VALUE-ADDED IN PROCESSING COCONUT INTO COPRA AT PARIGI MOUTONG REGENCY

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Abstract—Central Sulawesi is one of the regions that have the largest contribution to the Gross Regional Domestic Product (PDRB) from the agricultural sector in Sulawesi. In 2019, the plantation sub-sector contributed to a PDRB of 11.58%. Coconut is one of the plantation crops which is the leading commodity in Central Sulawesi. Processed coconut products that are cultivated include copra. Parigi Moutong Regency is one of the districts producing coconut and copra in Central Sulawesi. This study aims to determine the amount of added value obtained by farmers from processing coconut into copra in Parigi Moutong. The results showed that the added value of processing coconut into copra was IDR 844/kg of raw materials, at the level of raw material prices of IDR 1.150/kg. The added value ratio is 42%, which means that for every 100 product values, an added value of IDR 42. The value of production is higher than the value of raw materials and other inputs with a profit rate of 84%.

Keywords: *Value-Added, Coconut, Copra*

I. INTRODUCTION

Coconut plants can be a source of income for farming families, a source of foreign exchange, providing job opportunities, triggering and accelerating the growth of new economic centers, as well as driving the growth of downstream industries based on coconut oil and its derivative products in Indonesia (Barlina et al., 2022; Ignacio and Miguel, 2021). Coconut at the farmer level is still widely used in the form of granulated coconut, copra, and cooking oil which are processed using traditional tools, the main results of coconut at the farmer level are only used in the form of primary products in the form of granulated coconut, copra, and cooking oil. traditionally processed (Candraningrum et al., 2022; Ifa et al., 2022). Many coconut potentials have not been exploited due to various constraints, especially technology, capital, and uneven market absorption (Kardinasari and Devriany, 2020; Muchtar et al., 2022). Apart from being a source of vegetable oil, coconut plants are also an income source for farmers' families farming, as a source of foreign exchange for the country, providing employment opportunities, triggering and accelerating the growth of new economic centers, as well as driving the growth of the downstream industry based on coconut oil and its by-products in Indonesia (Nunes et al., 2020; Quiñones-Bolaños et al., 2021).

Central Sulawesi is one of the regions that have the largest contribution to the Gross Regional Domestic Product (PDRB) from the agricultural sector. The plantation sub-sector with a PDRS contribution of 11.58% in 2019 (BPS Province of Central Sulawesi, 2020). One of the plantation crops which is the main commodity in Central Sulawesi is coconut. The processed coconut

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meat that is cultivated is the manufacture of copra which is one of the leading products of Central Sulawesi (Ho and Ofomaja, 2006; Nunes et al., 2020). The area and coconut production based on coconut-producing districts in Central Sulawesi can be seen in Table 1.

Table 1. The Area and Production of Coconut by Regency in Central Sulawesi, 2019.

Regency/City	Area (Ha)	Production (Ton)
Banggai Kepulauan	20,069	10,027
Banggai	56,425	48,362
Morowali	3,261	1,176
Poso	5,081	5,402
Donggala	28,139	28,453
Tolitoli	2,038	14,959
Buol	12,865	10,164
Parigi Moutong	29,436	36,252
Tojo Una una	23,089	28,100
Sigi	6,037	2,516
Banggai Laut	9,418	3,665
Morowali Utara	903	403
Palu	441	179
Total	197,202	189,658

Source: BPS Central Sulawesi Province in Numbers, 2020

Based on Table 1, it is known that the three regions in Central Sulawesi which are the highest coconut producers include Banggai Regency, Donggala Regency, and Parigi Moutong Regency. Parigi Moutong Regency with an area of 29,436 ha of coconut plantations with a production of 36,252 tons and continuous efforts are made to increase its productivity. "Kelapa Dalam" is one of the leading commodities and is still the mainstay of Parigi Moutong in the plantation sector other than cocoa, as well as rice and corn in the food crops subsector

In general, the problem that occurs in some coconut-producing areas is post-harvest processing. Coconut processing in Indonesia at the farm level or the rural scale is mostly focused on handling the flesh of the fruit with the product being limited to copra oil or granulated coconut. Especially in Central Sulawesi, the processing of coconuts carried out by the community is processing coconut flesh into copra which is a superior product in Central Sulawesi

Copra is the main raw material for the manufacture of copra oil and has been a trade commodity that is sought after by importers because it is an export product (Das et al., 2022; Sandupama et al., 2022). Copra is generally used for various basic ingredients of copra oil or coconut oil and its quality is largely determined by the copra fat, while the quality of copra is determined by the appropriate drying process to achieve the desired moisture content level, so it is expected to provide added value much larger and able to contribute high economic value and can increase the income of farmers and owners of the copra industry (Dhanasekara et al., 2022; Te et al., 2020).

Added value is the addition of the value of a commodity because it undergoes processing, transportation, or storage in a production (Cheng et al., 2022; ter Avest et al., 2019). The value-added processing process can be defined as the difference between the value of the product and the value of the cost of raw materials and other inputs, excluding labor (Taringan, 2005). Hayami et. al. (1987) stated that the added value is the difference between the commodity that is treated at a certain stage and the sacrifice value used during the process. The sources of added value are from the utilization of factors such as labor, capital, human resources, and management. Based on the background presented, this study aims to determine the amount of added value obtained by farmers from processing coconut into copra in Parigi Moutong Regency.

II. RESEARCH METHOD

A. Research Location and Sample

The research location is in Parigi Moutong Regency due to the location is one of the centers of coconut production. The time of research is from April to December 2021. The determination of respondents using an purposive sampling method. This sampling technique is based on certain criteria or considerations. The sample is chosen spontaneously or anyone who is considered to be able to represent the population with the assumption that they have farmer characteristics so that researchers can serve as samples or respondents for data sources (Rianse, 2012). The number of samples of respondents is as many as 152 respondent coconut farmers.

B. Data Collection Methods and Techniques

The data collection method is carried out by conducting a ground check on the sample area that has been previously determined based on the largest land area. This survey aims to identify the condition of the coconut commodity and the socio-economic conditions of farmers in the research location.

Data and information collection techniques (both primary and secondary) are carried out by tracing and extracting data from various sources, namely: (i) direct interviews with coconut farmers, and (ii) Secondary data, namely data obtained from literature studies and other sources such as Parigi Moutong Regency in Number, and related source.

C. Data Analysis

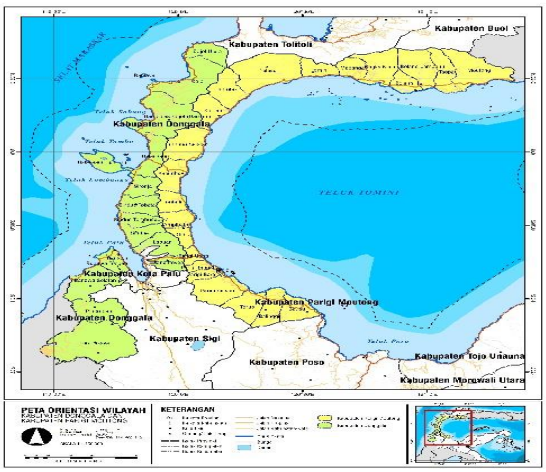
Analysis of the data used to achieve the research objectives, that is to determine the amount of added value obtained from the processing of coconut into copra by using value-added analysis. The added value was analyzed using the Hayami method (Wang et al., 2014) following research conducted by Dahar, D and Maharani (2018).

Table 2. Hayami Method of Value Added Calculation Framework

No	Component	Formulation
1.	Production (Kg/Process)	A
2.	Raw Material (Kg/ Process)	B
3.	Labor (HOK// Process)	C
4.	Convertion Factor (1/2)	a/b = m
5.	Labor Coefficient (3/2)	c/b = n
6.	Average Product Price (IDR/Kg)	D
7.	Average wage (IDR//Kg)	E
8.	Raw material prices (IDR//Kg)	F
9.	Other Inputs (IDR//Kg)	G
10.	Production Value (IDR//Kg) (4x6)	m x d = h
11.	a. Added Value (IDR//Kg) (10-8-9)	h – f – g = I
	b. Added Value Ratio (%) (11a/10)	i/h% = j%
12.	a. Benefits of Labor (IDR /HOK) (5x7)	n x e = k
	b. Share of Labor (%) (12a/11a)	k/l% = l%
13.	a. Profit (IDR /Kg) (11a-12a)	I – k
	b. Profit rate (%) (13a/11a)	l/l% = 0%

III. RESULT AND DISCUSSION

Parigi Moutong Regency in Central Sulawesi, which is one of the coconut-producing areas, also has a high production value. The areas in Parigi Moutong Regency where the research sample was taken are South Tinombo and Ampibabo sub-districts which were selected as sampling locations whose geographical location can be seen on the regional orientation map (Figure 1).



Based on the results of the analysis using the Hayami method, the value added results of copra processing are shown in Table 3.

Table 3. Added Value of Copra with Hayami Method

No	Component	Value
1	Production (Kg/Process)	1,573
2	Raw Material (Kg/ Process)	8,181
3	Labor (HOK// Process)	13.9
4	Convertion Factor (1/2)	0.19
5	Labor Coefficient (3/2)	0.0017
6	Average Product Price (IDR/Kg)	10,371
7	Average wage (IDR//Kg)	80,000
8	Raw material prices (IDR//Kg)	1,150
9	Other Inputs (IDR//Kg)	0
10	Production Value (IDR//Kg) (4x6)	1,994
11	a. Added Value (IDR//Kg) (10-8-9)	844
	b. Added Value Ratio (%) (11a/10)	42%
12	a. Benefits of Labor (IDR /HOK) (5x7)	135
	b. Share of Labor (%) (12a/11a)	16%
13	a. Profit (IDR /Kg) (11a-12a)	709
	b. Profit rate (%) (13a/11a)	84%

Source: Primary Data 2022

Based on the results, it is known that coconuts with an average level of copra production are 8,181 Kg/production process, resulting in an average product of 1,573 Kg/production process. The average working day range is 14 working days. The comparison of the number of products produced with the number of raw materials processed in one production process is a conversion factor with a value of 0.19. This means that for every 1 kg of processed coconut, 0.19 kg of copra will be obtained. The cause of the small conversion factor is due to the thickness of the coconut fiber, the difference in the size of the coconut, and the mixture of coconut types that are processed into copra, namely hybrid coconut and deep coconut (*kelapa hybrida dan kelapa dalam*). The labor coefficient is the ratio between working days and the raw materials processed so the coefficient value is 0.0017.

The average price of copra is IDR 10,371/Kg and the average price of raw materials is IDR 1,150/Kg which is the prevailing price at the farmer level if it is assumed that production uses purchased raw materials. However, the fact in the field is that some respondents use coconuts from their gardens plus coconuts purchased from other farmers with a harvest rental system. The average wage for workers from all copra processing activities is IDR 4,577/Kg. Donations of other inputs or supporting materials do not exist because in the processing of copra the fumigating fuel comes from coconut husks obtained from coconut shelling waste. The production value is the multiplication between the conversion factor and the product price so that the value of IDR 1,994/Kg.

The added value of processing coconut into copra is IDR 844/Kg, this value is the difference between the value of the product and the price of raw materials and other inputs. The amount of added value is influenced by the value of raw materials, other inputs, and the price of copra products (Ng et al., 2015; Saikhwan et al., 2022). The ratio of added value to product value is 42%, meaning that for every 100 product values, obtained an added value of IDR 42. The added value shows great value because the production value is higher than the value of raw materials and other inputs (Sun et al., 2022; Tulashie et al., 2022).

Benefits of labor are the result of multiplying the coefficient of labor with the average wage which is IDR 135/Kg of raw materials, while the share of labor is 16%, this value is the ratio of employee benefits to added value. Copra processing requires large services from the workforce, the number of services can be from the number of workers or from the wages of the workers used (Noviyanti, dkk, 2018). The profit obtained from processing coconut into copra is IDR 709/Kg of raw materials with a profit rate of 84%. The level of profit is influenced by the cost of raw materials and other input costs.

Another input cost that also affects the value added is the adoption of technology in processing coconut into copra, which tends to use simple tools(Indhiradevi et al., 2022; Satriani and Pramono, 2022). This is in line with the results of the added value analysis conducted by Trisutrino et. al., 2018, which was carried out in Karya Bhakti Village, West Kalisusu District, Buton Raya Regency, which obtained from coconut processing activities in copra is quite a large and can be profitable for copra entrepreneurs in Karya Bhakti Village, although This processing activity is considered to be relatively small, this is influenced by several factors, including the level of technology applied is still relatively simple and the processing process is most manually

IV. CONCLUSION

Based on the results that have been described, the conclusions of this study are : 1) the added value of processing coconut into copra is IDR 844/Kg of raw materials, at the price level of raw materials IDR 1.150/Kg; 2) the added value ratio is 42%, which means that for every 100 product values, an added value of IDR 42; 3) the added value shows a large value because the production value is higher than the value of raw materials and other inputs with a profit rate of 84%.

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