Income Analysis of Shallot Farmers in Sragen Regency

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ABSTRACT

Shallot (Allium Ascalonicum L) is a superior agricultural commodity in Sragen Regency. The main problem most often faced by shallot farmers in Sragen Regency is the high level of price fluctuations. Price instability causes farmers to complain about their unstable income. The purpose of this study is to determine and analyze the level of shallot farming income in Sragen Regency. This research was conducted from May to June in Sragen Regency. The research method used is the survey method with interviews using questionnaires to shallot farmers in Sragen Regency. Determination of the number of respondents using the lemeshow formula by being taken in several villages in Kedawung District, Sragen Regency. Determination of the sampling location in Kedawung Sub-district, because it is the highest shallot producing area in Sragen Regency. The method used to determine the sample is Proportional Sampling. The results showed that the average revenue of each farmer was fairly significant, while for the average production cost expenditure of each shallot farmer was different. The average income of shallot farmers in Sragen Regency is quite high. Although the average income of shallot farmers is high, the stability of this income is still a concern for shallot farmers in Sragen Regency, moreover, if the selling price of shallots is unstable, it can cause farmers to lose and result in not being able to meet all their needs.

KEYWORDS

Shallot; Revenue; Cost; Income

1. INTRODUCTION

According to Horticultural Statistics Data (2022), seasonal vegetable and fruit commodities that make a major contribution to horticultural production are shallots. In 2022, shallot production reached 199.11 thousand tons with a harvest area of 19.59 thousand hectares. Central Java is the region with the largest shallot production, contributing 28.07% of the total national production, namely 556.51 thousand tons with a harvest area of 53.59 thousand hectares. The participation of households in shallot consumption is 94.95%. The increase in shallot demand is often not matched by the amount of production, considering that shallots are a seasonal crop.

The high yield potential of shallots can provide a large amount of income, as well as improve the welfare of farmers. Shallots are one of the crops that often experience problems in the off-farm aspect, namely high price fluctuations. Price fluctuations cause changes in the ups and downs of farmers' income. Income is all forms of revenue or income from product sales during a certain period. Agricultural products often experience uncontrollable price fluctuations by farmers.

Prices are high when production is low, and vice versa when the harvest is plentiful, the prices received tend to be low, even commodities can be unsold due to the large number of products circulating in the market (Ayomi et al., 2020). This price fluctuation condition also occurs in Sragen Regency. Sragen Regency is a shallot producing center, as evidenced by the average production of 19,830 quintals from 2019 to 2023. Unstable shallot production is caused by fluctuating selling prices. This phenomenon makes it difficult for farmers to plan production activities and manage finances effectively (Marina et al., 2024).

The analysis of shallot farmers' income in Sragen Regency is very important to analyze and know the extent of shallot price fluctuations in a certain period and their impact on farmers' income, by better understanding this, shallot farmers in Sragen Regency can take appropriate actions to reduce risks and increase their income. This will bring long-term benefits to farmers by improving their economic welfare and the sustainability of shallot cultivation in the region.

2. METHODOLOGY

Research Design. The type of research conducted is quantitative with a survey method of distributing questionnaires to shallot farmers in Sragen Regency with the aim of obtaining primary data that will be processed to analyze the income received by shallot farmers.

Population and sample used. Population is the entire object of observation or research that has certain qualities and characteristics to be studied and then drawn conclusions. (Rozana & Musfikar, 2020). The population in this study were shallot farmers in Sragen Regency. The sample is part of the population that statistically represents the population in the study. (Izzul, 2019). The method used to determine the sample is the lemeshow formula resulting in 96 farmer respondents. The sampling amount used Proportional Sampling to determine farmer respondents in 10 villages in Kedawung District, Sragen Regency. The distribution in Kedawung Subdistrict there are 10 villages including, 53 farmers of Jenggrik Village, 22 farmers of Mojokerto Village, 18 farmers of Kedawung Village, 12 farmers of Mojodoyong Village, 9 farmers of Pengkok Village, 8 farmers of Bendungan Village, 8 farmers of Celep Village, 7 farmers of Karangpelem Village, 6 farmers of Wonorejo Village, and 3 farmers of Wonokerso Village.

Data Collection Techniques. Data Collection Techniques with the interview method are carried out by following a list of questions that have been prepared previously in the form of a questionnaire to shallot farmers in Sragen Regency in the form of farmer characteristics, farm characteristics, and production and harvest. Recall, which is a data collection method where participants are asked to recall and record relevant information from the past. The aim is to obtain data related to the price and income of shallot farmers in Sragen Regency. Documentation method, which is a data collection method to support information obtained in the field, so that the descriptions and arguments presented are more accurate and optimal.

Tools or Instruments Used. The types of data required in this study include primary data and secondary data. Primary data is actual information obtained directly from the first source, either from individuals or groups, through filling out questionnaires distributed to shallot farmers in Sragen Regency. The primary data of this study are farmer characteristics (farmer age, gender, education, farming experience), farming characteristics (land area, seed type, fertilization, medicines), production and harvest (quantity, selling price, income). Secondary data refers to information used to complement or support the main data, which is obtained from sources that are not the first source (Safrina et al., 2022). In the context of this study, the secondary data used is the number of shallot farmers obtained from the Central Bureau of Statistics and the Food Security, Agriculture and Fisheries Office of Sragen Regency.

Data Analysis Methods. The data analysis method in this study is descriptive quantitative which is an analysis carried out using statistical analysis using formulas in processing existing data. (Hayuni & Sefdia, 2021). The income of shallot farmers is the difference between the total revenue and the total costs used, meaning that to get the income value, the total revenue and total costs are first calculated. Calculate revenue with the formula:

$$TR = P \cdot Q$$

Description:

TR = Total shallot farming revenue (Rp/year)

P = Onion production price (Rp/kg)

Q= Total shallot production (kg/year)

To calculate the total cost using the formula (Busyra, 2020) as follows:

$$TC = FC+VC$$

Description:

TC = Total Cost (Rp/year)

FC = Fixed Cost (Rp/year)

VC = Variable Cost (Rp/year)

Furthermore, to calculate income using the formula according to (Masnun et al., 2020) namely:

$$I = TR - TC$$

Description:

I = Total Income (Rp/year)

TR = Total Revenue (Rp/year)

TC = Total Cost (Rp/year)

3. RESULTS AND DISCUSSION

Farm income is an important indicator to measure the level of profitability and welfare of farmers. The income received by shallot farmers is the result of the difference between total revenue and total expenditure. (Busyra, 2020). Shallot farming expenses are commonly referred to as production costs consisting of fixed costs and variable costs. Farm income is the value of production obtained by the farm from the total product multiplied by the selling price at the farm level. (Fadhilah & Rochdiani, 2021).

3.1 Reception

Farm revenue is the amount of physical production produced in one growing season that is valued in money. (Hoffman, 2019). Onion farm receipts in Sragen Regency are obtained from the results of multiplying the amount of shallot production produced by farmers for one year by the average shallot selling price received by farmers in 2023. Selling price is an important thing where price is a large component of consumer satisfaction, and price is a product value perceived by consumers. Selling price is the amount of price charged or issued to consumers which is obtained or calculated from production costs plus non-production costs and expected profit. (Harahap, 2019). The following is the calculation of farm receipts of shallot farmers in Sragen Regency can be seen in Table 1.

Table 1. Results of Calculation of Farm Revenue of Onion Farmers in Sragen Regency

Description	Total	Average
Production	2,395,833 Kg	24,957 Kg/Ha
Selling Price	Rp 25,000/Kg	Rp 25,000/Kg
Reception	**14.375.000.000**	**623.914.931**

Source: Primary Data Processed, 2024

Based on the data in Table 1, it can be seen that the total production of shallot farming in Sragen Regency with a sample of 96 respondents is 2,395,833 Kg/year. The amount of shallot production of farmers varies every year (Bakari, 2019). The farm income of shallot farmers is Rp 59,895,833,333/hectare/year. This figure is fairly significant, showing promising economic potential for shallot farmers in Sragen Regency. The average revenue per hectare of 96 farmer respondents is Rp 623,914,931, with an average revenue of each farmer of Rp 6,499,113/hectare, which means that the productivity produced by shallot farmers in Sragen Regency in shallot cultivation is quite high. The revenue is generated from shallot farming with a different scale of land area for each farmer ranging from 0.1 to 0.8 Ha. Respondent farmers have an average cultivated land area of 0.24 Ha. Farmers in one year on average are able to harvest 4 times with the time required for one harvest of 50 to 90 days. The total farm income of each farmer varies depending on the quality and quantity of production produced.

3.2 Production Cost

Production costs are expenses incurred by farmers during the farming process in one growing season. Production costs consist of fixed costs and variable costs (Sardianti *et al.*, 2023).. Fixed costs are costs incurred during the shallot farming process where costs include tool depreciation, taxes, and rental fees. Variable costs are costs that are largely influenced by the production obtained and greatly affect the results of production because the costs can change according to the size of the shallot production that farmers want, where these costs include seed costs, fertilizer costs and drug costs. Details of the production costs of shallot farming per year of respondent farmers can be seen in Table 2.

Table 2. Results of the Calculation of Farming Costs of Shallot Farmers in Sragen Regency

No.	Description	Total Cost	Average Cost (IDR/Ha)
Fixed Cost			
1	Tool Depreciation	Rp 557,389,871	Rp 5,806,144
2	Building Land Tax	Rp 30,229,167	Rp 314,887
3	Rent	Rp 717,083,333	Rp 7,469,618
	TFC		Rp 13,590,650
Variable Cost			
1	Seeds	Rp 11,454,541,667	Rp 119,318,142
2	Fertilizer	Rp 2,035,406,250	Rp 21,202,148
3	Drugs	Rp 1,078,283,333	Rp 11,232,118
	TVC		Rp 151,752,409
	Total Cost = TFC+TVC		**Rp 165,343,059**

Source: Primary Data Processed, 2024

Based on the data in Table 2, it can be seen that the average total cost of farming per hectare per year is Rp 165,343,059 resulting in an average cost incurred by each farmer of IDR 1,722,323/Ha. These costs consist of fixed costs of Rp 13,590,650 including the cost of depreciation of equipment which is the difference between the purchase price and the selling price when divided by the length of use of the equipment. (Puspitasari, 2020)The average depreciation cost of equipment is Rp 5,806,144/Ha. The smallest proportion of fixed costs is building tax, because the land area cultivated by shallot farmers includes narrow land so that the price of building tax is not too large, with an average of Rp 314,887 /Ha per farmer. Land rental costs are only a few tenant farmers who do not have land so rent with an average cost of Rp 7,469,618 / Ha.

Variable costs of Rp 151,752,409 consisting of seed costs, almost all shallot farmers in Sragen Regency use Brebes and Nganjuk seed varieties with an average price per kilogram of Rp 25,000 to Rp 60,000, resulting in a total average seed cost of Rp 119,318,142/Ha. The type of fertilizer used by shallot farmers in Sragen Regency is uncertain, according to the needs of farmers, but almost all farmers use manure and NPK, resulting in a total average fertilizer cost of Rp 21,202,148/Ha. The use of medicines in shallot farming is also uncertain, all depending on the needs of the farmers, the total average cost of medicines is Rp 11,232,118/Ha. The size of farming costs incurred by farmers will affect the quantity and quality of crops. If the quality and quantity of crops are high, then farmers can meet market needs better, and increase profits, and vice versa.

3.3 Revenue

Income calculation is the difference between total revenue and total costs incurred. (Ramadhan *et al*., 2023). The results of income calculations are used to determine the profits and losses in shallot farming in meeting the needs of their households. The calculation of income received by shallot farmers can be seen in Table 3.

Table 3. Calculation Results of Farm Income of Onion Farmers in Sragen Regency

No.	Description	Total	Average (Rp/Ha)
1	Total Revenue (TR)	Rp 59,895,833,333	Rp 623,914,931
2	Total Cost (TC)	Rp 15,872,933,621	Rp 165,343,059
	Revenue = TR-TC	**Rp 44,022,899,713**	**Rp 458,571,872**

Source: Primary Data Processed, 2024

Based on table 3, the average selling price obtained by farmers in 2023, Rp 25,000/Kg, resulted in an income of Rp 44,022,899,713 or a total average per hectare of Rp 458,571,872 which came from revenue of Rp 59,895,833,333 or an average of Rp 623,914,931 minus total production costs of Rp 15,872,933,621 or an average of Rp 165,343,059. The average total income of each farmer in Sragen Regency is Rp 4,776,790/Ha/year. The average income figure is quite high. Although the average income of shallot farmers in 2023 is high, the stability of this income is still a concern for shallot farmers in Sragen Regency, moreover, if the selling price of shallots is unstable, it can cause farmers to lose money and result in not being able to meet all their needs. This shows that prices have an impact on farmers' income. When the selling price is high, farmers' income will increase. Conversely, if the selling price is low, the farmer's income will decrease. According to Rahayu (2021) if the income of a household or a person is relatively low, it can be said that welfare is also low. Vice versa, if income is relatively high, welfare is also high. Business experience and productivity levels also affect income, the higher the productivity and the better the business experience has the opportunity to increase income.

4. CONCLUSION

Based on the results of the research conducted, it can be concluded that the average revenue per hectare of shallot farmers in Sragen Regency is Rp 623,914,931. The revenue is generated from shallot farming with different land area scales. Onion farmers in Sragen Regency have an average cultivated land area of 0.24 Ha. The average total production cost of shallot farmers in Sragen Regency per year is Rp 165,343,059, consisting of fixed costs of Rp 13,590,650 and variable costs of Rp 151,752,409. The average annual income of shallot farmers in Sragen Regency is Rp 458,571,872/hectare. These results indicate that the average income of each shallot farmer in Sragen Regency is quite high at Rp 4,776,790 / ha / year with a total average selling price of Rp 25,000 / kg. Suggestions for future researchers can expand the sample in other areas or add other calculation variables related to the income received by farmers in farming to strengthen the research results. For shallot farmers in Sragen Regency to increase knowledge and skills in post-harvest processing of shallots and build an accurate and up-to-date market information network in making the right harvest and sales decisions. For the Kedawung District and Sragen Regency offices to pay more attention to import quota arrangements and market interventions, so that shallot prices remain controlled.

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