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Analysis of Coffee Farming Income in Barambang Village, Sinjai Borong District, Sinjai Regency

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Abstract: This study aims to determine the factors that influence coffee farming businesses as well as the amount of income and the feasibility of coffee farming businesses in Barambang Village, Sinjai Borong District, Sinjai Regency. The research method used a quantitative descriptive approach with the determination of coffee farmer respondents selected using purposive sampling. The data were analyzed to determine the factors that influence coffee farming income, such as land area, production costs, selling prices, and income variables, and were also calculated using feasibility analysis using the R/C ratio. The results showed that several factors, such as land area and selling prices, had a significant effect on coffee farmers' income. Income analysis showed the average income from coffee farming per planting season, which included total production costs. Based on the feasibility analysis, the R/C ratio value indicated that coffee farming in Barambang Village was feasible because the R/C ratio value was > 1.

Keywords: Coffee farming, Income, Feasibility, R/C ratio

1. Introduction

Coffee has become one of the most vital and popular global commodities. As a beverage consumed by billions of people every day, coffee is not only part of the social and cultural routine in various parts of the world, but also an economic driver for dozens of producing countries. The global coffee industry supports the livelihoods of millions of people, from farmers in remote villages to baristas in modern urban cafes, making it a strategic commodity in the international economic arena. Indonesia plays a very significant role on this global stage. A long history of coffee cultivation since the colonial era has positioned Indonesia as one of the world's largest coffee producers and exporters (Sudjatmoko, 2013).

Coffee production in Indonesia during the period 2020 to 2023 shows a fluctuating or unstable pattern. The highest production occurred in 2021 with a total of 786,191 tons, while the lowest production was recorded in 2023 at 758,725 tons. These fluctuations indicate that coffee production in this area is highly vulnerable to changing conditions. However, behind the image of coffee as a dynamic global commodity lies a deep paradox. The welfare of small farmers, who are at the forefront of this supply chain, is often not commensurate with the economic value they generate. Many coffee farmers in Indonesia still struggle with low incomes, which limit their ability to achieve a decent and sustainable life.

One of the main root causes of the problem is relatively low productivity levels. Data shows that coffee productivity in Indonesia, for both Arabica and Robusta

varieties, is still below the average of other major producing countries such as Vietnam. This productivity gap directly limits the volume of production. that farmers can generate from their limited land, which in turn becomes a ceiling for their gross income potential (Makmur1 2022).

In addition to productivity, farmers also face other structural challenges. Price fluctuations in the global market, long and often inefficient marketing chains, and the weak bargaining position of farmers vis à-vis collectors are external factors that depress prices at the farm gate. As a result, farmers often receive only a small fraction of the final value of the coffee product enjoyed by consumers. Limited access to capital, modern cultivation technology, and market information also exacerbate the situation. This creates a vicious cycle: low incomes prevent farmers from investing in quality inputs such as superior seeds and fertilizers, as well as implementing good agricultural practices. As a result, productivity and crop quality remain low, ultimately making it difficult for their incomes to increase.

South Sulawesi Province is one of Indonesia's leading coffee production centers. The region is known as the home of several world-renowned specialty coffees, such as Toraja Coffee and Kalosi Coffee, whose reputations are built on unique terroir characteristics and distinctive flavors. Coffee is a key commodity that supports the economy in several districts in this province. Among these districts, Sinjai District plays an important role as one of the main coffee producing areas in South Sulawesi. This region, especially in the Bawakaraeng mountainous area, has agroecological conditions that are very conducive to the development of high-quality coffee. The local government is also actively encouraging the development of this commodity with the target of penetrating the export market (Wahyuningrum et al. 2023).

The coffee agribusiness landscape in Sinjai Regency is characterized by a dualism of varieties. Arabica coffee, which requires an altitude of more than 1,000 meters above sea level, is concentrated in highlands such as in West Sinjai District. Meanwhile, Robusta coffee is more widely cultivated in areas with lower elevations, such as in most of the Sinjai Borong District. Similar to the national situation, coffee farming in Sinjai is dominated by smallholder plantations. Thousands of farmers manage coffee plantations with small land holdings, averaging only between 0.5 and 1 hectare. This structure fundamentally limits the production volume per farmer, making their income highly dependent on land productivity and the selling price they receive.

Despite its great potential, various studies show that the net income received by coffee farmers in Sinjai is often low. Some studies even find that farmers' monthly income from coffee farming is well below the South Sulawesi Provincial Minimum Wage (UMP). This fact indicates that for many families, coffee serves more as a source of additional income than as the mainstay of economic welfare. More specifically, this study will focus on Sinjai Borong District. This district is interesting to study because although it is generally known as a center for Robusta coffee, the area also includes villages in the highlands that have great potential for Arabica coffee development. The existence of two different coffee ecosystems in one administrative area creates complex economic dynamics.

The research location was then narrowed down to Barambang Village, a village within the Sinjai Borong District. The uniqueness of Barambang Village lies in its location at an altitude of between 1,000 and 1,231 meters above sea level, an elevation that is ideal for cultivating premium quality Arabica coffee. This condition makes the farmers in Barambang Village an interesting case study, as they cultivate Arabica in the middle of a subdistrict dominated by Robusta. The economic reality faced by Arabica farmers in Barambang Village is likely to have different characteristics, both when compared to Robusta farmers in their neighboring villages and when compared to Arabica farmers in major centers such as West Sinjai Subdistrict. These differences may arise from aspects such as production costs, productivity levels, market access, and the selling prices they receive. Therefore, an income analysis focused on this location is highly relevant.

2. Metodologi

2.1. Type of Research

The type of research used is descriptive research with a quantitative approach. This choice is based on the research focus to measure and describe economic phenomena objectively at the research location. The quantitative approach was chosen because this research emphasizes the analysis of numerical data to measure research variables. The data to be collected, such as production costs in Rupiah, production volume in kilograms, selling prices, and total income, are numerical data that will be processed using simple statistical calculations. The use of this approach allows researchers to present measurable, objective, and systematic results regarding the income structure of coffee farming in Barambang Village. In addition, the types of research data used are primary and secondary data.

2.2 Research Location

This research will be conducted in Barambang Village, which is administratively located in Sinjai Borong Subdistrict, Sinjai Regency, South Sulawesi Province. This location was chosen deliberately (purposive sampling) based on several considerations relevant to the research objectives. The main consideration is that Barambang Village is one of the coffee production centers in Sinjai Borong Subdistrict. Most of the residents in this village work as farmers and depend on coffee farming as their main source of income. Based on initial observations, there is a phenomenon where the welfare of farmers in this region is suspected to be less than optimal despite the excellent natural resource potential for coffee. This makes Barambang Village a highly relevant location for conducting an in-depth analysis of income.

2.3. Sampling Technique

The population consists of all coffee farmers in Barambang Village, Sinjai Borong Subdistrict, Sinjai Regency. The sample is a portion of the population that represents the population and is taken using the Purposive Sampling technique. This technique was chosen because data on all coffee farmers in the village, including a list of coffee farming members, was not available. The limitations of the population data make a non-probability approach such as purposive sampling the most appropriate choice to ensure that the selected respondents are truly relevant to the research objectives.

2.4. Data Collection Techniques

Data collection is the recording of events, information, and characteristics of some or all elements of the population that will support or assist the research. The data collection techniques that will be used in this study can be carried out through observation, interviews, questionnaires, and documentation.

2.5. Data Analysis Techniques

The data analysis technique obtained from both primary and secondary data is analyzed quantitatively. Data analysis in this study is income data analysis.

2.5.1. Revenue Formula

Revenue is the product of the quantity of goods sold multiplied by the prevailing price at the time of sale, expressed in rupiah. The calculation can be performed using the following formula:

$$TR = Q \times P$$

Explanation

TR : Total Revenue

Q : Total Production (Kg)

P : Product selling price (Rp/kg)

2.5.2. Expense Formula

Expenses in coffee farming are generally referred to as production costs. These costs consist of two main components, namely fixed costs and variable costs. The expense formula is as follows:

$$\mathbf{TC = FC+VC}$$

Explanation:

TC (Total Cost) : Total business costs/expenses
FC (Fixed Cost) : Fixed costs (e.g., depreciation of equipment, buildings)
VC (Variable Cost) : Variable costs (e.g., fertilizer, pesticides, labor)

2.5.3. Depreciation formula

The straight-line method is most appropriate. This method divides the value of the asset evenly over its economic life, resulting in depreciation costs that are simple, stable, and easy to apply in agricultural income analysis.

$$\mathbf{D} = \frac{HP - NR}{UE}$$

Explanation:

D : Annual Depreciation Cost
HP : Asset Acquisition Cost (Cost)
NR : Residual Value (Remaining Value After the Useful Life Expires)
UE : Economic life of the asset (years)

2.5.4. Income Analysis

Formula Agricultural income is the difference between revenue and all costs, where agricultural revenue is the product of production and selling price, while costs are all expenditures incurred in an agricultural enterprise. The equation is written as follows:

$$\boldsymbol{\pi = TR - TC}$$

Explanation:

π : Farm Income (total revenue)
TR : Total revenue
TC : Total Cost

Total costs can be calculated using the following formula:

$$\mathbf{TC = FC + VC}$$

Explanation:

TC : Total Cost
FC : Fixed Cost
VC : Variable Cost

Revenue can be calculated using the following formula:

$$\mathbf{TR = P.Q}$$

Explanation:

TR : Total revenue
P : Product price
Q : Production obtained in a farming business

2.5.5. Feasibility Formula

TR = P.Q A

business that will be carried out is considered profitable or feasible if a business feasibility analysis is conducted. Business feasibility can be determined using the R/C approach. R/C is an abbreviation of

Revenue Cost Ratio, which is known as the ratio between total costs (TR) and total revenue (TC), with the following formula:

a = TR/TC

Explanation:

a : The ratio between total revenue and total cost
TR : Total Revenue (total income)
TC : Total Cost (total expenses)

With the criteria (Rita, 2021):
If a > 1, then the farming business is feasible
If a < 1, then the farming business is not feasible
If a = 1, then the farming business is neither profitable nor loss-making

3. Results and Discussion

3.1. Geographical Location

Barambang Village is located in a highland area with an altitude of approximately ±700 meters to 900 meters above sea level, making it a lowland area. The temperature in this area varies considerably, ranging from 20 degrees at its coldest to 32 degrees at its hottest. This region has an average rainfall of 7,200 mm/year and is topographically mountainous. Administratively, Barambang Village is one of the most remote areas in Sinjai Borong Subdistrict, which has a coffee plantation area of 1,662.62 hectares in 2024 with 755 coffee farmers. Coffee production in Barambang Village is 71 tons/year. The village covers an area of 14.03 hectares, which is part of the subdistrict's total area of 66.97 hectares. The boundaries of Barambang Village are as follows:

a. To the north, it borders Bonto Katute Village.
b. East: borders Biji Nangka / Palangka Village (South Sinjai).
c. South: borders Biji Nangka / Batu Belerang Village.
d. West: borders Batu Belerang/Barania Village (West Sinjai).

This village consists of four hamlets, namely Katute Hamlet with an area of 480.25 hectares, Balang Hamlet with an area of 231.2 hectares, Bonto Manai Hamlet with an area of 374.95 hectares, and Batu Massompo Hamlet with an area of 316.6 hectares. Distance from Barambang Village to the subdistrict administrative center.

a. Distance from the sub-district administrative center: 6.8 km.
b. Distance from the district capital: 49 km.
c. Distance from the provincial capital: 198 km.

3.2. Respondent Characteristics

The sample used in this study consisted of 40 respondents who were deliberately selected as turmeric farmers in Botolempangan Village, West Sinjai District, Sinjai Regency. Their characteristics are as follows:

3.2.1 Age

Age is a determining factor in all activities of each respondent in order to maximize labor and capital used during the farming process. In agriculture, age is an important factor. Younger farmers generally have greater physical endurance

compared to older farmers. The detailed description of the age of respondents in the study area is presented in Table 1 below.

Table 1. Age Characteristics of Respondents No Age (Years)

No	Ages	Number of Respondent	Percentage (%)
1	30-40	20	50
2	41-50	13	32,5
3	51-60	7	17,5
Total		**40**	**100**

Source: Primary Data After Processing, 2025

Based on Table 1 above, the data shows that coffee farmers in Barambang Village have an age structure dominated by the productive age group. The majority of respondents in this survey were in the 30 40 age range, with 20 people, accounting for 50% of the total 40 respondents. The proportion of respondents decreases with age, with the 41-50 age group consisting of 13 people or 32.5%, and the 51-60 age group being the smallest with only 7 people or 17.5%. This shows that the research sample is dominated by individuals in the younger productive age group, so the survey results most likely reflect the views of that age group.

3.2.2 Education

The majority of respondents had a relatively low level of education, with the largest proportion being elementary school graduates, numbering 15 people (37.5%), followed by junior high school graduates, numbering 12 people (30%), and those who did not attend school, numbering 11 people (27.5%). Meanwhile, respondents with a high school education numbered only 2 people, which was the smallest percentage at 5%. Overall, these data show that the survey sample was dominated by individuals with a formal educational background up to junior high school level or lower. This could be a challenge in terms of conveying information and training on new technologies. Therefore, an effective outreach approach must be tailored to their educational background so that it is easy to understand and implement.

Table 2. Educational Characteristics of Respondents

No	Education	Number of Respondent	Percentage (%)
1	No school	11	27,5
2	Elementary School	15	37,5
3	Junior High School	12	30
4	Sunior High School	2	5
	Total	**40**	**100**

Source: Primary Data After Processing, 2025

3.2.3 Length of Farming Experience

Most of the 40 coffee farmers who responded had relatively short farming experience, namely 1-10 years, with 19 people or 47.5%, which is in line with their age profile, which is dominated by the 30-40 age range. The group of farmers with 11-20 years of experience numbered 12 people (30%) aged 41-50 years, while the most experienced farmers (s, aged 21-30 years) numbered only 9 people (22.5%) aged 51-60 years. This shows that there is a regeneration of farmers in this sector, with many young farmers just starting their businesses.

Table 3. Respondents' Experience in Coffee Farming

Length of Coffee Farming Experience	Age (Years)	Number of Respondents	Percentage (%)
1 – 10	30 – 40	19	47,5
11 – 20	41 – 50	12	30
21 – 30	51 – 60	9	22,5
Total		**40**	**100**

Source: Primary Data After Processing, 2025

3.2.4 Farmers' Land Area

The majority of residents have relatively small plots of land, ranging from 2 to 6 acres. This group comprises 30 people, which is 75% of the total population. In contrast, only a few residents own larger plots of land, ranging from 7 to 10 acres. This group consists of only 10 people, equivalent to 25% of the total population. This data shows an imbalance in land ownership, where most residents own small plots of land, while only a quarter of the population owns larger plots.

Table 4. Characteristics of Respondents' Land Area

No	Land Area (are)	Number of Respondents	Percentage (%)
1	2 – 6 are	30	75
2	7 – 10 are	10	25
Total		**40**	**100**

Source: Primary Data After Processing, 2025

3.3 Production Equipment and Supplies

There are three main items of equipment that are purchased or used, along with their respective prices Gloves Used to protect farmers' hands during the harvesting process or handling of coffee beans. The cost of gloves is Rp. 22,000. This tool is important for maintaining cleanliness and work safety. Buckets This tool is crucial for collecting freshly picked coffee beans. At a cost of Rp. 31,250, buckets are the largest expense on this list, demonstrating the importance of this tool in the harvest collection process. Sacks After harvesting, sacks serve as containers for transporting or storing coffee beans. Sacks have the lowest cost, at Rp. 8,600, which shows that although they are important, their cost is relatively efficient.

Table 5. Coffee Farmer Production Equipment in Barambang Village

No	Production Equipment Coffee Farmers (Rp)	Production Equipment Coffee Farmers (Rp)
1	Gloves	22.000
2	Bucket	31.250
3	Sack	8.600
Total		**Rp 61.850**

Source: Primary Data After Processing, 2025

3.4 Coffee Farming Costs

Costs are all funds used in carrying out a business activity; costs are sacrifices – absolute sacrifices or expenses that must be incurred in order to obtain a result. Production costs are all expenditures to finance the production process in a business. The costs calculated in this study are those incurred during one planting season, which are classified as fixed and variable costs. Fixed costs in this study include land and building tax (PBB) and equipment depreciation (NPA), while variable costs include fertilizer, pesticide, and labor costs.

3.4.1 Variable Costs

Variable costs are costs that vary according to the desired amount of output. The higher the desired output, the greater the variable costs incurred. Variable costs in this study include fertilizer, pesticide, and labor costs.

Table 6. Average Variable Costs of Coffee Farmers in Barambang Village

No	Description Average	Description Average	Description Average
1	Urea Fertilizer	50 kg	165.000
2	Pesticides	2 litre	65.000
3	Labor Costs	5 people	69.500
Total			**Rp 299.500**

Source: Primary Data After Processing, 2025

Based on the table presented, the average variable cost for coffee farmers in Barambang Village reaches IDR 299,500, which reflects essential expenses that fluctuate according to production volume. These costs consist of three main components: the cost of fertilizer, which is 1 sack containing 50 kg at a price of Rp 165,000, which is the largest allocation to ensure plant nutrition; the cost of pesticides, which consists of weed control in the coffee plantation area at a price of Rp 30,000 and pest control for the coffee plants themselves at a price of Rp 35,000, so the total amount spent on fertilizer and pesticides is Rp 65,000 for plant protection from pests and weeds, and labor costs of Rp 69,500 required during the cultivation process.

3.4.2 Fixed Costs

Fixed costs are expenses that you have to pay regardless of how much you produce. Fixed costs are costs that do not affect production and must be paid even if production is low. The amount of these costs does not depend on the size of the production costs incurred. The fixed costs incurred in this study include the Depreciation Value of Equipment (NPA) and Land and Building Tax (PBB) costs.

Table 7. Fixed Costs of Coffee Farmers in Barambang Village

No	Production Equipment	Coffee Farmers (Rp)
1	Land Tax	73.500
2	Depreciation of Equipment	356.850
Total		**Rp 430.350**

Source: Primary Data After Processing, 2025

Based on Table 7, the fixed costs borne by coffee farmers in Barambang Village amount to Rp 430,350. These costs are static and are not affected by coffee production volume. The main components are land tax of Rp 73,500, which is a routine obligation that must be paid, and equipment depreciation of Rp 356,850. This depreciation cost is an estimate of the decline in the value of assets such as production equipment over time, and is the largest expenditure in the fixed cost category. These two components are expenses that must be anticipated regardless of the harvest. 3.5 Income and Viability of Coffee Farmers 3.5.1 Coffee Farmer Income The analysis presented in this table is an overview of the average monthly income and expenses of a coffee farmer in Barambang Village. Coffee production is the total amount of coffee produced in a month and is measured in kilograms (kg). Meanwhile, production costs include all expenses incurred to produce a certain amount of coffee in a given period of time.

Table 8. Average Income from Coffee Farming in Barambang Village

No	Uraian	Physical Quantity (Average/Month)	Unit Price (Rp)	Value (Rp/Month)
1	Production (kg)	**12,73**	**10.300**	**1.312.000**
2	Variable Costs			
	a) Labor			69.500
	b) Fertilizer			165.000
	c) Pesticides			65.000
	Variable Cost Total			**299.500**
3	Fixed Costs			
	a) Property Tax			73.500
	b) Equipment			356.850
	Fixed Cost Total			**430.350**
4	**Cost Total**			**729.850**
5	**Revenue**			**582.150**

Source: Primary Data After Processing, 2025

Based on Table 8 above, it can be seen that the average coffee production obtained by farmers in Barambang Village in a month is 127.3 kg. With the applicable coffee selling price of IDR 10,300 per kg, the average gross income or revenue obtained by farmers per harvest is IDR 1,312,000. Next, we will discuss the costs incurred in running a coffee farming business. These costs are divided into two categories: variable costs and fixed costs. Variable costs consist of labor costs, which average Rp 69,500 per harvest. Costs for purchasing fertilizers, pesticides, or simple agricultural tools. Thus, the total variable costs incurred by farmers average Rp 299,500.

Then, there are fixed costs. These costs consist of land and building tax (PBB), which averages Rp 73,500 per month, and equipment costs of Rp 356,850 per month. These equipment costs can include depreciation of harvesting or coffee processing tools. Thus, the total fixed costs incurred average Rp. 430,350 per month. By adding up the total variable costs and total fixed costs, these costs are expenses that are not affected by the amount of production. In the context of this study, these costs include Land and Building Tax (PBB) and the depreciation value of agricultural equipment. The average total fixed cost is IDR 430,350 per month, consisting of: Average Land and Building Tax (PBB): IDR 73,500 per year Equipment costs (depreciation): IDR 356,850 per month

Total Production Costs: Total costs are the combination of all fixed and variable costs incurred by farmers. Based on the processed data, the average total production cost per harvest is IDR 729,850. We obtain the total expenditure of coffee farmers in Barambang Village, which is IDR 729,850 per harvest. After determining the amount of revenue and total costs, we can calculate the farmers' net income (profit). This calculation is done by subtracting the average revenue from the average total costs incurred. Based on the table, the average net income from coffee farming per month is Rp 582,150.

3.4.3 Coffee Farmer Feasibility

The feasibility analysis of coffee farming in Barambang Village uses the Revenue Cost Ratio (R/C Ratio) approach. This calculation aims to determine the extent to which the costs incurred by farmers are able to generate income or profits.

Table 9. Viability of Coffee Farming in Barambang Village, Sinjai Borong District, Sinjai Regency

Description	Cost Average (Rp)
Revenue	1.312.000
Total Cost	582.150
R/C	**2**

Source: Primary Data After Processing, 2025

Table 9 illustrates the highly profitable financial condition of coffee farming in Barambang Village. The average monthly income of IDR 1,312,000 shows the farmers' ability to generate significant turnover. With relatively low total costs of IDR 582,150, the efficiency of farming is clearly evident. The R/C (Revenue/Cost) value of 2.00 is a strong indicator that every rupiah invested by farmers generates three times the revenue, confirming that coffee farming in Barambang Village is very feasible, stable, and provides substantial financial benefits for those involved.

This high R/C Ratio is influenced by several key factors that characterize coffee farming in Barambang Village. First, production costs are relatively low, as most farmers use organic fertilizers and simple equipment that do not require large capital investments. Second, most of the labor comes from family members, so variable costs can be kept down because there is no need to pay additional wages for outside labor. Third, the agroclimatic conditions of Barambang Village, which is located in the highlands, are very conducive to coffee productivity, resulting in relatively stable yields of good quality. These factors make coffee farming in Barambang Village not only efficient but also have the potential to continue to grow as a major source of income for the community. This study shows that the average gross income (turnover) from coffee farming in Barambang Village is IDR 1,312,000 per month. After deducting all production costs, the average net income earned by farmers is IDR 582,150 per harvest.

4. Conclusion

Coffee farming in Barambang Village is very profitable and financially viable. This is evidenced by an R/C Ratio of 2.00, which is well above 1, indicating that every Rp 1.00 spent on production costs generates a gross income of Rp 2.00. The average net income of coffee farmers in Barambang Village is Rp 582,150 per harvest. This figure shows that coffee farming contributes significantly to the income of farming families. The high feasibility of coffee farming in this village is influenced by relatively low production costs. This is due to the use of organic fertilizers and simple equipment, as well as the dominant use of family labor, which reduces wage costs.

5. Recommendations

Based on the above conclusions, the recommendation that can be made in this study is that farmers are expected to increase production cost efficiency through the use of simple technology and more appropriate inputs, so that the income obtained can be more optimal. Support from the government and related institutions is needed in the form of training, access to capital, and the provision of production facilities to encourage the development of more sustainable coffee farming. Further research can be conducted by comparing coffee farming with other commodities or by looking at non-financial aspects such as social, environmental, and sustainability aspects, in order to obtain a more comprehensive picture of the feasibility of coffee farming in this area.

Authors Contribution

Conceptualization: Haerul Amri, Fadilah Nurdin, Megawati, Putra Astaman

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