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Research Article

Farm Income Analysis of Shallot Farmers in Dulang, Enrekang, South Sulawesi

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ABSTRACT

Shallot, recognized primarily as a spice vegetable, serves a pivotal role within the realm of vegetables. This study, undertaken in Dulang, Malua, Enrekang, South Sulawesi, Indonesia, a prominent hub for shallot production in the Enrekang Regency, involved 90 respondents comprising shallot farmers. The principal objective of this research is to ascertain the income generated by these farmers. Employing a survey method, the study gathered data through direct interviews with shallot farmers, selected through a simple random sampling approach. The findings revealed that the average yield from shallot cultivation ranged between IDR 40,000,000 and IDR 50,000,000 per harvest. This outcome suggests the economic viability of shallot production in Dulang, Malua, Enrekang, South Sulawesi, Indonesia.

INTRODUCTION

The agricultural sector constitutes a pivotal element in national development, serving as a cornerstone for addressing food requirements essential to sustaining human life (Panurat, 2014). The overarching goal is to signify national food security, ensuring the fulfillment of food demands within the Indonesian state (Panurat, 2014). Notably, shallots assume a significant role in commerce due to their widespread popularity, as they feature prominently in nearly every culinary preparation (Muhammad Idrus, 2013).

The paramount sector in any developing economy is agriculture, serving as a crucial source for providing sustenance to the majority of the population and offering employment opportunities (Thamrin et al., 2018). Thamrin et al., (2018) underscore the significance of the agricultural sector in contributing to Indonesia's economic development. This sector, being the primary livelihood source for a substantial proportion of the Indonesian populace, assumes a pivotal role (Shodiq, 20. Through the commodities it yields, the agricultural sector holds significant potential for augmenting the income of farming communities in Indonesia.

The shallot industry constitutes a segment of the agriculture and food sector, encompassing the processes of production, distribution, and marketing of shallots (Allium cepa var. aggregatum) distinguished by its red outer skin and a sweeter flavor profile compared to garlic, shallots are cultivable in both lowlands and highlands. In Enrekang, farmers engage in the cultivation of shallots across varying elevations, with agricultural practices documented by Arham *et al,* (2015).

Cultivation of shallots represents a significant facet of horticultural practices, extensively adopted as a means of livelihood within the Enrekang Regency community. Beyond primary cultivators, individuals engaged in farm labor also derive income from shallot cultivation (Rahim et al., 2022). Emphasizing the augmentation of yield, production quality, and income, shallot cultivation in Enrekang Regency holds a prominent position among horticultural endeavors (Rahim et al., 2022). This cultivation not only enjoys widespread adoption but has also evolved into a vital source of livelihood for the inhabitants of Enrekang Regency.

Farmers play a pivotal role in shallot productivity, assuming a central position in this agricultural endeavor. Their significant contribution holds paramount importance for regional economic development, manifesting in the enhancement of living standards, creation of employment opportunities, reduction of unemployment rates, utilization of natural resources while ensuring environmental sustainability, and the provision of food surpluses (Arniati, *et al*, 2023).

Income strategies assume a crucial role in the realm of agriculture, extending beyond the realms of crop or livestock production. Agriculture, in essence, involves the cultivation of sustainable and sufficient income avenues for farmers. The endeavor to amplify shallot production necessitates a parallel effort to augment the income of farmers, thereby fostering an expansion of employment opportunities within the agricultural sector. This imperative arises from the fact that a substantial portion of the Indonesian populace resides in rural areas, with farming constituting the primary occupation (Muhammad Idrus, 2013).

The operational methodology of shallot farmers in Enrekang, encompassing the Baraka Subdistrict, remains rooted in conventional production principles, wherein augmenting yields is contingent upon escalating inputs. The primary recourse for farmers aiming to enhance shallot production involves elevating the quantities of fertilizer, seeds, and labor.

Farmers are compelled to optimize production to prevent imbalances in their agricultural endeavors. Fundamentally, the primary objective for farmers is to realize anticipated income when selling their products, marking income as the pivotal goal in agricultural activities. Amidst unstable economic conditions, particularly evident in Indonesia, the livelihoods of individuals, particularly farmers, may decline. This necessitates shallot farmers to exhibit increased creativity and efficiency in the shallot production process (Indriani, *et al* 2022).

Drawing from the aforementioned background, the researcher is motivated to investigate the income dynamics of shallot farmers in Dulang, Malua, Enrekang, South Sulawesi, Indonesia, under the title "Farm Income Analysis of Shallot Farmers in Dulang, Enrekang, South Sulawesi."

METHOD

This research was carried out in Dulang, Malua, Enrekang, South Sulawesi, Indonesia, recognized as a prominent shallot production hub in the Enrekang region. Employing a survey methodology, data collection involved direct interviews with shallot farmers, selected through a simple random sampling approach. The respondent profiles to be outlined encompass (1) age, (2) education level, (3) farming experience, (4) number of family members, and (5) cultivated land area. The dataset utilized for analysis comprises exclusively of primary data.

RESULTS AND DISCUSSION

Age of Shallot Farmers

Age constitutes a crucial determinant influencing an individual's performance and productivity, particularly within the context of shallot farming (Farianto et al., 2021). The age of farmers emerges as a pivotal aspect influencing their actions and decisions in the ongoing agricultural processes. As posited by Farianto et al. (2021), an individual typically witnesses an increase in work ability with advancing age, followed by a subsequent decline due to diminishing strength. The average age of farmers exhibits considerable variability contingent upon factors encompassing country of residence, farming type, lifestyle, access to healthcare, and various other determinants.

Table 1. Respondents by age on shallot farming in Dulang, Enrekang

No	Age (year)	Number (person)	Percentage (%)
1	15-25	7	7.77
2	26-36	27	30
3	36-45	32	35.55
4	46-45	15	16.66
5	>56 and above	9	10
	Total	90	100

Source: Primary Data Processed, 2023

Table 1 presents the age distribution of shallot farmers in Dulang, Malua, Enrekang, South Sulawesi, Indonesia. The majority of shallot farmers fall within the productive age range of 36-45 years, constituting 35.55 percent of the sample, totaling 32 individuals. The age group of 56 years and above exhibits the highest variation, while the lowest age group is 15-25 years. Nine farmers, accounting for 10 percent of the sample, are categorized as less or unproductive due to surpassing the productive age. Farmers aged 36-45 years represent the largest proportion at 35.55 percent, comprising 32 individuals. The age range of 26-36 years includes 27 farmers, constituting 30 percent of the sample, whereas the smallest cohort consists of seven farmers aged 15-25 years, making up 7.77 percent. This demographic distribution underscores the potential for shallot farmers to optimize efforts for increased yields and profits, thereby enhancing their economic status.

Education Level of Shallot Farmer

Education stands out as a pivotal factor influencing both development and the quality of human resources (Farianto et al., 2021). The level of education plays a crucial role in a farmer's capacity to embrace significant innovations and information, fostering advancements and adding value to agricultural practices. A farmer's higher educational attainment facilitates a more facile comprehension and acceptance of the latest innovations. Additionally, education serves as a noteworthy investment, contributing to the enhancement of knowledge for improved agricultural practices.

Table 2. Respondents by Education Level on shallot farming in Dulang, Enrekang, 2023

No	Education Level	Number (person)	Percentage (%)
1	Not graduated from elementary school	10	11.11
2	Elementary school	13	14.44
3	Junior high school	22	19.8
4	Senior high school	35	31.5
5	Diploma	3	2.7
6	Undergraduate	7	6.3
	Total	**90**	**100**

Source: Primary Data Processed, 2023

Table 2 reveals the educational background of shallot farmers, indicating that the predominant group possesses a secondary education. Specifically, 35 individuals, constituting 31.5 percent, completed their education at the junior high school level, followed by 22 individuals (19.8 percent) who graduated from high school. A smaller proportion pursued higher education, with 7 individuals (6.3 percent) having completed college, and 3 individuals (2.7 percent) holding a Diploma. Additionally, 13 farmers (14.44 percent) graduated from elementary school, while 10 individuals (11.11 percent) did not complete elementary school.

Farming Experience of Shallot Farmer

The farming experience of shallot farmers is quantified by the duration dedicated to shallot farming, measured in years. Experience emerges as a pivotal factor influencing the success of farmers. A discernible trend suggests that as farmers accumulate more time managing a farm, their knowledge deepens regarding its viability, potential challenges, and suitability. Moreover, extensive farming experience correlates with a heightened propensity to adopt relevant agricultural technologies (Arham., 2015).

Table 3. Respondents by Farming Experience on shallot farming in Dulang, Enrekang, 2023

No	Farming Experience (year)	Number (person)	Percentage (%)
1	1-5	5	5.55
2	6-10	29	32.22
3	11-15	35	38.88
4	16-20	9	10
5	21-50	7	7.77
6	>25	5	5.55
	Total	90	100

Source: Primary Data Processed, 2023

Table 3 illustrates the average farming experience of shallot farmers in terms of years. Farmers with 1-5 years of farming experience constitute 5 individuals, representing 5.55 percent of the sample. Those with 6-10 years of experience amount to 29 farmers, comprising 32.22 percent, while 35 farmers, constituting 38.88 percent, fall within the 11-15 years category. A total of 9 farmers, or 10 percent, possess 16-20 years of farming experience. Furthermore, the range of farming experience spans 21-50 years, encompassing 7.77 percent of the sample. This indicates a considerable longevity of experience among shallot farmers. The accumulation of such substantial experience facilitates informed decision-making in selecting suitable innovations and technologies for shallot plant cultivation.

Number of Family Members of Shallot Farmer

Table 4. Respondents by Number of Family Members on shallot farming in Dulang, Enrekang, 2023

No	Number of Family Members (person)	Number (person)	Percentage (%)
1	1-3	22	24.44
2	4-6	61	67.77
3	7-10	7	7.77
	Total	90	100

Source: Primary Data Processed, 2023

Table 4 delineates the distribution of shallot farmers based on the number of family members. The category spanning from the lowest to the highest comprises farmers with 1-3 family members, totaling 22 individuals, representing 24.44 percent. Subsequently, farmers with 2-6 family members constitute the majority, with a total of 61 individuals, accounting for 67.77 percent. The final category encompasses farmers with 7-12 family members, totaling 7 individuals, comprising 7.77 percent of the sample. The findings underscore that, predominantly, shallot farmers tend to have 4-6 family members, representing 67.77 percent. This observation indicates that labor availability is not a limiting factor for shallot farmers, as work can be efficiently managed within the family unit.

Cultivated Land Area owned by Shallot Farmer

Land area stands out as a pivotal factor in the shallot production process, specifically referring to the extent of land under the control of shallot farmers. The average land area controlled by shallot farmers is detailed in the subsequent table:

Table 5. Respondents by Cultivated Land Area on shallot farming in Dulang, Enrekang, 2023

No	Cultivated Land Area (ha)	Number (person)	Percentage (%)
1	0,10-0,40	25	27.77
2	0,41-0,80	52	57.77
3	0,81-1,20	10	11.11
4	>1,21	3	3.33
	Total	**90**	**100**

Source: Primary Data Processed, 2023

Table 5 illustrates that the distribution of land cultivated by farmers ranges from the highest to the lowest, with more than 1.21 hectares being controlled by 3 individuals, representing 3.33 percent. Following this, the land area cultivated in the range of 0.81-1.20 hectares is managed by 10 farmers, constituting 11.11 percent. Moreover, the land area cultivated in the range of 0.41-0.80 hectares involves 52 farmers, comprising 57.77 percent. The smallest land area cultivated, falling within the range of 0.10-0.40 hectares, is tended by 25 farmers, representing 27.77 percent. Consequently, the average cultivated land area of shallots controlled by farmers is relatively limited, posing a potential hindrance to enhancing the production capacity of their farms.

Income of Shallot Farmer

Income calculation involves determining the yield in a single harvest, a variable contingent upon factors such as the managed land area, the quantity of seeds planted, and the application of pesticides and fertilizers. The forthcoming table will outline the shallot production quantities of individual farmers.

Table 6. Respondents by Production on shallot farming in Dulang, Enrekang, 2023

No	Total Production (Ton)	Number (person)	Percentage (%)
1	1-5	28	31.11
2	5-10	33	36.66
3	10-15	15	16.66
4	>15	14	15.55
	Total	**90**	**100**

Source: Primary Data Processed, 2023

The table presented above indicates that the majority of respondents obtained shallot production ranging between 5 to 10 tons, involving 33 farmers, constituting 36.66 percent.

Production Costs Incurred by Shallot Farmers

Shallot farmers in Dulang, Malua, Enrekang, South Sulawesi, Indonesia, experience varying production costs, influenced by the cultivated land area. The larger the cultivated land area, the higher the incurred production costs. Fixed costs, those that remain constant irrespective of production quantity, contrast with variable costs, which fluctuate based on production levels. The calculation of fixed costs employs a depreciation calculation tool, as outlined by Adetya et al. (2021).

Table 7. Respondents by production costs incurred by shallot farmers on shallot farming in Dulang, Enrekang, 2023

No	Production Costs (IDR)	Number (person)	Percentage (%)
1	<20,000,000	5	5.55
2	20,000,000-30,000,000	23	25.55
3	30,000,000-40,000,000	38	42.22
4	40,0000,000-50,000,000	14	15.55
5	>50,000,000	10	11.11
	Total	**90**	**100**

Source: Primary Data Processed, 2023

Table 7 provides insights into the production costs of respondents, revealing that 5 farmers, or 5.55%, incur costs less than IDR 20,000,000. Additionally, 23 farmers, representing 25.55%, utilize costs ranging from IDR 20,000,000 to IDR 30,000,000. The category of costs between IDR 30,000,000 and IDR 40,000,000 is employed by 38 farmers, constituting 42.22%, while 14 farmers, or 15.55%, utilize costs within the range of IDR 40,000,000 to IDR 50,000,000. The remaining 10 farmers, with a percentage of 11.11%, bear production costs below IDR 50,000,000. Variations in cultivated land area and labor utilization account for these differences. It's worth noting that the research by Arham (2015) suggests variable costs for shallot farmers in the Enrekang district at IDR 48,081,617.38 per area of cultivated land.

Determining the revenue generated from farmers' endeavors is intrinsically tied to the quantity of shallot production. The market price of shallots exhibits dynamic fluctuations, influenced by shifts in demand and supply. When the demand for shallots surges, and the supply diminishes, prices tend to rise. Similarly, superior-quality shallots, characterized by larger size and vibrant red color, command higher prices, reaching IDR 25,000 per kilogram. Conversely, in situations where demand is low and the shallots are of inferior quality, they are traded at a lower price, around IDR 10,000 per kilogram.

Net Income Obtained by Shallot Farmers

According to Farianto et al., (2021), farm income is calculated by subtracting the total input costs or overall costs from the production yield. This variable is subsequently incorporated into the second stage of the model, as expressed in the following equation:

$$\pi = TR - TC$$

Where:
π : Income (IDR/Ha)
TR : Total revenue or total income (IDR/Ha)
TC : Total cost (IDR/Ha)

Arniati *et al* (2023) assert that income is influenced by both the selling price and the quantity of production. Beyond these factors, the production costs play a crucial role in the overall production process. Farmers are compelled to optimize their production to maintain equilibrium in their agricultural endeavors. The fundamental objective for farmers, when selling their products, is to attain income aligned with their expectations, as income stands as the primary goal in agricultural activities.

Table 8. Respondents by net income obtained by shallot farmers on shallot farming in Dulang, Enrekang, 2023

No	Net Income (IDR)	Number (person)	Percentage (%)
1	<30,000,000	5	5.55
2	30,000,000-40,000,000	27	30
3	40,000,000-50,000,000	36	40
4	50,0000,000-60,000,000	15	16.66
5	>60,000,000	7	7.77
	Total	**90**	**100**

Source: Primary Data Processed, 2023

Table 8 presents a clear overview of the income distribution among respondents. Notably, 36 farmers, constituting 40%, report the highest income falling within the range of IDR 40,000,000 to IDR 50,000,000 per harvest, whereas 5 farmers, or 5.55%, report the least income exceeding IDR 30,000,000. This contrasts with the findings of Maru et al. (2020), whose research indicates that the majority, 34.37%, earn income ranging from IDR 10,000,000 to IDR 20,000,000, while the minority, 9.37%, report income surpassing IDR 30,000,000 per harvest.

CONCLUSION

In Dulang, Malua, Enrekang, South Sulawesi, Indonesia, the majority of shallot farmers possess an education level equivalent to senior high school (SMA). Among the 90 respondents, 52 farmers manage land areas ranging from 0.41 to 0.80 hectares, while the average work experience falls between 11 to 15 years for 35 farmers. Analyzing the income from shallot farming in Dulang, Malua, indicates that the income level of shallot farmers is categorized as medium.

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REFERENCES

Adetya, A., Program, I. S., & Agribisnis, S. (2021). Analisis Produksi, Pendapatan Dan Risiko Usahatani Bawang Merah Di Kecamatan Sokobanah Kabupaten Sampang Provinsi Jawa Timur. *Jurnal Agriscience*, *2*, 17–31. http://journal.trunojoyo.ac.id/agriscience

Arham, Nurhapsa Kartini. (2015). Analisis Pendapatan Dan Kelayakan Usahatani Bawang Merah Di Kecamatan Anggeraja Kabupaten Enrekang. *Jurnal Galung Tropika*, *4*(3), 137–143.

Arniati, M. I. I. M. A. I. (2023). Analisis Pendapatan Petani Bawang Merah Di Desa Masalle Kecamatan Masalle Kabupaten Enrekang. *JUMADI*, *1 No 2*, 107–123. https://doi.org/10.56314/jumabi.v1i2

Farianto, A., Karyani, T., & Trimo, L. (2021). Komparasi Pendapatan Usahatani Bawang Merah Berdasarkan Sumber Pembiayaan di Kabupaten Nganjuk. *Jurnal Agribisnis Indonesia*, *9*(2), 88–104. https://doi.org/10.29244/jai.2021.9.2.88-104

Indriani, Jabal Tarik Ibrahim, B. Y. A. (2022). Strategi pemasaran untuk meningkatkan pendapatan pengrajin keripik tempe di sanan. *Jurnal Cemara*, *19*(2021), 43–52.

Rahim, A., Mk, P., & Soci, E. (2022). Pengaruh Penggunaan Lampu LED sebagai Perangkap Hama terhadap Pendapatan The Effect of Using LED Lights as Pest Traps on the Income of Shallot Farmers in Kolai Village, Malua District, Enrekang Regency. In *Jurnal Daun* (Vol. 9, Issue 2).

Shodiq, W. M. (2022). Model CPRV (Cost, Productivity, Risk dan Value-Added) dalam Upaya Meningkatkan Pendapatan Petani Indonesia: A Review. *Jurnal Hexagro*, *6*(2), 115–127. https://doi.org/10.36423/hexagro.v6i2.657

Thamrin, M., Novita, D., & Hasanah, U. (2018). *Kontribusi Pendapatan Pengupas Bawang Merah Terhadap Pendapatan Keluarga Contribution of Shallot Peeler Revenue to Family Income*.

Muhammad Idrus. (2013). Analisis Pendapatan Usaha Tani Bawang Merah Di Kelurahan Mataran Kecamatan Anggeraja Kabupaten Enrekang. *Jurnal Economix* , *1*(2), 94–103.

Panurat, S. M. (2014). *Faktor-Faktor Yang Mempengaruhi Minat Petani Berusahatani Padi Di Desa Sendangan Kecamatan Kakas Kabupaten Minahasa*.