

Feasibility of Spring Onion (*Allium fistulosum* L.) farming in the California Cialam Jaya Agrotourism Area, Tanea Village, Konda District, South Konawe Regency

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Abstract

*This study aims to determine the productivity, income, farm feasibility, and break-even point of scallion (*Allium fistulosum* L.) farming in the California Cialam Jaya Agrotourism Area, Tanea Village, Konda District, South Konawe Regency. The research method used was a survey method with a quantitative descriptive approach. The data used included primary and secondary data, collected through interviews and observations with farm managers. Data analysis used included analysis of productivity, income, farm feasibility using the R/C Ratio approach, as well as Break Even Point (BEP) analysis in terms of production, revenue, and selling price. The results of the study showed that the productivity of spring onion farming was 8,400 kg/ha, with an income of Rp22,224,167 per planting season and an R/C Ratio of 2.12, indicating that spring onion farming is financially viable. The break-even point for production was 471 kg/ha, the BEP for revenue was Rp2,807,000, and the BEP for selling price was Rp4,708.53, all indicating that actual production exceeded the break-even point, thus making this farming profitable. Based on these results, spring onion farming in the study area was declared feasible and has the potential for further development.*

Keywords: Farming, Spring Onions, Income, R/C Ratio, Break-Even Point



INTRODUCTION

Vegetables are one of the important agricultural products that play a strategic role in supporting national food security. In addition to being cultivated on a large scale, vegetables can also be grown on a small scale, such as in home gardens. One commodity with high economic value is leek (*Allium fistulosum* L.), which is not only used as a cooking ingredient but also utilized in traditional medicine (Mamusung et al., 2019). Therefore, leek is one of the horticultural commodities that is in high demand by the community and contributes to farmers' income and the regional economy.

Nationally, shallot production shows an upward trend, albeit at a relatively slow pace. BPS data (2024) shows that in 2021, total production reached 627,853 tons, increasing to 638,735 tons in 2022, then rising again to 639,675 tons in 2023. In Southeast Sulawesi Province, spring onion production experienced sharper fluctuations, namely 508.4 tons in 2021, falling to 406.2 tons in 2022, and then rising significantly to 570.2 tons in 2023. A similar situation occurred in South Konawe Regency, where production fell from 142.8 tons in 2021 to 132.3 tons in 2022, then increased to 192 tons in 2023 (BPS, 2024).

The California Cialam Jaya Agrotourism Area in Tanea Village, Konda District, South Konawe Regency is one of the areas that intensively cultivates spring onions. Managed with the concept of *Millennial Farmers*, this agrotourism area is not only a agricultural production area, but also developed as an educational tourist destination with an area of 14.5 hectares (Lestari et al., 2023). The existence of this area demonstrates that onion cultivation not only has economic value from a production perspective but also holds additional potential value from the tourism sector.

A number of previous studies have confirmed that horticultural farming, including spring onions, is financially viable. Andrie and Novianty (2021) found that red chili farming with diversification obtained an R/C ratio of 2.6. Hasanah et al. (2023) showed that the income of spring onion farmers who use farmer cards is higher than those who do not, with R/C ratios of 2.56 and 2.16, respectively. Meanwhile, Rachim et al. (2023) reported that spring onion farming in Ciamis Regency had an R/C ratio of 1.38, making it feasible. However, these studies generally focused on non-agrotourism rural areas, so there have not been many studies on the feasibility of spring onion farming in agrotourism areas that combine production and tourism functions.

Given these conditions, an in-depth study is needed to determine the extent to which spring onion farming in the California Cialam Jaya Agrotourism Area is being managed optimally. Analysis of cost structure, revenue, and income is not only important for farmers but also beneficial for agrotourism managers and policymakers in developing sustainable tourism-based



agriculture. Thus, this study is expected to contribute to the development of horticultural agriculture that is not only oriented toward productivity but also the welfare of farmers and the appeal of agricultural tourism.

METHOD

This research was conducted in the California Cialam Jaya Agrotourism Area, located in Tanea Village, Konda District, South Konawe Regency, Southeast Sulawesi Province, from March to July 2025. This location was selected *purposively* (intentionally) considering that the area is one of the places that cultivates spring onion farming, which has economic potential and is relevant to the research objectives related to the feasibility of spring onion farming.



Figure 1. Research Location Map

The informants in this study were parties directly involved in garlic farming activities in the California Cialam Jaya Agrotourism Area, Tanea Village, Konda Subdistrict, South Konawe Regency. The main informants consisted of owners and managers of garlic farms () responsible for garlic cultivation activities, who were selected purposively based on their direct involvement and knowledge of the technical and economic aspects of farming. The data collection techniques used included observation, which is the systematic observation and recording of the phenomena being studied; interviews, which are question and answer sessions and discussions using questionnaires containing written questions for respondents; and literature studies, which are

reviews of written sources such as previous research results and survey data from relevant institutions. The data analysis used in this study is as follows:

1. Productivity Analysis was used to answer the first objective, namely the productivity of onion farming. According to Fitriyana (2021), productivity analysis is as follows:

$$Productivity = \frac{Total\ Production\ (Kg)}{Land\ Area\ (Ha)}$$

2. Income Analysis uses farming analysis, which includes cost analysis, revenue, income, and R/C *ratio* to measure the feasibility of farming. To determine the amount of costs, the following formula is used (Andrie, *et al*, 2021):

$$TC = TFC + TVC$$

Explanation:

TC = *Total Cost* (Rp/cropping season)

TFC = *Total Fixed Cost* (Rp/cropping season)

TVC = *Total Variable Cost* (Rp/cropping season)

To determine the amount of revenue, the following formula is used:

$$TR = Y \cdot Py$$

Explanation:

TR = *Total Revenue* (Rp)

Y = *Production Volume* (kg)

Py = *Product Selling Price* (Rp/kg)

Farmers' income is calculated using the following formula:

$$I = TR - TC$$

Explanation:

I = *Income* (Rp/growing season)

TR = *Total Revenue* (Rp/growing season)

TC = *Total Cost* (Rp/growing season)

3. The feasibility of farming is determined by calculating the R/C ratio using the following formula:

$$R/C = \frac{TR}{TC}$$

Explanation:

R/C = *Ratio between revenue and cost* (Total Revenue Cost ratio)

TR = *Total revenue* (Rp/cropping season)

TC = Total Cost (Rp/cropping season)

With the following conditions:

- $R/C < 1$: therefore, onion farming in the California Cialam Jaya Agrotourism Area in Tanea Village, Konda District, South Konawe Regency is not feasible
- $R/C = 1$: then onion farming in the California Cialam Jaya Agrotourism Area in Tanea Village, Konda District, South Konawe Regency is neither profitable nor unprofitable
- $R/C > 1$: then onion farming in the California Cialam Jaya Agrotourism Area, Tanea Village, Konda District, South Konawe Regency is feasible.

4. *Break-Even Point* (BEP): To determine the *Break-Even Point* (BEP) for onion farming, several BEP concepts are used, including Revenue BEP, Production BEP, and Price BEP (Andrie *et al.*, 2021).

To analyze BEP in units, the following formula is used:

$$BEP (unit) = \frac{Variabel\ Cost\ Sales\ Revenue / unit}{Variabel\ Cost/unit}$$

Criteria:

- If Actual Production > Production BEP, then the spring onion farming business in the California Cialam Jaya Agrotourism Area is profitable.
- If Actual Production = Production BEP, then the spring onion farming business in the California Cialam Jaya Agrotourism Area is breaking even.
- If Actual Production is less than Production BEP, then the spring onion farming business in the California Cialam Jaya Agrotourism Area is declared to be at a loss.

To analyze BEP in rupiah, the following formula is used:

$$BEP (Rupiah) = \frac{Fixed\ Cost}{1 - \frac{Variabel\ Cost}{Sales\ Revenue}}$$

Criteria:

- If Actual Revenue > Revenue BEP, then the spring onion farming business in the California Cialam Jaya Agrotourism Area is financially viable.
- If Actual Revenue = Revenue BEP, then the spring onion farming business in the California Cialam Jaya Agrotourism Area is declared to be breaking even.
- If Actual Revenue is less than Revenue BEP, then onion farming in the California Cialam Jaya Agrotourism Area is not viable.

To analyze the BEP in the selling price, the following formula is used:

$$BEP (price\ sell) = \frac{a + b\ x}{x}$$

Explanation:

x = Production/sales quantity

a = Total Fixed Costs

b = Variable Cost per Unit

Criteria:

- If the Actual Selling Price is greater than the BEP Selling Price, then the onion farming business in the California Cialam Jaya Agrotourism Area is profitable
- If the Actual Selling Price = BEP Selling Price, then the spring onion farming business in the California Cialam Jaya Agrotourism Area is considered break-even
- If the Actual Selling Price is < BEP Selling Price, then the spring onion farming business in the California Cialam Jaya Agrotourism Area is not profitable

RESULTS AND DISCUSSION

Income

The income from onion farming is obtained from total revenue minus total costs in the onion cultivation process. The level of income is influenced by the level of production and production costs incurred. In this study, farming income was calculated based on fixed costs, labor costs, variable costs, total costs, revenue, and income. For more details, see the table below:

Table 1. Variables of Green Onion Farming Income in the California Cialam Jaya Agrotourism Area

Variable	Description	Depreciation Value (Rp/MT)
Fixed Costs	Hoe	75,000
	Machete	25,000
	Sprayer (Sorayer)	250,000
	Pipe	510,000
	Lawn mower	547,000
	Mulch	1,400,000
	Total	2,807,000
Labor Costs	Activity Stages	Value (Rp/HOK)
	Land preparation	12,500
	Fertilization	8,333
	Planting	16,667

	Watering and maintenance	5,000
	Spraying and pest control	10,000
	Harvesting and post-harvesting	8,333
	Total	60,833
Variable Costs	Description	Value (Rp/MT)
	Onion seeds	12,800,000
	Organic fertilizer	1,600,000
	Dolomite lime	425,000
	Pesticides:	
	Zeram	340,000
	Goldon	640,000
	Demolish	625,000
	Antracol	148,000
	Meothrin	330,000
	Labor	60,833
	Total	16,968,833
Total Cost	Type of Cost	Value (Rp/MT)
	Fixed Cost	2,807,000
	Variable Cost	16,968,833
	Total	19,775,833
Revenue	Description	Amount
	Total Production (kg)	4,200
	Price (Rp/kg)	10,000
	Revenue (IDR/MT)	42,000,000
Income	Description	Value (Rp/MT)
	Revenue	42,000,000
	Total Cost	19,775,833
	Amount	22,224,167

Source: Primary Data Processed 2025

Based on Table 1 above regarding income variables consisting of fixed costs, labor costs, variable costs, total costs, revenue, and income, the following can be explained:

1. The total fixed costs incurred by farmers in one planting season are IDR 2,807,000. The largest cost component comes from the use of mulch, amounting to IDR 1,400,000, which



serves to maintain soil moisture, reduce weeds, and improve soil structure. Grass cutting equipment contributed IDR 547,000 and pipes IDR 510,000 for irrigation needs, especially during the dry season. Sprayers cost Rp250,000 for fertilization and pest control, while manual tools such as hoes cost Rp75,000 and machetes cost Rp25,000. Thus, fixed costs in garlic farming are dominated by soil cover and irrigation systems, which play an important role in controlling the growing environment.

2. Labor costs incurred during one planting season reached IDR 60,833 per HOK. The planting stage is the activity with the highest labor costs, namely IDR 16,667 per HOK, because it requires precision and more time to ensure uniform plant growth. Land preparation ranks second at IDR 12,500 per HOK, followed by spraying and pest control at IDR 10,000 per HOK. Fertilization, harvesting, and post-harvest activities each cost Rp8,333 per HOK, while the lowest cost is watering and maintenance at Rp5,000 per HOK, which is relatively low because most of it is done directly by farmers.
3. The total variable cost of onion farming is IDR 16,968,833 per planting season. The largest cost comes from seeds, which cost IDR 12,800,000, while organic fertilizer costs IDR 1,600,000, which shows efforts to maintain soil fertility. Farmers also use dolomite lime, which costs IDR 425,000, to neutralize soil pH. , pest and disease control costs include pesticides such as Zeram (Rp340,000), Goldon (Rp640,000), Demolish (Rp625,000), Antracol (Rp148,000), and Meothrin (Rp330,000), with a total of Rp2,083,000. In addition, labor costs included in the variable are IDR 60,833. This variable cost structure shows that farmers are still very dependent on external inputs, especially seeds and pesticides, so that their efficient use is crucial to profitability.
4. The total costs incurred by spring onion farmers in the California Cialam Jaya Agrotourism Area reached IDR 19,775,833 per planting season. This amount consists of fixed costs of IDR 2,807,000 and variable costs of IDR 16,968,833. The larger proportion of variable costs indicates dependence on consumable inputs such as seeds, fertilizers, pesticides, and labor, while fixed costs are smaller due to their long-term nature. The total cost provides an overview of the capital that must be spent by farmers, as well as a basis for calculating income, profits, and the efficiency of spring onion farming.
5. Leek production in one growing season reaches 4,200 kg. With an average selling price of Rp10,000 per kilogram, the total income for farmers is Rp42,000,000. This income is quite high because it is supported by stable prices, large production volumes, and a direct marketing system through consumers and agrotourism, resulting in a shorter distribution





chain that benefits farmers. Thus, the income from spring onion farming can be categorized as high and serves as the basis for business feasibility analysis.

6. The total revenue from garlic farming is IDR 42,000,000 with total production costs of IDR 19,775,833, resulting in a net income of IDR 22,224,167 per planting season. This value shows that garlic farming is quite profitable because it can generate more than double the income of the costs incurred. The results of this study are also in line with the research by Andrie and Novianty (2021), who found that in red chili farming with a land area of 0.34 hectares, farmers earned an income of IDR 5,891,000 from revenues of IDR 9,590,000 and total costs of IDR 3,699,000, thus proving the significant benefits of intensive horticultural farming activities.

Farm Viability

In this study, onion farming in the Cialam Jaya Agrotourism Area was analyzed using the Revenue-Cost Ratio (R/C Ratio), which is the ratio between total revenue and total farming costs in one planting season. The results of the study show an R/C Ratio value of 2.12, which means that every Rp1.00 spent generates Rp2.12 in revenue or a net income of Rp1.12. This value indicates that spring onion farming is economically feasible and profitable. This shows that farmers have been able to manage their farms efficiently, both in the use of production inputs such as seeds, fertilizers, and pesticides, as well as in controlling costs during the cultivation process. This relatively high income also shows good prospects for spring onions to continue to be developed, especially supported by stable market prices and a direct marketing system through agrotourism that is able to cut the distribution chain and increase the selling value of products. A marketing system integrated with tourism activities even provides added value in the sale of crops. Therefore, the R/C Ratio of 2.12 can be used as an important indicator in decision-making for future farming development, both in terms of increasing production scale, cost efficiency, and strengthening distribution and marketing.

Compared to previous studies, these results are still relatively high and acceptable. Hasanah et al. (2023) reported an R/C ratio of 2.56, Welang et al. (2020) reported 2.17, while Fortuna et al. (2022) found a lower value of 1.55. Thus, although the R/C ratio in this study is slightly lower than some other studies, onion farming in the Cialam Jaya Agrotourism Area remains highly prospective and economically profitable, and can serve as a basis for consideration in the development of horticultural businesses oriented towards efficiency and sustainability.





Break-Even Point (BEP)

Break-Even Point (BEP) Analysis in Garlic Farming in the California Cialam Jaya Agrotourism Area. This section addresses the fourth objective of the study, which is to analyze the level of farming optimization through the BEP approach. The Break-Even Point (BEP) is the point of equilibrium between total revenue and total production costs, at which point the business neither incurs a loss nor a profit. BEP is an important indicator for measuring the efficiency and feasibility of farming businesses. In this analysis, three BEP approaches are used, namely production BEP (units), revenue BEP (rupiah), and selling price BEP.

1. Break-even point (BEP) is a condition where total revenue equals total costs, so that farming activities neither make a profit nor incur a loss. In this study, BEP analysis was calculated in units (kilograms) to determine the minimum production volume that must be achieved so that production costs can be covered by revenue from sales. Based on the results of the research, the Production BEP is 471 kg. This means that farmers must produce at least 471 kg of spring onions in one growing season to avoid losses. Meanwhile, based on actual data, the total production of spring onion farming reached 4,200 kg, far above the break-even point. Thus, spring onion farming in the California Cialam Jaya Agrotourism Area is classified as profitable because the actual production exceeds the BEP, which shows that farmers are able to cover costs and earn significant income. This study is in line with Andrie and Novianty (2021), who found a production BEP for red chili farming of 51.90 kg with an actual production of 858.25 kg, which also shows a high profit margin. This reinforces that the greater the difference between actual production and BEP, the more feasible and promising a farming business is to run.
2. In addition to being calculated in physical units, BEP analysis was also conducted in rupiah (Rupiah BEP) to determine the minimum amount of revenue that must be achieved to cover all production costs. The results of the study show that the total fixed costs are IDR 2,807,000, the total variable costs are IDR 16,968,833, and the total revenue from the sale of spring onions is IDR 42,000,000. Based on the calculations, the BEP revenue is Rp4,709,060. This means that farmers must obtain at least this amount of revenue to avoid losses. Since the actual revenue reached Rp42,000,000, the spring onion farming business in the California Cialam Jaya Agrotourism Area can be categorized as very profitable financially. This finding is supported by research by Hasanah et al. (2023), which shows that farmers who use farmer cards earn an average income of IDR 82,846,611 with an R/C ratio of 2.56, which is more profitable than farmers who do not





use farmer cards. This confirms that cost efficiency and increased income are closely related to business management strategies and production facility support.

3. Break-even point (BEP) analysis is used to determine the minimum price per kilogram that must be set in order to cover all production costs. By knowing the break-even price, farmers can develop appropriate pricing strategies to deal with market fluctuations. Based on research data, the total production cost is Rp19,775,833 with a total production of 4,200 kg. From the calculations, the BEP selling price is Rp4,708.53/kg. This means that the minimum selling price that must be set is Rp4,708.53/kg. However, the actual price in the field reaches Rp10,000/kg, more than double the BEP value, which shows that garlic farming provides high profits and is worth developing. This is reinforced by the research by Rachim et al. (2023) in Ciamis Regency, which shows a BEP selling price of IDR 9,000/kg with an income of IDR 9,213,916.52 and an R/C ratio of 1.38. This comparison shows that the actual selling price at the research location is much more competitive, supporting greater profits and strengthening the position of onion leaves as a leading horticultural commodity from an economic perspective.

CONCLUSION

Based on research and data analysis, the productivity of spring onion farming in the California Cialam Jaya Agrotourism Area reached 8,400 kg/ha in one planting season. This figure indicates a fairly high level of productivity and reflects efficiency in land use and production facilities. Economically, farmers are able to earn an income of IDR 22,224,167 per planting season, with total revenue of IDR 42,000,000 and total production costs of IDR 19,775,833. The Revenue-Cost Ratio (R/C Ratio) obtained is 2.12, which means that every Rp1.00 spent generates Rp2.12 in revenue. This confirms that onion farming is economically viable and provides significant profits for farmers.

In addition, the results of the Break Even Point (BEP) analysis also reinforce the feasibility of this business. The Production BEP was recorded at 471 kg, the Revenue BEP at IDR 4,709,060, and the Selling Price BEP at IDR 4,708.53/kg. When compared to actual achievements, onion leaf production reached 4,200 kg and the selling price was IDR 10,000/kg, far above the calculated break-even point. This condition indicates that the onion farming business not only covers all production costs but also provides a high profit margin. Therefore, it can be concluded that onion farming in this area is highly viable for further development, both in terms of productivity and economic benefits.



The recommendation from this study is that farmers or managers should maintain and improve existing good cultivation practices and consider expanding land area or increasing cultivation intensity to optimize income. For agrotourism managers, the results of the BEP analysis can be used as a basis for business planning, particularly in determining pricing strategies, production volume, and efficient cost allocation. Furthermore, for local governments or related agencies, the results of this study can be used as consideration in formulating policies for the development of the horticulture sector integrated with agrotourism to encourage local economic growth and farmer welfare. For future researchers, it is hoped that they can conduct further research related to business risk analysis, marketing management, or comparisons with other horticultural commodities in order to obtain a more comprehensive picture of the sustainability and development of farming businesses.

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