Indonesian Journal Of Small Scale Farming
Volume 1(2), 91 - 100, 2025
https://doi.org/10.24843/ijoss.2025.v01.i02.p03

Analysis of Curly Red Chili Farming

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Submitted July 10, 2025 ; Approved July 19, 2025

ABSTRACT

BACKGROUND AND OBJECTIVES

Buahan Village, located in the Kintamani District of Bangli Regency, is recognized as one of the most fertile areas that supports agricultural activities, particularly the cultivation of curly red chili. However, farmers in Buahan Village face several challenges in growing curly red chili, including pest and disease attacks that cause decay in the leaves and stems of the plants. Moreover, they are experiencing rising production costs each year, especially in plant maintenance, such as fertilizers, pesticides, and other chemical inputs. These challenges have led to a decline in production and an increase in farming expenses. The decrease in yield has resulted in a shortage of chili supply, leading to price fluctuations.

METHODS

This study uses a descriptive quantitative method. Data were collected through questionnaires and structured interviews with 33 farmers, who were selected using accidental sampling. Primary data was obtained directly from respondents, while secondary data came from documents and written references. Data analysis included: 1) Calculation of revenue, 2) Calculation of income, and 3) Measurement of the feasibility of the R/C ratio of curly red chili farming.

FINDINGS

The average revenue of curly red chili farmers reached Rp 38,409,712 with a cultivated land area of 31 ares in one planting season. The net income earned by these farmers was Rp 15,869,267, which was calculated by subtracting the total costs of Rp 22,540,445 from the total income of Rp 38,409,712 during the same season. The profitability of curly red chili farming is 1.7, which is greater than 1. This means that for every Rp 1 spent, farmers earn Rp 1.70, indicating that curly red chili farming is viable and financially worthwhile.

CONCLUSION

The average revenue of curly red chili farmers reaches IDR 38,409,712 with a cultivated land area of 31 ares in one planting season. The total costs incurred by red chili pepper farmers during one growing season amount to Rp 22,540,445. The income earned by red chili pepper farmers reaches Rp 15,699,267 with a cultivated land area of 31 ares per growing season. The profitability of red chili farming reaches a value of 1.7, where > 1. This means that every expenditure of Rp 1 will yield an income of Rp 1.7, making red chili farming viable and worth pursuing.

Keywords: Farming; Chili; Revenue; Income; Feasibility

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INTRODUCTION

Agribusiness refers to business activities that generate profits from the agricultural sector, agriculture-based enterprises, and supporting industries in both upstream and downstream segments (1). Additionally, potential food crops are defined as plants whose parts can be consumed by humans, either in their fresh form or after processing, as long as they are non-toxic and contain beneficial nutrients (2). Regional flagship commodities are valuable resources that can be optimized with relatively low production costs (3). One of the most important horticultural subsectors in Indonesian agriculture is the vegetable crop sector (4). From an agribusiness perspective, the horticultural subsector, particularly red chili peppers, offers promising economic potential. Red chili peppers (*Capsicum annuum*) are not only widely consumed but also hold strategic trade value, as their demand continues to increase and their prices often fluctuate, making them a high-value commodity.

The village of Buahan in Kintamani District, Bangli Regency, is known as one of the potential areas for producing curly red chili peppers in Bali. Despite having a fairly large area of cultivated land and relatively high production levels, chili pepper farmers in this village still face various challenges, such as unstable selling prices, limited market access, pest and disease infestations, and high production costs. These issues impact farmers' income, which can also affect the viability of their curly chili farming operations. A similar study conducted by (5) in Batur Village, Getasan Subdistrict, Semarang Regency, showed that unstable selling prices for curly red chili continue to fluctuate due to the large volume of supply and demand. Similarly, research conducted by (6) in Parit Village, Indralaya Utara Subdistrict, Ogan Ilir Regency, shows that curly red chili peppers are highly susceptible to pests and diseases, which affect their prices (causing fluctuations). According to (7) in his research in Metro Kibang Subdistrict, East Lampung Regency, the highly fluctuating prices of red chili peppers often result in significant profits for chili farmers, but sometimes they also suffer substantial losses. In contrast, research conducted by (8) in Siborongborong Subdistrict, North Tapanuli Regency, shows that the main issue causing chili farming to frequently face the risk of failure, aside from poor soil conditions, is the widespread use of chili seeds whose quality has not been adequately tested, resulting in suboptimal chili production. These conditions indicate the need for a study that can explain red chili farming regarding the income and earnings obtained by farmers, as well as the viability of red chili farming.

The novelty of this study lies in its integrated approach, which examines three important aspects that are rarely studied simultaneously, namely acceptance, income, and the feasibility of curly red chili farming. This approach provides a comprehensive picture of the socio-economic conditions of farmers and the costs of curly red chili farming, unlike previous studies that generally focused on only one aspect. The objectives of this study are 1) to analyze the income of red curly chili farmers in Buahan Village, 2) to analyze the income of red curly chili farmers in Buahan Village, and 3) to measure the viability of red curly chili farming in Buahan Village, Kintamani District, Bangli Regency. With these research objectives, this study not only provides deeper insights to red chili farmers but also provides data and analysis as a basis for government policies and support for farmers in Buahan Village in taking concrete actions to stabilize harvest prices, stabilize fertilizer and pesticide prices, and ensure a decent livelihood for farmers so that the potential of Buahan Village is not hindered by issues that can actually be addressed with appropriate government support and policies.

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RESEARCH METHOD

This research was conducted in Buahan Village, located in the Kintamani District of Bangli Regency, Bali Province, with an area of approximately 906 hectares. Buahan Village was selected as the research location because it plays a significant role in the development of curly red chili farming in the kintamani region. Additionally, the village possesses unique geographical and socio-economic characteristics and faces various challenges and issues related to the acceptance, income, and viability of curly red chili farming.

This study involved red curly chili farmers in Buahan Village. The population of red curly chili farmers in Buahan Village was 132 farmers. Due to the large number of farmers, a sample calculation was performed using the Slovin formula (9), resulting in a sample of 33 farmers. The sampling method used was accidental sampling, which is a method of selecting samples based on whoever is encountered by chance and willing to be a respondent, provided they meet the predetermined criteria.

This research uses both primary and secondary data sources. Primary data were collected directly through questionnaires and interviews, gathering information on revenue, income, fixed costs, and variable costs. Secondary data were obtained from village records, publications by Statistics Indonesia (BPS), and scientific literature. All collected data were then processed and analyzed to achieve the research objective:

The objective of this study is to calculate the income of curly red chili farmers. It is analyzed using income analysis in farming activities. The income in question is obtained by calculating the price of curly red chili products and the amount of curly red chili production. In calculating the income from curly red chili farming, the analysis used refers to the method from (10), with the formula:

$$\textbf{Revenue} = Py \times Y$$

Explanation:
Py = Product price per kilogram (Rp/kg)
Y = Production volume (kg)

The second objective of this study was to calculate the income of curly red chili farmers using an agricultural income analysis approach. Income was determined by subtracting total production costs from total revenue, using the following formula:

$$\textbf{Income} = \textbf{Revenues} - \textbf{Total Costs}$$

To calculate the total costs incurred by farmers in curly red chili farming, formula (11) is used as follows:

$$TC = FC + VC$$

Explanation:
TC = Total Cost (Rp)
FC = Fixed Cost (Rp)
VC = Variable Cost (Rp)

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The third objective of this study is to assess the feasibility of curly red chili farming. This is analyzed using the R/C Ratio method. Feasibility is determined by comparing the total income with the total costs incurred by farmers in curly red chili cultivation. According to source (11), the feasibility of curly red chili farming can be formulated as follows:

R/C Ratio = Total Revenue : Total Cost

RESULTS AND DISCUSSION

Revenue of Curly Red Chili Farmers in Buahan Village, Kintamani District, Bangli Regency

The revenue of curly red chili farmers in Buahan Village was analyzed using the technique proposed by (10), which is to calculate the price of the product based on the amount of production generated by curly red chili farmers. According to (11), farmers' income is obtained by multiplying the product price (Py) by the amount of production (Y). The following provides a detailed explanation of the income earned by red chili farmers through farming activities in Buahan Village.

Table 1. Average Revenue of Curly Red Chili Farmers in Buahan Village, Kintamani District, Bangli Regency, 2025

No	Description	Average (Rp)
1	Selling Price (Rp/kg)	20,152
2	Production Volume (kg/LLG/MT)	1,906
Total	Revenue (Rp/LLG/MT)	38,409,712

Source: Primary data, processed in 2025

The average income of curly red chili farmers in Buahan Village in 2024 reached Rp 38,409,712 per planting season with an average cultivated land area of 31 ares. Income was obtained by calculating the selling price of the product and the total production of curly red chili in Buahan Village.

These results are consistent with research conducted by (12) in Buanamekar Village, Panumbangan District, Ciamis Regency, which shows that the average income received by red chili farmers reaches IDR 29,072,308 in one planting season. This indicates that the income received by curly red chili farmers in Buahan Village is relatively high compared to other red chili-producing areas. Income is influenced by the amount of production obtained as well as the area of land used for farming.

In addition to Buanamekar Village, Rumahtiga Village in Ambon City is also one of the main chili-producing areas. According to source (13), chili is an important commodity that contributes to inflation in Ambon City. This inflation is driven by frequent price fluctuations caused by an insufficient supply of chili. In Rumahtiga Village, the average income earned by chili farmers is Rp 23,955,000 per growing season.

Income of Curly Red Chili Farmers in Buahan Village, Kintamani District, Bangli Regency

According to source (14), income in farming is defined as the difference between total revenue and all costs incurred by farmers. In other words, this income includes both gross income (total revenue) and net income. Source (10) states that farmers' income is obtained by subtracting total costs (TC) from total revenue (TR), which involves deducting all production expenses from

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the proceeds of product sales. The following is a detailed explanation of the income earned by curly red chili farmers through their farming activities.

Table 2. Average Income of Curly Red Chili Farmers in Buahan Village, Kintamani District, Bangli Regency, 2025

No	Description	Average (Rp)
1	Revenue (Rp/LLG/MT)	38,409,712
2	Total Costs (Rp/LLG/MT)	22,540,445
	Income (Rp/LLG/MT)	15,869,267

Source: Primary data, processed 2025

The average income of curly red chili farmers in Buahan Village in 2024 reached Rp 15,869,267 per planting season with an average cultivated land area of 31 acres. This income is influenced by factors such as land area, harvest selling price, and farming costs, where farmers with larger land areas tend to earn higher incomes. However, fluctuations in red curly chili prices pose a challenge that creates uncertainty in farmers' incomes.

This is in line with research conducted by source (12) in Buanamekar Village, which shows that the average income of red chili farmers in the village is IDR 14,586,686 per planting season. This indicates that farmers' income in Buanamekar Village is influenced by production factors such as land area, farming costs, and the selling price of crops.

In addition to Buanamekar Village, Maparah Village is also one of the red chili-producing areas in Ciamis Regency. According to source (15), the average income of red chili farmers in Maparah Village is Rp 103,495,391 per hectare per growing season. This indicates that farmers' income in Maparah Village is significantly influenced by factors such as land area, farming costs, and the selling price of red chili peppers.

Feasibility of Curly Red Chili Farming in Buahan Village, Kintamani District, Bangli Regency

According to (11), the feasibility of farming can be calculated using the R/C Ratio analysis, which is the ratio between total revenue and total costs incurred by farmers during the cultivation of curly red chili peppers. The criteria are as follows: if the R/C Ratio is > 1, the farming operation is viable; if the R/C Ratio is < 1, the farming operation is not viable; and if the R/C Ratio = 1, the farming operation is at break-even point. The following provides a detailed explanation of the viability of red chili farming operations through farming activities.

Table 3. Feasibility of Red Curly Chili Farming in Buahan Village, Kintamani District, Bangli Regency

No	Component	Average (Rp)
1	Revenue (Rp/LLG/MT)	38,409,712
2	Total Costs (Rp/LLG/MT)	22,540,445
Feasibility of Farming		1.7

Source: Primary Data, processed in 2025

The feasibility of red curly chili farming in Buahan Village reached a value of 1.7. This indicates that a value of 1.7 > 1 means that red curly chili farming in Buahan Village is feasible

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and profitable for farmers. In other words, every expenditure of Rp 1 will generate an income of Rp 1.7. This is a positive indicator for farming activities, especially for horticultural commodities such as curly red chili peppers, which often experience price fluctuations (13).

The results of this study are similar to those of a study conducted by (16) in Sukorejo Village, which showed that the feasibility value of red chili farming in Sukorejo Village reached 3.5. This was influenced by the relatively high income of farmers and the relatively low total cost of farming. Thus, red chili farming in Sukorejo Village is feasible and worth pursuing.

In addition to Sukorejo Village, Talang Kemang Village is also one of the villages that produce red chili peppers in Banyuasin Regency. According to (4), the viability of red chili farming in Talang Kemang Village reaches a value of 2.0. This is also influenced by high farmer income and relatively high total farming costs. Therefore, red chili farming in Talang Kemang Village is viable to operate and worth pursuing.

The results of this study indicate that red curly chili farming in Buahan Village is still in the development stage, particularly in the agribusiness sector. Farming income, revenue, and viability are influenced by land area and farming costs faced by farmers. Therefore, support and policies from the government are needed to continue assisting farmers in adapting to increasingly advanced technology so that farming can develop sustainably.

Table 4. Previous Research on Red Chili Farming

No	Researcher	Research Title	Research Results
1	(12)	Analysis of Red Chili Farming in Buanamekar Village, Panumbangan District, Ciamis Regency (12)	The research results show that: (1) The average production costs incurred by red chili farmers in Buanamekar Village, Panumbangan District, Ciamis Regency, amount to Rp 14,583,621, and the average income earned by chili farmers is Rp 29,072,308.69 per growing season, the average income obtained from red chili farming is Rp 14,586,686.19 per growing season, (2) Red chili farming is economically profitable for farmers. This can be seen from the R/C ratio of 1.82, meaning that for every Rp 1.00 spent, an income of 1.82 is obtained, resulting in a profit of 0.82.
2	(16)	Analysis of Income and Feasibility of Red Chili Farming in Tani Arum, Sukorejo Village, Parengan District, Tuban Regency (16)	The research results show that: (1) The income earned by farmers in Tani Arum, Sukorejo Village, Parengan Subdistrict, Tuban Regency is Rp 45,539,654/ha/farmer. (2) The viability of red chili farming in the Tani Arum Farmers' Group in Sukorejo Village, Parengan Sub-district, Tuban Regency has an average income value of Rp 22,085,714 per hectare per farmer. (3) The R/C Ratio is 3.5, indicating that red chili farming is viable and worth pursuing.

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3	(13)	Income Levels and Feasibility of Red Chili Farming in Taeno Hamlet, Rumahtiga Village, Ambon City (13)	The research concluded that the income of red chili farmers and cayenne pepper farmers in Taeno Hamlet was obtained from a total revenue of Rp 958,200,000.00 with an average of Rp 23,955,000.00, minus total production costs of Rp 219,995,000.00 with an average of Rp 5,499. 875.00, resulting in an income of Rp 738,205,000.00 for chili pepper farmers in Taeno Village, with an average of Rp 18,455,125.00 per year. The R/C Ratio shows a value of 4.36, calculated by dividing total income by total production.
4	(4)	Analysis of Red Chili Farming Income in Talang Kemang Village, Rantau Bayur Subdistrict, Banyuasin Regency (4)	The research results indicate the following: (1) An analysis of red chili farming in Talang Kemang Village shows a total revenue of Rp 88,612,150 and production costs of Rp 44,131,963, resulting in a net income of Rp 44,480,187 per planting season. (2) The feasibility of the business, based on the B/C Ratio formula, is 2.00, indicating that red chili farming is viable because the ratio is greater than 1.00. (3) The Break-Even Point (BEP), calculated by comparing the average production costs with the average yield, is Rp 8,964.44. Since this value is below the market price of Rp 18,000, it suggests that red chili farming remains profitable. At a price of Rp 8,964.44, farmers will break even. (4) The production level at the break-even point is 218.62 kg, which means the business is not at a loss even if production falls below 439 kg. Farmers will still earn a profit if the red chili is sold at Rp 8,964.44.
5	(15)	Feasibility Analysis of Red Chili Farming (Case Study of the Mekar Subur Farmer Group in Maparah Village, Panjalu District, Ciamis Regency) (15)	The research results show that: (1) The average cost of red chili farming in Maparah Village, Panjalu District, Ciamis Regency is Rp. 57,515,062.37/hectare/growing season. Meanwhile, the average income is Rp. 161,010,453/hectare/growing season. The income from red chili farming in Maparah Village, Panjalu Subdistrict, Ciamis Regency averages Rp. 103,495,391 per hectare per growing season, (2) The R/C ratio for red chili farming in Maparah Village, Panjalu Subdistrict, Ciamis Regency averages 2.80,

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meaning that for every Rp. 1.00 spent, farmers receive Rp. 2.80 in revenue and a profit of Rp. 1.80, making it worthwhile to pursue.

CONCLUSION

The cultivation of curly red chili peppers in Buahan Village has proven to be a promising source of income for farmers. Although the associated costs are relatively high, the yields still generate sufficient net income. This indicates that the farming activity is economically viable. The efficiency level of the farming practice is also considered good, as each cost incurred results in higher revenue. Therefore, the cultivation of curly red chili peppers in this area can continue to be developed as a profitable source of income for farmers.

RECOMMENDATIONS

To cope with the frequent price fluctuations that occur during the harvest season, farmers are advised to store their harvest or establish partnerships with fixed markets to ensure stable income despite fluctuating market prices. Additionally, efforts to improve efficiency in the use of production inputs such as fertilizers, pesticides, and labor should continue to be pursued to increase net income, particularly by leveraging more cost-effective and environmentally friendly agricultural technologies. Given that the cultivation of curly red chili peppers has proven to be financially viable, support from village governments and agricultural departments is crucial. Such support could include easier access to working capital, provision of cultivation training, and assistance in pest and disease management to ensure the sustainability and viability of this agricultural venture can be maintained and even enhanced in the future.

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ACKNOWLEDGEMENTS AND FUNDING

The author expresses sincere gratitude to all who participated in and supported this research, particularly the Buahan Village Head, the curly red chili farmers, the supervising lecturer, and others who provided valuable input and advice. Their contributions ensured the successful completion of this journal.

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	Homepage	https://pddikti.kemdiktisaintek.go.id/detail-mahasiswa/qwEMR9J8rCifN98Ch1b5vmzTlGyGIIqBz2GdQChq12wfVvzKKndsGOUN-SK5H_f7ycN98Q==
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Volume 1(2), 91 - 100, 2025
https://doi.org/10.24843/ijoss.2025.v01.i02.p03

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GRAPHICAL ABSTRACT