ANALYSIS EFFICIENCY OF IRRIGATED RICE FARMING IN WONOSARI DISTRICT

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AN ABSTRAK

Farmers, as parties who have an important role in meeting people's food needs in agriculture, should have high selling prices and their welfare should be taken into account by the government. Agricultural development is a means of effort to improve the standard of living of farmers, increase income, expand employment and business opportunities, and expand markets both domestically and abroad. This can be achieved through advanced, efficient and resilient agriculture so that it can increase yields, improve quality and support regional development. This study aims to analyze income, efficiency and costs of irrigated lowland rice farming in Wonosari district, Klaten. The method used in this research is to determine the sample by means of purposive sampling. Data analysis uses farming analysis such as analysis of income, efficiency and costs. The results of this research are the average income earned on irrigated rice fields in Wonosari District Rp. 10,542,703.72/Ha. Farming costs obtained by irrigation rice farmers amounted to IDR 11,009,059.63/Ha. Revenue for irrigated lowland rice farming is IDR 21,551,763.35/Ha and the efficiency of irrigated lowland rice farming in Wonosari District is IDR 2.0.

KEYWORDS *Efficiency,Irrigation,Revenue,Cost*

INTRODUCTION

Farmers, as parties who have an important role in meeting people's food needs in agriculture, should have high selling prices and their welfare should be taken into account by the government. The current situation of farmers is still far from prosperous. Agricultural development is an effort to improve the standard of living of farmers, increase

income, expand employment and business opportunities, and expand markets both domestically and abroad. This can be achieved through advanced, efficient and resilient agriculture so as to increase yields, improve quality and support regional development (Soekartawi, 2006)

In 2020, 46.30% of the total number of poor people in Indonesia came from households working in the agricultural sector, while other poor households, namely industry, amounted to 6.58% and other sectors 32.10%. In 2020 the number of farmers was 38.23 million people, around 17.70 million of whom were in the poor category (BPS, 2020).

Rice (Oryza sativa L) is an annual plant that has the ability to adapt to various existing environmental conditions. Rice plants are included in the grass type group or Graminae. Rice plants are important food crops because they produce rice which is a source of staple food for the community. Especially for the Indonesian people, most of whom depend on rice for their livelihood, because rice is a basic energy source. The demand for rice continues to increase along with the increase in population and changes in staple food patterns in certain areas from tubers to rice (Kasim, 2018).

The success of this policy was proven in 1984 when Indonesia was able to be self-sufficient in meeting rice needs and experienced strong food security (achieving self-sufficiency in food). Limited land and other productive sources have the potential to make farmers only become wage laborers in the existing system, which leads to structural poverty. When food prices are high, low-wage farmers are no longer able to meet their food needs. This is what causes the increase in malnutrition rates in Indonesia. In the end, it is predictable that poverty and hunger are problems that receive attention (Puspadi, 2005).

The need for rice will continue to increase in line with population growth. Increasing income will also increase the need for food, namely rice. Therefore, it is necessary to increase the productivity of lowland rice farming to produce rice. Rice is a leading food commodity that is often consumed by people in Indonesia.

Based on (Klaten Regency Agriculture in Figures, 2021) Wonosari District is the largest rice-producing area in 2021 with a rice production of 36,131 tons. Wonosari sub-district, apart from being the largest rice producer, is also the area with the largest harvested area, namely 5,663 Ha and the largest productivity, which is 6,380 tonnes/ha.

In connection with the background of the problem above, the problem can be formulated as follows: (1) What are the costs, receipts and income of irrigated rice farming in Wonosari District, Klaten Regency? (2) What is the efficiency of irrigated rice fields in Wonosari District, Klaten Regency?

RESEARCH METHODS

Analysis of the data obtained is using descriptive and quantitative methods. This Sampling Method

The selection of research locations can be done using a purposive method or deliberately based on certain considerations. (Singarimbun et all, 2008) purposive is the selection of research sites based on certain considerations based on previously known characteristics or traits in accordance with interests in research.

(a) Village Sample Determination. The determination of sample areas in villages in the Wonosari subdistrict was carried out deliberately by considering the village criteria based on the harvested area in the village and the largest harvested area of rainfed rice in the Wonosari subdistrict. (b) Sample Farmer Selection Method. (Singarimbun et all, 2008) states that if the data is analyzed using parametric statistics, the number of samples must

be large so that they can follow a normal distribution. A sample with a normal distribution is a sample whose total is 30 samples.

The selection of sample villages was carried out deliberately, namely by considering the largest number of farmers from the villages in Wonosari District. Based on the consideration of the widest production area, the villages of Sekaran Village and Sukorejo Village were selected.

Determining the number of sample farmers from each village was carried out using the proportional random sampling method, namely taking the number of samples according to the proportion of the number of farmers in the sample village. The number of samples taken in this study were 30 irrigated lowland rice farmers in Sekaran Village and Sukorejo Village. (Nazir, M. 1988)

(a) Cost, Revenue, Income and Efficiency Analysis

(1) Cost Analysis. The concept of cost in this study is the cost of doing business. Cultivation costs are costs that are actually paid during the production process by farmers in one planting season which consist of costs for production facilities which include costs for external labor, internal labor costs, costs for seeds, fertilizers, chemical drugs, and other costs which include depreciation costs, salvage costs, land tax, irrigation costs (ippair) and transportation. Formulated as follows:

TC = cost of production facilities (cost of purchasing chemical drugs + cost of purchasing seeds + cost of purchasing fertilizer + cost of internal labor + cost of external labor + other costs (depreciation costs, land tax + safety costs + transportation)

Information :

TC = Operating costs (Rp)

(2) Acceptance Analysis. Revenue is the multiplication of the yield of lowland rice products sold by the price of lowland rice which is formulated as follows:

TR = Q x P

Information :

TR = Total Revenue/ Total revenue of irrigated paddy rice (Rp)

Q = Quantity Production of irrigated rice (kg)

P = Price (Rp/kg)

(3) Income Analysis. Lowland rice farming income is the difference between total revenue and total farming costs, formulated as follows

Pd = TR – TC

Information:

Pd = Income(Rp)

TC = Total Cost (Rp)

TR = Total Revenue (Rp)

(4) Farming efficiency. Analysis of the efficiency of lowland rice farming using the Revenue Cost Ratio. The R/C Ratio is known as the ratio (ratio) between farming revenues and farming costs. Mathematically it can be written as follows:

Lowland rice farming efficiency (R/C Ratio) =

Information :

TR = Total Revenue (Rp)

TC = Total Cost (Rp)

From the formula listed above, the following criteria are obtained:

R/C > 1, means that irrigated lowland rice farming is efficient

R/C = 1, meaning that irrigated rice farming is in break even point condition

R/C < 1, meaning that irrigated rice farming is inefficient

RESULTS AND DISCUSSION

Results Acceptability, Efficiency, Revenue, Income

Rice farming income is obtained from the production of rice multiplied by the selling price of rice. Production, revenue and prices in irrigated lowland rice farming can be seen in Table 1

Table 1. Average production, revenue and prices in irrigated lowland rice farming in Wonosari MT I District in 2023

No	Description	Average Production, Revenue and Price
		Ha/Irriged
1	Price (Rp/Kg)	Rp 4.600,00
2	Production (Kg)	4.743,91
3	Revenue (Rp)	Rp 21.551.763,35

Source: Primary Data Analysis

Irrigated rice production in farming in Wonosari District averages 4.743,91 kg/Hectar. The selling price of dry grain harvested by farmers' rice farming is IDR. 4,600.00/kg. The average income of irrigated rice farmers in Wonosari District is IDR 21.551.763.35/Hectar.

Average income and efficiency in irrigated rice farming in Wonosari sub-district. The average income of irrigated lowland rice farming can be calculated by subtracting the income from the operating costs that have been incurred by farmers. Efficiency is obtained by using the formula of total revenue divided by total operating costs. The results of these calculations can be seen in Table 2 below.

Table 2. Average net income and efficiency of irrigated rice in Wonosari MT I District in 2023 (Rp)

No	Description	Net income of irrigated rice fields
		Ha/Irriged
1	Cost	11.009.059,63
2	Revenue	21.551.**763**,35
3	Income	10.542.703,72
4	Efficiency	2,0

Source: Primary Data Analysis

The average income obtained from irrigation farming in Wonosari District is IDR 10,542,703.72/Hectar. Farming costs obtained by irrigated rice farmers are 11,009,059.63/Hectar. Revenue from irrigated rice farming is 21,551,763.35/hectar. Farming efficiency in irrigated rice fields in Wonosari District is IDR 2.0. From the explanation above it can be concluded that irrigated rice farming in Wonosari District is feasible for farmers because the R/C is more than 1 so that irrigated rice farming is efficient or feasible.

CONCLUSION

The average income earned on irrigated paddy fields in Wonosari District is IDR 10,542,703.72/Hectar. Farming costs obtained by irrigation rice farmers amounted to 11,009,059.63/Hectar. Revenue in Irrigated lowland rice farming is 21,551,763.35/Hectar. The efficiency of irrigation rice farming in Wonosari District is IDR 2.0. From the

explanation above, it can be concluded that the irrigation rice farming business in Wonosari District is feasible for farmers because the R/C is more than 1 so that the irrigation rice farming business carried out is efficient or feasible. Further research is needed on the competitiveness of irrigated rice farming in Wonosari District, both competitively and comparatively.

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