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MARKETING | RESEARCH ARTICLE

Analysis of Oil Palm Marketing Efficiency in Tommo District, Mamuju, Indonesia

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Abstract: This study aims to determine the pattern of oil palm marketing channels, the number of costs and marketing margins obtained by each marketing agency, as well as the efficiency of oil palm marketing channels. The respondents were 34 information, consisting of 30 oil palm farmers and traders collecting oil palm FFB in Tommo District. Marketing of oil palm FFB is carried out using the snowball sampling method. The results of this study indicate that there are three marketing channels formed. Namely: Marketing channel I, namely Farmers sell directly to palm oil mills, Marketing channel II, namely sales through farmer groups then sold to palm oil mills, Marketing Channel III, namely Farmers selling to collector traders then sold to palm oil mills, highest marketing costs is in the channel I. The costs incurred in this marketing channel are transportation costs of Rp. 11.36/Kg of FFB, labor costs of Rp. 21.88/Kg of FFB, retribution costs of Rp. 7.71/Kg of FFB. Marketing Channel shows that marketing channel I is an efficient channel. With a margin value of 4.07 percent and a farmer's share of 95.92 percent, the production volume is 32.78 tons or 24.45 percent. Farmer share for the selling price of FFB is the highest farmer share because farmers directly sell their harvest to the factory.

Keywords: Palm Oil Marketing, Efficiency, Margin Profit, Farmer Share**JEL Classification Code:** Q10, Q12, Q16

1. INTRODUCTION

The plantation is all activities that cultivate certain plants on soil or other growing media in an appropriate ecosystem to process and market goods and services from these plants with the help of science and technology, capital, and management to create prosperity for plantation business actors and the community (UU Law No. RI No. 18, 2004). Plantations are distinguished from agroforestry and silviculture (forest cultivation) because of their intensive nature. In plantations, maintenance plays an important role. While in agroforestry and silviculture, plants tend to grow according to natural conditions. Due to its intensive nature, plantations almost always apply monoculture cultivation methods. Oil palm (*Elaeis guineensis* Jacq.) is a tropical plant belonging to the palm group, an annual plant. The palm oil industry is an essential contributor to production in Indonesia and has bright development prospects. The sector also contributes to regional development as a necessary resource for poverty alleviation through agricultural cultivation and subsequent processing.

Indonesia's palm oil industry is expected to continue to increase. World demand for palm oil has experienced rapid growth in recent decades, with current palm oil production estimated at more than 45 million tonnes. Indonesia is one of the largest producers and exporters of palm oil globally, producing more than 18 million tons of palm oil per year (Hasan, 2015). Providing job opportunities is an added value because the plantation sector opens employment opportunities to rural and remote areas. This role is strategic because the provision of employment in remote areas can suppress the flow of urbanization. In addition, plantations are one of the sectors that have an essential contribution in creating added value, which is reflected in their contribution to gross domestic product (GDP). In line with GDP growth, the plantation sector has a strategic role in economic development. The Indonesian government continuously strives to make Indonesian agriculture more productive. If land, labor, and other scarce resources can provide higher yields, Indonesia will produce more food and increase the

income of rural communities. The plantation sub-sector as one part of agriculture in a broad sense is a primary essential component in the Indonesian economy. Where almost every year, there is always the opening of new lands for the plantation sector. The role of the government is vital to advance the plantation sector in Indonesia, especially oil palm plantations, whose production increases every year. According to the statistical center of Indonesia, oil palm plantations for the production of palm oil in 1995 amounted to 2.4764 million tons and increased to 14,290,054 tons in 2010.

This illustrates that the oil palm plantation sector is greatly improved and can provide an overview of opportunities for exquisite farming to be developed and cultivated. Increased production plays an essential role in the community's income, especially oil palm farmers. The average productivity of palm oil from 2009 to 2015 is 2.43 tons/ha/year. Palm oil is a commodity in demand because the product, namely palm oil, is one of the most consumed and produced oils in the world. It is used for various foods, cosmetics, hygiene products and can also be used as a source of biofuel or biodiesel.

Table 1: Palm Oil (CPO) Export-Import Volume and Value by Country of Destination and Origin in Asia.

Export		
Country Of Destination	Volume (Kg)	Value (\$ US)
India	2.888.187.557	2.101.736.375
Singapura	532.902.347	396.982.438
Malaysia	262.056.524	175.861.462
Vietnam	7.210.632	4.477.865
China	1.060.000	590.640
South Korea	102.000	55.300
Thailand	40.000	23.350
Amount	3.691.559.060	2.679.727.430

Source: Directorate General of Plantation 2016

Table 1 shows the volume (kg) and export-import value (\$US) of palm oil (CPO) by country of destination and origin in 2014 in Asia. India is the country that imports the most CPO oil from Indonesia in Asia, with a total volume of 2,888,187,557 kg CPO. The export value of CPO oil to India was the highest, reaching 2,101,736,375 U.S.\$. Meet domestic demand. Tommo sub-district is one of the producing areas for oil palm FFB in Mamuju district. With a land area of 8,047 ha, with a production of 14,086 tons in 2016. More details on the location and output of smallholder plantations can be seen in table 2.

Table 2: Area and Production of People's Plantations by Type Plantin

Type Plant	Area (Ha)	Production (Tons)
Cloves	25,25	0,41
Cocoa	2 879,22	1 827,16
Coconut	305,50	214,52
Oil Palm	8 047,00	14 086,00

Source: Directorate General of Plantation 2019

2. Literature Review

To begin to address gaps in access to healthy food, standardized assessment tools are needed. To assess a consumer's food environment, a grocery store audit tool measures the availability, price, promotion, placement, and quality of healthy and unhealthy foods (Cummins & Macintyre, 2006; Gustafson et al., 2012; Kelly et al., 2011). The tool has been used in various traditional and non-traditional food places (McKinnon et al., 2009). Desirable features of a tool include a defined assessment protocol, adequate characterization of healthy versus unhealthy foods, assessment of price, availability, quality, and promotion of food (as these might influence consumer behavior), reliability, and validity. To date, most tools have accessed the consumer food environment in supermarkets,

grocery stores, or convenience stores (Moen et al., 2011). Still, they have not reached non-traditional food places such as farmers' markets (Schultz et al., 2015).

Multi-agent-based modeling and simulation have been applied in previous studies to study and develop optimal strategies (Ghazali et al., 2018; Oudendag et al., 2014). To date, multi-agent-based modeling and simulations have been applied to several studies on the development of dairy farming with multiple applications found in smallholders with a focus on feeding, rangeland management, and adaptation to strategies and policies (Fust & Schlecht, 2018; Mack & Huber, 2017; Schilling et al., 2012). To our knowledge, this study is the first attempt to develop peer-to-peer farm practice learning for milk yield improvement for SDF using an agent-based modeling and simulation approach (Nyambo et al., 2020). Saxe-Custack et al. (2019) explain that although a growing body of literature suggests farmer market incentives are associated with increased fruit and vegetable consumption and reduced food insecurity among adults, no studies have assessed the perceived impact of farmer market incentive programs.

In Messner et al. (2020) farmers' markets have documented benefits to local food consumers, farmers and the environment (Figueroa-Rodríguez et al., 2019; Holben, 2010). From 1994 to 2014, there has been an increase in demand and use of farmers' markets in the United States among consumers of all socio-economic and income levels (Morozink et al., 2010). The benefits of farmers' markets include (1) fresher, tastier and cheaper produce than in the nearest store (Lucan et al., 2015); (2) reduced transportation problems (Shi & Hodges, 2016); (3) access to culturally appropriate food (Joassart-Marcelli & Bosco, 2017); (4) nutrition education (Bowling et al., 2016); (5) meaningful interactions between vendors and consumers (Carson et al., 2016); (6) reducing carbon footprint (Ling & Newman, 2011); and (7) positive economic impact on society (O'Hara & Shideler, 2018). Farmers' markets are also the intervention for areas designated as food deserts due to a reduction in the capital investment required to start up (Holben, 2010). Ursu et al. (2014) analyzed crop production systems' economic efficiency (EE) and reported low EE levels due to price volatility. Previously, Bravo-Ureta and Pinheiro (1997) showed that medium-sized agriculture, contract farming and beneficiaries of agrarian reform have a significant positive effect on the economy and AE. Higher levels of production efficiency were found, and agrarian reform beneficiaries and younger farmers. The average technical, allocative, and estimates of farmers were 0.70, 0.44 and 0.31, respectively. The study concludes that AE is more important than TE in terms of gain in EE. Bintu et al. (2015) investigated irrigated vegetable farming in Borno state, Nigeria, and found technical inefficiencies among the various crop enterprises studied with values of 0.99 (single onion) 0.94. They found 0.96 (single pepper), 0.95 (onion/tomato) and 0.98 (onion/pepper). Family labor, farm size, agricultural chemicals and seed costs are the most significant factors affecting efficiency. Haji & Andersson (2006) estimate the efficiency of vegetable farmers in Ethiopia and find that there is substantial inefficiency in production among farmers. Asset ownership, non-farm income, small farm size, high consumer spending, illiteracy and large family size are the main factors affecting inefficiency in production. High consumer spending, large family size, and limited access to capital markets contribute to the low revealed EE scores. These studies show that demographic, technological, environmental, and socio-economic factors affect farmer efficiency (Adams et al., 2020). This brief overview demonstrates that collective marketing can be an efficient innovative approach for farmers grazing in Sub-Saharan Africa to increase productivity, lower risk, limit external effects, and reduce uncertainty, ties associated with the marketing environment increase in costs. However, Dandajena (2013) this study was motivated in large part by the observation that historically, livestock producers in Sub-Saharan Africa, and especially those who graze on nature, are largely motivated likely than other agricultural producers, to use marketing channels. collectively to market their livestock. The concept of collective action has not been put into practice to some extent, despite government of support associated with group formation Sumberg (2005) argues that adoption can be expected to occur only if there is some degree of congruence between the innovation and the targeted group of potential users, meaning that the innovation must match the interests and interests unity Confidence.

3. Research Method and Materials

This research was conducted in Tommo District, Mamuju Regency. With the consideration that the location is a center for the development of Palm Oil in Mamuju Regency. Farmer respondents were selected using purposive or intentional techniques; this was done by selecting farmers who used different marketing channels. The number of farmer respondents who were taken was 30 farmers who were considered to represent all farmers in Tommo District. The number of respondent traders is 3, namely two collectors and one farmer group institution—the three intermediary agents. Sampling for marketing institutions is carried out by snowball sampling. Sampling technique with snowballs. The research was conducted using qualitative and quantitative analysis methods. Qualitative analysis is used to determine the marketing system, marketing institutions, marketing channels, and marketing functions. Meanwhile, quantitative research is used to determine the efficiency of marketing operations, namely marketing margins, farmer's share, and the ratio of profits to costs.

3.1. Analysis of Institutions, functions, and Marketing Channels

The analysis of Fresh Fruit Bunches in Tommo District is carried out by tracing marketing activities from farmers to palm oil mills. The pattern of marketing channels that occur and the number of marketing institutions involved in these marketing channels will be seen. Differences in marketing channels will affect the level of income received by each related institution. Marketing function analysis is used to determine the marketing functions carried out at each marketing agency involved in marketing Fresh fruit bunches. This analysis is also used as a reference in calculating the costs incurred by each marketing agency to obtain marketing margin, farmer's share, and profit to cost ratio. The analysis of the marketing function can be seen from the exchange function, physical function, and facility function carried out by each marketing agency.

3.2. Marketing Efficiency Analysis

Palm oil marketing efficiency can be seen from several factors such as marketing margin, farmer's share, and profit to cost ratio analysis. Apart from these factors, several factors need to be considered, such as marketing channels, marketing functions, marketing institutions.

A. Marketing Margin Marketing

Margin is the price difference between the producer level and final consumer level. Marketing margin can be calculated using the following formula: $M = Pr - Pf$ Where: Mp: Marketing Margin (Rp/Kg), Pr: Price of FFB Palm Oil at the consumer level (Rp/Kg), Pf: Price of FFB Palm oil in producer level (Rp/Kg).

B. Farmer's share

$$F's = \frac{Pf}{Pr} \times 100\%$$

Where:

Fs: Farmer's share (%)

Pf: Farmer's price (Rp/Kg)

Pr: Price paid by processing factory (Rp/Kg)

Criteria used to determine marketing. Fresh Fruit Bunches (FFB) are considered efficient because each marketing channel has a low marketing margin and a high percentage value farmers share. A business is typically said to continue if it does not suffer losses or the business breaks even. If the share received by farmers is <50%, it is not efficient, and if the percentage received by farmers is >50%, then marketing is said to be efficient (Sudiyono, 2002).

C. Profit and Cost Ratio

A marketing system's efficiency level can also be seen from the ratio of profits to marketing costs. With the more even distribution of earnings to marketing costs, the technically (operational) marketing system is more efficient. To find out the distribution of profit and cost ratios in each marketing agency, it can be stated as follows, Profit/Cost Ratio = Kp/Bp , Information: Kp = Profit of marketing agency, Bp = Marketing cost.

4. Results and Discussion

4.1. Descriptive Analysis

Tommo District is one of the sub-districts in Mamuju Regency. The total area of Tommo District is 827.35 km² which is administratively divided into 14 villages. The village with the largest size is Leling Village, with an area of 207.42 km² or 25.07 percent of the total area of Tommo District. Meanwhile, the village with the narrowest area is Tammejarra Village, with an area of 7.20 km² or 0.87 percent of the total area of Tommo District. Most of the land in the Tommo District is plantation land, namely oil palm and cocoa plantations. Land in Tommo District is one of the most critical media for both residential and agricultural land. There are two types of land units in Tommo District, namely:

- The parent material of clay deposits (Grey Alluvial) is found in flat areas with an altitude of 410 M above sea level.
- Brown Mediterranean complex, this type of soil is found in undulating and hilly areas located at an altitude of 450-1500 m above sea level.

The total population in Tommo District, Mamuju Regency is 23,197 people, consisting of 12,238 males and 10,959 females with a population density of 28 people/km². According to the population census data, the family size in one household in the District of Tommo is 3-6 people/household.

4.2. Marketing Channels for Oil Palm Marketing

Channels are palm oil fresh fruit bunches (FFB) movement from producers to consumers through marketing agencies. The marketing channel consists of institutions that carry out all activities and functions used to distribute products and their ownership status from producers to consumers. In the FFB marketing system, there are several parties involved, including (a) Farmers, (b) Farmer Groups, and (c) Collector traders. The pattern of oil palm marketing channels in Tommo District, Mamuju Regency tends to form a short marketing chain. This is because the resulting product is a raw material that must be immediately transported to the processing plant. CPO is produced, which is ready to be processed further.

- Channel Marketing I

Figure 1: Channel Marketing-I Tandan Fresh Fruit

Marketing Channel I consists of farmers and palm oil mills (PCS). The number of respondents in this channel is only three farmers. Farmers in the marketing channel I directly sell their harvested fresh fruit bunches (FFB) to palm oil mills (PCS). The farmers who do this marketing channel already have

transportation to transport their fresh fruit bunches (FFB) to the palm oil mill (PCS). In addition to having their means of transportation, these farmers also already have a large area of oil palm and a permit to become a supplier of fresh fruit bunches (FFB) at a palm oil mill (PCS), namely PT Manakarra Unggul Lestari. With sales volume reaching 32,780 kg or 24.46 percent of the total sales of FFB. The fresh fruit bunches (FFB) of oil palm purchased by the palm oil mill (PKS) from this farmer is Rp. 1,004.30 per kg. This price is determined through a Deliberation between Government Companies, Members of the Mamuju Regency DPRD, Farmers and Farmers Groups using the calculation of world CPO oil prices which fluctuate every day.

b) Channel Marketing II

Figure 2: Channel Marketing-II Tandan Fresh Fruit (TBS)

Nineteen respondent farmers carry out channel II. This channel consists of farmers, farmer groups, and palm oil mills (PCS). Farmers use this marketing channel because they are legitimate members of farmer groups. In this channel, the head of the farmer group with transportation facilities that have been rented will visit the gardens of the farmers who are their members. They will carry out weighing, sorting and loading, and unloading fresh fruit bunches (FFB) on the land owned by the member farmers. The sales volume of oil palm Fresh Fruit Bunches (FFB) in this channel is 78,710 kg or 58.72 percent of oil palm fresh fruit bunches (FFB). The average purchase price of fresh fruit bunches (FFB) from farmers to farmer groups is IDR 650, 50/kg. Palm oil mills (PKS) buy fresh fruit bunches (FFB) from farmer groups at an average IDR 1 004, 30/kg. In this channel, the role of farmer groups is constructive for farmers who use marketing channels, although, in this channel, farmers are subject to cost discounts during the marketing process. Deals consist of transportation costs, management fees, loading and unloading costs, and harvest costs.

c) Channel Marketing III

Marketing channel III has almost the same pattern as marketing channel II. Farmers in marketing channel III come from Tommo District, Mamuju Regency. Respondent farmers in channel III sell their oil palm harvests in fresh fruit bunches (FFB) to collectors. Farmers directly receive the money for selling FFB. after knowing the weight of FFB through a weighing card in this channel. Collector traders can now go to the oil palm plantation area owned by farmers to harvest and transport to the factory. At the time of the research through marketing channels, eight farmers sold FFB (46.88%) with a volume of 31.99 Kg of FFB or 16.82 percent of the land area of 12.85 Ha. The average price of FFB purchases by traders is Rp. 600.50 per kg of FFB. The number of farmers, land area, production, costs incurred (harvest costs, transportation costs, and security costs), and the buying and selling prices of respondent farmers in Tommo District according to the marketing pattern channel can be seen in Table 3 below.

Table 3: Area and Production of People's Plantations by Type Plantin

Channel Marketing	Number of Farmers (person)	Large (Ha)	Total Production (tons)	Amount Fee (Rp/kg)	Purchase Price (Rp/kg)	Selling Price (Rp/kg)
I	3	18,25	32,78	118,62	700,20	1.004,30
II	19	47,45	78,71	43,74	600,50	1.004,30
III	8	12,85	22,55	50,57	650,30	1.004,30
Total	30	78,55	134,04	212,93	195.100	3.012.90

Source: Primary Data after processing, 2019

During the Harvest Season, the collectors will come and buy FFB, and then they will be taken to the collector's warehouse or yard. This channel only carries out harvesting and transportation activities without packaging. Then it is taken to the factory: functions - functions of marketing at each marketing agency. The oil palm marketing system in Tommo District consists of several marketing institutions involved. Each marketing agency certainly carries out marketing functions intending to facilitate the product distribution process. The Marketing function consists of an exchange function, a physical function, and a facility function. Each marketing agency can carry out more than one function following their respective roles in the continuity of marketing activities. The function of an exchange is transferring ownership of an item from the producer to the consumer. This function consists of a sales function and a purchase function. Physical function is an activity that is directly related to the product, giving rise to the use of place, form, and time. A bodily function consists of several activities such as storage, processing, and transportation. The storage function is carried out to regulate the balance of product supply throughout the year. In this palm oil marketing system, the implementation of transportation and sorting functions has a role in helping farmers improve the quality of the products sold. Meanwhile, those that are part of the activities in the facility function include the financing function, the risk-bearing function, and the market information function. The marketing functions of oil palm FFB can be seen in Table 4 below:

Marketing institutions are actors in the marketing system that carry out or develop business activities, namely marketing functions. Institutions involved in delivering oil palm Fresh Fruit Bunches (FFB) products to the marketing channels established in Tommo District, Mamuju Regency include Collector Traders, Farmers Groups, and Processing Factories. Each marketing agency performs marketing functions following its marketing interests and objectives. These marketing functions aim to facilitate distributing oil palm Fresh Fruit Bunches (FFB) products from farmers to palm oil mills (PCS). In detail, the parts of marketing functions by producer farmers and each marketing agency for oil palm Fresh Fruit Bunches (FFB) in Tommo District, Mamuju Regency.

Table 4: Marketing functions of oil palm FFB in Tommo District, Mamuju Regency

Channel Marketing	Marketing Functions							
	Trade		Tangible			Facility		
	Sell	Buy	Transport	Harvest	Storage	Capital Loan	Risk	Information Market
Marketing I								
Farmers	y	n	y	y	y	n	y	y
Pcs	n	y	y	n	n	y	y	y
Marketing II								
Farmers	y	n	n	y	y	n	y	y
Farm Group	y	n	y	y	y	y	y	y
Pcs	n	y	n	n	n	y	y	y
Marketing III								
Farmers	y	n	n	y	n	n	y	y
Collector	y	y	n	y	n	y	y	y
Pcs	n	y	n	n	n	n	y	y

Source: Primary Data after processing 2019

Explanation:

y: carry out these functions

t: do not carry out

o: do not always do, depending on the circumstances

4.3. Distribution Volume Analysis

Through distribution volume analysis, the most dominant marketing channel is used to market coconut Fresh Fruit Bunches (FFB). Oil palm in Tommo District, Mamuju Regency. The total volume of Fresh Fruit Bunches (FFB) distributed in each marketing channel with a unit of time for one harvest can be seen in Table 5.

Table 5: Distribution Volume of Fresh Fruit Bunches (FFB) in Each Marketing Channel

Channel Marketing	Distribution Volume	Percentage (%)
Marketing I	32,78	24,46
Marketing II	78,71	58,72
Marketing III	22,55	16,82
Total	134,04	100,00

Source: Primary Data Source after processing 2019

Table 5 shows that smallholders' oil palm Fresh Fruit Bunches (FFB) are widely distributed through marketing channel II. Fresh fruit bunches (FFB) of oil palm in this channel are distributed through farmer groups to consumers, which are palm oil mills (PCS). The total sales volume of oil palm fresh fruit bunches (FFB) in this marketing channel was 78.71 tons (58.72%) of the total sales volume of oil palm fresh fruit bunches (FFB), which reached 134.04 tons. Marketing channel III is the channel that distributes the minor distribution of fresh fruit bunches (FFB) of oil palm with a volume of 22.55 tons (16.82%) of the total sales volume of fresh fruit bunches (FFB) of oil palm. In this channel, fresh fruit bunches (FFB) of oil palm are distributed through traders to palm oil mills (PCS).

4.4. Marketing Cost Analysis Marketing

Costs are incurred by marketing agencies involved in distributing Fresh Fruit Bunches (FFB) to the final consumer, in this case, the Palm Oil Mill (PCS). These costs are expressed through the functions of marketing functions performed by each marketing agency involved. This marketing cost analysis is carried out to determine which marketing channels incur the highest and lowest costs. The marketing costs consist of transportation costs, labor costs, and user fees. The marketing costs for fresh fruit bunches (FFB) in Tommo District, Mamuju Regency, can be seen in Table 6 below. Referring to table 6, the highest marketing cost structure is in channel I. The costs incurred in this marketing channel are transportation costs Rp 11.36/Kg FFB, labor costs Rp 21.88/Kg FFB, retribution costs Rp 7.71/Kg TBS. The high cost of labor is one of the causes of the high cost of this channel. This is due to the difficulty of finding productive workers ready to work from harvesting to loading onto trucks. The lowest marketing cost structure is in channel II. The costs incurred in this marketing channel are transportation costs of Rp. 11.60/Kg of FFB, labor costs of Rp. 21.48/Kg of FFB and retribution costs of Rp. 5.05/Kg of FFB. Following the marketing function approach (Kohl and Uhl 2002), the impact of the implementation of the function will cause marketing costs. This means that the more parts of the marketing function performed by the marketing agency, the higher the costs incurred. The marketing theory is the difference between the most elevated marketing cost structure in marketing channel I and the lowest cost structure in marketing channel II.

Table 6: Structure of marketing costs incurred by marketing agencies in Tommo District

Description	Retribution	Channel	Marketing
	I	II	III
Farmers			
freight cost	11,36		
Labor Cost	21,88		
Retribution Fee	7,71		
Total Cost	40,95		
Farmer Group			
freight cost		11,60	
Labor Cost		21,48	
Retribution Fee		5,05	
Total Cost		38,08	
Collector			
freight cost			12,92
Labor Cost			22,56
Retribution Fee			5,58
Total Cost			41,07

Source: Primary Data Source after processing 2019

4.5. Margin Analysis Marketing

Margin is the price difference at the producer farm level and the final consumer level. The definition of marketing margin shows the added value of productive activities that occur after the commodity from the farmer level as a primary producer until the final consumer accepts the product. Therefore, the marketing margin can be used as an indicator of the efficiency or not of the formed marketing system. In this study, the Marketing margin is calculated using the equality principle. All units in the calculation of the marketing margin for fresh fruit bunches (FFB) are Rupiah per kg of FFB. In Figure 2, it can be seen that the price of fresh fruit bunches (FFB) at the farmer level in Marketing channel I is IDR 963, 35/kg, while the cost of fresh fruit bunches (FFB) at the palm oil mill (PKS) level is IDR 1,004, 30/kg. In Marketing Channel II, the price of fresh fruit bunches (FFB) at the farmer level is IDR 700, 20 /kg, while the cost of fresh fruit bunches (FFB) at the palm oil mill (PKS) level is IDR 1,004, 30kg. And marketing channel III the price of fresh fruit bunches (FFB) at the farmer level is Rp. 600.50/Kg while the price at the Palm Oil Mill (PKS) level is Rp. 1,004.30kg. The marketing margin shows the number of marketing costs incurred by the marketing agency and the profit taken by the marketing agency involved. Marketing margins can be used to assess the distribution of prices paid by final consumers to farmers. The marketing margin for each marketing channel of oil palm Fresh Fruit Bunches (FFB) in Tommo District, Mamuju Regency, can be seen in table 7.

Table 7: Marketing margin for each marketing channel (Rp/kg) in Tommo District

Description	Channel Marketing		
	I	II	III
Farmers			
Selling Price	963,35		
Farmer Group			
Selling Price		1.004,30	
Purchase price		700,20	
Margin		304,10	
Collector			
Selling Price			1.004,30
Purchase price			600,50
Margin			403,80
Palm Oil Management	1.004.30		

Source: Primary Data Source after processing 2019

In table 7 above, it can be seen the marketing margin of each marketing channel of fresh fruit bunches (FFB) in Tommo District, Mamuju Regency. The difference in marketing margins in each channel is caused by differences in treatment, namely the differences in marketing functions performed by each marketing agency involved, so that, in the end, will determine the number of costs they sacrifice. In Marketing channel I, sales are made by farmers directly to the factory. The price received by farmers is the factory price after deducting labor costs, levies, and transportation carried out by the farmers themselves. The average price of FFB received by farmers through this channel is Rp. 963.35/kg, while the cost of Fresh Fruit Bunches (FFB) at the Palm Oil Mill (PKS) level is Rp. 1,004.30/kg. Marketing channel II, the extensive margin formed is Rp. 304, 10/kg Tbs with farmer groups acting as intermediary institutions. In channel III, the margin formed is Rp. 403, 80/kg FFB, with collectors working as intermediary institutions. Based on table 7 above, it can be seen that marketing channel III is the marketing channel with the highest marketing margin.

4.6. Farmer's Share Analysis Farmer's

Share is the ratio between the price at the farm level with the price at the retail level. In this case, it is the factory. Through farmer's shares, it can be known whether a marketing channel is efficient or not. The considerable value of the farmer's share indicates that the share received by the farmer has a reasonably significant value, indicating that the marketing channel is efficient. Small farmers' share value suggests that the share received by small farmers means that the marketing channel is inefficient. Farmer's share analysis of Fresh Fruit Bunches (FFB) marketing in Tommo District, Mamuju Regency can be seen in Table 8 below.

Table 8: Analysis of Farmer's share of fresh fruit bunches (FFB) in Tommo District

Channel Marketing	Price Farm	Price Factory	Farmer Share (%)
I	963,35	1.004,30	95,92
II	700,20	1.004,30	69,72
III	600,50	1.004,30	59,79

Source: Primary Data Source after processing 2019

The highest farmer's share is found in marketing channel I, which is 100.00 percent. This is because farmers in this channel now sell fresh fruit bunches (FFB) to the palm oil mills (PKS) without intermediaries.

4.7. Profit to Cost

Ratio Profit to cost ratio can be used to see the efficiency of a marketing system. While at the same time defining the amount of profit received from the marketing costs incurred. The analysis of the profit-to-cost ratio of the marketing channel for oil palm fresh fruit bunches (FFB) in the Tommo District can be seen in Table 9 below. Based on table 9, each marketing channel has a profit and cost ratio value that is more than one; this means that the marketing activities carried out by each marketing agency provide benefits. The profit-to-cost ratio cannot be calculated in marketing channel I because farmers directly supply FFB to palm oil mills (PKS) without going through intermediary institutions. The farmer bears all marketing costs and farming costs on the distributed FFB, so it cannot be known with certainty how much the net profit is earned by farmers in marketing channel I. The value of the profit to cost ratio in Marketing channel II is 7.9. This shows that every 1 rupiah of marketing costs incurred will generate a profit of Rp. 79. The profit-to-cost ratio in marketing channel III is 8.83. This indicates that every 1 rupiah of marketing costs incurred will generate a profit of Rp.88. Marketing efficiency is one of the goals to be achieved in a marketing activity. The marketing system can be said to be implemented efficiently if the satisfaction of each party or institution involved in implementing the marketing system can be achieved. Parties or institutions consist of actors involved in the product distribution process and up to the final consumer level. Things that can be used as indicators for determining the efficiency of a marketing activity include the formed marketing channels, the

application of the marketing function in product distribution, market structure, market behavior, and the value of marketing margins and the formed farmer's share. In determining the marketing efficiency of oil palm in Tommo District, standardization of the quality of fresh fruit bunches in each marketing channel is carried out to compare the efficiency values of each track. The components taken into account in determining the value of marketing efficiency are obtained from the results of calculations on the condition of the quality of oil palm FFB with a yield of 18-20 percent.

Table 9: Profit to cost ratio analysis of fresh fruit bunches (FFB) marketing channels

Description	Channel Marketing		
	I	II	III
Farmers			
Selling Price	963,35	700,20	600,50
Freight Cost	11,36		
Labor costs	21,88		
Retribution Fee	7,71		
Total Cost			
Farmer Group			
Purchase price		700,20	
Selling price		1.004,30	
Freight Cost		11,60	
Labor costs		21,48	
Retribution Fee		5,05	
The number of costs		38,08	
Profit		304,10	
π/C		7,9	
Collector			
Purchase price			600,50
Selling price			1.004,30
Freight Cost			12,92
Labor costs			22,56
Retribution Fee			5,58
The number of costs			41,07
Profit			362,73
π/C			8,83
Total Marketing Cost	40,95	38,08	41,07
Total Profit	-	304,10	362,73
Profit To Cost Ratio	-	7,9	8,83

Source: Primary Data Source after processing 2019

Table 10: Value of Marketing Efficiency in each Palm Oil Marketing Channel

Channel Marketing	Farmer Price	Factory Price	Margin	efficiency	Farmer	π/C
I	1.004,30	1.004,30	-	11,81	88,19	7,5
II	700,20	1.004,30	304,1	30,28	69,76	5,9
III	600,50	1.004,30	403,8	40,21	59,79	7,0

Source: Primary Data Source after processing 2019

Table 10 presents data on the value of marketing efficiency in each marketing channel formed with the condition of palm oil products with relatively the same quality in each channel, with a yield of 18-20 percent. Based on these data, it can be seen from the value of margin and farmer's share that channel I is relatively more efficient than channel II, and III with a margin value of 0 and farmer's share of 100.00%, the production volume of 32.78 tons or 24.45 percent. The resulting ratio value is 7.5.

5. Conclusion

The marketing system for fresh fruit bunches (FFB) in Tommo District, Mamuju Regency, is a marketing channel for oil palm fresh fruit bunches (FFB) formed in Tommo District Mamuju Regency. There are three channels, namely: Marketing channel I, namely Farmers - Palm oil mills, Marketing channel II, namely Farmers - Farmers groups - Palm oil mills, Marketing Channel III, namely Farmers - Collectors - Palm oil mills, then the highest marketing cost structure is in the channel I. Marketing costs incurred in This marketing channel is Rp 40.95/Kg FFB. In marketing channel II, the margin formed is Rp. 304.10/kg FFB. In channel III, the margin formed is Rp. 403.80/kg FFB, and channel 1 is the most efficient channel for farmers. Based on margin analysis, profit-to-cost ratio analysis shows that marketing channel I is the most efficient channel. This is caused by the margin value of 11.81% and 100% farmer's share, the production volume of 32.78 tons or 24.45%. The resulting ratio value is 7, 2. Things that need to be considered and improved to support oil palm marketing activities. Namely: Farmers in marketing channel III should immediately form farmer groups to distribute the production of fresh fruit bunches (FFB) of oil palm directly to the palm oil mill (PKS). The local government, in this case, the plantation office, can monitor the purchase price of FFB issued by the Palm Oil Mill (PKS) correctly so that the Palm Oil Mill (PCS) does not arbitrarily lower the purchase price of FFB. It is recommended to play an active role in helping to socialize cooperatives to farmers and issuing permits to form cooperatives. Village and sub-district officials must participate in supervising the implementation of activities for forming farmer groups and cooperatives. Palm oil mills (PKS) are advised to socialize the performance of good harvests and assist in making contracts with farmer groups.

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