



Analysis of Added Value and Profitability of the Coconut Sugar Agroindustry

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Abstract

This research aims to analyze the amount of added value and level of profitability of the coconut sugar agroindustry in Kedungbenda Village, Nusawungu District, Cilacap Regency. The research method used is a survey. The sampling method uses techniques *purposive sampling* with a total sample of 70 coconut sugar producers. Analysis methods using quantitative analysis include cost analysis, Hayami Method added value analysis and profitability analysis. This research shows that coconut sugar producers in Kedungbenda Village, Nusawungu District, Cilacap Regency have the characteristics of being aged 51 - 64 years, with a primary school education with a percentage of 82.86%, length of business in the range 11 - 20 years, number of trees tapped in the range 11 - 20 trees, the added value resulting from processing sap into coconut sugar is IDR 1,237.16/kg with a value-added ratio of 73.36%. The income obtained from coconut sugar production is IDR 112,000.00/day and IDR 3,472,000.00/month. The income obtained from coconut sugar production is IDR 40,947.96/day and IDR 1,269,386.76/month. The resulting profitability value was 57.63%. Test results in *one sample t-test* The significance value is 0.00 so the coconut sugar agro-industry in Kedungbenda Village, Nusawungu District, Cilacap Regency is worth pursuing.

Keywords: Agroindustry; coconut sugar; value-added; profitability

A. Introduction

Indonesia is an agricultural country where the majority of its population works in the agricultural sector. The agricultural sector is a combination of several subsectors, one of which is the plantation sector. The plantation subsector has good prospects for development, both in terms of increasing cultivation yields and innovation in processing agro-industrial products. The plantation subsector contributes to the domestic product of around 3.94% in 2021 (Central Statistics Agency, 2022).

Coconut is an important plantation subsector commodity for Indonesia, apart from rubber, palm oil, cocoa and vanilla. Coconut is also called the Tree of Life because all parts of the coconut plant can be used by humans. This coconut commodity still has good prospects for developing its processed products. Products produced by coconut plants include young coconuts for direct consumption, old coconuts are processed into coconut oil, the stems are used as building materials, coconut flowers (mayang) produce sap which is used as raw material for making coconut sugar, coconut fibre as raw material making mats and coconut leaves can be processed into broomsticks.

Based on data from the Cilacap Central Statistics Agency (2022), Cilacap Regency has a coconut sugar production of 43,825.90 tons from a harvest area of 5,222.93 ha with a productivity level of 8,391 kg/ha. Nusawungu District has the potential to develop the coconut sugar agro-industry. The area of coconut deres in Nusawungu District is 481.90 ha with coconut sugar production of 4,455.56 tons with a coconut sugar productivity level of 9,245.81 kg/ha. Coconut sugar production from 2020 – 2023 will experience a decline.

Kedungbenda Village is a centre for coconut sugar production in Nusawungu District, Cilacap Regency. The coconut sugar that is widely produced is usually in the form of half a cup. Apart from producing coconut sugar, people in Kedungbenda Village also use coconut fibre to make doormats. Coconut sugar and doormat production activities are still carried out on a household scale. People in Kedungbenda Village tend to use their coconut plants by taking the sap that comes out of coconut flowers as raw material for coconut sugar. This is considered more profitable because sap can be taken every day so production can be done every day, compared to selling coconuts once a month.

Added value is the difference in value that occurs due to the treatment of an input produced. According to Magdalena *et al.* (2018), added value can increase product quality, increase its economic value and provide higher profits compared to selling without processing it first. The prospect of processing sap into coconut sugar is quite wide open because the demand for coconut sugar in the market is quite high. The amount of added value provided by coconut sugar can be determined using added value analysis, so that coconut sugar producers can find out whether their business provides added value or not. Added value is an increase in the value of a product because it has undergone a transformation process. Increasing added value certainly increases the welfare of business actors (Purbaningsih *et al.*, 2022). In essence, added value is the production value of raw materials and supporting materials used in the production process (Helviani *et al.*, 2022). Profitability is the ability of a company to generate profits from production activities carried out (Azmita, *et al.*, 2019). Producers in running their business have the aim of getting maximum profits by allocating the resources they have. This makes the amount of added value and profits in the coconut sugar processing business an interesting thing to study.

Based on the description above, the author is interested in researching "Analysis of Added Value and Profitability of the Coconut Sugar Agroindustry in Kedungbenda Village, Nusawungu District, Cilacap Regency". The problem that can be formulated is the amount of added value and level of profitability of processing sap into coconut sugar in the coconut sugar agro-industry in Kedungbenda Village, Nusawungu District, Cilacap Regency. This research aims to analyze the amount of added value and level of profitability of the coconut sugar agroindustry in Kedungbenda Village, Nusawungu District, Cilacap Regency. The benefits of this research for coconut sugar producers are expected to provide information to producers regarding the amount of added value and profitability of the business they run, so that they can develop their business and for the government it is hoped that the results of this research can be taken into consideration in making policies in the future, especially related to the coconut sugar agro-industry.

B. Method

The research method used is a survey. The survey method is a method used to obtain current or past data from research samples using a questionnaire as a tool for data collection (Sugiyono, 2019). The research was carried out from December 2023 – January 2024 in

Kedungbenda Village, Nusawungu District. The research location is determined randomly *purposive* (intentionally) considering that Kedungbenda Village is a coconut sugar centre with a total of 194 coconut sugar producers.

The sampling method is carried out randomly *simple random sampling*. Method *simple random sampling* namely a sampling technique carried out randomly without paying attention to the strata in the population (Sugiyono, 2019). Based on data from Kedungbenda Village, the population of coconut sugar producers was 194 people, then calculated using the Slovin formula with a degree of error of 10%, the number of samples in the study was 66, then rounded up to 70 coconut sugar producers.

The data collection methods used were interviews and observation. Interviews can be carried out using questionnaires which are used to obtain primary data needed in research. Observations were carried out to see directly the processing of sap into coconut sugar, starting from extracting the sap to packaging the coconut sugar.

The data analysis method used in this research is quantitative analysis. Data processing uses the Microsoft Excel program and the SPSS 23 program. The data analysis used in the research is as follows:

a. Production cost

Production costs are the total costs incurred by producers in processing sap into coconut sugar. The formula for production costs (Saputra, *et al.*, 2016) is explained as follows:

$$TC = FC + VC$$

Information :

TC: *Total Cost*

FC *Fixed Cost*

VC: *VVariableCost*

b. Receipts and Earnings

Revenue is the product of product price and total production. The formula for acceptance (Soehyono, *et al.*, 2014) is described as follows:

$$TR = Pq \times Q$$

Information :

TR: Total Revenue

Pq: Product price

Q: Total Production

Meanwhile, income is total revenue minus total costs. The income formula (Antarani, *et al.*, 2019) is explained as follows:

$$\pi = TR - TC$$

Information :

π : iIncome TR: Total Revenue

TC : Total Cost

c. Normality Test *Kolmogorov Smirnov*

Normality test *Kolmogorov Smirnov* used to see whether the distribution of the data collected is normally distributed or not. Normality test *Kolmogorov Smirnov* carried out with the help of SPSS.

Decision-making criteria:

- If the significance value is less than 0.05, then the data distribution is not normally distributed.
- If the significance value is more than 0.05, then the data distribution is normally distributed.

d. Value Added Analysis

Analysis of added value in this research uses the Hayami method.

The added value assessment criteria are:

1. If the amount of added value < 15%, then the added value is low,
2. The added value is 15% - 40%, then the added value is medium,

3. If the added value is > 40%, then the added value is high.
 e. Profitability Analysis

Profitability is a comparison between the profits obtained and the total costs incurred and multiplied by 100%. The formula for profitability (Noviatiningsih, *et al.*, 2018) is described as follows:

$$\text{Profitability} = \frac{\pi}{TC} \times 100\%$$

Information :

p = business profit (Rp)

TC = total cost (Rp)

- f. Test *One Sample T-test*

Test one sample t-test In this research, it is used to prove whether there is a significant difference between the profitability value obtained and the 2023 BRI bank deposit interest rate. The profitability results are compared with the 2023 BRI bank deposit interest rate of 6.00%.

Decision-making criteria:

- If the significance value is greater than 0.05, then the agro-industry is not feasible to run.
- If the significance value is less than 0.05, then the agro-industry is feasible.

C. Results and Discussion

The respondents in this study were coconut sugar producers in Kedungbenda Hamlet, Bodo Hamlet, Api-api Hamlet, Karanganyar Hamlet, Bulukuning Hamlet, Kedungbenda Village, Nusawungu District. The results of distributing questionnaires to 70 respondents obtained data on the distribution of respondents' characteristics which are described in the following table:

Table 1. Characteristics of Coconut Sugar Producer Respondents

No	Indicator	Amount	Presentation
		-----people-----	-----%-----
1	Age (years)		
	31 - 40	7	10
	41 - 50	18	25,71
	51 - 64	32	45,71
	>64	13	18,57
2	Last education		
	SD	58	82,86
	JUNIOR HIGH SCHOOL	11	15,71
	SMA	1	1,43
3	Length of Business (years)		
	<10	9	12,86
	11 - 20	27	38,57
	21 - 30	20	28,57
	>30	14	20
4	Number of Trees (fruit)		
	<10	5	7,14
	11 - 20	44	62,86
	21 - 30	18	25,71
	>30	3	4,29

Source: Processed Primary Data, 2024.

Based on Table 1, it can be seen that the age of coconut sugar producers in Kedungbenda Village, Nusawungu District, is in the age range 51 - 64 years, as many as 32 people with a percentage of 45.71% and are included in the productive age group. According to the Indonesian Ministry of Health in 2017, society can be categorized into 3 based on age groups,

namely the young age group (<15 years), the productive age group (15-64 years), and the non-productive age group (>65 years). Respondents of productive age have optimal physical abilities so that they will also support optimal work productivity. The final education level of coconut sugar producers in Kedungbenda Village, Nusawungu District, was at the elementary school level, 58 people or 82.86%, indicating the low level of education of coconut sugar respondents. This is due to a lack of awareness of the importance of education and economic limitations. According to Sriyoto and Sumantri (2016), someone with higher education will increase their knowledge and receive innovation, someone with lower education needs guidance and the introduction of appropriate technology.

The length of business for coconut sugar producers in Kedungbenda Village, Nusawungu District is in the range of 11 – 20 years as many as 27 people or 38.57%, indicating that the majority of coconut sugar producers have more than 10 years of coconut sugar production experience. The more experience a producer has in producing coconut sugar, the more skilled they will be. According to Puji (2018), business experience is one of the factors for production success, because having skills can improve product quality. The number of coconut trees tapped by coconut sugar producers in Kedungbenda Village, Nusawungu District, Cilacap Regency in the range of 11 – 20 trees was 44 people or 62.68%. The number of coconut trees tapped will influence the amount of coconut sugar production. According to Mugiono (2014), increasing the number of tapping trees will increase the amount of sap obtained as raw material for coconut sugar.

Cost Analysis

Coconut Sugar Agroindustry Production Costs

Table 2. Coconut Sugar Production Costs per Day

No	Number of Trees --fruit--	Fixed Costs	Variable Costs -----Rp-----	Total Production Costs
1	5 – 20	2.348,54	55.242	57.590,54
2	>20	4.479,85	80.579,67	85.059,52
Rate-Rata		3.414,20	67.910,84	71.052,04

Source: Research Primary Data, 2024.

Based on Table 2, it can be seen that the cost of producing coconut sugar in Kedungbenda Village, Nusawungu District is IDR 71,052.04/day, which consists of fixed costs of IDR 3,414.20/day and variable costs of IDR 67,910.84/day. These production costs are used to produce 8 kg of coconut sugar. This shows that the production costs incurred for 1 kg of coconut sugar are IDR 8,881.50/day. Production costs are obtained from the total of all fixed costs and variable costs.

Fixed costs are costs that are not influenced by the amount of production. Fixed costs incurred by coconut sugar producers are IDR 3,414.20/day. Fixed costs include depreciation of equipment, land and building taxes (Arifin, 2015). The tools used to produce coconut sugar include a stove, frying pan, sickle, sugar mmouldpokerr, jug, sieve, stirring spoon and weir. The variable costs incurred are IDR 67,910.84/day. Variable costs are costs whose amount changes according to the level of production. Variable costs are several costs whose amount is determined or influenced by business operational activities (Arifin, 2015).

Revenue from the Coconut Sugar Agroindustry

The amount of revenue obtained by coconut sugar producers can be seen in the following table:

Table 3. Coconut Sugar Agroindustry Revenue per Day

No	Information	Amount
1	Product Quantity (kg)	8
2	Product Price (Rp/kg)	14.000
3	Revenue(Rp)	112.000

Source: Processed Primary Data, 2024.

Based on Table 3, it can be seen that the average income of coconut sugar producers in Kedungbenda Village, Nusawungu District is IDR 112,000.00/day and IDR 3,472,000.00/month. This revenue is obtained from the result of multiplying the average amount of coconut sugar production of 8 kg/day with the selling price of coconut sugar of IDR 14,000.00/kg. The amount of revenue obtained by coconut sugar producers depends on the amount of production produced. According to Yuroh and Maesaroh (2018), the amount of revenue depends on the size of production and the prevailing price level.

Coconut Sugar Producer Income

The amount of income earned by coconut sugar producers can be seen in the following table:

Table 4. Coconut Sugar Agroindustry Income per Day

No	Information	Amount
1	Revenue (Rp)	112.000
2	Production Costs (Rp)	71.052,04
3	Income (Rp)	40.947,96
4	Profitability(%)	57,63

Source: Processed Primary Data, 2024.

Based on Table 4, it can be seen that the income of coconut sugar producers in Kedungbenda Village, Nusawungu District is IDR 40,947.96/day with a production volume of 8 kg, so the income per kg of coconut sugar is IDR 5,118.50. The income obtained is relatively low, this is due to the small amount of coconut sugar production and the large production costs incurred.

Added Value

Added value is the difference between the commodity that receives treatment at a certain stage and the value of the sacrifice used during the process. The amount of added value produced by coconut sugar producers can be seen in the following table:

Table 5. Added Value of Coconut Sugar Agroindustry

No	Variable	Mark
Output, Input and Price		
1	Output (Kg/production)	8
2	Raw Materials (Kg)	69,95
3	Labourr (HOK/production)	0,54
4	Conversion Factor	0,12
5	Labor Coefficient	0,008
6	Output Price (Rp/Kg)	14.000
7	Average Wages of Workers (Rp/HOK)	40.500
Income and Added Value		
8	Price of Raw Materials (Rp/Kg)	250
9	Other Input Contributions (Rp)	192,84

10		Output Value (Rp/Kg)	1.680
11	a.	Added Value (Rp/Kg)	1.237,16
	b.	Value Added Ratio (%)	73,36%
12	a.	Labor Income (Rp/Kg)	324
	b.	Labor Share (%)	26,19%
13	a.	Profit (Rp)	913,16
	b.	Profit Rate (%)	73,81%

Source: Processed Primary Data, 2024.

Based on Table 5, it can be seen that the amount of output or coconut sugar produced in one production process by coconut sugar producers in Kedungbenda Village, Nusawungu District is 8 kg with a selling price of IDR 14,000.00. The raw material used is 58 litres of sap with a sap price of IDR 250/litre. The added value is IDR 1,237.16/kg. Added value is the difference between the commodity that receives treatment at a certain stage and the value of the sacrifice used during the process. The added value ratio is 73.36%. This shows that the coconut sugar agroindustry in Kedungbenda Village, Nusawungu District, Cilacap Regency, in processing sap into coconut sugar, has high added value. According to Arum (2017), the value-added ratio is high, namely if the percentage value is >40%, the value-added ratio is medium if the percentage value is 15-40% and the value-added ratio is low if <15%.

Profitability

Profitability is the ability of a business to generate profits from the production activities carried out. Based on Table 4, it can be seen that the profitability generated by coconut sugar producers in Kedungbenda Village, Nusawungu District is 57.63%. Profitability results from the division between the profits generated amounting to IDR 40,947.96/day and the production costs incurred amounting to IDR 71,052.04/day. The size of the profitability value is influenced by two factors, namely profits and production costs incurred in the production process. This profitability value provides an overview of the level of effectiveness of managing a business run by a person. The greater the profitability value, the better the level of effectiveness of company management, so that the welfare of business owners will be better (Zakia, 2019).

Test results *One sample t-test* shows a significance value of $0.00 < 0.05$, meaning that there is a difference between the level of profitability and the 2023 BRI bank deposit interest rate. The deposit interest rate used is the BRI bank deposit interest rate of 6%. It can be concluded that the coconut sugar agro-industry in Kedungbenda Village, Nusawungu District is feasible to run.

D. Conclusion

Based on research regarding the analysis of added value and profitability of the coconut sugar agro-industry in Kedungbenda Village, Nusawungu District, Cilacap Regency, the following conclusions were obtained. The added value resulting from processing sap into coconut sugar was IDR 1,237.16/kg and the profitability value obtained from coconut sugar production was IDR 1,237.16/kg. 57.63%.

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