



Income Level of Rice Paddy Farmers (*Oryza Sativa* L.) in Waenetat Village, Waeapo Sub-district, Buru Regency

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ABSTRACT

Production costs and farm receipts determine the level of income of farmers in the management of rice paddies. This study aims to analyze the success of farming as seen from the income level of wet-rice farmers in Waenetat Village. The data used are primary and secondary data, with income analysis methods and Break Event Point (BEP) farm feasibility analysis. Determination of the sample was determined by simple random sampling, namely 55 farmers from a population of 270 wetland rice farmers in Waenetat Village. The results showed that the average income of paddy rice farming in Waenetat Village was Rp.30,567,171/Ha/MT and BEP analysis of revenue of Rp.976,697/MT < Rp.37,423,545/MT, BEP production of 87.03-Kg < 3,343,-/Kg/MT, and BEP price of Rp.2,051,-/Kg < Rp.11,218,-/Kg. Based on the calculation of income level and Break Event Point feasibility analysis, the rice paddy farming in Waenetat Village is feasible to develop

INTRODUCTION

One of the economic sectors utilized by the Indonesian people to meet their food needs is the agricultural sector. In line with the Central Bureau of Statistics (2023) the agricultural sector is a sector that contributes to the national economy. In the phenomenon of employment in the agricultural sector, it produces rapid development in the agribusiness sector as well as producing raw materials for agricultural product managers, which shows that the agricultural sector can survive the economic crisis.

The importance of improving the agricultural sector and meeting food needs is an important indicator in supporting the success system of national development. This explains that agricultural welfare requires an increase in meeting the income of farmers in agricultural commodities. One of the commodities of food crops that are quite superior is rice.

By meeting food needs, it is necessary to improve the quality of rice cultivation such as planting media, the use of superior seeds, nurseries, planting, land care (maintenance), prevention of pests and diseases, and harvesting. However, the ups and downs of rice production are not only seen in the quality of cultivation, but the influence of land area can also affect the increase in rice productivity. The effect of land area on increasing income can be seen from the land area of wet-rice food crops in Waeapo Sub-district covering an area of 5,432.75 ha which contributes greatly to the income of farmers in Waeapo Sub-district (Central Bureau of Statistics, Buru Regency 2024).

Based on the area of paddy fields in Waenetat Village, the average income is higher than that of Waelata Village in Nur Fitri's research (2022) which obtained an average income of Rp.9,083,020/MT. Therefore, each region has different production factors and can affect production costs as well as income in certain areas. Thus, research was conducted in Waenetat Village, Waeapo District to analyze the amount of production, feasibility level, and income level.

LITERATURE REVIEW

Farmer Income

Income is a form of revenue or profit obtained individually, in groups, or from various sources in a certain period. Income reflects business activities obtained through trade exchanges by reflecting the interaction between production and consumption in the economy (Samuelson et. al, 2018). The importance of the role of income greatly affects the level of living standards and welfare of individuals and households.

While in farming, income is obtained from total revenue minus production costs (fixed costs and variable costs). Farm income is important for the sustainability of an agricultural business, also as an impact on the welfare of farmers in the economy.

Feasibility of Farming

Suratiyah (2015), Feasibility of farming is used to determine the success of an agricultural business or conduct an evaluation to determine whether an agricultural business is feasible to run. The importance of testing the feasibility of farming, especially for the agricultural sector in the rice business, is a policy

that must be carried out because it can provide a decision on the profit or loss of a farm that is being developed.

The feasibility of farming used is the Break Event Point (BEP). Break Event Point is a break-even condition, if a calculation of profit and loss for a certain period has been prepared, the company does not make a profit and does not suffer a loss (Tarore, 2021). Conducting a break event point analysis is useful for farming actors to become a planning tool to generate profits, to determine the relationship between production sales as well as selling prices and costs incurred, and to manage farming operations efficiently. Meanwhile, based on the break event point formula, Suratiah (2015) is divided into three, namely:

- a. Analyze BEP in Units Using the Formula:

$$\text{BEP (Revenue)} = \frac{\text{fixed cost (FC)}}{1 - \frac{\text{variable cost (VC)}}{\text{biaya penerimaan}}}$$

- b. BEP Analysis in Nominal/Rupiah Using the Formula :

$$\text{BEP (Production)} = \frac{\text{fixed cost (FC)}}{\text{price unit} - \text{average variable cost (VC)}}$$

- c. BEP Analysis in Selling Price Using the Formula :

$$\text{BEP (Price)} = \frac{\text{total cost (TC)}}{\text{production (Q)}}$$

METHODOLOGY

Research Location

This research was conducted in Waenetat Village, Waeapo District, Buru Regency. The selection of the research location was carried out purposively, because Waenetat Village became the center of paddy rice production in Waeapo Subdistrict with an area of about 5,432.75 Ha of paddy rice fields based on the Central Bureau of Statistics, Buru Regency. In addition, the research was conducted because there was no other research on farming analysis in Waenetat Village.

Data Collection Methods

In the research, the data obtained are primary data and secondary data. Primary data is obtained by direct observation in the field and conducting interviews with respondents of wet-rice farmers. While secondary data is obtained from reports, documents from authorized agencies. Here are four data collection techniques:

1. **Observation**

Based on the definition from Junaidi (2021) that observation is a data collection technique that involves direct observation of events, behaviors, and natural contexts that occur directly. By making observations or observations systematically on the object of research on rice paddies.

2. Questionnaire / Questionnaire

Sekaran's explanation (2016) in the book "research methods for business: a skill-building approach" questionnaire is a tool used in collecting data from respondents by asking questions that have been processed in both open and closed forms.

3. Interview

The definition of an interview according to Moleong (2006) in his book "qualitative research methodology" that an interview is a process of interaction between researchers or data collectors with sources or data sources which aims to conduct interviews in order to obtain information on an accurate phenomenon.

4. Documentation

According to Sugiyono (2017) in his book "quantitative, qualitative and R&D research methods" explains that documentation is a data collection technique by analyzing documents, such as books, archives, reports, photographs, written figures, and images related to research.

Sampling Technique

The sampling method used a simple random sampling technique so that the research location was deliberately chosen in Waenetat Village, Waeapo District. Meanwhile, the sample size taken using the slovin method because it can measure the number of samples used based on the population. In the study, the population of wet-rice farmers in Waenetat Village amounted to 270 people based on data obtained from agricultural extension workers during a survey at the research site. The formula in the slovin method for sampling is as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Description:

n = number of samples or respondents

N = population size

e = error rate or sampling determination that can still be tolerated (12%)

Referring to the formula then obtained, the population amounted to 270 farmers, the sample sought based on the level of determination that can be tolerated 12% or 0.12. Calculated as follows:

$$\begin{aligned} n &= \frac{N}{1 + N(e)^2} \\ n &= \frac{270}{1 + 270(0,12)^2} \\ n &= \frac{270}{4,888} = 55 \end{aligned}$$

Based on the above results, the number of samples that can be obtained is 55 people from a population of 270 rice farmers in Waenetat Village.

Data Analysis

In research, the importance of data analysis aims to analyze, interpret the data collected so as to draw conclusions and provide results from the research conducted. The analysis methods in the research are:

1. Income Analysis

According to Soekartawi (2001) farm income is obtained from the difference between the total sales revenue of agricultural products and the total costs incurred for production, income is reflected in the profits earned by farming actors. Based on the formula, income is the difference between revenue (TR) and total costs (TC), the formula is as follows:

$$I = TR - TC$$

Unknown:

I = Income (Revenue)

TR = Total Revenue (Total Revenue)

TC = Total Cost (Total Cost)

2. Break Event Point (BEP) Feasibility Analysis

Suratiah (2015), Farm feasibility is used to determine the success of an agricultural business or conduct an evaluation to determine whether an agricultural business is feasible to run. There are several criteria in determining the feasibility of farming, but in research using Break Event Point (BEP) feasibility.

Break Event Point is a break-even condition, if a calculation of profit and loss for a certain period has been prepared, the company does not make a profit and does not suffer a loss (Tarore, 2021). In farming, the break event point is the point where the total cost (TC) is equal to the total revenue (TR), so there is no profit or loss (Rizki, 2023). Conducting a break event point analysis is useful for farming actors to become a planning tool to generate profits, to determine the relationship between production sales as well as selling prices and costs incurred, and to manage farming operations efficiently.

RESULTS AND DISCUSSION

Geographical Conditions

Waenetat Village is a village often called Mako (Markas Komando) which has an area of 19,487 km² located in Waeapo District, Buru Regency, Maluku. With the topography of Waenetat Village, it is dominated by a rather steep lowland and is bordered by moderate elevations with steep slopes to the west and southeast with an average temperature of 27-36°C. Waenetat Village has 3 hamlets, namely Flamboyant Hamlet with 02 neighborhood associations (RW) and 08 households (RT), Boiling Water Hamlet with 02 neighborhood associations (RW) and 04 households (RT) while Rawamangun Hamlet with 02 neighborhood associations (RW) and 08 households (RT). Most of the village consists of agricultural land with a land area of 1986 Ha which is used to grow rice, also most of the population makes farmers their main occupation. The superiority of agriculture in Waenetat Village makes it a center of rice productivity. This can be seen in the average production cost of Rp.6,856,374 / MT, average income of Rp. 30,567,171 / MT and the feasibility level of revenue BEP Rp.976,697 / MT < Rp.37,423,545 / MT, production BEP of 87.03-Kg < 3,343, -/Kg / MT, and price BEP of Rp.2,051, -/Kg < Rp.11,218, -/Kg.

Farming Cost Analysis

The importance of cost analysis greatly influences the right decision making on farming. this is because the analysis of farming costs can determine the costs as well as the planned income, farming costs involve all costs associated with rice production. Components in farm costs include fixed costs and variable costs.

Farm production costs refer to all expenditures required to produce agricultural products. These costs include various components needed to support agricultural activities, from land preparation to harvesting. The following are the average production costs of rice.

Table 1. Average Production Costs of Rice Paddy Farmers in Waaenetat Village, Waeapo Subdistrict, Buru Regency in 2025

Production Cost	Value
Variable Costs (Vc)	
Seed Costs	539.636
Fertilizer Costs	328.309
Pesticide Costs	358.889
Labor Costs	1.396.056
Post Harvest Costs	878.182
Harvest Costs	2.340.909
Total Variable Cost	5.368.824/MT
Fixed Cost (FC)	
Land Rent	3.466.667
Tool Depreciation Costs	440.974
Total Fixed Cost	819.156/MT

Source: Primary Data After Processing, 2025

The table above shows that the average variable cost of farming is Rp.5,224,855 which is divided into seed costs of Rp.539,936, fertilizer costs of Rp.328,309, pesticide costs of Rp.358,889, labor costs of Rp.1,396,056, harvest costs of Rp.2,340,909 and post-harvest costs of Rp.878,182.

In paddy rice farming in Waenetat Village, the seed varieties used are Cigeulis, Ciherang, M70 and Inpari (32, 42, and 64). The price of rice seeds is Rp.8,000/kg - Rp.30,000/10 kg depending on the type and quality of the seeds. Rice seed purchases by farmers on average buy 50 kg-150 kg for Cigeulis, Ciherang and Inpari seed types, usually the purchase price is Rp.8,000/kg- Rp.10,000/kg. As for the type of seed M70, farmers buy at a price of Rp.30,000 for 10kg. Of the 55 farmers there are 3 farmers who buy seeds of the M70 variety at a price of Rp.30,000 for 10kg. For the use of seeds in paddy rice farmers use the Direct Seed Sowing system (TABLEA), in this way making it easier for farmers in planting.

For fertilizer costs with an average cost of Rp.328,309 / growing season, where fertilizers used by Waenetat Village farmers are Urea and Phonska fertilizers. For Urea and Phonska fertilizers, farmers buy at a price of Rp.112,000- Rp.150,000 for the purchase of 1-2 sacks, each of which weighs 50kg. In the

fertilizer purchase payment system, farmers often buy fertilizer without paying at the beginning, after the new harvest is paid.

For pesticide costs per growing season amounted to Rp.358,889, the types of pesticides used by farmers are, Fostin, Ranon, Klenset, Fenite, Spontan, Desthin and others. In addition, the amount of pesticide costs is influenced by the use of several pesticides per growing season. Farmers usually use 2-4 types of pesticides per growing season with different uses. If there is a rainy season farmers will spray pesticides repeatedly so that the cost of pesticides increases. As for the cost of harvesting per growing season amounting to Rp.2,340,909, the cost of this harvest is used for the cost of renting a rice harvesting machine (Combine Harvester). The price of harvesting machine wages ranges from Rp.1,300,000-Rp.3,000,000 Using the harvesting tool also makes it easier for farmers to harvest and also shorten the harvest time. In addition to using combine harvesters, farmers also use tractors for harvesting. According to respondents (farmers) using machines for harvesting only takes 2-3 days but if using human labor can finish harvesting up to 1 week.

For post-harvest costs per growing season amounting to Rp.878,182, post-harvest costs are used to pay for transportation costs, pelvis (transport) and consumption. Meanwhile, the costs of packaging, drying, and milling are not paid using wages but are paid by dividing the harvest in the form of rice, which has been done by farmers for a long time. Transportation costs range from Rp.500,000 - Rp.2,000,000, consumption costs Rp.500,000, while the amount of transportation costs depends on the distance from the land to the highway. If the distance from the land to the highway is up to 200 meters, the price paid for transportation is Rp.3,000,000, while the price paid by farmers for transportation or carrying usually ranges from Rp.300,000-Rp.800,000.

The table above shows that the average fixed cost in Waenetat Village, Waeapo Sub-district, Buru Regency is IDR 819,156 per growing season. Fixed costs are obtained from land rental costs and depreciation costs of equipment. Land rental costs on wet-rice farming in Waenetat Village are at an average value of Rp.3,466,667 per growing season, which comes from 55 rice farmers and there are 6 farmers who rent land with a land rental price of Rp.2,300,000-Rp.4,000,000. The reason farmers rent land is due to limited capital to buy land so renting is a more appropriate choice, besides that farmers also rent land because they want to access better planting locations to increase yields.

For the average cost of tool depreciation with the lowest cost is on the hoe tool with an average cost of Rp.12,385, hoes are owned by all farmers in Waenetat Village because it is a very important tool in the process of cultivating paddy rice. In addition, the largest tool depreciation cost is the tractor tool with a depreciation cost of Rp.499,572, from 55 farmers in Waenetat village there are 43 farmers who have their own tractor.

Income and Revenue Analysis

In the analysis of income obtained from the difference between total revenue and all costs incurred in the production process. In line with the opinion of Zulfani (2017) explained that income can be calculated after reducing all expenses related to production. Meanwhile, the definition of acceptance put

forward by Ginting (2020) that farm income is total income minus variable costs, the importance of farm income greatly affects the profitability as well as the sustainability of the farm.

Table 2. Average amount of farm income and receipts in Waenetat Village, Waeapo Subdistrict, Buru Regency, 2025

Description	Average Value (Rp)
Reception (TR)	
Rice Production (Y) (Kg)	3.343
Production Price (Py) (Rp)	11.218/kg
Reception	37.423.545/MT
Total Reception (TR)	37.423.545
Total Cost Of Production (TC)	6.187.980
Revenue (I = TR-TC)	30.567.171/ MT

Source: Primary Data After Processing, 2025

The table above shows that the average value of farmers' receipts on wet-rice farming in Waenetat Village is Rp.37,423,545 per growing season, the amount of production is Rp.3,343 kg (3.3 tons) of rice per growing season with a selling price of Rp.11,218/kg. While income is obtained from the difference between total revenue and total production costs, the total income obtained with an average value of Rp.31,567,171/ growing season. Based on the results of the study showed that the higher the costs incurred, the less income earned by farmers, on the contrary, if the costs incurred are lower, the income can increase. However, the balance between costs incurred during production and income can have an effect on profitable farming.

Farm Feasibility Analysis

By understanding the Break Even Point (BEP) analysis method, farmers can make better decisions because it is related to production, marketing, and farm management. In the Break Even Point (BEP) analysis, it is divided into 3 methods, namely BEP (revenue), BEP (production), and BEP (price). The following is table 3 regarding 3 BEP analyses to determine the feasibility of farming.

Table 3. Feasibility of Farming Based on Break Even Point (BEP) Analysis in Waenetat Village, Waeapo Sub-district, Buru Regency in 2025.

Description	Value
Fixed Cost (FC)	819.156
Variable Cost (VC)	5.368.824
Revenue Cost (TR)	37.423.545
Total BEP Revenue	Rp. 956.287
Fixed Cost (FC)	819.156
Average Selling Price	11.218
Variable Cost (VC)	5.368.824
Average Production Quantity	3.343
Total BEP Production	85,22,-/Kg

Total Cost (TC)	6.187.980
Average Production Quantity	3.343
Total BEP Price	Rp. 1,851/ Kg

Source: Primary Data After Processing, 2025

Based on the table above, there are three calculations of BEP analysis that have different ways of calculation. By conducting BEP analysis helps farmers in knowing whether the farms run provide profits or losses or break even. It can be seen in table 3, the total BEP acceptance of paddy rice farming is obtained at Rp.976,697 / MT. The revenue obtained by rice paddy farmers in Waenetat Village is Rp.37,423,545 / MT > Rp.976,697 / MT then, it shows that rice paddy farmers in Waenetat Village are profitable.

Total BEP production of paddy rice farming obtained amounted to 87.03,- /Kg/MT. But the production produced by wet-rice farmers in Waenetat Village amounted to 3,343,-/Kg/MT, meaning that the farm experienced a profit. The total BEP price obtained by farmers is Rp.2,051 / Kg. While the price obtained by wet-rice farmers in Waenetat Village amounted to Rp.11,218/Kg. This shows that farmers in Waenetat Village are profitable.

CONCLUSION AND RECOMMENDATION

1. Waenetat Village is one of the rice production centers in Waeapo Sub-district, Buru Regency, with this research the production seen is rice with an average production of 3,343 kg (3.3 tons)/Ha/MT and the price of rice sold is Rp.11,218/Kg, so that the average income of farmers is Rp.30,567,171 MT.
2. Calculation of farm feasibility analysis using the BEP method with the results, namely, BEP analysis Revenue of Rp.976,697 / MT < Rp.37. 423,545 / MT of revenue obtained by Waenetat Village farmers, BEP Production of 87.03, -/Kg < 3,343, -/Kg / MT of production produced by Waenetat Village farmers, BEP Price of Rp.2,051, -/Kg < Rp.11,218, -/Kg average selling price of rice in Waenetat Village. This means that rice farming by farmers in Waenetat Village is feasible to develop.

FUTHER STUDY

This research still has a delay, so it is necessary to conduct further research related to the topic of Income Level of Rice Paddy Farmers (*Oryza Sativa L.*) in Waenetat Village, Waeapo Sub-district, Buru Regency to improve this research and add insight for readers

REFERENCES

- Central Bureau of Statistics. (2023). Rice Paddy Production. By District/City. Maluku.
- Central Bureau of Statistics. (2024). Harvested Area and Rice Production. Maluku Province. 2024, 1-14.
- Bakari, Y. (2019). Analysis of Cost and Income Characteristics of Rice Paddy Farming. *Journal of Agricultural Social Economics*, 15(3), 265-277.
- Burano, R. S., & Siska, T. Y. (2019). The Effect of Farmer Characteristics on the Income of Rice Paddy Farmers. *Menara Ilmu: Journal of Research and Scientific Studies*, 13(10).
- Ginting, A. (2020). Definition of Farm Revenue. Jakarta: Agricultural Sciences Publisher
- Junaidi, J. (2021). *Annotated Qualitative Research Methodology*, John W. Creswell.
- Lumintang, F. M. (2013). Income Analysis of Rice Farmers in Teep Village, Langowan Timur District. *EMBA Journal: Journal of Economic Research, Management, Business and Accounting*, 1(3).
- Moleong, L. J. (2006). *Qualitative Research Methods*. Bandung: PT Remaja Rosdakarya.
- Rizki, A. (2023). Definition of Break-Even Point (BEP) Farming. Jakarta: Agricultural Publishers.
- Samuelson, P. A., Nordhaus, W. D., & Soedrajat. (2018). Definition of Farmer's Income. In *Agricultural Economic Analysis*. Gramedia Publisher.
- Saragi, C. P., Aulia, M. R., & Manihuruk, R. A. (2022). Income Analysis of Rice Paddy Farming in Simpang Panei Raya Village, Panei District, Simalungun Regency. *Agriust Journal*, 26-31.
- Sekaran, U. (2016). *Research Methods For Business: A Skill Building Approach*.
- Soekartawi, M. (2001). Definition of Total Cost. Jakarta: Agriculture Publishers.
- Sugiyono, P. D. (2017). *Research Methods: Quantitative, Qualitative, and R&D*. Bandung: Alfabeta.
- Suratiah, K. (2015). *Farming Business Science (Revised Edition)*. Penebar Swadaya Group.
- Tarore, M. L. G. (2021). Break Even Point (Bep) Analysis Farming Business In Taraitak I Village, Langowan District, Minahasa District. *Agri-Socioeconomics*, 17(1), 85-92.
- Utami, N. F. (2022, 23-26). Analysis of Rice Paddy Farming (*Oryza Sativa* L) and Rice Marketing. In *Debowae Village, Waelata District, Buru Regency, Maluku Province, Pattimura University, Ambon*.
- Yasa, I. N. A., & Hadayani, H. (2017). Analysis of production and income of paddy rice farming in Bonemarawa Village, Riopakava District, Donggala Regency (Doctoral dissertation, Tadulako University).
- Zulfani, A. (2017). Definition of Income. "Microeconomics" Jakarta: Samuelson Publisher.