.890.303

The results of the analysis using the PAM matrix can be seen in Table 3 below.

**Table 3:** Matrix of Shallot Farming Policy Analysis

Description	Revenue (Rp / ha)	Cost (Rp / ha)		Profits (Rp / ha)
		Tradable Input	Non Tradable Input	
Private Prices	61.138.529,00	33.490.499	3.479.216	34.269.456,00
Social Prices	95.890.303	26.878.368	26.878.368	92.203.432,00
Policy Impact	-34.751.774	15.464.702	7.717.500,00	(57.933.976,00)

It can be seen in Table 3 above the results of the Shallot Farming Policy Analysis in Solok Regency are as follows:

- (1) Private revenue (61,138,529.00) is obtained from the output generated in the business, at the private selling price, that is, the product of production times the selling price.
- (2) Social Revenue (95,890,303) is obtained from the output generated in the business, at the social selling price, ie the product of production times with its selling price.
- (3) Tradable Private Input Costs (33,490,499) are obtained from the sum of all costs, inputs used in business which are also traded on international markets (import-export) where private prices are obtained directly on the domestic market when buy the inputs, among others: urea fertilizer, kcl fertilizer, sp36 fertilizer, NPK fertilizer, urea fertilizer, SS fertilizer, tsp fertilizer, za fertilizer, antracol pesticide, confidor pesticide, dursban pesticide, and infrastructure used in the infrastructure
- (4) Social Tradable Input Costs (3,479,216) obtained from the sum of the total costs on inputs used in the business are also traded on the international market (import-export), where the social price is the price on the export market Imports include urea fertilizer, Kcl fertilizer, SP36 fertilizer, NPK fertilizer, urea fertilizer, SS fertilizer, TSP fertilizer, ZA fertilizer, antracol pesticide, confidor pesticide, dursban pesticide, and infrastructure used.
- (5) Non-Tradable Private Input Costs (26,878,368) are obtained from the sum of all costs on inputs used in farming that are not traded on the international market (import-export), including: land used for farming shallots, labor use ranging from land processing to post-harvest activities, and also the facilities and infrastructure used by farmers to cultivate shallots.
- (6) Non-Tradable Social Input Costs (26,878,368) obtained from the sum of the total costs of inputs used in farming that are not traded on international markets (import-export), including land used for onion farming red, the use of labor ranging from land processing to post-harvest activities, and also facilities and infrastructure used by farmers to cultivate shallots.
- (7) Private Profitability obtained is Rp. 34.269.456.00, this is obtained from  $= A - (B + C)$ , so that it produces  $D > 0$ , ie the commodity system generates a profit above the normal cost which means the commodity is financially feasible.
- (8) Social Profitability obtained is Rp. 92,203,432.00, this is obtained from  $= E - (F + G)$ , resulting in  $H > 0$ , which is a commodity system worth developing because it provides a comparative advantage.
- (9) Private Cost Ratio (PCR) obtained which is equal to 0.24 is obtained from  $= C / (A - B)$ , so as to produce  $PCR < 1$ , ie farming has a competitive advantage (farming ability to pay domestic costs or non-tradable inputs such as land, tax and labor).
- (10) Domestic Resource Cost Ratio (DRCR) obtained is equal to 0.04, this is obtained from  $= G / (E - F)$ , resulting in  $DRCR < 1$ , which means the smaller the value, means the system is more efficient and has advantages comparative (can be saved to produce one-unit foreign exchange).

- (11) Output Transfer (OT) obtained is equal to Rp. 34,751,774 is obtained from  $= (A-E)$ , this positive result means that government policy on output gives incentives to producers. That is, the price paid by consumers to producers is higher than it should be.
- (12) Nominal Protection Coefficient Output (NPCO) obtained, which is equal to 0.64, is obtained from  $= A / E$ , resulting in  $NPCO < 1$ , which means that the level of government protection against output is low, causing the price of output received to be lower than actual price.
- (13) Transfer Input (J) received is Rp. 15,464,702, this is obtained from  $= B - F$ , which means the government provides subsidies for tradable inputs, so farmers do not need to pay in full the tradable (social) inputs that should be paid.
- (14) The obtained Nominal Protection Coefficient Input (NPCI) of 26.04 is obtained from  $= B / F$ , resulting in  $NPCI > 1$ , which means that the level of government protection against tradable inputs is low, so farmers pay lower prices for tradable inputs than the price should be.
- (15) Transfer Factor (K) obtained is Rp. 7,717,500, this is obtained from  $= C - G$ , which means there is a negative subsidy on non-tradable inputs. Farmers pay non-tradable inputs higher than the actual price.
- (16) Net Transfers (L) obtained are in the amount of Rp. 57,933,976.00, this is obtained from  $= D - H$ , so that it produces  $L > 0$ , which means that there is a producer surplus caused by government policy on inputs and outputs.
- (17) Effective Protection Coefficient (EPC) obtained is equal to 0.47 obtained from  $= (A - B) / (E - F)$ , resulting in  $EPC < 1$ , which means the level of government protection against domestic production is low .
- (18) Subsidy Ratio to Producer (SRP) obtained which is equal to 0.60, this is obtained from  $= L / E$ , resulting in  $SRP < 1$ , which means that government policy causes producers to issue production costs lower than the counterparty cost to produce.

## **5. Conclusion**

Based on the results of research on Competitiveness Analysis of Shallot Commodities in Nagari Alahan Panjang and Nagari Air Dingin Lembah Lembah Gumanti, Solok Regency, the following conclusions can be obtained:

1. The description of onion agribusiness carried out by the respondent farmers in the study area in accordance with the recommendations from the referral sources, activities that are not in accordance with the recommendations from the referral source only on the irrigation / watering activities on the shallots.
2. Shallot farming in Solok Regency has competitiveness, because it has a Private Advantage of

34,269,456.00 (Competitive Advantage) and has a Social Advantage of 92,203,432.00 (Comparative Advantage), and has a competitive advantage with PCR results 0, 24 (Private Profitability), and comparative advantage with DRCR 0.04 (Social Profitability) results.

3. The results of the analysis using the PAM method show that the SP value for onion farming is Rp.92,203,432 /Ha/Year. This shows that onion farming is feasible to be cultivated and has a comparative advantage. Social Profitability (SP) is the profit gained in the event of a perfectly competitive market, where there is no government interference and market failure.

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