



FEASIBILITY PERFORMANCE OF CANDLENUT (*Aleurites moluccana*) FARMING (CASE STUDY OF CANDLENUT FARMERS IN LABALIMUT VILLAGE)

KERAGAAN KELAYAKAN USAHATANI KEMIRI (*Aleurites moluccana*) (STUDI KASUS PADA PETANI KEMIRI DI DESA LABALIMUT)

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Abstract

This study aims to analyze the feasibility of candlenut farming (*Aleurites moluccana*) in Labalimut Village, Nagawutung District, Lembata Regency, East Nusa Tenggara Province. The method used is a descriptive, quantitative approach, with simple random sampling involving 36 candlenut farmers. The results show that the average revenue is IDR 16,791,667 per hectare, with total production costs amounting to IDR 1,259,167 per hectare, resulting in an income of IDR 15,532,500 per hectare. The R/C ratio value of 13.61 (greater than 1) indicates that candlenut farming is feasible and profitable. The break-even point BEP of production is 41.97 kg, the BEP price is IDR 2,739 per kg, and the BEP revenue is IDR 27,639. Therefore, candlenut farming in this region has strong economic prospects and potential for further development.

Keywords: *candlenut, farming, feasibility, R/C ratio, BEP*

Abstrak

Penelitian ini bertujuan untuk menganalisis kelayakan usahatani kemiri (*Aleurites moluccana*) di Desa Labalimut, Kecamatan Nagawutung, Kabupaten Lembata, Provinsi Nusa Tenggara Timur. Metode yang digunakan adalah deskriptif kuantitatif dengan teknik pengambilan sampel acak sederhana kepada 36 petani kemiri. Hasil penelitian menunjukkan bahwa rata-rata penerimaan sebesar IDR 16.791.667/ha, dengan total biaya produksi sebesar IDR 1.259.167/ha, sehingga diperoleh pendapatan sebesar IDR 15.532.500/ha. Nilai R/C ratio sebesar 13,61 (lebih dari 1) menunjukkan bahwa usahatani kemiri layak dan menguntungkan untuk diusahakan. Titik impas BEP produksi sebesar 41,97 kg, BEP harga sebesar IDR 2.739/kg, dan BEP penerimaan sebesar IDR 27.639. Dengan demikian, usahatani kemiri di wilayah ini memiliki prospek ekonomi yang baik dan berpotensi untuk dikembangkan lebih lanjut.

Kata Kunci: kemiri, usahatani, kelayakan, R/C ratio, BEP.

INTRODUCTION

Indonesia is an agrarian country where the majority of its population relies on the agricultural sector for their livelihood. This country has a wide variety of agricultural land with abundant and diverse natural potential. The agricultural sector plays an important role in meeting basic needs and providing a livelihood for the community. However, despite the national



economic growth being quite high, only a small portion of the population, especially farmers, truly felt the benefits. Therefore, improving farmers' welfare through agricultural business development is an urgent need (Zasriati, 2021). Farmers always strive to use their resources (land, labor, agricultural equipment, and capital) as efficiently as possible in their businesses (Mandang *et al.*, 2020). As agricultural businesses advance among farmers, they will be able to operate if agriculture or plantations are managed carefully, resulting in good yields and high product output, which is always the hope of farming communities in achieving high production results and reaching the same outcome.

Candlenut is one of the important agricultural commodities with economic and social value for the community, especially in tropical and subtropical regions such as Labalimut Village, Nagawutung District, Lembata Regency. Aside from being the main source of income for farmers in this area, candlenut also provides sustainable benefits to the surrounding community. East Nusa Tenggara province is one of the potential nutmeg-producing areas with a climate very suitable for its development. Because it has high market value and is an export commodity, the candlenut plant is very important. There are 214 families in Labalimut Village. Every family in Labalimut Village has a nutmeg plantation. In one garden, there can be more than 5 to 10 trees, and one candlenut tree can produce at least 400 kilograms of candlenuts in a year.

Nut farmers in Labalimut Village always sell their nuts in Lewoleba, and the journey to the market takes two hours. As long as the market still needs coconuts at a high selling price, the path for farmers toward prosperity will continue to widen. Market demand for candlenuts is very high among the public, as they are needed for processing kitchen spices, pharmaceuticals, and the beauty industry. The price of whole round candlenuts with their shells unbroken is IDR. 8,000 per kilogram. Shelled candlenuts are priced at IDR. 35,000 per kilogram, and those that are split and shelled are priced at IDR. 32,000 per kilogram. Cashew farming in Labalimut Village has not yet shown clear profits for the farmers. Further in-depth analysis is still needed to determine the feasibility of nutmeg farming and whether it is profitable or unprofitable based on farm analysis.

RESEARCH METHODS

In this study, two data analysis methods were used: quantitative descriptive analysis. This descriptive analysis aims to provide a general overview of betel nut farming and explain farmers' costs and income. The factors discussed in this descriptive analysis include land area, labor, maintenance, and other costs. Quantitative analysis was used to determine whether betel nut farming is profitable.

This research was conducted in Labalimut Village, Nagawutung District, and the data types used were both primary and secondary. This location was chosen intentionally (purposively) because the majority of the population are cashew farmers. Research period: November 2024 - February 2025.



The data types are primary and secondary. The first is data obtained from direct observation in the field and from interviews with respondents using a list of questions (a questionnaire). The second is secondary data obtained from literature and relevant institutions, such as the Labalimut Village Office. Primary data were collected through direct surveys of 36 respondents, using the method described by Suharsimi Arikunto in Aries Veronica's book. According to this book, if the population size is more than 100 people, the sample can be taken at 10% to 25% of the population size. The simple random sampling technique was used from 214, using Slovin's formula, 15%:

$$\begin{aligned}
 & N / (1 + N * e^2). \\
 & = 214 / (1 + 214)(15\%)^2 \\
 & = 214 / (1 + 214)(0.15)^2 \\
 & = 214 / (1 + 214)(0.0225)^2 \\
 & = 214 / (1 + 4.8) \\
 & = 214 / 5.8 \\
 & = 36
 \end{aligned}$$

The author used farm business data analysis techniques to determine the feasibility of a business and to evaluate ongoing business activities. Considering factors such as cost, revenue, profit, and the break-even point (BEP). The farm business analysis was conducted by calculating the difference between total revenue ($TR = P \times Q$) and total cost ($TC = TFC + TVC$), yielding profit ($TR - TC$). Additionally, the feasibility of the farm business was analyzed using the Break-Even Point (BEP) and the Revenue Cost Ratio (R/C) approaches. BEP was calculated based on units (production), price, and revenue. At the same time, the R/C ratio was used to assess business feasibility, with the condition that the farm business is considered feasible if the R/C ratio > 1 .

RESULTS AND DISCUSSION

1 Respondent Characteristics

Farmers are people who strive to provide agricultural needs. The identity of the respondent farmers is needed to obtain information about the farming they are engaged in. Here is a discussion of the respondents, including age, education level, number of family dependents, farming experience, and land area.

a. Respondent's Age

Generally, age can affect a person's abilities, both physically and mentally. Younger farmers have stronger physical abilities and are more receptive to innovations compared to older farmers. Therefore, age differences can serve as an indicator of work ability, as younger farmers have more work experience and stronger physical capabilities.



Table 1. Characteristics of Respondents by Age

No	Age	Number (People)	Percentage (%)
1.	25 - 36	4	11,11
2.	37 - 48	8	22,22
3.	49>	24	66,67
Total		36	

Source: Processed Primary Data, 2025

According to Table 1, the 49-year-old age group has the highest number of cashew farmer respondents, with 24 people representing 66.67%. Farmers aged 25 to 36 have 4 respondents, representing 11.11%, and farmers aged 37 to 48 have 8 respondents, representing 22.2%. Therefore, younger cashew farmers will be more productive in cashew farming because they are physically and mentally stronger, more willing to take risks, and slower and easier to make decisions than older farmers.

b. Education Level

If farmers receive longer formal education, they are more likely to find new things and changes in how they run their farming businesses.

Table 2. Characteristics of Respondents by Education Level

No	Education	Male	Female	Total (People)	Percentage (%)
1	No School	-	-	-	-
2	Elementary School (SD)	14	3	17	47,22
3	Junior High School (SMP)	9	-	9	25
4	Senior High School (SMA)	8	1	9	25
5	Higher Education	1	-	1	2,78
Total			36		

Source: Processed Primary Data, 2025

Table 2 shows that farmers’ education level is higher at the Elementary School (SD) level than at Junior High School (SMP), Senior High School (SMA), and Higher Education, with 17 people (47.22%) having the highest percentage. Meanwhile, the lowest education level is 2.78%. Therefore, it can be concluded that farmers with higher education levels will have greater knowledge and better skills in working or cultivating nutmeg. The more skilled farmers are in their endeavors, the greater their influence over their farming operations, which, if well-managed, will result in higher yields.

c. Number of Family Dependents

The number of family dependents is the number of people in the respondent’s family who are responsible for paying all their living expenses. The number of family members is very important for managing farming because it determines the number of needs the farmer must meet and the farmer’s responsibility to fulfill them.



Table 3. Characteristics of Respondents Based on Number of Family Dependents

No	Number of Dependents (People)	Number (People)	Percentage (%)
1.	1-3	28	77,78
2.	4-6	8	22,22
Total		36	

Source: Processed Primary Data, 2025

Table 3 shows that the largest group of respondents has the most family dependents; 28 people from this group account for 77.78% of the total. This indicates that the respondents' families often have partners and children. Additionally, this indicates that when family size is modest, family income is sufficient. Household expenditure is directly influenced by the number of family dependents because the amount of labor required to finance agricultural businesses increases with the number of dependents.

d. Land Area

Because the crops planted by cashew farmers are the same, the same land area is always used on a traditional farming scale. Therefore, the guidelines for land area also take into account the value of capital, assets, and labor.

Table 4. Characteristics of Respondents by Land Area

No	Land Area (Ha)	Number (People)	Percentage (%)
1.	0,02-0,08	30	83,33
2.	0,09-0,25	5	13,89
3.	1>	1	2,78
Total		36	

Source: Processed Primary Data, 2025

Table 4 shows that farmers in Labalimut Village, Nagawutung District, Lembata Regency, have varying land areas used to plant candlenuts. Most farmers have a land area of 0.02-0.08 ha; 30 respondents, representing 83.33% of the sample, fall within this range. Meanwhile, 5 farmers have land areas between 0.09 and 0.25 ha, accounting for 13.89%. Moreover, 1 farmer has an area of more than 1 ha, accounting for 2.78% of the total.

e. Farming Experience

One of the benchmarks in farming is a person's experience. The longer a person's experience in farming, the more time they spend doing it.

Table 5. Characteristics of Respondents Based on Farming Experience

No	Length of Farming Experience (Years)	Number People)	Percentage (%)
1.	5-15	14	38,89
2.	16-30	19	52,78
3.	31>	3	8,33
Total		36	

Source: Processed Primary Data, 2025



Table 5 shows that 52.78% of the 19 farmers have between 16 and 30 years of experience. This indicates that farmers in Labalimut Village have considerable farming experience, ranging from 16 to 30 years, and they have a workforce that can enhance skills and provide insights into managing and developing the nutmeg farming business.

2 Farming Calculation

This research analyzes cashew farming in Labalimut Village, Nagawutung District, Lembata Regency. The analysis results show that the total production cost for one season is IDR 1,259,167, consisting of fixed costs of IDR 27,639 and variable costs of IDR 1,231,528. Meanwhile, farmers’ total revenue from the production of 559.72 kg at a selling price of IDR 30,000/kg is IDR 16,791,667. Therefore, the net income earned is IDR 15,532,500 per season.

Table 6. Income from Candlenut Farming

Description	Value (IDR)
Production	559,72 (kg)
Price	30.000
Total Revenue	16.791.667
Fixed Costs	27.639
Variable Costs	1.231.528
Total Production Cost	1.259.167
Net Income	15.532.500

Source: Processed Primary Data, 2025

Based on Table 6, which presents the details of costs and revenue from candlenut farming activities over one year for one season, farming income is the amount of production generated by the farm multiplied by the selling price at the farmer level. This production value is calculated in Rupiah (Fadhilah & Rochdiani, 2021). The selling price of the candlenuts used in this study was IDR 30,000/kg. With an average total production of 559.72 kg per hectare, farmers earned an income of IDR 16,791,667. This price is quite stable and in line with the local market price in the research area. The high selling price indicates that the betel nut commodity has promising economic value, thus offering high profit potential for farmers if production can be maintained or increased.

In farm costs, there are fixed costs, variable costs, and net total costs received by farmers during one season. In farming, there are fixed costs and variable costs (Ibrahim *et al.*, 2021). The cost of cashew farming in Labalimut Village consists of fixed and variable costs. Fixed costs include land tax and equipment depreciation, totaling IDR 27,639. Meanwhile, variable costs include sacks and labor for maintenance and harvesting, totaling IDR 1,231,528. Thus, the total production cost for the betel nut farm is IDR 1,259,167. Variable costs are the largest component of total production costs, reflecting the dominance of labor in betel nut farming.

Farm income is analyzed by calculating production, prices, revenues, and costs associated with farming activities. The cost of farming itself is the total expenses incurred by the farmer



during the production process. This cost is divided into two categories: fixed costs and variable costs. Fixed costs are costs whose amounts do not change even as production volume increases, such as land taxes, equipment depreciation, and labor wages. Variable costs, on the other hand, are costs whose value changes according to the level of production carried out by farmers (Djafar *et al.*, 2023; Mahmud *et al.*, 2022; Ramli *et al.*, 2021). In this case, the net income earned by cashew farmers is IDR. 15.532.500 per ettaro all’anno.

Table 7. Results of Farm Feasibility Analysis

Indicator	Value (IDR)
R/C Ratio	13,61
Production BEP	41.972 (kg)
Price BEP	2.739
Revenue BEP	27.639

Based on Table 7, the farm feasibility analysis results for candlenut using the BEP and R/C Ratio indicators are shown. This indicates that candlenut farming is very profitable. Additionally, the R/C Ratio value of 13.61 indicates that for every one rupiah of cost incurred, IDR. 13.61 in revenue will be generated, making candlenut farming financially very feasible to continue and develop.

According to Darminto (Aminus & Sarina, 2022; Siswanto *et al.*, 2016; Pangemanan, 2016), the Break-Even Point (BEP) analysis is a technique used to determine the sales volume and product mix needed to cover all costs within a specific time period. When all costs and revenues are equal, it is the break-even point. Based on the business analysis, the production break-even point is reached at 41,972 kg. This means that hazelnut farming will be at the break-even point if it can produce a minimum of 41,972 kg of harvest in one year, one harvest season. The break-even point (BEP) price is calculated by dividing the total cost of IDR 1,259,167 by the total production of 41.9729 kg, resulting in a minimum selling price of approximately IDR 2,739. The break-even point for revenue of IDR 27,639 indicates a low minimum threshold to cover fixed costs, making the cashew farming in Labalimut Village highly prospective and suitable for development overall.

CONCLUSION AND RECOMMENDATIONS

1 Conclusion

The research conducted in Labalimut Village, Nagawutung District, Lembata Regency, shows that respondents received a total income of IDR 16,791,667/ha. Respondents incurred total production costs of IDR 1,259,167/ha, resulting in a total income of IDR 15,532,500/ha.

In the research area of Labalimut Village, Nagawutung District, Lembata Regency, the R/C ratio of 13.61 (greater than 1) indicates that nutmeg farming is feasible. Production BEP is achieved when the production volume reaches 41,972 kg. This means that hazelnut farming will break even if it can produce at least 41,972 kg of harvest in one year, one harvest season. The break-even price is calculated by dividing the total cost of IDR 1,259,167 by the total production



of 41,9729 kg, resulting in a minimum selling price of approximately IDR 2,739. The break-even revenue of IDR 27,639 indicates a low minimum threshold to cover fixed costs, making the cashew farming in Labalimut Village highly promising and suitable for development overall.

2 Suggestions

- 1 It is hoped that cashew farmers in Labalimut Village, Nagawutung District, Lembata Regency will record more financing. This will help determine the costs incurred during betel nut farming.
- 2 To increase income, betel nut farmers are expected to create derivative products from betel nut production, such as seasonings.
- 3 The government should pay more attention to betel nut farmers by providing training on betel nut production and providing access to betel nut marketing.
- 4 Efforts to increase farmer capacity through education and training, infrastructure improvement, and good farm management are highly recommended to maximize the results and income from this betel nut farming.
- 5 Further research is needed regarding the betel nut supply chain in Labalimut Village, Nagawutung District, Lembata Regency.

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