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An empirical investigation on Cost Benefit Analysis of Coconut Oil Processing Units in Karnataka with special reference to Uttara Kannada District

Indresh M L
Research Scholar
SJB research center, Affiliated to Mysore University
Department of commerce

Dr. V Babu
Professor and Research Guide
SJB research center, Affiliated to Mysore University
Department of commerce

Abstract: In the state of Karnataka, coconut farming is gradually expanding. Large populations are employed directly or indirectly by the coconut crop. From an economic standpoint, the coconut tree's entire body is useful. For instance, the coconut tree produces neera, tender coconut, dried coconut, copra, leaves, and a trunk that can be used for various things. Because of these factors, the majority of Indians regard the coconut tree as a "Kalpavruksha" or "tree of life," according to Borkar Prema (2015). About 90% of the coconut acreage is grown in the southern states of Kerala, Karnataka, Tamil Nadu, and Andhra Pradesh. Coconut oil (also known as coconut butter) is a type of plant oil that is made from the fruit, flesh, and milk of the coconut palm. It is employed in industrial settings and as culinary oil. Due to its high quantities of saturated fat, various health experts advise against consuming too much coconut oil. Certain saturated fats are abundant in coconut oil. Compared to the majority of other dietary fats, these fats have different effects on the body. The fatty acids in coconut oil can help your body burn fat while also giving your body and brain rapid energy. They increase your blood's HDL (good) cholesterol as well, which may help lower your risk of developing heart disease. In the consumer goods sector, edible oils are a big topic right now. One of the well-known oils, coconut oil, is well-known throughout the world due to its use in fragrances and other industries. They come in two main varieties: refined and virgin. Due to customer preferences for health and wellness, the market for coconut oil is poised for rapid rise. In countries like Kerala and Goa, coconut oil is used in domestic cooking. Additionally, it is employed in the production of soap, hair oils, and bakeries. Only 35% of the total yield is used for the manufacturing of copra and coconut oil. Vegetable oil is the most imported commodity in the world, with India importing close to 60% of its 16–17 million tonne annual consumption.The added value of the product may rise with the development of the coconut agro-industry. To determine how much the additional value of processed coconut products is, value-added analysis must be done. To determine how much it costs to produce 1 unit or 1 kg of a product, basic costs must also be calculated. This study helps coconut producers make better decisions by providing them with information that will boost their income. In this study, value-added analysis was conducted using the Hayami technique, and the cost of processing was calculated using labour expenses, fixed costs, variable costs, working hours, and production capacity. The study was carried out in Uttara Kannada District. Based on prior study, it was decided to produce coconut oil, coconut sugar, and shell charcoal as potential products. Honnavar, Kumta, Bhatkal were the talukas were data was collected. The findings revealed that the added value of each product was IDR 1,037.79 per kg for coconut sugar, IDR 760 per kg for coconut oil, and IDR 249.98 per kg for shell charcoal. According to the calculations used to determine the cost of processing, the production cost of processing charcoal is IDR 472.92 per kg, that of processing coconut oil is IDR 14,939.13 per kg, and that of processing coconut sugar is IDR 8,535.07 per kg. The business is quite profitable because the cost of producing the three products is much lower than the selling price.

Keywords: Cost Benefit Analysis, Coconut Oil Processing Units, edible oils, fixed costs, variable costs

Introduction:

The agro-industry based on coconuts has the potential to grow. This can add value and boost smallholder plantation efficiency, especially if it is developed in an integrated manner. Agro-industry that processes coconuts using a variety of raw materials, including coconut meat, water, saps, and by-products such sticks, shells, and coir, is known as an integrated coconut agro-industry. Uttara Kannada district is considered as a

sampling area for research due to the availability of coconut as main plantation crop. Population, plantation area, production, and the number of coconut growers are used as selection factors. Coconut oil, coconut sugar, and charcoal made from coconut shells are some of the potential processed goods created in Uttara Kannada district. The choice of product is made based on a number of factors, including the availability of raw materials, employment, technology employed, added value of the product, impact on the environment, market opportunities, product quality, distribution, and governmental policy. Knowing the added value of each processed product is essential for the successful development of an agricultural sector based on coconuts. Finding the additional value of a processed food product requires doing a value-added analysis. Capital, labor, human resources, and management considerations are all aspects that affect added value analysis. Numerous studies on the added value of agricultural products that have undergone processing, such as chocolate, mango dodol, fruit syrup, and sago, have been conducted. In contrast, analyses of the added value of products made from coconut, such as copra, brown sugar, nata de coco, and VCO, have also been conducted. Some of these studies highlight the significance of determining how much value is added from a raw material during processing by analysing the added value to a processed good. In the Caribbean, where it is frequently farmed, the coconut palm (Cocos nucifera) performs a variety of functions. Food security is significantly aided by small-scale manufacture of goods made from coconut palms. The coconut business is a significant employer and source of income in rural areas on an industrial scale. A number of items made from coconuts are consumed both locally and globally. These include, among others, copra, fresh green and dried nuts, coconut oil, and coconut water. While some coconut oil is used in food, the majority is used in the oleo-chemical sector. It is also employed in the cooking of meals. The shell is also used to make charcoal, various fibers, and other as-yet-uncommercialized goods. There is a chance of supplying both the domestic and international markets in the USA, Canada, and the European Union, which are important markets for coconut oil and other coconut products. The most notable of them is the alleged negative impact on human nutrition and health, yet research, such that done by Spade and Dietchy (1988), has demonstrated that coconut oil inhibits the development of hepatic cholesterol esters. Additionally, the lauric acid in coconut oil produces the immune-boosting, disease-fighting fatty acid monolaurin. Packers continue to have a significant issue with regard to the bottling and storage of coconut water for increased shelf life and greater marketability. Research and development might also boost the productivity and financial success of coconut destined for the bottled water industry or coconut destined for other applications like oils or fibers.

The increased number of items that producers may provide consumers is demonstrated by a product's added value. This might be viewed as a unique quality that coconut artisans created to boost the value of coconut goods. It is crucial to increase the value of coconut products since doing so encourages consumers to buy them and boosts the income of coconut artisans. Using the Hayami method, the added value from processing a coconut product can be exploited. Knowing value-added, output value, and productivity are benefits of adding value analysis utilizing the Hayami technique. Additionally, it has the ability to calculate the compensation for producers' factor owners. Hayami, which is based on the added value principle, can be used for subsystems outside of processing, such marketing initiatives. Calculating processing expenses is necessary in addition to determining the value added to the product. This is required to educate the artisans who work with coconuts of the costs involved in the processing. The quantity of fixed costs, the amount of variable costs, and the processing machinery's capability all affect the basic processing cost. With respect to fixed costs, production volume has no bearing on whether they rise or fall. Fixed costs are expenses that coconut artisans must cover regardless of certain business actions. The cost of capital interest and depreciation charges are typically the fixed costs that coconut craftspeople must cover when processing coconut. Costs of capital interest are incurred when funds are utilised to finance the creation of long-term assets by artisans working with coconuts. When an asset's appropriate accumulated depreciation value has been subtracted from it, depreciation expenses are what remain.

Costs that fluctuate in direct relation to industrial output are known as variable costs. Depending on the company's production volume, variable costs rise or fall. Variable costs rise when output rises and fall as production of coconuts falls. Raw material costs, labour expenses, and added material prices are all variables in the cost of processing coconuts. In Uttara Kannada, the majority of coconut growers prefer to sell their harvest unprocessed rather than turning it into other goods. This is brought on by a lack of knowledge regarding the additional value of the product as well as the fundamental cost involved in manufacturing each processed good. As a result, the cost of processing coconut oil, coconut sugar, and shell charcoal products in the Uttara Kannada district was calculated as part of this study's examination of value-added. This study helps coconut producers make better decisions by providing them with information that will boost their income.

Materials and Methods used for the purpose of study:

The district of Uttara Kannada was considered as the area of study. Three talukas namely Honnavar, Kumta, and Bhatkal were the locations where data were collected.The choice of product is also based on prior

study, which demonstrates that coconut oil, coconut sugar, and shell charcoal are potential new products. The Hayami method of data processing for value-added analysis was used. In order to calculate added value, Hayami created the Hayami technique in 1987 by fusing processing added value with marketing added value. Table 1 contains the model for the Hayami technique.

Table I Templates for the Hayami Method

Sl.No	Variable	Notation
	Output and Input	
01	Production (Kg/Day)	A
02	Raw Material (Kg/Day)	B
03	Labour (NWH/Day)	C
04	Conversion Factor	D =A/B
05	Co-efficient of Labour	E = C/B
06	Average Product Price (IDR/Kg)	F
07	Average Wage (IDR/NWH)	G
	Income and Profit	
08	Cost of Raw Material (IDR/Kg)	H
09	Contribution of additional input (IDR/Kg)	I
10	The value of product (IDR/Kg)	J = D*F
11	a. Value added (IDR/Kg)	K = J-H-I
	b. Ratio of value added	L=K/J*100%
12	a. Labour salary (IDR/Kg)	M=E*G
	b. Labour share	N=M/K*100%
13	a. Labor salary (IDR/Kg)	O=K-M
	b. Profit Level	P=O/K*100%
	Share of the owner of production factor	
14	Margin (IDR/kg)	Q=J-H
	a. Owner's income	R=M/Q*100%
	b. Contribution of Additional Input	S=I/Q*100%
	c. Profit of owner	T=O/Q*100%

Calculation of the cost of processing using the formula is as follows:

$$BP = \frac{\frac{BT + BTT}{n}}{KP}$$

Where,
BP = Basic cost of processing (IDR/Kg)
BT = Fixed cost of processing (IDR/Year)
BTT = Variable cost of processing (IDR/Year)
n = Number of work hours per year
KP = Processing Capacity (Kg/Hour)

The price required to generate one unit of output is known as the basic cost (production cost). The cost of creating one kg of processed coconut goods is the main expense in their manufacture. Basic costs are typically thought of as expenses made per product unit. Fixed costs are expenses whose total amount never fluctuates and are unaffected by fluctuations in the volume of, or intensity of, an activity. Changes in activity volume or capacity are inversely correlated with changes in fixed costs per unit. The fixed costs per unit are lower the more activity there is. The fixed costs per unit are higher the lower the degree of activity. Fixed costs can be divided into two categories in terms of cost behavior: committed fixed costs and discretionary fixed costs. Costs that change proportionally with the volume of an activity are considered variable costs. The overall variable expenses will increase proportionately as the volume of activities or activities increases. Total variable expenses decrease proportionally as activity volume decreases.

Results and Discussion:

Value-added analysis and processing cost calculations are based on information about fixed costs, variable costs, work capacity, labor expenses, and other factors. Table 2 contains the data required for the analysis. As can be observed from Table 2, the average fixed cost for processing coconut oil is IDR 881,355

annually, while the hourly variable costs range from IDR 4,568.75 to IDR 10,512.5. The average annual fixed cost for processing coconut sugar is IDR 1,082,355, while the average hourly variable cost is IDR 9,858.38. The average variable cost for processing charcoal is IDR 13,500 per hour, while the fixed cost ranges from IDR 699,750 to IDR 1,119,600 per year.

Table below showing data processing of coconut commodities in each taluk

Sl.No	Description	Honnavar	Kumta	Bhatkal
	Coconut Oil			
01	Fixed Cost (IDR/Year)	8,81,353	8,81,353	8,81,353
02	Variable Cost (IDR/hour)	4,568.75	10,512.5	5,900
03	Raw material (Kg)	42.5	144.5	34
04	Production (Kg)	3.5	12	3
05	Raw material price (IDR/Kg)	529.41	529.41	529.41
	Product selling price (IDR/Kg)	17,000	17,000	17,000
	No of work hour (hour/year)	384	1,344	264
	Processing capacity (Kg/Hr)	0.438	0.857	0.375
	Coconut Sugar			
	Fixed cost (IDR/Year	1,082,355	1,082,355	1,082,355
	Variable Cost (IDR/Hr)	9,859.38	9,859.38	9,859.38
	Raw Material Price (IDR/kg)	100	75	100
	Production (kg)	10	9	10
	Product Selling Price (IDR/kg)	16,000	16,000	16,000
	Number of Work Hour (hour/year)	2,400	1,920	2,880
	Processing Capacity (kg/hour)	1.250	1.125	1.250
	Charcoal			
	Fixed cost (IDR/Year	8,39,700	6,99,750	1,11,960
	Variable Cost (IDR/Hr)	13,500	13,500	13,500
	Raw Material Price (IDR/kg)	600	500	800
	Production (kg)	150	125	200
	Product Selling Price (IDR/kg)	5,000	5,000	5,000
	Number of Work Hour (hour/year)	600	600	600
	Processing Capacity (kg/hour)	30	25	50

Each district produces a varied amount of charcoal, coconut sugar, and coconut oil. The varied quantities of raw materials used are to blame for this. The average weight of coconut oil produced is 6.17 kg, the average weight of coconut sugar produced is 9.33 kg, and the average weight of charcoal produced is 158.33 kg. With an average of 1.67 kg per hour, the processing capacity for coconut oil ranges from 0.375 to 0.857 kg per hour. Coconut sugar can be processed at an average rate of 1.25 kilogram per hour whereas charcoal can be processed at an average rate of 31.67 kg per hour. The largest quantity of output that may be created in a given length of time is referred to as processing capacity. The quantity of labor, the skill and knowledge of the labor, the number of machines and tools utilized, machine maintenance, the availability of raw materials, and work productivity are all elements that might affect production capacity.

A. Value added analysis:

The information in Table 2 above is utilized to determine the cost of processing and conduct value-added analysis. Table 3 provides an analysis of value addition on processed coconut products. According to Hayami, added value refers to the value that a good gains as a result of processing, moving, or storing it during production. The Hayami method is an analytical technique used to ascertain the added value of coconut processing. To calculate the value added that results from processing coconut into coconut oil, coconut sugar, and charcoal, value-added calculations are used in the study area.

Table 3 below showing data processing of coconut commodities in each talukas of Uttara Kannada District

Sl.No	Description	Honnavar	Kumta	Bhatkal
	Output and Input			
01	Production (Kg/day)	6.17	9.67	158.33
02	Raw material (Kg/day)	73.67	91.67	633.33
03	Labour (NWH/day)	1	1	1

04	Conversion factor	0.0838	0.1055	0.2499
05	Co-efficient of labor	0.0136	0.0109	0.0016
06	Average product price (IDR/Kg)	17,000	16,000	5,000
07	Average wage (IDR/NWH)	47,700	63,875	67,500
	Income and Profit			
08	Cost of raw material (IDR/kg)	529.41	500	1,000
09	Contribution of additional input (IDR/Kg)	134. 37	150	0
10	The value of product (IDR/kg)	1,423.78	1,687.79	1,249.98
11	a. Value added (IDR/Kg)	760	1,037.79	249.98
	b. Ratio of value added	53%	61%	20%
12	a. Labour Salary (IDR/Kg)	647.48	696.79	106.58
	b. Labour share	85%	67%	43%
13	a. Profit (IDR/Kg)	112.52	341.00	143.40
	b. Profit level	15%	33%	57%
	Share of the owner of production factor			
14	Margin (IDR/Kg)	894.37	1,187.79	249.98
	a. Labor's Income	72%	59%	43%
	b. Contribution of additional input	15%	13%	0%
	c. Profit of owner	13%	29%	57%

1. Output and Input:

Table 3 shows that 6.17 kg of coconut oil and 9.67 kg of coconut sugar were produced daily from 73, 67 kg of raw material, 91, 67 kg of raw material, and 633, 33 kg of raw material, respectively. Every kilogram of coconut produces 0.0838 kg of coconut oil, according to the calculation, which yields a conversion factor of 0.0838 for coconut to coconut oil. Every kilogram of coconut yields 0.1055 kg of coconut sugar because the coconut conversion factor is equal to 0.1055. Every kilogram of coconut creates 0.2499 kg of charcoal because the conversion factor from coconut to charcoal is equal to 0.2499. Divide the output amount by the total number of inputs (production/raw materials) to get the conversion factor. The ratio of labor to the raw materials utilized in production is known as the coefficient of labor. According to the calculations, the coefficients for processing coconut sugar are 0.0109, for processing coconut oil are 0.0136, and for processing charcoal are 0,0016. Accordingly, it took 136 workers to turn 10,000 kg of coconuts into coconut oil, 109 workers to turn 10,000 kilograms of coconuts into coconut sugar, and 16 workers to turn 10,000 kg of coconuts into charcoal. Due to the stages of processing and continued use of manual technology and human force, converting coconuts into coconut oil and coconut sugar requires more labor than treating them with charcoal.

2. Income and profit:

According to Table 3, the price of raw coconut for making coconut oil is IDR 529.41 per kg. The contribution of additional input to the processing of coconut oil is IDR 134.37 per kg, which means that for every kilogram of coconut processed, additional input contribution costs of IDR 134.37 are required. These costs are determined by dividing the sum of all contributions from additional inputs by the quantity of raw material used. The amount of auxiliary supplies and equipment used is the additional input contribution in question. The price per kilogram of the raw material used to make coconut sugar is IDR 500. The cost of an additional input for processing coconut oil is IDR 150 per kg, which means that for every kilogram of sap processed, an additional input is required. This cost is determined by dividing the total cost of all other inputs by the weight of the raw material used. Charcoal processing raw materials cost IDR 1,000 per kilogram. Since no additional input is required for the processing of charcoal, there are no expenses associated with the contribution of other inputs. Table 3's value-added ratio of 53% indicates that the added value for coconut oil is IDR 760 per kg. This finding is higher than the added value of coconut oil in other areas, such as the talukas of July, Honnavar (added value per kg of 550), and Kumta (added value per kg of 173). It is clear that the processing of coconut oil yields a profit of IDR 112,52 per kg, or roughly 15%. A value-added ratio of 61% was used to calculate the additional value of processing coconut sugar in this study, which was IDR 1,037.79 per kg. Additionally, this is more expensive than in other areas, with Honnavar charging IDR 705.9 for a liter of coconut sugar. It is clear that the processing of coconut sugar yields a profit of IDR 341 per kg, or around 33%. The additional value of processing coconut shell charcoal, which accounts for 20% of the total value added, is IDR 249.98 per kg. The added value of shell charcoal in July Sub-District, Kumta, which is IDR 560 per kg, is less than this finding. It shows that the processing of shell charcoal yields a profit of roughly IDR 143.4 per kg, or about 57% of the total profit. While the value-added ratio in the production of coconut sugar and oil is categorized as high, the ratio in the production of coconut shell charcoal is categorized as medium. This is consistent with Azis' research, which claims that the value-added ratio between 15 and 40% falls into the

medium group, while the ratio above 40% is categorized as high. The value of the final product, which is significantly higher than the value of raw material inputs, is what accounts for the high value-added ratio in the processing of coconut oil and coconut sugar. This results from the contribution of other inputs, which raises the added value. However, because no other inputs were used in the processing of shell charcoal, the value of the finished product did not change much from the value of the raw materials' input. Consequently, the product's added value is similarly modest. Additional procedures in the main raw material may result in the increase in added value. Additionally, the lack of processing technologies employed in processing is the reason shell charcoal has a lower value added than the other two products. The use of technology in processing has an impact on a product's added value as well. However, compared to the other two products, the processing of shell charcoal offers a more significant benefit in terms of commercial profit margins. This is due to the fact that processing coconut oil and sugar incurs substantially higher labor expenses than processing coconut shell charcoal. The processing of coconut commodities can raise the added value of the product, according to the examination of the added values of the three products. The value of the items generated can be increased through food processing. As a result, there is a need to increase the processing of coconut commodities into several derivative goods like VCO, copra, and other products. According to analysis of value-added VCO, the cost of VCO in West Aceh was approximately IDR 2,674.67 per liter. The potential of an industry to generate revenue by raising the value of commodities through the adoption of new forms is demonstrated by added value. Because byproducts like twigs, leaves, and shells can also be used, adding value to the processing of coconut goods can also lessen environmental degradation. The output value, raw material costs, and various input expenses all affect how much value is added. The ratio of labor and benefits to value-added can indicate whether a company relies heavily on capital or heavily on labor. The agro-industry, coconut oil, coconut sugar, and charcoal industries in Indragiri Hilir are still primarily labor-intensive businesses that use low-tech equipment and little money. This issue is a significant barrier to the growth of the coconut agro-business into a middle-class and contemporary industry. The result of multiplying the average wage by the labor productivity coefficient is the labor salary. Each kilogram of raw material processed results in a wage for the laborer. The labor share in this firm is 85% since the labor salary for processing one kilogram of raw coconut material into coconut oil is IDR 647.48 per kilogram. Each kilogram of raw materials processed into coconut sugar results in a labor wage of IDR 696.79, or 67% of the business's total revenue. The labor share in this business is 43% since each kilogram of raw material that is processed into charcoal has a labor wage of IDR 106.58. The scale of the workforce acquisition is not reflected in the percentage of this labor share. This graph solely shows how the labor salary portion of income compares to the business owner portion of income. The agro-industry can help pay workers' wages if the ratio of labor salary to value created (measured in percent) is high. Through chances for equal employment, this can address the issue of unemployment. The profit threshold for artisans who make coconut oil is 15%, or IDR 112.52 per kg. Craftsmen of coconut sugar make IDR 341.00 per kg in profit, or a profit margin of 33%. The profit earned by charcoal artisans is IDR 143.40 per kilogram, or 57% of their total profit. The profit margin displays the payment that artisans earn for producing charcoal, coconut sugar, and coconut oil.

3. Share of the owner of production factor:

As can be observed, the profit acquired from the difference between the values output with the price of raw materials in the processing of coconut oil is IDR 894.37 per kg, the profit obtained from the processing of coconut sugar is IDR 1,187.79 per kg, and the profit obtained from the processing of coconut sugar is IDR 249.98 per kg. The labor revenue, other input contributions, and profit effort are subsequently divided among the margin. The labor income contributed IDR 72 for every IDR 100 of its margin, making up the majority of the repayment gained in the processing of coconut oil (72%). The donation of 15% more input is the second-largest incentive. This indicates that for every IDR 100 in margin, additional input contributes IDR 15. The owner profit, which accounted for the lowest repayment at 13%, meant that the owner gave IDR 13 for every IDR 100 in margin. However, both business owners and employees work in the coconut oil sector. The labor income, which totaled 59% of the payback acquired in the processing of coconut sugar, was the largest repayment received. This implies that labor contributed IDR 59 for every IDR 100 of its margin. The owner's 29% profit is the second-largest reward. This indicates that for every 100 IDR in margin, the owner's profit contributes IDR 29. The lowest repayment came from the additional input's 13% contribution, which indicates that for every IDR 100 in margin, additional input contributed IDR 13. The owner's profit, which totaled 57% and contributed IDR 57 for every IDR 100 of the company's margin, was the source of the largest repayment in the charcoal processing industry. The income of labor, at 43%, is the second-largest reward. This indicates that for every 100 IDR in profit, labor contributes IDR 43. In the meanwhile, the company's margin is unaffected by the addition of more input. One of the profitability factors that is frequently used to assess how profitable a company is is its margin. It displays the proportion of sales that were profitable.

B. Basic cost (PRODUCTION COST) Calculation:

Coconuts are processed into coconut oil in a number of steps, including removing the coir, cracking the shell, removing the flesh, shredding, pressing, and boiling the coconut milk. The output of coconut oil produced is 6.17 kg, and the average amount of raw material utilized in the three districts for processing coconut oil is 73.67 kg per production (Table 2). 664 hours are typically worked each year producing coconut oil. The annual fixed costs, which include capital interest and depreciation, total IDR 881,358. In the three districts, the non-permanent cost of processing cooking oil is IDR 6,993.75 per hour. The processing speed is 0.557 kilogram per hour on average. Thus, the following formula can be used to determine the basic cost of manufacturing coconut oil: BP = IDR 14,939.13/Kg

As observed in Table 2, the cost of raw coconut is $529.41, whereas the cost of coconut oil is IDR17,000 per kg. The fact that the basic processing cost is less than the selling price indicates that the coconut oil processing industry is extremely lucrative. A number of steps are involved in the production of coconut sugar, including tapping the sap, filtering the sap, heating the sap, and printing the sugar. According to the information in Table 2, the average annual fixed cost of processing coconut sugar is IDR 1,082,355, and the average hourly variable cost is IDR 9,859.38. While the average processing capacity is 1,208 kg per hour, the average number of hours worked annually is 2,400 IDR. So, the following formula can be used to determine the fundamental expenses of processing coconut sugar: BP = IDR 472.92/Kg

As shown in Table 2, the cost of shell raw material is IDR 1,000 per kg, whereas the cost of shell charcoal for sale is IDR 5,000 per kg. Because the fundamental expenses of manufacturing shell charcoal are far lower than the product's selling price, the shell charcoal industry is therefore immensely profitable. The three processed products of the coconut commodity have a processing cost that is less than the selling price, according to the cost of production estimate. The expense incurred to process one unit of output is the basic processing cost. The cost incurred to manufacture 1 kg of each processed product, such as coconut oil, coconut sugar, and shell charcoal, is the key processing cost. A number of factors, including fixed costs, variable costs, and the processing capacity of each product, affect the cost of processing. Increasing processing capacity or lowering costs, both fixed and variable costs, are two ways to lower processing costs. The selling price of a product can be measured or determined using the fixed costs and variable expenses spent for a processing activity, according to Ref. Therefore, it is anticipated that the cost of processing can be decreased by reducing fixed or variable costs in order to generate a sizable profit.

Conclusion:

The processing of coconut products in the Indragiri Hilir district can, in our opinion, add value. The processing of coconut sugar has the highest added value at IDR 1,037.79 per kg, while the processing of shell charcoal has the lowest added value at IDR 249.98 per kg. The added value of refining coconut oil is IDR 760 per kilogram, meanwhile. The processing of shell charcoal yielded the lowest processing cost, which is IDR 472.92 per kg, when processing costs were calculated. The price for processing coconut oil is the highest, at IDR 14,939.13 per kg. The basic cost of producing (or processing) one kilogram of coconut sugar is IDR 8,535.07. However, the business is highly lucrative because the cost of producing the three products is much lower than the selling price. The production costs employed have a significant impact on the added value produced by the coconut agro-industry. The coconut agro-industry must efficiently use the production expenses in order to generate added value and significant profit.

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