

## ANALYSIS OF THE ADDED VALUE OF THE PALM SUGAR IN RAMBAH DISTRICT ROKAN HULU REGENCY

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### ABSTRACT

Sugar palm is a type of plant that has high economic value. Almost all parts of the palm plant can be utilized, from the roots to the male flower bunches that can produce sap. The sap obtained from sugar palm is processed into palm sugar. The palm sugar processing business aims to obtain added value. The purpose of this study was to analyze the added value of palm sugar in the Rambah District, Rokan Hulu Regency. This research was conducted for one month, namely in August 2021. The method used was a survey method, sampling was carried out using the census method as many as 16 craftsmen in Rambah District, Rokan Hulu Regency. Analysis of the data used is the Hayami Method. The results showed that the added value ratio obtained from palm sugar was 30.20% (medium ratio) which means that palm sugar still has added value so it is feasible to be developed. The craftsmen should continue to maintain the palm sugar agro-industry by continuing to cultivate palm plants, increase the amount of production, and maintain the quality of palm sugar. The government should provide assistance to craftsmen to develop their businesses by providing assistance in the form of capital and appropriate technology.

**Keywords:** Added Value; Agroindustry; Sugar Palm

### INTRODUCTION

Sugar palm is one of the plantation commodities that has become an economic choice for the people of Rokan Hulu, one of which is in Rambah District. There are 3 sub-districts that are centers of palm sugar production in Rokan Hulu, namely Rambah Samo District, Rambah District, and Bangun Purba District. Each sub-district has a different area of land and sugar palm production. Rambah Samo District with an area of 4 hectares produces 4.68 tons of sugar palm production, Rambah District with 4.12 hectares of land area produces 6.32 tons of sugar palm production, and Bangun Purba District with a land area of 4 hectares produces sugar palm production of 4.62 tons (Becker *et al.*, 2018).

According to (Azhar *et al.*, 2020) sugar palm is one of the potential commodities to be developed because all parts of the sugar palm can be processed into processed food and non-food products, so that they can obtain economic value. Processed products produced from one part of the palm (sap) are sugar, beverages (tuak), and bioethanol. Processed products produced from the palm fruit part, namely kolang-kaling, the stem produces flour.

The development of the oil palm plantation sector in Rokan Hulu Regency which is increasing in size every year causes a reduction in the area of sugar palm plantations. This can be proven by BPS data from Rokan Hulu Regency. In 2010 the area of sugar palm plantations amounted to 29.61 hectares decreased to 12 hectares in 2016. The decline in the area of sugar palm plantations occurred due to the number

of sugar palm plants that were unable to produce due to the age of the plants getting older so that the sugar palm plants died, as well as frequent planting of palm trees. continuous tapping and the conversion of land functions to other plantation crops (Rasihen, 2017).

Even so, the local government is still trying to make the sugar palm plants not just disappear. To preserve sugar palm plants, the government provides assistance in the form of seeds to be cultivated, although only 30% of them survive (Rasihen, 2017). This can be proven by data from BPS Rokan Hulu in 2016 and 2017. The area of sugar palm plantations in 2016 which was 12 hectares increased to 12.12 hectares in 2017. The reason why palm is still cultivated is because the processed palm products in the form of palm sap and palm sugar have become a local wisdom that is passed down from the ancestors of the people of Rambah District, Rokan Hulu Regency.

Agroindustry is an activity to process products from raw products into finished products. This activity can provide a higher economic value for a product, as is the case with the people of Rambah District who process palm sap into palm sugar. Agro-industry activities carried out in Rambah District, Rokan Hulu Regency are still classified as household-scale agro-industry and still use traditional equipment. Household-scale agro-industry is an agro-industry that has limited capital and uses less than 5 workers (Lestari, 2019).

Palm sugar has been widely known by the public because of its distinctive aroma, taste, and color so it is favored by many consumers. In addition, palm sugar is also often mixed by the community as a sweetener in processed foods and beverages (Gunawan *et al.*, 2018). This palm sugar is one of the main sources of income for palm producers who do not have rubber and oil palm plantations, as well as a side income for craftsmen who have rubber and oil palm plantations. Palm craftsmen who process palm sap into sugar mostly have their palm plants and a small number of palm craftsmen do not have palm plants, but are given the trust by the palm plant owners to process sap then the results of the income earned will be divided between the owners and craftsmen with the system The division of 6 days of sap yields is given to craftsmen and 1 day to the owners of palm plants.

According to (Julita, 2016) added value is the added value of a commodity because it undergoes a processing process. Palm craftsmen in Rambah District, Rokan Hulu Regency still use simple tools in processing palm sap into palm sugar and palm sugar. With this processing, of course, will provide added value to the palm sap, because the costs are incurred so that new prices and new profits are formed. The purpose of this palm sugar processing is to increase the added value of palm sugar.

Value added is the basic concept of the difference between the input value output. The way to get added value is by reducing the output value with the price of raw materials and other input contributions (Aji *et al.*, 2018). The greater the added value obtained, the better the overall industrial process. Based on the description described above, this study aims to analyze the added value of palm sugar in Rambah District, Rokan Hulu Regency.

## METHOD

Selection of this location was done purposively, with the consideration that Rambah District is one of the centers of sugar palm production in Rokan Hulu Regency. The time of the study was carried out for one month, namely in August 2021.

The research method used was the survey method. Sampling of craftsmen is done by means of a census. The types of data used in this study are primary and secondary data. Data collection techniques used are observation, interviews, literature study, and documentation. Analysis of the data used is descriptive quantitative analysis.

Methods Data analysis was used to analyze the added value of sugar palm agroindustry in Rambah District, Rokan Hulu Regency using the Hayami method as in Table 1.

**Table 1.** Calculation of Value Added Using the Hayami Method

No	Variable	Value
Output, Input, and Price		
1	Output (Kg/Month)	A
2	Raw Material (Kg/Month)	B
3	Labor (HOK/Month)	C
4	Conversion Factor (Kg)	$D = A / B$
5	Coefficient of Labor (HOK/Kg)	$E = C / B$
6	Price of <i>output</i> (Rp/Kg)	F
Revenue and Profits		
7	Labor wages (Rp/HOK)	G
8	Price of raw materials (Rp/Kg)	H
9	Contribution <i>inputs</i> (Rp/Kg)	I
10	value <i>Output</i> (Rp)	$J = D \times F$
11	a. Value added (Rp/Kg)	$K = J \times H \times I$
	b. Value added ratio (%)	$L = (K / J) \times 100\%$
12	a. Labor income (Rp/Kg)	$M = E \times G$
	b. Labor share (%)	$N = (M / K) \times 100\%$
13	a. Processing Profit (Rp/Kg)	$O = K \times M$
	b. Profit rate (%)	$P = (O / K) \times 100\%$
14	Margin (Rp/Kg)	$Q = J \times H$
	a. Direct labor income (%)	$R = (M / Q) \times 100\%$
	b. Contribution <i>inputs</i> (%)	$S = (I / Q) \times 100\%$
	c. Profit (%)	$T = (O / Q) \times 100\%$

Source: Baihaqi *et al.*, (2020)

The value added criteria according to (Maulana *et al.*, 2018) namely:

- If the ratio value is <15%, then the added value is low
- If the ratio value is between 15- 40%, then the added value is moderate.
- If the ratio value is > 40%, then the ratio value is high.

## RESULTS AND DISCUSSION

### Overview of Palm Sugar Agroindustry Palm

According to (Tarmizi, 2017) palm sugar agroindustry is one of the businesses that are a source of community income. This sugar palm agro-industry is carried out from generation to generation by utilizing palm sap that grows on community land. Sugar palm plants cannot produce sap after producing approximately 10 years. This is due to the frequent conduct of continuous tapping so that the availability of sap is decreasing.

The palm sugar agro-industry in Rambah District is a small household business because the processing is only done at home and uses family labor. Household-scale agro-industry is an agro-industry that has limited capital and uses less than 5 workers (Lestari, 2019). This business includes the main livelihood for 15 craftsmen and a side income for 1 sugar palm craftsman in the Rambah District. The potential of natural

resources in the form of an area that has the widest area of sugar palm plantations in Rokan Hulu makes it one of the supports for the ongoing activities of this palm sugar agro-industry in Rambah District. Palm sugar has become a hereditary heritage from ancestors and has become local wisdom for the people of Rambah District.

The early history of this palm sugar agro-industry is the belief that this palm sugar agro-industry will continue to run and will not become extinct and the desire to utilize available natural resources for the welfare of life. Until now, palm sugar which was originally only consumed alone has now become one of the typical souvenirs of Rokan Hulu. In terms of marketing, it is no longer a problem for sugar palm craftsmen, because of the large number of requests both within the city and from outside the city. It's just that the available raw materials are decreasing due to continuous tapping, so the palm trees cannot produce sap again after 8-10 years of production (Rukmana, 2019).

Efforts made by palm craftsmen in developing and maintaining palm sugar are by continuing to cultivate palm plants. This cultivation activity is expected to increase the production of the sap obtained, so that if the sap is obtained more and more, of course, palm sugar production can be increased, besides that the quality of the palm sugar must be maintained. Apart from artisans, the government also has a very important role in the development of the palm sugar agro-industry, namely by providing capital assistance, because to develop a business requires larger capital.

The number of palm trees owned by craftsmen varies, the palm trees that are currently in production is palm trees that grow wild and several trees are cultivated. The number of palm trees owned by palm craftsmen is 1-5 palm trees with the number of craftsmen 9 people (56.25%). Meanwhile, the highest number of palm trees, namely >11 trees, was only owned by 2 craftsmen (12.5%).

### **Craftsman Characteristics**

Research respondents totaled 16 palm sugar craftsmen, dominated by the age group 28-60 years categorized as "productive age" (Ukkas, 2017). However, based on the results of research, craftsmen aged >60 years are quite good, both in terms of spirit and physically who are still able to drag and climb high palm trees even reaching 15 meters. In addition, craftsmen who are at this age are better known by the public because of their experience in processing palm sugar.

The last education is dominated by craftsmen who graduated from Elementary School (SD), which means that craftsmen in the Rambah District have a low level of education. Sugar palm craftsmen in the Rambah District still carry out traditional agro-industry activities by utilizing simple tools such as the use of sugar cooking utensils in the form of iron cauldrons. If the craftsman has higher education, it will allow the craftsman to renew the processing for a better one by utilizing modern tools to save time.

The number of dependents of craftsmen on average is 3-4 people. The greater the number of a person's dependents, the greater the cost of needs that must be incurred to meet daily needs (Adamy, 2016). In Rambah District, family dependents also act as palm sugar processors, one of which plays a role in the palm sugar cooking process.

There are 16 craftsmen, only 2 craftsmen whose business experience is >10 years. This means that 87.50% are craftsmen whose business experience is <10 years. Craftsmen in Rambah District already have skills in processing palm sugar seen from the quality of the products produced and their long experience. In addition, processing palm sugar is the main job of craftsmen so they are accustomed to doing palm processing activities starting from tapping sap, processing sap into palm sugar to packaging.

The processing of palm sugar by craftsmen in Rambah District is still traditional because the technology is not sufficient so that the processing takes quite a long time, namely 4-5 hours. in this case the craftsmen really need help from the government in

the form of technology that can facilitate the craftsmen in palm sugar processing activities.

### Palm Sugar Added Value

Added is the basic concept of the difference between the input value and the output value. The greater the added value obtained, the better an industrial process as a whole. The main components for calculating added value are raw materials, labor inputs, and other contribution inputs (Aji *et al.*, 2018).

Added value is generated from the production process resulting from agro-industry activities. Usually, this added value is obtained from the result of reducing the value of the product with the price of raw materials and other inputs. So the added value is not a net added value because it does not include benefits for workers. The value added ratio itself is the ratio between the added value and the output value (Arianti, 2019)

Calculation of added value can be done using the Hayami method. With this Hayami method, it can be seen what the value of output is against the main raw material unit used. In addition, it can be seen the distribution of added value to labor and remuneration or benefits for owners of production factors (Prasetiyo *et al.*, 2018).

**Tabel 2.** Calculation of Palm Sugar Added Value Using the Hayami Method

No.	Variable	Value
	Output, Input, and Price	
1	Output (Kilogram/Month)	143.31
2	Raw Material (Kilogram/Month)	740.31
3	Labor (HOK/Month)	0,56
4	Conversion Factor (Kilogram)	00.19
5	Coefficient of Labor (HOK/Kilogram)	00.02
6	Price of output (IDR/Kilogram)	23,397.50
	Revenue and Profits	
7	Labor wages (IDR/HOK)	40,000
8	Price of raw materials (IDR/Kilogram)	2,912.62
9	Contribution inputs (IDR/Kilogram)	248.80
10	value Output (IDR)	4,529
11	a. Value added (IDR/Kilogram)	1.368
	b. Value added ratio (%)	30.20
12	a. Labor income (IDR/Kilogram)	695
	b. Labor share (%)	50.84
13	a. Processing Profit (IDR/Kilogram)	673
	b. Profit rate (%)	49.16
14	Margin (Rp/Kg)	1.617
	a. Direct labor income (%)	43.01
	b. Contribution inputs (%)	15.39
	c. Profit (%)	41.60

Source: Primary Data, Processed (2021)

Table 2 shows the average amount of production produced by palm sugar for one month is 143.31 Kilograms/by processing sap as much as 740.31 Liters with a density of sap 1.03 Kilograms/m<sup>3</sup> so that the total juice used is 740.31 Kg with a conversion factor of 0.19. The conversion factor is obtained from the quotient between production and the amount of raw materials used. This shows that each processing of 1 Kilograms of sap will produce 0.19 Kg of palm sugar.



The value of the product produced by palm sugar is IDR 4,529 obtained from the product of the conversion factor with the product price, namely IDR 23,397.50/Kilograms. The value of this product shows the value of the product produced from processing 1 Kg of raw materials. The contribution of other inputs of palm sugar is IDR. 248.80/Kilograms was obtained from the result of dividing the total cost of other inputs by the amount of raw materials used for the product. Other inputs used for palm sugar consist of Raru, Firewood, Banana leaves, and Matches.

The added value obtained from 1 Kilograms of palm sugar is IDR. 1.368/Kilograms. This added value is obtained from the result of reducing the value of the product with the price of raw materials (sap) and the contribution of other inputs. The added value ratio obtained is 30.20%, which means that the processing of sap into 1 Kilograms of palm sugar provides an added value of 30.20%.

Wages received by direct labor to process 1 Kilograms of palm sap are called labor income. The labor income from processing 1 Kilograms of sap to 0.19 Kilograms of palm sugar is IDR. 695/Kilograms. This means that for every 1 Kilograms of palm sap that is processed into palm sugar, a labor cost of IDR. 695. Labor income is obtained from the product of the coefficient of labor and labor wages. The labor share is the percentage of direct labor income from the added value obtained. The percentage of the share of labor to the added value of palm sugar is 50.84% which is obtained from the profit sharing of labor with added value.

The profit obtained by palm sugar craftsmen is IDR. 673 Kilograms This means that for every 1 kilograms of palm sugar, a profit of IDR. 673 which is obtained from the reduction of value added with labor income. With a profit rate of 49.16% obtained from profit sharing with added-value. This profit shows the total profit obtained by the craftsmen from each Palm Sugar processing. The difference between the value of the product and the price of raw materials (sap) is called the margin. Processing 1 Kilograms of palm sugar obtained a margin of IDR. 1,617 which are distributed for each labor factor, namely labor income which is the percentage of direct labor income from the added value obtained by 43.01%, the contribution of other inputs which is a percentage of the results for the contribution of other inputs, and a margin of 15.39 %. The profit obtained from palm sugar is 41.60%.

From the calculation of the added value of Palm Sugar using the Hayami Method Formula, it can be explained that the ratio value obtained from palm sugar is included in the medium ratio category, namely 30.20%, which means that the palm sugar agro-industry business is still gaining added value so it is feasible to be developed (Maulana *et al.*, 2018).

## CONCLUSION

The added value obtained from palm sugar is IDR. 1.368/Kilograms with a ratio value of 30.20% (medium ratio). Based on the value of the palm sugar ratio, it means that the palm sugar business is feasible to run. The craftsmen must continue to maintain the palm sugar agro-industry by continuing to cultivate palm sugar, increasing palm sugar production and maintaining the quality of palm sugar. The government should pay more attention to the needs of craftsmen in developing the palm sugar agro-industry by providing assistance in the form of capital to develop businesses, as well as technology to facilitate craftsmen in processing palm sugar.

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