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Income Analysis of Palm Sugar Processing Business (*Arenga saccharifera*) in Wansugi Village, Kabangka District, Muna Regency

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Abstract

This study aims to determine the amount of income from the palm sugar processing business in Wansugi Village, Kabangka District. This research was conducted in October 2024 - March 2025. The population in this study were business actors in Wansugi Village, Kabangka District, Muna Regency. To determine the sample in this study, the Census Sampling method was used for palm sugar processing business actors. This study was analyzed using quantitative descriptive analysis. The results of this study indicate that the average total income per month in palm sugar processing is IDR 1,445,000 with an average total cost per month of IDR 88,024 and an average income of palm sugar processors per month of IDR 1,257,944. With an R/C Ratio value of 1.12, it means that the palm sugar processing business in Wansugi Village, Kabangka District is feasible to be developed because the R/C Ratio value is > 1.

Keywords: Muna Regency, Kabangka District, palm sugar processing, income

INTRODUCTION

Indonesia is one of the developing countries known as an agrarian country with a land area of approximately 190.9 million hectares. Of this total area, about 37.1% is used for cultivation activities such as rice fields, dryland agriculture, plantations, and fields, while the remaining 62.9% is forest area (Azhar et al., 2021). Indonesia's geographical location in the tropics makes its climate, soil, and natural resources highly suitable for developing the agricultural sector. This is reflected in the large number of people who depend on this sector for their livelihoods.

The agricultural sector plays an important role as a provider of food, clothing, and shelter,

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as well as creating jobs for a large portion of the population. Additionally, this sector significantly contributes to national income and foreign exchange earnings, and serves as the foundation for rural economic development through agribusiness and agroindustry (Yolanda, 2021). One of the strategic subsectors is the plantation subsector, which includes commodities such as sugar palm, cocoa, corn, coconut, coffee, and pepper.

The sugar palm (*Arenga pinnata*) is a perennial plant that can grow in various climatic conditions, from wet to dry, and at altitudes of 0–1,500 m above sea level. This plant thrives in loose, volcanic, or sandy soils along riverbanks, with a productive lifespan of 15–20 years (Muhusana et al., 2016). One of the primary products of the sugar palm is sap, which can be processed into various economically valuable byproducts such as palm sugar, palm sugar syrup, vinegar, bioethanol, and fermented beverages. The main components of palm sap include water, carbohydrates (sucrose), fats, vitamins, and minerals. Damage to palm sap is typically caused by the fermentation of sucrose into alcohol or acetate due to bacterial and yeast activity (Hardiansyah et al., 2023).

In Muna Regency, palm trees are one of the main sources of income for the community. Almost all parts of the plant can be utilized, with palm sugar as the primary product, which has high economic value and the potential to increase community income while also serving as a source of regional revenue (Effendi, 2009). Data from the Southeast Sulawesi Bureau of Statistics (2024) shows that palm sugar production in Muna Regency from 2019 to 2023 tended to be stable at the beginning of the period, then increased from 2021 to 2023, both in terms of planting area and production volume. Wansugi Village, Kabangka District, is one of the palm sugar processing centers in Muna Regency. Most of the residents work as palm sugar processors, and income from this activity plays a crucial role in meeting their daily needs. However, to date, there has been limited research analyzing the income generated from palm sugar processing activities in the region.

Based on these conditions, the problem studied in this research is: how much income is generated from palm sugar processing in Wansugi Village, Kabangka District, Muna Regency? The purpose of this study is to determine the amount of income generated from palm sugar processing in the village.

METHOD

This study was conducted in Wansugi Village, Kabangka District, Muna Regency. The research location was selected purposively, considering that Wansugi Village is a village that produces palm sugar. The research was conducted from October 2024 to March 2025. The

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population and sample in this study consisted of 15 individuals involved in the palm sugar processing business in Wansugi Village, Kabangka District, Muna Regency, selected using a saturated sampling technique.

The types and sources of data in this study consist of primary and secondary data. Primary data was obtained through direct interviews with respondents using a prepared questionnaire, while secondary data was obtained through recording and collecting relevant data from the village office and related agencies. Data collection techniques were conducted through interviews by asking direct questions to respondents using a questionnaire, as well as documentation that includes the collection, recording, and storage of information in the form of documents, both in text and images. The data analysis used in this study is Income Analysis, according to Awami et al. 2014, the method of calculating total costs can be formulated as follows:

TC = FC + VC
Explanation:
TC = Total Cost FC = Fixed Cost
VC = Variable Cost (Variable Cost)

To determine the total revenue (TR) and the total income of palm sap tappers, the following formula (Rosmawaty, et al., 2022) is used:

TR = Q x P
Explanation:
TR = Total Revenue (Rp)
Q = Quantity (Kg)
P = Product Price (Rp)

According to Nabila (2024), the method for calculating variable costs is by multiplying the variable cost per unit by the quantity produced.

TVC = VC x Q
Explanation:
VC = Variable Cost
Q = Quantity (Production quantity)

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According to Suratiyah (2015), R/C is the ratio between revenue and total cost.

R/C = Total Revenue (TR) / Total Cost (TC)
Explanation
Revenue = Amount of revenue obtained
Cost = The amount of expenses incurred

To determine the total revenue from sugar processing, the following formula (Rosmawaty, et al., 2022) is used:

I = TR - TC
Explanation:
I = Income (Rp)
TR = Total Revenue (Rp) TC = Total Cost (Rp)

RESULTS AND DISCUSSION

Costs, Revenue, and Income from the Processing of Aren Palm Sugar

Palm sugar processing is not merely the process of transforming palm sap into a sweet product enjoyed by many people, but also an economic activity that serves as a livelihood for communities, particularly in rural areas. Behind every grain of palm sugar lies a series of activities, from tapping, processing, to marketing, which require costs, labor, and time. Therefore, understanding the components of costs, revenue, and income is crucial to determining how profitable and sustainable this endeavor is. The costs, revenue, and income are presented in the following table;

Table 1. Average Processing Costs of Palm Sugar in Wansugi Village, Kabangka District, Muna Regency, 2024

No	Description of Fixed Costs	Rp/Month	Variable Cost Description	Rp/Month
1	Wok	5.146	Candlenut	255.000
2	Tapping knife	2.965	Betel nut	186.500
3	Sugar mold	2.965	Beeswax	58.000
4	Jerry cans	1.356	Labor	210.000
5	Filter	923, 6	Fuel	74.667

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Based on Table 1, it shows that the average expenditure of palm sugar processors for woks is Rp5,146, tapping knives is Rp2,965, sugar molds is Rp2,965, jerry cans is Rp1,356, and sieves is Rp923.6. Meanwhile, the average variable costs incurred by palm sugar processors for candlenuts are Rp 255,000, lime for betel leaves Rp 186,500, beeswax Rp 58,000, labor Rp 210,000, and fuel Rp 74,667.

Table 2. Total Revenue from Palm Sugar Processing in Wansugi Village, Kabangka District, Muna Regency in 2024

Respondent	Production/Month (kg)	Price (Rp/kg)	Total Revenue (Rp/Month)
1	120	12.500	1.500.000
2	75	15.000	1.125.000
3	120	15.000	1.800.000
4	105	15.000	1.575.000
5	120	15.000	1.800.000
6	105	15.000	1.575.000
7	150	12.500	1.875.000
8	105	15.000	1.575.000
9	105	15.000	1.575.000
10	120	15.000	1.575.000
11	90	15.000	1.350.000
12	75	15.000	1.125.000
13	75	12.500	937.500
14	75	12.500	937.500
15	75	15.000	1.125.000
Total	**1.515**	**215.000**	**21.675.000**
Average	**101**	**14.333**	**1.445.000**

Table 2 shows that among the fifteen respondents, the highest sugar production was obtained from respondent 7, which was 150 kg/month, with a selling price of Rp 12,500 per kg, resulting in a total monthly income of Rp 1,875,000. The lowest production was 75 kg among respondents 2, 12, 13, 14, and 15, with varying selling prices and total income. Respondents 2 and 15 had the same selling price of Rp 15,000, resulting in total monthly income of Rp 1,125,000, while respondents 13 and 14 had a selling price of Rp 15,000, resulting in total monthly income of Rp 937,500. The average monthly production is 101 kg, with an average total monthly income of

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Rp 1,445,000.

Table 3. Income from Palm Sugar Processing in Wansugi Village, Kabangka Sub-District, Muna Regency in 2024

Respondent	Total Revenue (Rp/Month) TR	Total Costs (Rp/Month) TC	Income (Rp/Month) TR-TC=I
1	1.500.000	88.023	1.411.977
2	1.125.000	88.023	1.036.977
3	1.800.000	88.023	1.711.977
4	1.575.000	88.023	1.486.977
5	1.800.000	88.023	1.711.977
6	1.575.000	88.023	1.486,977
7	1.875.000	88.023	1.786.977
8	1.575.000	88.023	1.486.977
9	1.575.000	88.023	1.486.977
10	1.800.000	88.023	1.711.977
11	1.350.000	88.023	1.261.977
12	1.125.000	88.023	1.036.977
13	937.500	88.023	849.477
14	937.500	88.023	849.477
15	1.125.000	88.023	1.036.977
Total	**21. 675.000**	**1.320.345**	**18.869.165**
Average	**1.445.000**	**88.023**	**1.257.944**

Table 3 shows that the average total monthly income from palm sugar processing is Rp 1,445,000, with an average total monthly expense of Rp 88,023 and an average monthly income per palm sugar processor of Rp 1,257,944.

Financial Viability of Palm Sugar Processing Business

The financial viability of the palm sugar processing business can be determined using the R/C Ratio analysis, which stands for *Return Cost Ratio*. The R/C Ratio is calculated by dividing the average revenue by the total costs. Information regarding the R/C Ratio can be seen in Table 4.

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Table 4. R/C Ratio Values for the Palm Sugar Processing Business in Wansugi Village, Kabangka District, Muna Regency in 2024

Description	Average
Revenue (IDR)	1.445.000
Total Costs (IDR)	88.023
R/C Ratio	1,12

Based on Table 4, it can be seen that the average revenue of the palm sugar processing business is Rp 1,445,000, the average total cost incurred by the palm sugar processing business is Rp 88,023, and the average R/C Ratio of the palm sugar processing business is 1.12, meaning that every Rp 1 spent will generate revenue of Rp 1.12. This indicates that the sugar palm processing business in Wansugi Village, Kabangka District, is viable for development because the R/C Ratio is greater than 1.

CONCLUSION

Based on the total monthly income from sugar processing of Rp 18,869,165 and the average monthly income of Rp 1,257,944. Meanwhile, the average income from the palm sugar processing business is Rp 1,445,000, the average total cost incurred by the palm sugar processing business is Rp 88,023, and the average R/C Ratio of the palm sugar processing business is 1.12, meaning that every Rp 1 spent will generate Rp 1.12 in revenue. This indicates that the sugar palm processing business in Wansugi Village, Kabangka District, is viable for development due to its R/C Ratio being greater than 1.

The recommendations from this study are as follows: palm sugar processors are advised to increase production frequency to boost income; local authorities are encouraged to conduct training, workshops, and provide guidance on production techniques and quality improvement for palm sugar; and future researchers are urged to refine this study by examining marketing strategies for palm sugar.

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