

## COCONUT VALUE ADDED AT TABONGO DISTRICT GORONTALO REGENCY

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### ABSTRACT

*Tabongo District is one of the coconut production centers in Gorontalo Regency, with a total plantation area of 982.88 Ha and a total production of 1.090.10 tons in 2019. The majority of farmer in this area sell coconut in the form of grains, yet other farmers process it into copra and coconut oil. The research aims to determine the marketing and the amount of added value of coconut which conducted for three months, September to November 2021, in Tabongo District. Purposive sampling of 20 farmers were applied as the sample utilizing the READSI (Rural Empowerment and Agricultural Development Scaling-up Initiative) program and the snowball sampling method to obtain four traders. This survey research method was consisted of primary and secondary data. Marketing analysis and Hayami value-added analysis are used to analyze data. The results showed that the processed form of coconut in Tabongo District is coconut grains, copra and coconut oil. There are three types of coconut marketing routes in the area: 1) copra farmers-wholesalers-Central Sulawesi, 2) coconut oil farmers-consumers, and 3) coconut farmers-traders-treatment factories. Every value added in 1 kg of copra product is Rp 1,150, or 49.92 percent of the product's worth. The profit rate for coconut copra processing is 46.13 percent of the product's value, which is Rp 2,400 per kg. Every added value in 1 kg of coconut oil product is Rp 5,246 or 45.05 percent of the product's worth. The profit rate of coconut oil treatment is 7.07 percent of the product's value, which is Rp 823 per kg. Meanwhile, the marketing added value obtained by coconut grain traders amounted to Rp 1,464.29 / kg or 54.23%.*

**Keywords:** Marketing, Value Added, treatment, Copra, Coconut Oil

### INTRODUCTION

Coconut is a valuable export commodity that grows well along the coast, highlands and mountain slopes in general. Coconut fruit which is the raw material for oil called copra, has an oil content ranging from 60-65%. While the oil content of the flesh of a young fresh fruit is about 43 % (Warisno, 2003). Gorontalo province is one of the provinces with a lot of potential for coconut plant development. In 2020, this area has 74.100 hectares of coconut plantations with total coconut production of 55 946.00 tons (BPS, 2021). Coconut is the lifeblood of the farmers in the region, and kinds of exported products are in the form of crude coconut oil, coconut flour, shell charcoal and in particular copra meal. In terms of volume and quantity, copra meal is the most exported commodity. The largest amount of coconut production in Gorontalo province is in Gorontalo Regency which cover 22 091.01 hectares coconut plantations with a yield of 22 062.00 tons (BPS, 2020).

The coconut industry in Gorontalo is still dominated by crude coconut oil made from copra, with coconut growers producing only 1.21 tons of copra/ha/year on average. Copra prices in Gorontalo fluctuate, yet however the price will be down if farmers succeed in harvesting coconuts. Further, at the factory level, the average price of copra ranges from Rp 2,500/kg to

Rp 2,700/kg, whereas at the farm level, it ranges from Rp 2500/kg (Alam, 2020). Tabongo sub-district is one of Gorontalo Regency's 19 sub-districts that possess the potential to produce coconut. According to BPS in 2020, coconut plantations covered 982.88 ha with a total coconut production of 1,090.10 tons in 2019. Tabongo District is one of Gorontalo Regency's coconut production centers. In 2018, coconut production increased by 1,140.27 tons compared to 1,123.55 tons in 2017.

A flow of agricultural commodities flows from upstream to downstream, which starts from farmers and ends to consumer, and receives treatments such as processing, preservation, and transfer to increase its utility or its added value (Sudiyono, 2004). Next, increased added value in agricultural primary products is aimed at increasing farmers' income, particularly in rural areas (Dilana, 2013). Furthermore, by adding value to an agricultural product, the item will be more readily accepted by the broad market (Coltrain, Barton and Boland, 2000). On average, the amount of coconut harvest in a year are about 4,500 coconuts. In general, farmers in Tabongo district sell coconut in the form of grains, however some coconut growers process coconut into copra and traditional coconut oil. Copra is dried coconut kernels, and it is one of the most important coconut derivative products since it is the raw material for making coconut oil and its derivatives.

In terms of income, the profit obtained on the sale of coconut in the form of copra and coconut oil is still higher than the sale in the form of granules. Nevertheless, farmers in Tabongo District prefer to sell their product as granules for the reason that they earn money faster. On the other hand, the nature of agricultural products, especially coconuts are perishable and bulky. Hence, farmers' crops must undergo treatments such as processing, preservation and transfer to add usefulness or added value which will increase farmers' revenue outside of coconut farming. Thus, the research aims to determine evaluate coconut marketing, processed coconut value added, and coconut marketing value added in Tabongo District, Gorontalo Regency.

## RESEARCH METHODS

The research conducted from September to November 2021 in Tabongo District, Gorontalo Regency. It applied purposive sampling of 20 farmers of READSI program and snowball sampling method to obtain 4 traders. A survey method was used to collect primary and secondary data from BPS, Gorontalo District Agricultural Office, and Gorontalo Provincial Agricultural Office. Data analysis employed are marketing analysis, Hayami value-added analysis and marketing value-added analysis.

### *1.1. Marketing Analysis*

Descriptive analysis is used to describe the development of the characteristics of certain economic and social conditions of an area. The descriptive approach provide detailed explanations and not to make generalizations. Descriptive analysis was utilized for coconut marketing routes and its treatment in Tabongo District, Gorontalo Regency. In line with Sudiyono (2004), below are how to calculate the marketing margin and farmer's share of coconut farmers:

$$M = Pr - Pf \dots\dots\dots (1)$$

$$FS = Pf/Pr \times 100 \% \dots\dots\dots (2)$$

Description:

M = Marketing Margin

FS = Farmer's Share

Pr = Consumer level price  
 Pf = farmer-level price

1.2. Value Added Analysis

The concept of added value is utilized to examine the added value of coconut. The concept of added value refers to an increase in value caused by the processing of a commodity's input. Following Hastang (2014) The added value occurs through enhancing the process's value or by raising prices. There are two types of added value, those are processed added value and marketing added value. The following is the formula to calculate N value added marketing:

- Marketing added value = Sale price - purchase price - other input costs ..... (3)
- Margin = Sale Price - Purchase Price ..... (4)
- Value added= margin - marketing costs ..... (5)
- Profit = Value added - Labor costs ..... (6)
- Value added ratio = Value added / X Sale Price 100% ..... (7)

As for calculating the value added treatment. used Hayami value added analysis (Table 1).

**Table 1. Hayami Added Value Analysis**

No	Variable	Value
<b>Output, Input, and Price</b>		
1.	Output (kg)	(1)
2.	Raw Material (kg)	(2)
3.	Direct Labor (HOK)	(3)
4.	Conversion Factor	(4) = (1) / (2)
5.	Direct Labor Coefficient (HOK / kg)	(5) = (3) / (2)
6.	Output Price (Rp/Kg)	(6)
7.	Direct Labor Wages (Rp / HOK)	(7)
<b>Receipts and Profits</b>		
8.	Raw material price (Rp / kg)	(8)
9.	Other Input prices (Rp / kg)	(9)
10.	Output Price (Rp/kg)	(10) = (4) x (6)
11.	a. Value Added (Rp/kg)	(11a) = (10) – (8) – (9)
	b. Value Added Ratio (%)	(11b) = (11a) / (10) x 100
12.	a. Direct Labor Revenue (Rp/kg)	(12a) = (5) x (7)
	b. Direct Labor share (%)	(12b) = (12A) / (11a) x 100
13.	a. Profits (Rp/kg)	(13a) = (11a) – (12a)
	b. Profit rate (%)	(13b) = (13A) / (10) x 100

Sources: Sudiyono (2004)

**RESULTS AND DISCUSSION**

1.3. Farmers' Characteristics and Description of Coconut Farming

Factors such as age, education, number of family dependents, farming experience and farm land area have an important role for farmer’s business both in terms of production and marketing. This can be seen in Table 2.

**Table 2. Characteristics of farmers respondents coconut farming in Tabongo District Gorontalo Regency, 2021.**

No.	Characteristic	Total (person)	Percentage (%)
A.	Age		
	a.<15 years	0	
	b.15-64 years	21	100
	c.>65 years	0	
B.	Education		
	a. Elementary School	15	71.4
	b. Junior High School	3	14.3
	c. Senior High School	2	9.5
	d. Diploma	1	4.8
C.	Farming Experience		
	a.=< 10 years	4	19.0
	b.11-20 years	6	28.6
	c. > 20 years	11	52.4
D.	Number of family dependents		
	1-2 persons	4	19.0
	3-4 persons	13	61.9
	> 4 persons	4	19.0
E.	Land Area		
	a. <1 Ha	1	4.7
	b.1-1.5 Ha	15	71.4
	c. > 1.5 Ha	5	23.8

Source: Processed Primary Data (2022)

Table 2 shows that in terms of the age, respondents farmers have a productive age of 15-64 years which the average farmer is 47 years old. Most of the respondents' formal education level was Elementary School (71.4%) and respondents' college level was 4.8%. While the average farming experience is 23 years and the average number of dependent family farmers respondents is 3 people.

Based on coconut farming classification pattern, coconut farming in Tabongo District is a non-specific farming (polyculture), which 76.2% of coconut growers plant crops other than coconuts on other fields. These plants include rice, corn, chili, durian, nutmeg and rambutan, whilst roughly 23.8% of coconut growers chose special farming (monoculture). In addition, the average land area owned by coconut farmers is 1.3838 ha.

Coconut is an annual plant, thus the typical respondent's planting time to harvest is 5 years. In coconut farming, 80.9 percent of respondents received aid from the READSI Program by the Department of Agriculture which distributes seeds, fertilizers, medicines, and agricultural machinery (coconut milk grated, squeezed machine, copra drying machine, and coconut grinding machine). Meanwhile the rest 19.1 percent of respondents purchased fertilizer and seeds through farmers' markets and traders.

Moreover, all respondents harvesting within a period of 5 years. Harvesting is a labor-intensive activity due to the variety of work, which include picking, stripping, splitting, drying, shipping, and processing into coconut milk and coconut oil. Coconuts are harvested twice a year. The amount of harvest in a year are 4,500 coconuts in average, and farmers selling coconut in the form of item, copra and coconut oil.

1.4. Coconut Marketing

Coconut marketing from READSI farmers in Tabongo District is divided into direct marketing route and indirect route involving marketing agencies, wholesalers and traders. Form of coconut marketing route in Tabongo District as follows :

1. Grain coconut farmers → Consumer
2. Copra farmers → Wholesalers → Central Sulawesi
3. Coconut farmers grain → Traders → Coconut milk and coconut oil Processing Plant
4. Coconut oil farmers → consumer

Based on the results of the study, farmers sell coconut in the form of grains directly to consumers by 30% and to traders by 65% . While processed coconut in the form of copra marketed to large traders by 5% then by large traders sent outside the area of Central Sulawesi. Next, marketing traditional coconut oil is sold directly to consumers. Coconut marketing routes in Tabongo district can be seen in Figure 1.

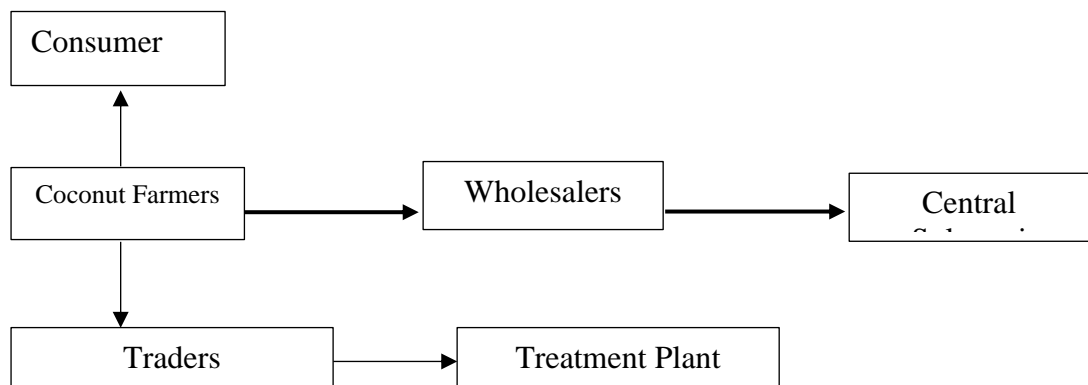


Figure 2. Coconut Marketing Routes in Kecamatan Tabongo District, 2022  
Source: Processed Primary Data (2022)

Moreover, an average production of coconut farmers are 4,500 items, with sale prices ranging from Rp 700 to Rp 2,700 depending on the size of the coconut item. Subsequently, the average revenue obtained is Rp. 6.233.823,-. Routes 1,2, and 4 of marketing margins cannot be calculated given that those are direct marketing routes and routes 2 sales are in the form of copra while the information from the wholesalers is unavailable. Further, the marketing margin on routes 3 is Rp 1,500 items. This can be seen in Table 3.

**Table 3. Marketing margins on coconut marketing routes in Tabongo District, 2022.**

Marketing Agency	Channel 3
<b>FARMER</b>	
a. Sale price (Rp /grain)	1200
<b>COLLECTOR</b>	
a. Purchase price (Rp /grain)	1200

b. Marketing costs (Rp /grain)	35.71
transportation costs	35
other costs	0.71
c. Profit (Rp /grain)	1464.29
d. Sale price (Rp /grain)	2700
<b>PROCESSING PLANT</b>	
a. Purchase Price (Rp/grain)	2700
<b>MARKETING MARGIN (Rp/grain)</b>	1500
<b>FARMER'S SHARE (%)</b>	44.44

Sources: Primary Data Analysis, 2021

Table 3 shows that the marketing margin in the coconut grain marketing routes is Rp 1500 / grain, this indicates a considerable margin value exceeding the selling price at the farm level. This is because the profits received by traders are quite large compared to marketing costs such as transportation and other costs they incur. Table 3 also shows the farmer's share 44.4 value of 44.4 percent which means the share received by coconut farmers is 44.4 percent of the selling price of coconut grains. at the processing plant level of Rp 2.700/item. According to Muslim and Dervish (2011) the greater the proportion of prices received by farmers, the more fair the existing marketing system. Conditions like this will stimulate farmers to continue to produce. Agriculture is a business that has great risks, so farmers have the right to obtain an adequate proportion of rewards, in this case from the proportion of prices that occur at the consumer level.

#### 1.5. Added value of copra and coconut oil

The concept of added value in agriculture is when a good gets treated both during the production process or distribution to consumers so that with the US activity consumers spend more money on the goods they buy (USDA, 2002). Added value is the value added to agricultural products due to treatments such as processing, preservation, and removal. According to Indriani, et al (2019), there are 2 kinds of added value, namely processing added value and marketing added value.

Farmers in Tabongo District Gorontalo Regency generally market coconuts in the form of grains, while other farmer process it into copra and coconut oil. This can be seen from some respondents who are working on both commodities. Therefore, copra and coconut oil can be calculated based on the calculation of added value of processed Hayami which can be seen in the table below.

**Table 4. Hayami added value analysis on copra products in Tabongo District, 2022.**

No.	Variable	Value
1	Output (kg/production)	400
2	Raw Material Input (seeds / production)	2000
3	Labor Input (HOK / production)	1.71
4	Conversion Factor	0.2
5	Labor Coefficient	0.0008
6	Product Price (Rp / kg)	12000
7	Labor Wages (Rp / HOK)	50000
acceptance and profit (RP / kg coconut)		
8	Raw Material Input Price (Rp/seed)	1000

9	Other Input Contribution (Rp /seed)	250
10	Product Value (Rp / Kg)	2400
11	Value Added (Rp/Kg)	1150
	Value Added Ratio (%)	49.992
12	Labor Revenue (Rp/Kg)	42.75
	Share of labor (%)	3.771
13	Profit (Rp/Kg)	1107,25
	Profit Rate (%)	46.13

Sources: Primary Data Analysis, 2021.

Table 4 explains that with coconut raw materials as much as 2,000 grains produce copra as much as 400 kg per one production. Copra processed products are sold at a price of Rp 12.0000 / kg. The value of the conversion factor is 0.2 so the value of the product is Rp 2.400/ kg. Value added in every 1 kg of copra product is Rp 1,150 or 49.92,92% of the value of the product. The profit rate of coconut processing into copra is 46.13,13% of the value of the product, which is Rp 2.400/ kg. This is in line with Sudiyono (2004) the advantages of value-added analysis by Hayami are: it can be known the amount of added value, it can be known the amount of remuneration to the owner of the production factor and can be applied outside the sub-system processing, for example marketing activities. In addition to copra farmers respondents also process coconut oil into coconut oil. This can be seen in Table 5.

**Table 5. Hayami added value analysis on coconut oil products in Tabongo District, 2022**

No.	Variable	value
1	Output (kg/production)	13.84
2	Raw Material Input (kg/production)	38.75
3	Labor Input (HOK/production)	17.14
4	Conversion Factor	0.36
5	Labor Coefficient	0.442323
6	Product Price (Rp/kg)	32608
7	Labor Wages (Rp / HOK)	10000
Acceptance and profit (Rp/kg coconut)		
8	Raw Material Input Price (Rp/kg)	4000
9	Other Input Contribution (Rp/kg)	2400
10	Product Value (Rp/Kg)	11646.32
11	Value Added (Rp/Kg)	5246.315
	Value Added Ratio (%)	45.05
12	Labor Revenue (Rp / Kg)Kg)	4423.226
	Share of labor (%)	84.31109
13	Profit (Rp / Kg)	823.09
	Profit Rate (%)	7.07

Sources: Primary Data Analysis (2021)

Table 5 shows from 155 items coconut produce 30 bottles of coconut oil. If converted into the form of kilograms, then with bahan coconut raw materials as much as 38.75 kg per one time production produce coconut oil of 13.84 kg per one time production. Processed coconut oil products are sold at a price of Rp 32.608/ kg. The value of the conversion factor is 0.36,36 so that the value of the product is Rp 11.646/ kg. The added value in every 1 kg of coconut oil product is Rp 5.246 or 45.05,05% of the value of the product. The profit rate of coconut processing into coconut oil is 7.07,07% of the value of the product, which is Rp 823/ kg.

Tables 4 and 5 also show a comparison of the added value of copra and coconut oil. The results showed that the added value of coconut to copra (49.92%) than the added value of coconut oil (45%). Although the difference is not too big.

#### 1.6. The Added Value of Coconut Marketing

Value added is the difference in sacrifice in treatment during the flow process, so the purpose of value added measurement is to see the extent of the remuneration received by the input from the processed output (Fajar, 2014). The flow of increased value added of agricultural commodities occurs in each supply chain from upstream to downstream which starts from farmers and ends at the end consumer (Marimin and Magfiroh, 2013).

The calculation of marketing value added is done on coconut grain marketers, namely traders in Tabongo District. The value obtained by marketing agencies in marketing activities is an added value (Fajar, 2014). Value added is the difference in margin with other input costs, while profit is the difference in value added with labor costs. The added value of marketing from marketing agencies, namely coconut grain traders in Tabongo district, can be seen in Table 6.

**Table 6. Analysis of the Added Value of Coconut Marketing District Tabongo, 2022.**

Marketing Agency	Channel 3
<b>FARMER</b>	
a. Sale Price (Rp/grain)	1200
<b>TRADERS</b>	
a. Purchase price (Rp /grain)	1200
b. Sale price (Rp /grain)	2700
c. Marketing costs (Rp/grain)	35.71
Transportation costs	35
d. Value added (Rp /grain)	1465
e. Value added Ratio (%)	54.26
f. Labor (Rp /grain)	0.71
g. Profit (Rp /grain)	1464.29
h. Profit Ratio (%)	54.23
<b>PROCESSING PLANT</b>	
a. Purchase price	2700

Sources: Primary Data Analysis (2021)

Table 6 describes the value added marketing of coconut grains at the level of traders amounting to Rp 1.465/ kg or 54.2,26% of the selling price to consumers of Rp 2.700 /item and the profit obtained by traders Rp 1.464.29/item or 54.2,23% of the selling price at the processing



plant level of Rp 2.700 /item. According to Asmarantaka (2012) the greater the margin of producer acceptance is relatively small. The more expensive the consumer pays the price offered by the marketing agency (Merchant), the less the share received by the producer, because the producer sells agricultural commodities at relatively low prices. The more expensive the consumer pays the price offered by the merchant, the part received by the farmer will be less because it sells agricultural commodities at relatively low prices.

### CONCLUSION AND RECOMMENDATION

The results showed that the processed form of coconut in Tabongo District is coconut grains, copra and coconut oil. Coconut marketing in this region there are 3 forms of channels, namely: 1) copra farmers-wholesalers-Central Sulawesi, 2) coconut oil farmers-consumers and 3) coconut farmers – traders – processing plants. The value added in every 1 kg of copra product is Rp 1.150 or 49.92,92% of the value of the product. The profit rate of coconut processing into copra is 46.13,13% of the value of the product, which is Rp 2.400/ kg. Value added in every 1 kg of coconut oil product is Rp 5.246 or 45.05,05% of the value of the product. The profit rate of coconut processing into coconut oil is 7.07,07% of the value of the product, which is Rp 823/ kg. While the marketing added value obtained by coconut grain traders amounted to Rp 1,464.29 / kg or 54.23%.

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