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Financial Feasibility Analysis of Rice Farming in Dawuan Barat Village, Cikampek Subdistrict, Karawang Regency

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ABSTRACT

Rice farming plays an important role in supporting national food security and the rural economy in Indonesia. However, rice farmers face several challenges, including increasing production costs, limited farming capital, land conversion, and uncertainty in agricultural sustainability. Dawuan Barat Village, Cikampek District, Karawang Regency, is one of the rice production centers with high agricultural potential, but farmers still experience constraints related to land ownership, rental costs, and production inputs. This study aims to analyze the financial feasibility of rice farming in Dawuan Barat Village based on production costs, revenue, income, and feasibility indicators. The research used a quantitative descriptive method conducted in August 2023. Data were collected through observation, interviews, and questionnaires involving 35 selected farmers using a simple random sampling technique from a population of 131 farmers. The analysis employed cost, revenue, income, Revenue-Cost Ratio (R/C Ratio), and Break Even Point (BEP) calculations. The results showed that the average production cost was IDR 31,226,778 per planting season per farmer, with revenue of IDR 48,834,286 and income of IDR 17,607,508. The R/C Ratio value reached 1.56, indicating that rice farming is financially feasible. Furthermore, BEP analysis demonstrated that the selling price, production volume, and revenue exceeded the break-even point. Based on land-scale analysis, small, medium, and large-scale farmers also obtained R/C Ratio values above 1. Therefore, rice farming in Dawuan Barat Village is profitable and feasible to be continuously developed.

INTRODUCTION

Indonesia is an agrarian country because most of its population works in the agricultural sector (Faturohman et al., 2023; Habibi, 2022; McCarthy et al., 2023; Mukhlis & Gürçam, 2022; Ngadi et al., 2023; Siregar et al., 2024; White et al., 2023). Agriculture is a very important sector whose role in the Indonesian economy is very important. The agricultural sector makes a significant contribution to the Gross Domestic Product (GDP). Based on data from the Central Statistics Agency (BPS) in 2022, the contribution of the agricultural sector to the national Gross Domestic Product (GDP) is 12.91%. This shows that the agricultural sector plays a key role for economic development and community survival (Ibrahim et al., 2024; Kalogiannidis et al., 2023; Ogbari et al., 2024; Purnamawati et al., 2023; Rafael, 2023).

The agricultural sector is divided into several subsectors, one of which is the food crop subsector. The rice paddy commodity is one of the most important and strategic food crops in its position as a source of basic food needs for the majority of the Indonesian population, namely rice. Indonesia managed to achieve rice self-sufficiency in 1984 with the total rice production reaching 25.8 million tons (Musarofal et al., 2022). Based on the Agricultural Data and Information System Center in 2022, the average rice consumption in Indonesia in 2022 reached 81,044 kg/capita/year. This shows that rice production in Indonesia needs to be considered every year in order to meet domestic food needs.

Indonesia has a very large rice land, with a rice harvest area in 2022 of 10,452,672 ha. The level of land productivity in Indonesia is 5.23 tons/ha. Rice production in Indonesia in 2022 reached 54,748,977 tons. The amount of production increased by 333,683 tons compared to 2021 of 54,415,294.22 tons (BPS, 2022). Although Indonesia has a large agricultural area, there are still several obstacles faced by a large number of farmers. These obstacles include climate change, water resource management, and lack of capital for farming. In general, rice field farmers do not have sufficient resources to carry out their farming activities in a sustainable manner (Pakaya S. et al, 2022).

Rice production is spread across almost all provinces in Indonesia, including West Java Province. West Java Province has a harvest area of 1,662,404 ha with a land productivity level of 5.7 tons/ha (BPS, 2022). This condition causes West Java Province to become the province with the second highest rice production in Indonesia, reaching 9,433,723 tons after East Java Province with a planting area of 1,693,211 and rice production of 9,526,516 tons (BPS, 2022).

Karawang Regency is one of the rice production centers in West Java Province. Known as the rice barn of West Java, in 2022 Karawang Regency managed to produce 1,226,880.08 tons of rice. Karawang Regency has an area of 1,911.09 or 3.73% of the area of West Java Province. Karawang is one of the areas that has fertile land in West Java, so most of the land in Karawang Regency is used for agriculture (Karawang Regency in 2023 Figures). The area of rice land in Karawang Regency is 200,247 ha, which is the largest in several sub-districts. The largest agricultural land area in Karawang Regency is in Tempuran District covering an area of 6,480 ha and the smallest land area is in Cikampek District with an area of 342 ha (Karawang Regency Agriculture Office, 2022). The area of agricultural land in Cikampek District continues to decline significantly every year. In 2017, the area of agricultural land in Cikampek District was 416 ha, then in 2022 it dropped to 342 ha. km^2.

According to Father H. Ramdhani, S.P., M.P as the head of the Cikampek District Agricultural UPTD, the decrease in the area of agricultural land is caused by the conversion of agricultural land into settlements and industrial development. Based on the Regional Regulation (PERDA) of Karawang Regency number 1 of 2018 concerning the Protection of Sustainable Food Agricultural Land (LP2B), Cikampek District does not have the protection of Sustainable Food Agricultural Land (LP2B). Where the land status of Cikampek District is in the red and yellow zones, which means that the area in Cikampek is intended for industrial and urban development in Karawang Regency. This is in accordance with what has been stipulated by the government in the Karawang Regency Regional Regulation number 2 concerning the Regional Space Tara Plan (RTRW) article 5 paragraph 2 of 2011-2031. So that this results in the conversion of agricultural land in Cikampek District can occur every year. The Map of Sustainable Food Agricultural Land (LP2B) is presented in Appendix 2.

Agricultural land in Cikampek District is spread across 8 villages. West Dawuan Village is the village that has the largest agricultural land in Cikampek District, which is 137 ha. In 2022, the productivity of agricultural land in West Dawuan Village will reach 6.8 tons/ha. West Dawauan Village has a high productivity of land that produces rice in Cikampek District, which is 942.56 tons (UPTD Pertanian Cikampek 2022). This shows that West Dawuan Village still has agricultural potential compared to other villages in Cikampek District.

The majority of residents in West Dawuan Village make a living as farmers. Farming activities in West Dawuan Village have been going on for a long time and have become a hereditary business. Farming in West Dawuan Village is generally commercial, where the production (Output) is intended to be sold at the prevailing price. The status of land ownership and agricultural land area in West Dawuan Village varied. Where farmers in Dawuan Village can be divided into 3 strata based on the area of agricultural land. According to Sayogyo in Susilowati & Maulana (2012) These strata are small, medium and large-scale farmers. This difference in land size can affect the level of income earned by farmers. In general, the larger the farmland, the greater the chance of generating higher income. This is due to greater production capacity and the ability to diversify crops or other agricultural ventures, and vice versa (Hasa S. 2018).

The problem of farmers in West Dawuan Village is the availability of little production capital and not all farmers in Dawuan Village have rice fields, the land used by farmers in West Dawuan Village is mostly leased land. Based on the LP2B map in Appendix 2. West Dawuan Village is one of the areas intended for the development of urban areas in Cikampek District. This condition makes land owned or leased by farmers at this time in danger of being converted. In addition to the problem of agricultural land, the location of the saprotan supplier store far away makes it difficult for farmers to obtain fertilizers and pesticides. This condition causes the price of fertilizers and pesticides to be high due to transportation costs in the purchase of fertilizers and pesticides. The additional cost of land lease and fertilizer purchase resulted in higher production capital.

METHOD

In this study, a quantitative descriptive research method was carried out. Where in the discussion in this study, it prioritizes the costs used by farmers during one planting season, receipt, and income received as well as the feasibility of rice farming in West Dawuan Village, Cikampek District, Karawang Regency, which is seen from several indicators, namely the R/C ratio, and BEP.

Place and Time of Research

The selection of the research location was carried out deliberately (purposive) which will be carried out in West Dawuan Village, Cikampek District, Karawang Regency. Considering that West Dawuan Village has the largest area of agricultural land and production in Cikampek District. This research will be carried out in August 2023.

Sampling Techniques

The sampling technique that will be used in this study is using a simple random sampling technique. According to Sugiyono (2016), the simple random sampling technique is a sampling technique from population members that is carried out randomly without paying

attention to the strata in the population. With consideration of samples that carry out agricultural activities in West Dawuan Village.

The total population in this study is all farmers in West Dawuan Village, Cikampek District, which is 131 farmers who will be grouped into 3 strata based on the area of farming land.

RESULTS AND DISCUSSION

Cost of Production, Receipt, and Income of Rice Farming in West Dawuan Village.

The sample farmers in this study will be analyzed in general or overall and will be divided into three groups of farmers based on the area of rice fields managed. Namely small-scale farmers with a farming land area of ≤ 0.5 ha, medium-scale farmers with a land area of 0.5 < n ≤ 1 ha, and large-scale farmers with a farming land area of > 1 ha. This aims to find out the cost of production, income and income of farming in general and based on the area of rice fields managed.

Rice farming production costs in general.

The total cost of farming is the total or total cost incurred by farmers for production purposes. The total cost is obtained from the total fixed cost of farming added to the total variable cost of farming. The fixed costs in this study are in the form of the cost of depreciation of farming equipment, as well as the cost of taxes and land rent, while the variable cost of the cost is fluctuating and depends on the production conditions of farming, namely the cost of labor, seeds, fertilizers, medicines, and harvest costs. The total production costs incurred by sample farmers in West Dawuan Village can be seen in Table 9 below.

Table 1. Production Costs of Rice Field Farming in West Dawuan Village in 2023.

Production costs	Quantity	Average/MT/farmer	Rerata/MT/ha
Fixed Fees			
Taxes and Land Leases	114.900.175	3.282.862	2.266.765
Equipment	2.981.048	85.173	60.652
Quantity	117.881.223	3.368.035	2.398.397
Variable Costs			
Workforce	260.425.000	7.440.714	5.298.576
Seeds	14.186.000	405.314	288.627
Pupuk	101.880.000	2.910.857	2.072.838
Fertilizer transport	8.280.000	236.571	614.751
Drugs	30.215.000	863.286	10.852.492
Harvest	533.400.000	15.240.000	168.464
Harvest Transport	26.670.000	762.000	542.625
Quantity	975.056.000	27.858.743	19.838.372
Total Production Cost	1.092.937.223	31.226.778	22.236.770

The data in Table 1 shows that the average total production cost of rice farming incurred by each sample farmer in West Dawuan Village is Rp 31,226,778/MT/farmer and Rp 22,236,770/MT/ha. With details of the average fixed cost of IDR 3,368,035/MT/farmer, and

the average variable cost of IDR 27,858,743/MT/farmer for an average planting area of 1.40 ha.

The average fixed cost incurred by each sample farmer consists of the cost of depreciation of farming equipment of Rp 85,173/Mt/farmer, as well as tax and land rental costs of Rp 3,282,862/Mt/farmer. So that the amount of fixed costs incurred by each sample farmer in West Dawuan Village is Rp. 3,368,035/MT/farmer for an average planting area of 1.40 ha, and Rp. 2,327,417/ha. Details of the fixed cost of rice farming in West Dawuan Village can be seen in Appendix 18.

Based on the results of the research, it can be seen that in general, farmers in West Dawuan Village are cultivators, who manage agricultural land with a rental system, where the cost of renting rice fields ranges from Rp4,000,000 to Rp8,000,000/ha for one planting season, where the payment of land rental fees is made after the harvest period. Details of rental fees and land taxes can be seen in Appendix 4.

The cost of depreciation of paddy farming equipment refers to expenses incurred due to a decrease in the value of productive assets in paddy farming activities. The farming equipment used by the sample farmers in West Dawuan Village includes hoes, machetes, sambits, and sprayers. Details of equipment depreciation costs can be seen in Appendix 5.

Data in Table 9 shows that the total variable costs incurred by sample farmers in West Dawuan Village are IDR 975,056,000/MT, with the average variable costs incurred by each farmer in West Dawuan Village which is IDR 27,858,743/MT/farmer with an average planting area of 1.40 ha, and IDR 19,936,643/MT/ha. Details of the total variable cost of rice farming in West Dawuan Village can be seen in Appendix 19.

The sample farmers divided the agricultural workforce into 7 groups, namely klaktor, nampingan, seedling, planting, fertilizing, spraying, and spraying medicines. Labor for land cultivation is generally farmers in West Dawuan Village, namely with the "Wholesale" system, where farmers only give wages to the head of farm labor at a predetermined price, the price or wages of farm workers are measured based on the area of rice fields, for the number of farm workers who work is determined by the head of farm labor.

The average cost of land cultivation such as increasing land and masking is Rp 1,200,000 to Rp 1,300,000/ha, with an average workforce of 2 people to plow the land, while the average workforce for masking is 3 farm workers. So that it can be known that the average labor cost incurred by each farmer is Rp 7,440,714/Mt/farmer. Details of labor costs can be seen in Appendix 13.

Sample farmers in West Dawuan Village generally use two types of rice seed varieties, namely Inpari 32 and Ciherang. However, the majority of sample farmers in West Dawuan Village tend to use the Inpari 32 variety of rice seeds more often. Farmers on average need the number of seeds ranging from 15 - 25 kg/hectare, with prices ranging from Rp 10,000 to Rp 17,000/kg, depending on the quality of the seeds used, so that it is known that the average cost for the purchase of seeds incurred by the sample farmer is Rp 405,314/MT/farmer. Details of the amount and cost of seed purchase can be seen in Appendix 14.

Fertilizer is an important means of production. Applying fertilizers with the right composition can result in high production. Sample farmers generally use 2 types of fertilizers, namely urea fertilizer and poska. Based on Table 9, it can be seen that the cost of purchasing

fertilizer incurred by sample farmers in West Dawuan Village is IDR 101,880,000/MT, with the average cost incurred by a sample farmer of IDR 2,910,857/MT.

Sample farmers in West Dawuan Village generally use urea fertilizer and poska with an amount of around 500-800 kg/ha/MT each for irrigated rice fields, while for rainfed saw, which ranges from 300-400 kg/ha/MT. The price of urea fertilizer is Rp 2,300/kg and the price of poska fertilizer is Rp 2,500/kg. Fertilization is carried out 2 times in one planting season, with a fertilization ratio of 1:1. Details of the cost of fertilizer guidance can be seen in Appendix 15.

Fertilizer transportation costs refer to the cost of fertilizer delivery services that have been purchased by sample farmers from farmer stores. The cost of fertilizer transportation is calculated based on the amount of fertilizer purchased by the sample farmers, which is Rp 200/kg. Therefore, based on the data from the research results listed in Table 9, it can be seen that the transportation cost of fertilizer purchases incurred by each sample farmer has an average of Rp 236,571/MT. Details of the transportation cost of fertilizer purchase can be seen in Appendix 15.

Pests in general are one of the biggest enemies of farmers, where pests can affect the quality and quantity of rice production. Pests that are often faced by rice farmers in West Dawuan Village include leafhoppers, butterflies, stem hoists, and birds, while diseases are sundep, oncom fungus, and leaf dwarf. The amount of pesticide, herbicide, and fungicide purchases depends on the conditions of the pests and diseases that are invading. The more pests and diseases that attack, of course, the greater the costs incurred by farmers for the purchase of rice field medicines.

Based on Table 9, it can be seen that the total cost of purchasing medicines incurred by sample farmers in West Dawuan Village is Rp 30,215,000/MT, with the average expenditure of each farmer being Rp 863,286/MT. Sample farmers generally directly buy rice field medicines from the nearest farmer's shop. Details of the cost of purchasing medicines can be seen in Appendix 16.

Rice farming in several regions of Indonesia, including West Dawuan Village, generally follows a pattern of harvesting twice a year. This practice has become a common habit among farmers. Harvesting activities in West Dawuan Village on average use a rice thresher machine. The cost incurred for harvesting activities using a rice peroktok machine is calculated based on the amount of rice harvest, which is Rp 2,000/kg. In addition to the cost of renting a machine, there is also a cost of transporting harvests using motorcycle taxi services at a rate of around Rp 5,000/sack, where one sack contains 50kg of rice. This is because there is a need for a process of moving crops from rice fields to storage or sale.

Based on Table 9, it can be seen that the average harvest cost incurred by each sample farmer in West Dawuan Village is Rp 15,240,000/farmer for one planting season, and the average cost of harvest transportation services is Rp 762,000/MT/farmer. Details of harvest costs and harvest transportation costs incurred by sample farmers can be seen in Appendix 17.

The Cost of Rice Farming Production in West Dawuan Village Based on the Scale of Rice Field Land.

The production costs incurred by each sample farmer in West Dawuan Village vary according to the area of rice fields managed. Where in general, the smaller the area of rice

fields managed, the less likely the number of production inputs used. The average production costs incurred by each sample farmer based on the area of rice fields can be seen in Table 10.

Production Costs	Average Production Cost (Rp/farmer)		
	≤ 0.5 ha	0.5 < n ≤ 1 ha	> 1 ha
Fixed Fees			
Taxes and Land Leases	627.579	3.128.034	4.476.397
Equipment	62.609	69.675	104.492
Quantity	690.187	3.197.709	4.580.889
Variable Costs			
Workforce	2.087.143	4.969.545	11.244.118
Seeds	146.429	243.182	616.824
Pupuk	840.000	1.747.727	4.516.176
Fertilizer transport	68.571	140.000	368.235
Medications	237.857	481.000	1.368.176
Harvest	3.800.000	9.436.364	23.705.882
Harvest Transport	190.000	471.818	1.185.294
Quantity	7.370.000	17.489.636	43.004.706
Production/farmer costs	8.060.187	20.687.346	47.585.595

The data in Table 10 shows the average production costs incurred by each farmer based on the scale of the rice field area, namely small-scale farmers with an average rice field area of 0.39 ha which is Rp 8,060,187/MT, medium-scale farmers with an average rice field area of 0.85 ha which is Rp 20,687,346/MT, and on large-scale farmers with an average rice field area of 2.22 ha which is Rp 47,585,595/MT. This shows that the larger the rice field that is managed, the greater the production costs needed. Details of the total production cost of rice farming in West Dawuan Village can be seen in Appendix 20.

Andila J. et al. (2021) stated that the larger the rice field, the higher the production costs incurred. This is because farmers need more production inputs that are adjusted to their needs based on the area of rice fields managed by farmers, such as the amount of fertilizer needed, the number of seeds used, labor, and other production input costs. Where this can indicate that the smaller the rice field area, the smaller the production input used.

This section discusses the revenue and income of rice farming in West Dawuan Village. Farming revenue is influenced by the amount of production and the selling price of grain, which in this village varies depending on quality. In general, the sample farmers' average production reached 7,620 kg/MT with an average selling price of Rp6,437/kg, yielding an average revenue of Rp48,834,286/MT per farmer or Rp34,775,178/ha, with an average land area of 1.40 ha.

Based on land area scale, farmers' revenue differs considerably: small-scale farmers (average 0.39 ha) earned around Rp11.8 million, medium-scale farmers (0.85 ha) around Rp30.7 million, and large-scale farmers (2.22 ha) around Rp75.8 million. This indicates that land area affects the level of production and farming revenue, consistent with the views of Mamondol (2016) and Sudrajat (2020).

Farming income, defined as the difference between revenue and total costs, totaled Rp616,262,777/MT, with an average of Rp17,607,508/MT per farmer or Rp12,538,408/ha. Given a planting season duration of about 4 months, monthly income was only around Rp4,401,877, a figure lower than the Regional Minimum Wage (UMR) of Karawang Regency at Rp5,219,263.

Although farmers' average monthly expenditure was relatively low (Rp1,988,571), meaning income could still cover needs for 4 months, this condition nonetheless reflects a relatively low level of welfare. The low expenditure stems from the fact that most farmers are elderly (aged 50–78) with few family dependents, and spending is directed more toward food than non-food needs—an indication of households that are not yet prosperous (Martina, 2021; Trisnowati, 2013). When faced with a 6-month expenditure requirement, some farmers struggle to meet household needs and tend to borrow money from relatives. This shows that if farmers rely entirely on rice farming income, household needs become difficult to fulfill, so farmers require additional sources of income beyond farming activities.

This section examines rice farming income in West Dawuan Village based on land area scale. Farming income is farm revenue minus total production costs, and land area generally provides an overview of potential production and income. Based on scale, income differed markedly: small-scale farmers (average 0.39 ha) earned Rp3,804,098/MT, medium-scale farmers (0.85 ha) earned Rp9,994,472/MT, and large-scale farmers (2.22 ha) earned Rp28,217,347/MT. Smaller fields incurred lower production costs, while revenue depended heavily on production volume, confirming that land area influences farmers' income (Legebada, 2017; Andila et al., 2021).

However, larger land does not guarantee higher income. Of the 35 sample farmers, 16 earned below Rp10,000,000/ha/MT, including 4 small-scale, 5 medium-scale, and 7 large-scale farmers. The causes varied by group: small- and medium-scale farmers were burdened mainly by land rental costs (as many lacked their own fields) and, for medium-scale farmers, reliance on rainfed fields without irrigation. Large-scale farmers faced greater exposure to pests and diseases, raising pesticide and fertilizer costs (Kartika et al., 2014). This indicates that other factors—land management, technology use, market conditions, and resource access—also shape income levels (Soekartawi, 2001).

Location further explains these differences across the village's four hamlets. Payuyon Hamlet had the most low-income farmers (11), due to its rainfed fields and dependence on rainfall, which lowered productivity and complicated planting schedules. In contrast, Kamijaya Hamlet had the highest productivity, with 10 of 11 farmers earning above Rp10,000,000, supported by good irrigation channels (Muzdalifah, 2014). Babakan and Tegal Wangi hamlets, though irrigated, still had some low-income farmers due to high land rent and pest attacks, showing that irrigation alone does not guarantee high income.

Although West Dawuan Village has no protected agricultural land (LP2B) under the Karawang Regency regulation, the analysis suggests Kamijaya Hamlet—with its high productivity and irrigation—is suitable to be designated as LP2B. Tegal Wangi and Babakan hamlets have potential worth maintaining, whereas Payuyon Hamlet, with its low productivity and income, would be difficult to sustain as rice fields.

The Feasibility of Rice Farming in West Dawuan Village in General and Based on the Scale of Rice Field Land.

Farming in this study will be tested whether the farming is worth destroying or not suitable for cultivation. The methods used to test the feasibility of rice farming in general and based on the area of rice fields are the R/C *Ratio* and Break Event Point (BEP) analysis methods.

Analysis of the Feasibility of Rice Farming in West Dawuan Village in General.

The R/C ratio analysis is an indicator that describes the level of sustainability of paddy rice farming, which reflects the extent to which the activity can be considered feasible or unfeasible. The R/C ratio is calculated by dividing the total revenue from paddy farming by the total costs incurred. This parameter is used to evaluate the efficiency and profitability of agricultural activities, with a higher R/C ratio indicating a better level of sustainability, while a lower value may indicate the presence of unsuitability or unsustainability in the farm. The results of the R */C ratio* analysis of paddy rice farming in West Dawuan Village can be seen in Table 3.

Table 3 R/C Ratio Value of Rice Field Farming in West Dawuan Village.

Scarcity	Land Area (ha)	Admission (Rp/Mt)	Production Cost (Rp/Mt)	R/C Ratio
Total	49,15	1.709.200.000	1.092.937.223	1,56
Average/farmer	1,40	48.834.286	31.226.778	1,56
Average/ha	1,00	34.775.178	22.236.770	1,56

Source: Primary data processed, 2023

As a result of the calculation in Table 18, the total revenue from rice farming is IDR 1,728,200,000 with an average of IDR 48,834,286, and the total production cost is IDR 1,092,937,223, with an average of IDR 31,226,778. So that the R/C value of rhizome in paddy rice farming in West Dawuan Village is 1.56, which means that every Rp 1 spent by the sample farmers will get a profit of Rp 1.56. This shows that the *R/C ratio* value is > 1, which means that rice farming in West Dawuan Village is feasible.

The results of the study show that rice farming in West Dawuan Village has different *R/C ratio* values . Of the 35 sample farmers, there were 2 sample farmers who had an *R/C ratio* value of less than 1.30, as well as 19 sample farmers who had *an R/C ratio* value ranging from 1.30 to 1.50, and there were 13 sample farmers who had an *R/C ratio* value of more than 1.50. Meanwhile, there is only 1 sample farmer who has *an R/C ratio* value of more than 2. This shows that the majority of sample farmers in West Dawuan Village have decent and profitable farming, but the value of rice farming feasibility is relatively low. Details of the *R/C ratio* value in rice farming in West Dawuan Village can be seen in Appendix 23.

Analysis of the Feasibility of Rice Farming in West Dawuan Village Based on the Scale of Rice Field Area.

Farming feasibility analysis based on land area is an essential method in evaluating the sustainability and potential profits of an agricultural business. Land area is a crucial factor because it has an impact on production capacity and operational costs. By considering the right scale of farming, farmers can optimize the use of resources and increase production efficiency.

The feasibility value of paddy rice farming in West Dawuan Village based on the scale of land area can be seen in Table 4.

Table 4 The value of farming feasibility is based on the scale of the rice field area

Remarks	Land Area Scale (ha)		
	≤ 0.5 ha	**0,5 < n ≤ 1**	**> 1**
Average Land Area (ha)	0,39	0,85	2,22
Agricultural Revenue (Rp)	11.864.286	30.681.818	75.802.941
Farming Production Cost (Rp)	8.060.187	20.687.346	47.585.595
R/C ratio	1,47	1,48	1,59

Source: Primary data processed, 2023

Results of *R/C ratio* calculation in Table 19. It can be seen that the R/C value for small-scale farmers with a land area of ≤ 0.5 ha is 1.47, meaning that every Rp 1 spent by farmers will get a profit of Rp 1.47/MT, in medium-scale farmers with a land area of 0.5 < n ≤ 1 ha which is 1.48, meaning that every Rp 1 spent by farmers will get a profit of Rp 1.48, and for large-scale farmers with a land area of > 1 ha of 1.59, meaning that every Rp 1 spent by farmers will get a profit of Rp 1.59. These results show that the larger the land area managed by rice farming, the greater the value of the feasibility of rice farming.

Based on the results of the R*/C ratio* calculation, it shows that large-scale farmers have the greatest feasibility value, while the lowest feasibility value is found in small-scale businesses. However, each farmer strata based on the land area scale has an *R/C Ratio* value of > 1, which means that each farming strata in West Dawuan Village based on the area of rice fields is suitable for cultivation. However, if you look at the value of the eligibility ratio of small- and medium-scale farmers, it is not much different,

Based on the results of research on small-scale farmers, the area of land managed is very limited, causing farmers to take into account the large number of production inputs used to reduce production costs. Such as the use of adequate fertilizers and pesticides, and the amount of labor that is not too much. Most small-scale farmers are senior farmers, even though the age of the farmers is close to the age of unproductive. The experience that farmers have is one of the keys to the success of farmers in cultivating their farms.

Medium and large-scale farmers, in order to pursue high production yields, some farmers are willing to increase production input costs, such as the addition of fertilizers and pesticides used. Because the land used is quite large, of course the cost of tillage and rice cultivation will be more. This results in production costs for medium-scale farmers compared to small-scale farmers. However, this has an impact on the amount of production produced.

The feasibility value (R/C) is obtained based on the amount of production costs used and the farming revenue obtained by farmers. The size of production and receipt costs can be influenced by several factors. Such as land area, selling price of rice and farmers' expertise in managing their farming. The average selling price of rice in West Dawuan Village is relatively the same for all farmers based on the scale of rice fields. However, because there is a difference in the use of production costs in small- and medium-scale farmers, the feasibility value (R/C) in small- and medium-scale farmers is not significantly reduced.

Analysis of Break Event Point (BEP) of Rice Field Farming

Break-even point analysis or *Break Event Point* (BEP) is an analysis tool to determine the level of production that must be achieved by a business in order to achieve profits. In this study, the analysis of *Break Event Point* (BEP) of production, BEP price, and BEP of receipt was used. The results of the calculation of Break Even Point (BEP) in rice farming in West Dawauan Village can be seen in Table 5.

Table 5. BEP Agribusiness in West Dawuan Village.

	Price (Rp/Kg)	Production (kg)	Admission (Rp)
Rerata/Mt	6.437	7.620	48.834.286
BEP/Mt	4.098	1.260	7.841.303

Source: Primary data processed, 2023

The data in Table 5, shows that the results of the BEP price calculation show that the selling price of rice that has reached the break-even point of Rp 4,098/kg/Mt, meaning that the cap-even point of paddy rice farming will be reached at a price level of Rp 4,098/kg/Mt. It is known that the average selling price of rice in West Dawuan Village is Rp 6,437/kg/Mt. This shows that the BEP price < the selling price of rice, so rice farming in West Dawuan Village is worth pursuing.

The results of the production BEP calculation show that the amount of production that has reached the break-even point is as much as 1,260 kg/Mt, meaning that the capitulation point of paddy rice farming will be reached at a production level of 1,260 kg/Mt. It is known that the average production produced by farmers in West Dawuan Village is 7,620 kg/Mt. This shows that BEP production < rice farming production, so rice farming in West Dawuan Village is feasible.

The calculation of BEP revenue amounted to Rp 5,375,073/ha, meaning that the break-even point of paddy rice farming will be reached at a revenue level of Rp 5,375,073. The average agricultural income in West Dawuan Village is IDR 35,161,750/ha. This shows that the BEP receives < rice farming revenue, so rice farming in West Dawuan Village is feasible. The calculation of BEP analysis on paddy rice farming in West Dawuan Village can be seen in Appendix 25.

Break Event Point (BEP) Analysis of Rice Farming Based on the Scale of Rice Field Land.

The Break *Event Point* (BEP) analysis based on the scale of the rice field area in this study can help in determining the point where the revenue obtained from rice harvest is in line with the production costs incurred. The results of BEP analysis based on land area can provide valuable insights for farmers to optimize land use and increase production efficiency. The results of the calculation of Break Even Point (BEP) in rice farming in West Dawauan Village based on the area of rice fields can be seen in Table 6.

Table 6. BEP of Rice Farming in West Dawuan Village Based on Land Area Scale in 2023.

Area (ha)	Price (Rp)		Production (kg)		Admission (Rp)	
	Rerata	BEP	Rerata	BEP	Rerata	BEP
≤ 0,5	6.286	4.098	1.900	278	11.864.286	1.821.998
0,51 - 1	6.500	4.385	4.718	1.158	30.681.818	7.437.097
> 1.01	6.459	4.015	11.853	1.699	75.802.941	10.587.302

Source: Primary data processed, 2023

The results of the calculation in Table 21 show that the price BEP shows that the selling price of rice that has reached the break-even point in small-scale farmers with a land area of ≤ 0.5 ha is Rp 4,098/kg, while in medium-scale farmers with a land area of 0.5 < n ≤ 1 ha is Rp 4,385/kg, and in large-scale farmers with a land area of > 1 of Rp 4,015. It is known that the average selling price of rice received by each farming strata based on the scale of land area presented in Table 18, shows that the value of BEP price < The selling price of rice produced by each farming strata based on the scale of land area, This shows that rice farming in West Dawuan based on the scale of rice field land is profitable and feasible to be cultivated.

The results of the production BEP calculation show that the amount of production that has broken even in small-scale farmers with a land area of ≤ 0.5 ha is 278 kg/MT, while in medium-scale farmers with a land area of 0.5 < n ≤ 1 ha as much as 1,158/MT, and in large-scale farmers with a land area of > 1 ha as much as 1,699 kg/MT. It is known that the average rice production produced by each farming strata based on the scale of land area presented in Table 18, shows that the value of BEP production < rice production produced by each farming strata is based on the scale of land area. This shows that rice farming in West Dawuan Disa is based on the scale of the area of rice fields to be cultivated.

The results of the calculation of BEP revenue for small-scale farmers with a land area of ≤ 0.5 ha amounted to Rp 1,821,998/mt, on medium-scale farmers with a land area of 0.5<n≤1 ha of Rp 7,437,097/Mt. and on large-scale farmers with a land area of > 1 ha of Rp 10,587,302. It is known that the average income obtained by each farming strata based on the scale of land area presented in Table 18, shows that the value of BEP of lending < Rice farming revenue based on the scale of land area. This shows that rice farming in West Dawuan Village based on the scale of the rice field area is profitable and feasible to be cultivated.

The results of the study from three Break Even Point analyses of income, production volume, and price, in each strata of rice farming in West Dawuan Village based on the scale of the area of rice fields have a good level of income, assuming that production remains or exceeds the production that has been obtained, thus rice farming in West Dawuan Village, Cikampek Village, Karawang Regency can be said to be feasible and in favorable circumstances because it is at the break-even point. The calculation of BEP analysis on paddy rice farming in West Dawuan Village based on the scale of the rice field area can be seen in Appendix 26.

CONCLUSION

The results of the study show that the average cost of production, receipt, and income of farming in general, namely the average production cost of Rp 31,226,778/MT/farmer,

revenue of Rp 48,834,286, and income of Rp 17,607,508/MT/farmer for an average planting area of 1.40 ha. Meanwhile, for small-scale farmers, the average production cost is IDR 8,060,187/MT/farmer, revenue is IDR 11,864,286/MT/farmer and income is IDR 3,804,098/MT/farmer for planting area with an average of 0.39 ha, medium-scale farmers have an average production cost of IDR 20,687,346/MT/farmer, revenue of IDR 30,681,818/MT/farmer, and income of IDR 9,994,472/MT/farmers for planting area with an average of 0.85 ha. while for large-scale farmers, the average production cost is IDR 47,585,595/MT/farmer, revenue IDR 75,802,941/MT/farmer, and income IDR 28,217,347/MT/farmer for planting area with an average of 2.22 ha. So it can be concluded that agricultural activities on various scales of land can provide benefits.

The results of the analysis of R/C ratio and BEP carried out on rice farming in West Dawuan Village in general and based on land area show that the R/C value in farming in general is 1.56 > 1, BEP revenue of IDR 7,841,303/MT/farmer, BEP production of 1,260 kg/MT/farmer, and BEP price of IDR 4,098/kg. Meanwhile, in farming based on the scale of small, medium, and large land area, the R/C ratio shows an R/C ratio value above 1 and reaches the break-even point (BEP) in receipt, production, and price. So it can be concluded that rice farming in West Dawuan Village, both in general and based on land area, can provide benefits and is feasible to be cultivated.

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