

Comparative Income Analysis of Partner and Non- Partner Shallot Farmers in Cirebon

Rifyal Zaelva Gustinar^{1*}, Dina Dwirayani¹, Tety Suciati¹

¹Faculty of Agriculture, Swadaya Gunung Jati University, Cirebon, Indonesia

*Corresponding author E-mail: rifyalzaelfaagustinar@gmail.com, ddwirayani@ugj.ac.id,
 tety_suciati@ugj.ac.id

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ABSTRACT

Reality shows that there is an income gap between farmers partnered with PT Tani Bawang Sejahtera and non-partner farmers, even though ideally partnerships should be able to promote equitable profits. This study aims to: 1) analyze the partnership pattern between PT Tani Bawang Sejahtera and its partner farmers; and 2) analyze the income differences between PT Tani Bawang Sejahtera partner farmers and non-partner farmers. This research was conducted in Babakan Subdistrict, Cirebon Regency, with the research process taking place from October 2025 to January 2026. The research design is considered a comparative quantitative study with a survey research technique. The population of this study consists of red onion farmers who are both partners and non-partners. Data analysis was conducted using a two-sample independent mean difference test (independent sample t-test). The study results showed that partner farmers had an average production cost of IDR. 175,610,184, revenue of IDR. 445,726,071, and income of IDR. 270,115,887, while non-partner farmers had a production cost of IDR. 174,596,638, revenue of IDR. 292,063,141, and income of IDR. 117,466,503. Based on the difference test analysis using the independent sample t-test, the significance was found to be 0.000 and the mean difference was positive, indicating a difference between the incomes of partner and non-partner farmers, with partner farmers having a higher average income.

Keywords: Shallots, Cirebon, Partnership, Income

1. INTRODUCTION

Cirebon Regency is one of the main centers of shallot production in West Java, contributing significantly to the horticultural supply in the Pantura region. Data from Badan Pusat Statistik, (2024) shows that the harvested area for shallots increased from 3,121 hectares in 2023 to 3,205 hectares in 2024, but production decreased from 34,301.9 tons to 32,099.4 tons. This situation indicates that productivity fell from 10.98 tons/ha to 10.01 tons/ha, suggesting potential inefficiencies in cultivation or post-harvest handling.

The high production costs of red onions are further pressuring farmers' incomes. A study by Dinas Pertanian Kabupaten Cirebon (2024) showed that farming costs reach IDR 95 million per hectare, mainly for seeds (38%), fertilizers and pesticides (26%), and labor (21%). The selling

price, which fluctuates sharply between IDR 5,000–50,000 per kg, also makes farmers' incomes unstable and vulnerable to losses when prices fall below basic production costs.

Several agribusiness institutions have begun developing partnerships with various farmers, both individually and institutionally, to reduce market risks. PT Tani Bawang Sejahtera is one agribusiness company that has established a partnership model through the provision of superior seeds, technical assistance, purchase guarantees, and contract financing schemes in Babakan District. Conceptually, this partnership is expected to create mutually beneficial relationships through production efficiency, technology transfer, and market certainty (Melati et al., 2024). This partnership mechanism also plays a role in strengthening farmers' bargaining positions against price fluctuations and market failure risks (Yuliastri et al., 2022).

Field observations indicate that partner farmers have safer access to inputs and markets, allowing them to reduce production costs by 10–15% compared to non-partner farmers. Data from Dinas Pertanian Kabupaten Cirebon (2023) show that the net income of partner farmers reaches around IDR 85 million per hectare per planting season, while non-partner farmers only earn about IDR 63 million. This difference is economically significant, but statistical analyses such as an independent t-test are still needed to confirm its significance.

The managerial strategies of the two groups also differ. Partner farmers implement the company's cultivation standards, including the use of certain varieties, measured fertilizer doses, planting schedules, and integrated pest monitoring. Non-partner farmers rely more on personal experience and market conditions without purchase guarantees. These differences in strategy create gaps in the agribusiness system, where the bargaining position of non-partner farmers is weaker (Lestari, 2024).

Previous research has mentioned that partnerships can increase input efficiency, provide price certainty, and improve business management (Hutabarat & Nawawi, 2023; Melati et al., 2024; Yuliastri et al., 2022). However, there has been no research specifically comparing the income of partner and non-partner shallot farmers under the partnership with PT Tani Bawang Sejahtera. Observations also indicate that farmers have diverse perceptions, leading to a knowledge gap regarding the extent to which the partnership quantitatively affects income. Farmers who are in a partnership consider it beneficial as it provides access to capital, price guarantees, and production cost efficiency; however, non-partner farmers tend to feel that the partnership will limit their flexibility in selling their crops. This difference in perception indicates a knowledge gap and needs

to be examined to what extent the partnership actually impacts the income level of red onion farmers quantitatively.

This research aims to: 1) analyze the partnership patterns between PT Tani Bawang Sejahtera and its partner farmers; and 2) analyze the income differences between partner farmers of PT Tani Bawang Sejahtera and non-partner farmers.

2. RESEARCH METHOD

This research was conducted in Babakan District, Cirebon Regency, which was purposely chosen because it is a center for shallot production as well as the location of farmer partnerships with PT Tani Bawang Sejahtera. The research activities were carried out over two months, from October to November 2025.

This study uses a comparative quantitative design with survey techniques. This method is based on positivism, using instruments to collect data, as well as objective statistical analysis as explained by Suharsimi (2013) and Winarno (2018). The survey technique was conducted due to the relatively large population size (Sinambele, 2014), and this technique was applied through direct interviews using questionnaires with shallot farmers who are partners of PT Tani Bawang Sejahtera and non-partners in Babakan District.

The research population consisted of 84 partner farmers and 117 non-partner farmers, with a total population size of 201 people. The sample was determined using Slovin's formula with a 5% margin of error, resulting in 134 respondents, namely 56 partner farmers and 78 non-partner farmers. Sampling was conducted through stratified random sampling according to the differences in characteristics between the groups (Sugiyono, 2019).

The research data was obtained from direct interviews as the primary source, as well as archives, literature, and previous studies as secondary sources. Data analysis was conducted using an independent sample t-test to measure the income differences between partner and non-partner farmers. This data analysis was performed using SPSS v.26 software, and the analysis output was interpreted based on decision criteria according to significance values: if $p < 0.05$, it indicates a significant income difference, whereas if $p > 0.05$, it indicates no significant difference (Unaradjan, 2019).

3. RESULTS AND DISCUSSION

Partnership Pattern of PT Tani Bawang Sejahtera

PT Tani Bawang Sejahtera is an agribusiness company that plays an important role in managing the red onion value chain through a partnership system in Cirebon Regency, particularly in Babakan District, which is known as one of the most developed horticultural production centers in Cirebon Regency. The company is part of the modernization flow of the red onion agribusiness by implementing a collaborative model that directly involves farmers through the arrangement of inputs, cultivation techniques, and marketing of the harvest. To date, the company has partnered with more than 215 farmers, covering a total cultivation area of around 185 hectares each planting season. Most of the production activities take place in Jatiseeng Kidul, Jatiseeng, Babakan, and several other surrounding villages. With a fairly extensive area under development and a structured cooperation framework, the company plays a role in consolidating production, strengthening farmers' capacities, and improving the efficiency of red onion farming in the region.

The recruitment process for partner farmers is carried out through a tiered selection mechanism aimed at ensuring that prospective farmers have land, basic technical skills, and readiness to follow the company's cultivation standards. The initial stage usually begins with collecting data on prospective partners based on recommendations from the head of the farmer group, local leaders, or field extension workers who understand the characteristics of the farmers and their land. After data collection, the company conducts field verification to check the suitability of the agroecosystem, such as soil texture, land use history, and availability of water resources. Verification also aims to assess the certainty of land status, whether privately owned or leased, so that no issues arise during the contract period. In addition, an assessment is conducted on the readiness of farmers to follow technical regulations, including their willingness to use certain varieties, adhere to planting schedules, and comply with fertilization and integrated pest management recommendations. If prospective farmers pass all stages of verification, the process continues with the signing of a partnership agreement that outlines the rights and obligations of both parties, including provisions related to the provision of inputs, technical assistance, financing schemes, and marketing mechanisms for the harvest.

To support cultivation activities, the company provides a package of production facilities that includes superior seeds, basic and supplementary fertilizers, pesticides according to crop pest control recommendations, and plastic mulch as part of the modern cultivation technical



components. The value of the saprodi package provided ranges from IDR 50–100 million per hectare, depending on the input needs of each farmer and the condition of the land. The provision of this package is not only aimed at meeting technical needs but also ensuring that all farmers use uniform inputs so that the quality of the harvest can be better controlled. To ensure that the cultivation implementation runs according to plan, the company assigns 8–12 field assistants each planting season. The assistants are responsible for routine monitoring, providing intensive guidance on balanced fertilization, integrated pest and disease management, and evaluating plant growth. The presence of these assistants has been proven to help farmers reduce technical errors and improve the accuracy of cultivation processes. As a result, the average productivity of partner farmers reaches 13–15 tons per hectare, higher compared to non-partner farmers who generally produce only 9–11 tons per hectare.

On the marketing side, the company implements a contract pricing scheme that is determined before the planting season, ranging from IDR 25,000–30,000 per kilogram. This system provides price certainty to farmers, minimizing the risk of market fluctuations. For red onion commodities, which are very sensitive to market dynamics, price certainty is a key factor influencing farmers' income stability. In addition, the company coordinates planting and harvesting schedules to maintain a continuous supply. This arrangement ensures that the supply of red onions remains stable and meets the company's needs, while also preventing simultaneous harvesting that often causes prices to plummet at the farmer level. In terms of varieties, the company has designated the use of the Bima Brebes variety as the standard. This variety is chosen because it has uniform bulbs, high productivity, good storage capability, and matches the preferences of both local and regional markets.

The partnership model implemented by PT Tani Bawang Sejahtera creates a more controlled production environment through the use of standardized inputs, intensive technical assistance, regulation of planting patterns, and guaranteed marketing of the produce. This situation provides farmers with the opportunity to achieve better production efficiency and higher income stability. Meanwhile, non-partner farmers tend to face yield variability, price uncertainty, and high market risks due to the lack of technical or structured marketing regulations. This partnership model develops adaptively following the characteristics of the Babakan Subdistrict agroecosystem, which is known as an area with high horticultural potential and competitive shallot productivity. Geographic and historical proximity to Brebes Regency also influences the local farming patterns,



where farmers are generally responsive to innovation and easily adapt to agribusiness partnership models.

Agribusiness literature emphasizes that partnerships are an important instrument in strengthening the integration of production and marketing of horticultural commodities. Soekartawi (2017) explains that partnerships provide input support, technical assistance, and more secure market access, thereby reducing the risk of production failure and price volatility. Martono (2019) adds that from a supply chain perspective, partnership patterns create mutually beneficial relationships because companies bear part of the production risk through the provision of production facilities, technology, and purchase guarantees for the harvest. Empirical findings also support this view. Kusuma et al. (2024) stated that partner farmers tend to be more productive because they follow fertilization, pest control, and post-harvest management more diligently. Suryani et al. (2023) showed that partnerships can improve farmers' bargaining position and price stability, resulting in a significant increase in farmers' income. These findings prove that partnerships not only strengthen the technical aspects of cultivation but also provide more certain economic benefits for farmers.

Analysis and Discussions

The production cost analysis is presented to illustrate the expenditure structure in red onion cultivation for partner and non-partner farmers. This analysis is used to assess the differences in cost components arising from variations in input access, technology, and institutional support (Zaman et al., 2020). The research results show the cultivation costs for partner farmers in Table 1.

Table 1. Partner Farmers' Production Costs

Numb	Component	Costs (IDR)	Percentage (%)
A. Variable Costs			
1	Labor	31,809,791	18.11
2	Seedlings	100,119,821	57.01
3	Fertilizer	8,051,821	4.59
4	Pesticides	3,160,284	1.80
5	Sacks	447,991	0.26
6	Fuel	5,427,679	3.09
7	Agricultural Lime	842,586	0.48
	Total Variable Costs	149,859,973	85.30
B. Fixed Costs			
1	Land Rent	15,132,143	8.62
2	Depreciation	9,939,957	5.66
3	Irrigation Fees	437,857	0.25



4	Electricity	240,253	0.14
	Total Fixed Costs	25,750,211	14.66
C.	Total Production Costs	175,610,184	100.00

Source: Primary Data, 2025

Table 1 shows that the total production cost of shallots for partner farmers reaches IDR175,610,184 per planting season. This cost reflects the use of more intensive and standardized inputs according to the company's regulations. Meanwhile, the total farming costs for non-partner farmers, which are compiled based on independent cultivation patterns without institutional support, are presented in Table 2.

Table 2. Non-Partner Farmers' Production Costs

Numb	Component	Costs (IDR)	Percentage (%)
A. Variable Costs			
1	Labor	32,402,821	18.56
2	Seedlings	101,400,513	58.08
3	Fertilizer	8,163,654	4.68
4	Pesticides	3,196,695	1.83
5	Sacks	454,500	0.26
6	Fuel	5,496,282	3.15
7	Agricultural Lime	852,338	0.49
	Total Variable Costs	151,966,803	87.04
B. Fixed Costs			
1	Land Rent	13,284,615	7.61
2	Depreciation	8,766,267	5.02
3	Irrigation Fees	351,923	0.20
4	Electricity	227,030	0.13
	Total Fixed Costs	22,629,836	12.96
	C. Total Production Costs	174,596,638	100.00

Source: Primary Data, 2025

Table 2 shows that the production cost of red onions for non-partner farmers reaches IDR174,596,638. This figure reflects expenses determined independently without support from input packages or technical assistance from the company. The cost structure for non-partners tends to be influenced by market prices and each farmer's decisions in using inputs. Furthermore, details regarding income from red onion farming are explained in Table 3.

Table 3. Income of Shallot Farmers

Numb	Partnership	Production (Kg)	Price (IDR)	Revenue (IDR)
1	Partner Farmer	14,858	30,000	445,726,071
2	Non-partner Farmer	11,683	25,000	292,063,141

Source: Primary Data, 2025



Table 3 shows that partner farmers received an income of IDR 445,726,071 from 14,858 kg of production at a selling price of IDR 30,000 per kilogram, achieved thanks to higher productivity and access to partnership markets. In contrast, non-partner farmers only received IDR 292,063,141 from 11,683 kg of production at a price of IDR 25,000 per kilogram. The low income of non-partners is influenced by lower productivity and depressed selling prices due to dependence on open markets and middlemen. In addition, onion farm income is presented in Table 4.

Table 4. Income of Shallot Farmers

Numb	Partnership	Revenue (IDR)	Production Cost (IDR)	Benefits (IDR)
1	Partner Farmer	445,726,071	175,610,184	270,115,887
2	Non-partner Farmer	292,063,141	174,596,638	117,466,503

Source: Primary Data, 2025

The income of partner farmers reached IDR. 270,115,887, much higher than that of non-partners who only earned IDR. 117,466,503. This difference is mainly due to higher income for partner farmers resulting from greater productivity and selling prices, even though the production costs of both groups are almost the same.

Several previous studies have shown a consistent pattern that farmers who are part of partnerships have higher incomes compared to non-partner farmers. This income increase is mainly influenced by more reliable market access, structured technical support, and better use of production facilities. Research by Yuliastri et al. (2022), Hutabarat & Nawawi (2023), and Deperiky et al. (2021) indicates that the income improvement of partner farmers is directly related to advantages in production quality, technological support, and market certainty that enhance the farmers' bargaining position. Meanwhile, the studies by Hidayat et al. (2021) and Muslifah et al. (2022) confirm that the structure of farming enterprises in partnerships can increase efficiency and productivity, resulting in higher net income compared to non-partnership systems. Overall, these studies confirm that partnerships play an important role in improving farming performance and farmers' income sustainably.

Next, the analysis of statistical difference tests is presented in Table 5. Here it is:

Table 5. Difference Analysis

Independent Samples Test							
		Levene's Test for Equality of Variances		t-test for Equality of Means			
		Sig.	t	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Pendapatan Barang Merah	Equal variances assumed	,000	30,163	,000	152649384,681	142638688,676	162660080,687
	Equal variances not assumed		26,474	,000	152649384,681	141132850,745	164165918,617

Source: Primary Data, 2025

The independent sample t-test results showed that the income of partner farmers and non-partner farmers differed significantly. The Levene's Test value of 0.000 indicates that the variances of the two groups are not homogeneous, so the interpretation uses the 'Equal variances not assumed' row. In that row, the t-value of 26.474 with a significance of 0.000 ($p < 0.05$) indicates that the income difference between the two groups is statistically highly significant. The mean difference of IDR 152,649,384.68 indicates that the average income of partner farmers is much higher compared to non-partner farmers. The 95% confidence interval ranges from 141,132,850.745 to 164,165,918.617, all above zero, further confirming that the partnership has a significant positive effect on increasing red onion farming income.

The research results show a clear difference in income between the two groups of red onion farmers. This disparity reflects differences in access to production support, technology, and markets, where farmers within the partnership system benefit from a stronger institutional structure. Such support includes technical assistance, availability of production facilities, and marketing certainty, which contribute to increased efficiency and business stability, resulting in higher incomes for partner farmers.

These findings are consistent with various previous studies that have consistently shown significant differences in income tests between partner and non-partner farmers. Research by Rianto et al. (2023) and Basoly et al. (2023) confirmed that the income advantage of partner farmers is influenced by better business management and more stable market access. Similar findings were reported in studies by Elizabeth et al. (2021) and Melati et al. (2024), which showed

that partnerships increase production efficiency and strengthen farmers' bargaining positions. Overall, this empirical evidence confirms that the income differences identified through difference tests reflect the effectiveness of partnership systems in improving the performance and welfare of farmers.

4. CONCLUSIONS

Based on the narrative discussed earlier, it can be concluded as follows:

- 1) The partnership pattern between PT Tani Bawang Sejahtera and partner farmers is formed through a structured and guidance-based cooperation mechanism.
- 2) There is a significant income difference between partner farmers and non-partner farmers, with partner farmers earning more than non-partner farmers.

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