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Maize Farmers' Income in the Arid Region of Batang Regency, Central Java, Indonesia

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ABSTRACT: This study investigates the earnings of maize farmers in the arid regions of Batang Regency. Utilizing a case study methodology, data were collected over a single cropping season through direct interviews using structured questionnaires. The analysis included calculating production expenses, total revenue, farm income, and the Revenue-Cost (R/C) ratio. The findings indicate that the average total revenue from maize cultivation is IDR 37,100,000 per hectare, while total production costs amount to IDR 13,767,286, resulting in positive farm income. The R/C ratio is 2.69, signifying that for every IDR 1.00 invested, farmers receive IDR 2.69 in return. This ratio suggests that maize farming in these arid regions is economically viable and profitable. Consequently, maize cultivation offers a substantial opportunity to enhance farmers' income and serves as a sustainable livelihood option for households in arid areas.

KEYWORDS: Arid Regions, Cost Production, Income, Maize, R/C Ratio

I. INTRODUCTION

In Indonesia, maize holds strategic importance because of its substantial productivity (Bantacut et al., 2015). It plays a crucial role in driving economic growth and fulfilling the livelihoods and requirements of farming households (Lestari et al., 2022). Although domestic demand for maize has surged, production has not kept pace, underscoring the necessity for advancements in agricultural technology. A significant portion of this high domestic demand still depends on imports. As the population grows and living standards improve, this demand is expected to rise further. The growing consumption of animal protein, particularly from chicken and eggs, is driving an increased demand for raw materials within the feed industry (Bantacut et al., 2015).

Enhancing maize productivity and production efficiency is crucial to meet the growing demand for maize and improve farmers' economic well-being. Productivity can be increased through the adoption of appropriate cultivation practices, including optimized fertilization, appropriate planting spacing, and optimum plant population management (Syafruddin, 2018). Higher productivity not only contributes to increased maize production but also improves farmers' income, thereby supporting national efforts to achieve maize self-sufficiency (Khairati et al., 2023). Moreover, the demand for maize continues to rise due to its expanding role as a food commodity, livestock feed, and raw material for the bioenergy industry. This growing demand creates favorable market opportunities for maize farmers through stable market demand and attractive selling prices. However, the extent to which these opportunities translate into higher farm income depends on the financial performance of maize farming. Therefore, this study aims to evaluate the income of maize farmers in the arid region in Batang Regency.

II. MATERIALS AND METHODS

This study was conducted in Batang Regency, focusing on maize farmers. A case study approach was employed to gain a comprehensive understanding of farming practices and their economic outcomes. Observations took place throughout the maize growing season. Primary data were gathered through direct interviews with farmers using a structured questionnaire. The analysis involved estimating total revenue, production costs, and net farm income. Additionally, the economic viability of maize farming was assessed using the Revenue-Cost (R/C) ratio, which serves as an indicator of the profitability of farming operations. Production Cost (IDR) encompasses all expenses incurred during the farming process, including labor, production inputs, depreciation, and other related costs such as land tax, irrigation fees, profit-sharing agreements, and equipment maintenance. The revenue (IDR) from maize farming is calculated by multiplying the total production volume (in kilograms) by the selling price, which is IDR 5,000 per kilogram. Income (IDR) from maize farming is determined by subtracting total production costs from total revenue. The R/C ratio is a metric used to evaluate the economic viability of a farming enterprise. It is defined as the ratio of total revenue (R) to total cost (C). This measure is commonly used to assess the profitability and efficiency of farming activities. An R/C ratio greater than 1

signifies that the farming enterprise is viable and profitable, an R/C ratio of 1 indicates a break-even point, and an R/C ratio less than 1 suggests that the farming enterprise is not viable.

III. RESULT AND DISCUSSION

The table outlines the elements of production cost, total revenue, and farm income in maize cultivation. Production costs encompass labor, production inputs, depreciation costs, and other related expenses incurred during the farming process. The findings show that the total revenue farmers receive exceeds the total production costs. This situation results in a positive farm income, indicating that maize farming offers economic advantages to the farmers. Additionally, the gap between total revenue and total production cost signifies the net farm income that farmers earn in a single cropping season. This observation implies that maize farming activities yield a profitable return and help enhance the economic conditions of farmers.

Table 1. Maize's Production Cost and Farm Income per Hectare per Crop Season

Item		Total
Revenue (IDR)		37,100,000
Production Cost (IDR)		13,767,286
Labor Cost (IDR)	5,435,000	-
Production Input (IDR)	7,648,000	-
Depreciation Cost (IDR)	334,286	-
Other Cost (IDR)	350,000	-
Income (IDR)		23,332,714
R/C Ratio		2,69

The findings indicate that maize farming yields a total revenue of IDR 37,100,000, whereas the overall production expenses are IDR 13,767,286. The income earned by farmers enhances the financial status of their households. From these figures, the Revenue-Cost (R/C) ratio is determined to be 2.69. This means that for each IDR 1.00 invested in production, farmers receive IDR 2.69 in return. An R/C ratio exceeding 1 suggests that maize farming in dry areas is both economically viable and profitable. The results of this study are in line with several previous studies (Palobo et al., 2019; Nurcahya et al., 2022; Aisyah et al., 2023; Hayati et al., 2024; Hilala et al., 2025), which stated that maize farming is feasible to cultivate.

V. CONCLUSIONS

This study concludes that maize farming in the arid regions of Batang Regency is economically feasible and profitable. The results show that total revenue exceeds production costs, resulting in a positive farm income. The calculated R/C ratio of 2.69 indicates that every unit of production cost generates IDR 2.69 in revenue. These findings suggest that maize farming has strong potential to improve farmers' income and serve as a viable agricultural enterprise in arid areas. Therefore, efforts to enhance production efficiency, improve access to quality inputs, and strengthen market opportunities are essential to further increase the profitability and sustainability of maize farming. Future research is recommended to examine the long-term economic performance of maize farming and compare its profitability across different agroecological regions.

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