



Analysis of Income from Pineapple Intercropping Farming in Pasiang Village, Polewali Mandar Regency

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ABSTRACT

This study aims to analyze the income of pineapple-cocoa intercropping farming in Pasiang Village, Matakali District. The method used is a quantitative method with purposive sampling, and the data used are primary and secondary data that will be analyzed using income analysis by calculating total income and total costs. The results of the study indicate that the pineapple intercropping business in Pasiang Village is profitable with an income of Rp64,832,456.00/hectare/year. This income is influenced by the fairly high selling price and relatively low production costs. The pineapple-cocoa intercropping planting pattern also allows farmers to utilize land optimally and increase income. This study shows that pineapple farming can provide quite a large income for farmers in Pasiang Village.

Keywords: Analysis of Income, Pineapple Intercropping, Pasiang Village

INTRODUCTION

Pineapple intercropping farming is one of the types of farming that is widely practiced in Indonesia. Pineapple is one of Indonesia's leading fruit commodities that has high economic value and is highly needed by the community. According to Suprayogi et al (2022), pineapple plants in Indonesia are widely grown in lowland to highland areas, making it a potential commodity to be developed as a national flagship commodity. However, pineapple farming still faces several problems, such as low selling prices, high production costs, and lack of access to markets. These problems can lead to relatively low income for pineapple farmers, affecting their welfare and families.

Polewali Mandar Regency is one of the areas in West Sulawesi that has considerable agricultural potential. Pasiang Village, Matakali District, is one of the villages that has extensive and fertile agricultural land, making it a potential area to be developed as a pineapple production center. According to data from the Central Statistics Agency of West Sulawesi in 2023, pineapple production in Polewali Mandar Regency was 278.85 tons. However, pineapple farming in Pasiang Village still faces several problems, such as low selling prices, high production costs, and lack of access to markets. This causes the income of pineapple farmers in Pasiang Village to remain relatively low.

Therefore, it is necessary to conduct research to analyze the income of pineapple intercropping farming in Pasiang Village and identify the factors that affect the income of pineapple farmers in the area. The purpose of this research is to analyze the income of pineapple intercropping farming in Pasiang Village and identify the factors that affect the income of pineapple farmers in the area. This research is expected to provide useful information for pineapple farmers and policymakers in increasing the income of pineapple farming in Pasiang Village. The benefits of this research can also be used as a reference for the development of pineapple farming in other areas with similar potential.

Production factors (input) or resources are everything that is available in nature and/or in society and can be used for production activities. Production factors are in the form of objects or tools or all productive resources. These resources are provided by addresses created by humans and can be used to produce objects or services needed by humans. Production factors are classified into 4 types, namely land, labor, capital, and expertise (Wula et al, 2022).

Production costs are costs incurred to process raw materials into finished products ready for sale. In general, these production costs are divided into raw material costs, direct labor, and overhead costs. Production costs are costs used to process raw materials into finished products ready for sale. Examples are raw material costs, auxiliary material costs, labor costs, and depreciation costs of machinery and equipment or production costs are costs incurred to process raw materials into finished products ready for sale (Harun et al, 2023).

According to Heryana et al (2016) Depreciation costs are costs that are not incurred every time a production process is carried out in the form of materials and tools that are only purchased at the beginning of the production process and can be used many times, unless the item is damaged. The depreciation value of the tool (NPA) is the value contained in a tool by looking at the initial price of the item, the final price, the length of use, and the number of items. According to Heryana et al (2016), the final price (residual value) can be obtained from 10% of the initial price. This means that the residual value or final price of a tool or machine is 10% of its initial price.

In a business, income is the amount of money received by a company from its activities, all from the sale of products or services to customers. For investors, income is not as important as the profit obtained from the amount of money received after deducting expenses. Farming income is the amount of benefits received by farmers which is calculated based on the value of production minus all types of expenses used during production. So that farming income is influenced by the amount of production facility costs, maintenance costs, post-harvest costs, processing and distribution and production value (Garatu, 2023).

RESEARCH METHODS

This research was conducted in Pasiang Village, Matakali District, Polewali Mandar Regency from May to June 2025. The location was selected intentionally (purposive sampling) based on certain criteria, such as areas with high internet access or schools with special education programs, to obtain more specific and accurate data in the research of Hasan et al (2025).

This study uses quantitative data analysis with two data sources, namely primary and secondary data. Quantitative research is a type of research that is systematic, planned, and structured, with a focus on calculations and quantities. This study uses numbers in data collection, data estimation, and presentation of results, thus allowing for objective and accurate statistical analysis (Dhewy, 2022).

1. Primary Data: Data collected directly from the source, namely pineapple farmers in Pasiang Village, Matakali District, through: Interviews, Questionnaires, Observations. According to Hamsah et al (2023), Primary data comes from the results of interviews and field observations including: characteristics of local community informants, site visitors, and local government
2. Secondary Data: Data obtained from other sources, such as: Previous research reports, Agricultural statistics, Government documents. According to Hamsah & Nirmawala (2022), Secondary Data, obtained indirectly (obtained from Government and Military Agencies) for the same materials or types and related to this research, as well as other relevant guidelines in accordance with this research.

The sampling method used is Purposive Sampling, the population in this study amounted to 30 farmers who cultivate pineapple and cocoa intercropping. The number of samples used was 30 people, meaning that all were sampled with the criteria that these 30 farmers met the criteria, namely having more than 50 pineapple trees and having cultivated pineapple intercropping for at least 2 years. According to Lasut et al. (2025) Purposive sampling is the selection of samples based on certain criteria that are relevant to the research objectives, to ensure that the data obtained can represent the population accurately and relevantly.

The research "Analysis of Pineapple Farming Income in Pasiang Village, Matakali District" uses several data collection methods, including:

1. Observation: This method involves directly observing pineapple farming activities in Pasiang Village, Matakali District. According to Yakub et al. (2024), observation is a data collection technique that involves direct observation of objects related to business activities. This method allows researchers to gain a deeper understanding of the research object and obtain accurate and detailed information about practices carried out by the business.

2. Questionnaire: This method involves providing written questions to respondents, namely pineapple farmers in Pasiang Village, Matakali District. According to Romdona et al. (2025), a questionnaire is a data collection technique that involves providing a series of written questions to respondents to answer, allowing data collection from many respondents with more efficient time and cost. There are several types of questionnaires, including open-ended questionnaires, closed-ended questionnaires, and semi-structured questionnaires.
3. Documentation: This method involves collecting documents relevant to the research, such as financial reports, production records, and other documents related to pineapple farming in Pasiang Village, Matakali District. According to Hasan (2022), documentation is the process of recording and categorizing information in written, photographic, or video form, utilizing accurate evidence from various sources to provide valid and reliable documents.

These methods are used to obtain accurate and comprehensive information about pineapple farming in Pasiang Village, Matakali District. The data analysis method used is Farm Income Analysis. Farm income can be divided into two categories: gross income and net income. Gross income is the income obtained from the sale or exchange of production results, while net income is gross income minus production costs, such as labor costs and production facilities, according to Sari (2019). According to Syarif et al. (2024), business income can be determined by calculating the difference between total revenue (TR) and total cost (TC). Business revenue is the product of output produced and the selling price of the product (coconut sugar). Costs refer to all costs incurred in acquiring production factors. This can be seen using the following formula:

$$\pi = TR - TC$$

Where:

π (Profit) = Net Income (Rp)

TR (Total Revenue) = Total Revenue (Rp)

TC (Total Cost) = Total Cost (Rp)

Where:

Total Revenue (TR) = Price x Quantity

Total Cost (TC) = Fixed Cost + Variable Cost

This formula is used to calculate the net income of the business by subtracting the total cost from the total revenue.

RESULTS AND DISCUSSION

The pineapple variety cultivated by the people of Pasiang Village is the Cayenne type, which has several advantages, including its distinctive and sweet taste, easy care and maintenance, large and high-quality fruit, and high demand due to its good quality and taste. These advantages make Cayenne pineapple the main choice for farmers in Pasiang Village to cultivate, thereby increasing their income and meeting the community's demand for high-quality pineapple.

In Pasiang Village, Matakali District, farmers have developed a unique and effective intercropping pattern to increase their income. This intercropping pattern involves planting pineapple under cocoa plants. By doing so, farmers can maximize land use and increase their income. The intercropping pattern allows farmers to optimize land use and natural resources.

Planting and Maintenance Process

In the first planting, farmers incur costs for purchasing pineapple seedlings. However, for subsequent plantings, farmers no longer incur costs for purchasing seedlings because they can use suckers from previous crops. This allows farmers to save on production costs and increase their income. The planting and maintenance process is done carefully and meticulously, including watering, fertilizing, and pest control.

Harvest Frequency

Pineapple plants in Pasiang Village, Matakali District, are usually harvested once a year. The relatively low harvest frequency allows farmers to focus on caring for and maintaining the plants during the growth period. Pineapple harvesting is done when the fruit is ripe and ready for market. Farmers ensure that the fruit is harvested carefully to avoid damage and loss of quality.

Benefits of Intercropping

The intercropping pattern has several benefits, including:

- Increasing farmers' income by maximizing land use
- Saving production costs by using suckers from previous crops
- Increasing the efficiency of natural resource use
- Reducing the risk of crop failure through diversification
- Improving the quality of pineapple fruit through good care

Impact on Farmers' Income

The intercropping pattern has had a positive impact on farmers' income in Pasiang Village, Matakali District. By maximizing land use and saving production costs, farmers can increase their income. The increased income can help farmers improve their quality of life and meet their family's needs. Additionally, stable income can also help farmers develop their farming business further.

1. Cost Structure and Revenue

a. Variable Costs

Variable costs in pineapple farming in Pasiang Village include several important components that affect the total production cost. Here are some variable costs faced by pineapple farmers in the village:

- Pineapple Seedlings:** The cost of purchasing high-quality pineapple seedlings for planting. Good seedlings will determine the quality and quantity of the harvest.
- Pesticides:** The cost of purchasing pesticides used to control pests and diseases that attack pineapple plants. Proper use of pesticides can help increase crop yields.
- Labor:** The cost of paying laborers involved in the process of planting, maintaining, and harvesting pineapples. Labor is essential to ensure that each stage of production is done well.
- Transportation:** The cost of transporting pineapple harvests from the farm to the market or storage facility. Transportation costs can vary depending on the distance and mode of transportation used.

These variable costs are crucial in determining the total production cost and ultimately affecting the profitability of pineapple farming in Pasiang Village.

Table 2. Variable Costs of Pineapple Intercropping Farming in Pasang Village on a 1 Ha Scale

Cost Components	Quantity/Unit	Unit Price (Rp)	Total (Rp)
Pineapple seeds	20.000 Seedlings	3.600	72.000.000
Pesticides	2 Liter	70.000	140.000
Labor	42 HOK	150.000	6.300.000
Transportation	15 Liter	10.000	150.000
Fertilizers (Urea,TSP,KCL)	5 Zach	115.000	575.000
Total Variable Costs			79.165.000

Source: Primary Data After Processing, 2025.

b. Fixed Costs

Fixed costs in pineapple farming in Pasiang Village include several components that are used in the production process and are not consumed in a single use. Here are some fixed costs faced by pineapple farmers in the village:

- Hoe:** A farming tool used for digging soil, clearing land, and maintaining crops.
- Machete:** A tool used for cutting and clearing pineapple plants from weeds or pests.
- Basket:** A container used for transporting and storing pineapple harvests.

These fixed costs represent the initial investment made by farmers to support their pineapple farming activities. Although these fixed costs do not change significantly in the short term, they are crucial for supporting productivity and efficiency in farming. By having adequate equipment, farmers can increase crop yields and reduce other operational costs.

Table 3 Fixed Costs of Pineapple Intercropping Farming in Pasiang Village on a 1 Ha Scale

Cost Components	Physical (Unit)	Unit Price (Rp)	Total (Rp)
Hoe	1	55.000	55.000
Machete	1	137.000	137.000
Basket	13	35.000	350.000
Hand Sprayer	1	850.000	850.000
Tax	1	250.000	250.000
Land Rent	1	15.000.000	15.000.000
Total Fixed Costs			16.642.000

Source: Primary Data After Processing, 2025

Table 4. Depreciation Costs of Pineapple Intercropping Farming Equipment in Pasang Village

Equipment	Starting Price (Rp)	Final Price (Rp)	Age (Years)	Number of Tools (Pcs)	Depreciation Cost (Rp)
Hoe	55.000	5.500	2	1	2.062
Machete	137.000	13.700	3	1	3.425
Basket	35.000	3.500	1	13	44.525
Hand Sprayer	850.000	85.000	5	1	12.750
Total Depreciation Cost of Equipment Per Month					62.712
Total Depreciation Cost of Equipment Per Year					752.544

Source: Primary Data After Processing, 2025

2. Production and Revenue of Pineapple-Cocoa Intercropping

In the pineapple-cocoa intercropping system, pineapple plants are planted between rows of cocoa plants. The spacing of cocoa plants in this study is 4m x 4m, while the spacing within rows of cocoa is 0.5m x 1m. With this spacing, the population of pineapple plants in 1 hectare is approximately 20,000 plants.

Farmers' revenue comes from the sale of pineapples, which is heavily influenced by the selling price and productivity of the crop. The production of pineapples in 1 hectare can yield 20,000 fruits. With a selling price of Rp8,000 per fruit for high-quality fruits, the revenue obtained in 1 hectare is Rp160,000,000 per harvest.

3. Income Analysis of Pineapple-Cocoa Intercropping in Pasiang Village

The income analysis is conducted using the income analysis of pineapple farming in Pasiang Village, which requires the total revenue and variable costs, as well as fixed costs. The variable costs are added to the fixed costs to determine the total cost. Meanwhile, to determine the total income, the total revenue is subtracted by the total cost. Here are the results of the income analysis of pineapple farming in Pasiang Village:

Table 5. First Year Income of Pineapple Intercropping Farming in Pasiang Village on a 1 Ha Scale

Description		Amount	Unit	Unit Price (Rp)	Value (Rp) /Year
a.	Reception	20.000	Fruit	8.000	160.000.000
b.	Variable Costs				
	Pineapple Seeds	20.000	Seedlings	3.600	72.000.000
	Pesticide	2	Liter	70.000	140.000
	Fertilizers (Urea, TSP, KCL)	5	Zach	115.000	575.000
	• Planting Labor				
	• Embroidery Labor				
	• Maintenance Labor				
	(Fertilization, Earthing, Weed and Pest Control)	42	HOK	150.000	6.300.000
	• Harvesting Labor				
	Transportation	15	Liter	10.000	150.000
	Total Variable Costs				79.165.000
c.	Fixed Costs				
	Depreciation Value of Equipment				752.544
	Land Rent	1	Hectares	15.000.000	15.000.000
	Tax	1	Land	250.000	250.000
	Total Fixed Costs				16.002.544
	Total cost				95.167.544
	income				64.832.456

Source: Primary Data After Processing, 2025

The table above shows that pineapple-cocoa intercropping in Pasiang Village is profitable, with an income of Rp64,832,456 per hectare per year. This income indicates that pineapple-cocoa intercropping can provide a significant income for farmers in Pasiang Village. This is due to the relatively high selling price, especially for high-quality fruits with large sizes, which can be sold at a higher price of Rp10,000 per fruit. Additionally, the high income is also due to the relatively low costs incurred. In subsequent plantings, if farmers want to expand their planting area, they have the potential to earn even more income because they can use their own production seeds.

CONCLUSION

Pineapple-cocoa intercropping in Pasiang Village, Matakali District is very profitable and effective in increasing farmers' income. By maximizing land use and saving production costs, farmers can increase their income. This intercropping pattern also allows farmers to optimize the use of available land and natural resources. With an income of IDR 64.8 million per hectare per year, this system has proven to be very profitable for farmers.

The main driver of this profit is the low cost of seeds in the following years after the initial planting, allowing farmers to save production costs and increase income. In addition, competitive selling prices and optimal harvests also provide high profits.

To increase the scale and desirability of this system, several strategies can be implemented, such as Training on shoot propagation to improve the quality and quantity of seedlings, Better market access to increase selling prices and increase farmers' income, Development of agricultural infrastructure to improve production efficiency and effectiveness. Future research can focus on: (1) Longitudinal studies to integrate crop yields and farmers' income in the long term; (2) Assessment of the desirability of the system, including its impacts on soil health and long-term crop yields; and (3) Development of strategies to increase the resilience of the system to climate change and market fluctuations. Thus, the pineapple-cocoa intercropping system can continue to grow and provide greater benefits to farmers and surrounding communities.

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