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Marketing Analysis of Indonesian Sustainable Palm Oil (ISPO) and non-ISPO Certified Independent Palm Oil in Batanghari Regency, Jambi Province, Indonesia

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Abstract. This research analyzes marketing efficiency: marketing, marketing function, marketing margin, farmer's share, and the ratio of profit to cost of fresh fruit bunches (FFB) for ISPO (Indonesian Sustainable Palm Oil) and non-ISPO palm oil in Batanghari Regency, Jambi Province. The sample consisted of 30 ISPO farmers and 30 non-ISPO farmers, sampling farmers using a purposive method and then using the snowball sampling method to find out what institutions are involved in the ISPO and non-ISPO independent oil palm marketing process in Batanghari Regency. The research results show four marketing channels: (1) farmer-trader-large trader-palm oil weighing-mill, (2) farmer-trader-palm palm weighing-mill, (3) farmer-palm palm weighing-mill, and (4) farmer-merchant-mill. ISPO farmers do not experience differences in marketing channels and prices, which is not in accordance with the objectives of establishing ISPO. Marketing functions include purchasing, selling, transporting, harvesting, risk-bearing, financing, and market information. Analysis of marketing margin, farmer's share, and profit-to-cost ratio shows the third most efficient channel with a farmer's share of 87.82% with the farmer's marketing channel selling FFB through palm oil weighing, which distributes it to mills, involving one marketing institution.

Keywords: channels; efficiency; ISPO; marketing; palm oil

INTRODUCTION

Jambi Province is one of the regions in Indonesia that produces palm oil. Palm oil is one of the leading agricultural commodities in Jambi Province (Dinas Perkebunan Provinsi Jambi, 2022). Batanghari Regency is one of the regencies in Jambi Province that cultivates palm oil, with a total area of 52,351 hectares and a production of 140,905 tons of palm oil (Dinas Perkebunan Provinsi Jambi, 2022).

Batanghari Regency has obtained the ISPO (Indonesian Sustainable Palm Oil) certification at the Mutiara Bumi Cooperative in Bajubang Subdistrict, Pompa Air Village. The funding for the ISPO certification comes from the Regional Budget (APBD) of the Batanghari Regency Government (Regulation of The Minister of Agriculture of The Republic of Indonesia Number 11 of 2015). ISPO certification is intended for ensure that palm oil products are produced using the appropriate processes and methods sustainable (Hutabarat, 2019, 2022a)

Take advantage of existing opportunities to obtain ISPO (Indonesian Sustainable Palm Oil) certificates, so that farmers will easily get capital assistance, thus farmers can take part in various training and counseling in the context of developing oil palm (Nainggolan et al., 2023)

The funding for ISPO certification at the Mutiara Bumi Cooperative comes from the local government, Presidential Regulation of The Republic of Indonesia Number 44 of 2020 as stated in Article 18, Paragraph 2, where the funding for ISPO certification can come from the state budget, regional budget, and/or other legitimate sources, in accordance with the regulations. The Central Government and Local Government provide guidance and supervision for the implementation of ISPO certification for business actors. Therefore(Hutabarat, 2022b), palm oil with ISPO certification should have different qualities and prices compared to non-The high cost of certification is intended by the local government to encourage ISPO-certified oil palm farmers to sell their Fresh Fruit Bunches (FFB) to cooperatives, so that cooperatives can collaborate and sell directly to palm oil mills at higher prices for the farmers.

However, in the current implementation, cooperatives do not have a significant economic role, such as selling FFB to palm

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oil mills. As a result, the farmer groups *(gapoktan)* and cooperatives have not fully carried out their functions as specified in the ISPO formation(Euler et al., 2016). If the farmers want to obtain added value, the functions of the cooperative institution must be aligned. Since there is no role of cooperatives in marketing ISPO-certified FFB, ISPO-certified oil palm farmers should streamline the marketing system and sell their harvest directly to the mills. By doing so, they can avoid price discrepancies and achieve efficiency in the marketing process. This can be achieved by selling high-quality FFB obtained through the implementation of good plantation practices (Raharja et al., 2020).

The ISPO cooperative does not yet have an economic role, such as selling FFB to palm oil mills, so that Gapoktan and the ISPO cooperative are not in accordance with the ISPO principles as stated in the Regulation of the Minister of Agriculture of the Republic of Indonesia Number 38 of 2020. The implementation of the aim of establishing ISPO is so that ISPO farmers get more added value (Sari, 2022; Sihombing & Ernah, n.d.). The government program for issuing ISPO certificates in Gapoktan and cooperatives in Jambi Province has not been well realized, so that Gapoktan and cooperatives that have received ISPO certificates have not made any economic changes, especially in the marketing of ISPO certified palm oil. Large costs come from the Regional Government APBD in facilitating cooperatives and Gapoktan to obtain ISPO certificates, but these are not realized properly. ISPO cooperatives should be a force in implementing institutional functions in marketing channels, so that they can influence marketing costs and share margins received. Based on the data above, the research objective is to find out how marketing channels, marketing functions and roles are carried out by marketing institutions for ISPO and non-ISPO palm oil in Batanghari Regency and to conduct an analysis of the marketing efficiency of ISPO palm oil FFB in Tanjung Jabung Regency. West and Batanghari Regency in Jambi Province using the marketing margin approach, farmer's share, and profit to cost ratio.

METHODS

This research was conducted in Batanghari Regency. The location selection will be purposive, considering that Batanghari Regency, specifically Bajubang Subdistrict, Pompa Air Village, is one of the largest producers of FFB with the highest productivity in Jambi Province(Dinas Perkebunan Kabupaten Batanghari, 2022), and it has implemented ISPO certification for independent oil palm plantations. The research will be conducted from August to October 2022(Dinas Perkebunan Provinsi Jambi, 2022).

Research Sample

The selection of respondents will be done using purposive sampling method taking into account that Batang Hari Regency, Bajubang District, Pompa Air Village is one of the largest FFB production villages with the largest productivity in Jambi Province and has implemented an ISPO certificate at the Mutiara Bumi Cooperative in 2019. The characteristics of the farmers will be considered based on the type of commodity they cultivate, which is ISPO-certified and non-ISPO-certified oil palm. The sample determination will be conducted using a stratified approach, where the samples will be classified into farmers who are members of cooperatives/gapoktan with ISPO certification and farmers without ISPO certification.

Based on Gay and Mahmud (2011), a minimum sample size of 30 samples from the population is recommended for research purposes. Therefore, the number of selected respondents will be 30 ISPO-certified oil palm farmers and 30 non-ISPO-certified oil palm farmers, representing the overall population of farmers in Batanghari Regency, Bajubang District, Pompa Air Village, total

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sample size for this study will be 60 oil palm farmers.

Determining respondents used the simple random sampling method as a simple random sample selection method where each element in the population has the same opportunity to be selected as a sample and there is a sample frame of ISPO and non-ISPO oil palm farmers, making it easier to determine the sample, followed by snowball sampling technique to identify the institutions involved in the marketing process of ISPO-certified and non-ISPO-certified independent oil palm in Batanghari Regency are Traders, Wholesaler, Mill weighing traders, and Mills . The data collection techniques will include observation and interviews. Observation will involve direct observations conducted at the research location.

Research Data

The data sources that will be used in this study are primary and secondary data. Primary data will be obtained from surveys conducted through interviews with oil palm ISPO and non-ISPO oil palm farmers and relevant marketing institutions. Secondary data will be obtained from various sources, such as the Central Bureau of Statistics, the Jambi Provincial Plantation Office, the Batanghari Regency Plantation Office, the Agricultural and Fisheries Extension Center, and other literature related to this research.

Data Analysis

Analysis of Marketing Institutions and FunctionsThe analysis of marketing institutions is conducted to understand the marketing functions performed by each marketing institution involved in Batang Hari Regency using Marketing and Institutional Analysis, Marketing Channel Analysis, Marketing Margin Analysis, Farmer Share Analysis, and Profit Ratio Analysis. The analysis of marketing institutions uses a qualitative descriptive approach. This analysis aims to identify the marketing institutions involved in the marketing channels of ISPO and non-ISPO oil palm in Batanghari Regency. The analysis of these marketing institutions discusses who is involved in delivering the products from producers to consumers. The analysis of marketing institutions is also used to identify the achievement of efficiency in a marketing channel (Carolina Simorangkir & Rosiana, 2022).

Analysis of Marketing Channels

The analysis of marketing channels uses a qualitative descriptive approach and aims to determine the marketing channels used by marketing institutions in delivering ISPO and non-ISPO oil palm to the palm oil mills in Batanghari Regency.

Analysis of Marketing Margins

Marketing margins are obtained from the difference between the selling price at the producer level (farmers) and the selling price at the consumer level. The analysis of marketing margins is conducted through a quantitative approach. Marketing margins represent the price difference paid by consumers and the price received by producers.

$$MT = \Sigma Mi,\ i = 1,2,3,..\ n \quad ---(1)$$

$$Mi = Pr - Pf$$

Information:

MT: marketing margin at each level of marketing agency (Rp/kg)
Mi : average margin at marketing agency level in (Rp/kg)
i : marketing agency level 1,2,3,…….,n
Pr : purchase price at the consumer level, in this case at the processing factory level (Rp/kg)
Pf : price at producer farmer level (Rp/kg)

Marketing margin consists of two components, namely cost component and profit component, where the margin of a marketing institution is the sum of marketing costs incurred and the profit received by that institution.

$$Mi = \pi i + Bi \quad ----(2)$$

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Information:
Mi: average margin at marketing agency level in (Rp/kg)
I : marketing agency level 1,2,3,…….,n
Bi : average marketing costs at marketing agency level (Rp/kg)
πi : average profit at marketing institution level (Rp/kg)

Farmer's Share Analysis

The income received by farmers is the percentage comparison of the price received by farmers to the price paid at the final consumer level. Mathematically, farmer's share is calculated using the following formula:

$$F's = Pf / Pr \times 100\% \text{ ----(3)}$$

Information:
F's: Income received by farmers in the form of a percentage (%)
Pf : Prices at farm level (Rp/kg)
Pr : Price paid by palm oil mills (Rp/kg)

Profit-Cost Ratio Analysis

The profit-cost ratio (π/C Ratio Analysis) is the percentage of marketing profit to marketing costs, which is technically used to assess the level of efficiency. Mathematically, the profit-cost ratio for each marketing institution can be formulated as follows:

Profit/Cost Ratio

$$(\pi/c)=(\pi i/ci) \times 100\% \text{ ---- (4)}$$

Information:
πi : Profit- i marketing agency (Rp/kg).
Ci : Marketing Cost i issued by the marketing agency (Rp/kg).

RESULTS AND DISCUSSION

Batanghari Regency is one of the regencies located in Jambi Province. It covers an area of 5,180.35 square kilometers. As of the end of 2020, the regency had a population of 301,700 people, with a population density of 52 people per square kilometer. Bajubang Sub-district is one of the sub-districts within Batanghari Regency, Jambi Province. Bajubang Sub-district has an area of 481.66 square kilometers and consists of 10 villages, 38 hamlets, and 145 neighborhood units (RT). Pompa Air Village comprises 4 hamlets and 11 neighborhood units, with a total area of 19.80 square kilometers..

Characteristics of Respondent Farmers

The farmer's age, farming experience, price of fresh fruit bunches, and the cash payment system have a significant influence on the selection of marketing channels used in the marketing of fresh fruit bunches(Arwan et al., 2023).

Table 1. Characteristics of ISPO and non-ISPO Palm Oil Farmer Respondents in Batanghari Regency.

No	Attribute	Number (people)			
		ISPO farmer	Percentage (%)	non ISPO farmers	Percentage (%)
1.	Age (years)				
	26 – 35	2	6,67	4	13,33
	36 – 45	9	30,00	9	30,00
	46 – 55	10	33,33	8	26,67
	56 – 65	8	26,67	7	23,33
	66 – 75	1	3,33	2	6,67
2	Land Area (Ha)				
	1 – 3	6	20,00	29	96,67
	4 – 6	22	73,33	1	3,33
	7 – 9	0	0,00	0	0
	10 – 12	2	0,00	0	0
3	Education level				
	Elementary School	19	63,33	22	73,33
	Junior High School	7	23,33	5	16,67
	Senior High School	3	10,00	3	10,00
	Bachelor's Degree	1	3,33	0	0
4	Farming experience (Years)				
	5 – 15	29	96,67	27	90,00
	16 – 27	0	0,00	0	0,00
	28 – 39	1	3,33	3	10,00

Source: Primary data processed, 2022

Based on Table 1, the characteristics of farmer respondents can be observed from several aspects including age group, land area, last education attainment, and farming experience. Farmer respondents are predominantly in the age group of 46-55 years for both ISPO and non-ISPO farmers, age being able to support the adoption of innovation in improving oil palm farming, which can support productivity and adoption

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of innovation in the program. The land area is predominantly between 1-3 hectares, which has an impact on farming productivity. The last education attainment is predominantly at the elementary school level. On average, farmers have farming experience ranging from 5 to 15 years. This shows that farmers have experience in cultivating oil palm plants so that it has a positive effect on oil palm productivity (Riati, 2021).

Respondent Institutional Characteristics

The marketing institutions analyzed are the institutions involved in the ISPO palm oil business in Kabupaten Batanghari. There are 3 FFB traders, 4 large traders, 2 mill weighing traders, and 1 farmer who also acts as a FFB trader in the marketing channel in Kabupaten Batanghari. Age group, last education attainment, and business experience are characteristics of these marketing institutions.

Based on the age range of the respondents, it can be concluded that the dominant age group is between 27 and 36 years old, this indicates that this age group falls within the late adulthood category according to (Keputusan Menteri Kesehatan Republik Indonesia, n.d.). Furthermore, looking at the educational background of the respondents, the majority of them have completed junior high school or high school. This indicates that the marketing institutions can provide clear, simple, and accessible information and communication to farmers with this educational background. The use of easily understandable language and effective message delivery can help build awareness and trust among farmers in selling FFB. In terms of experience, the majority of marketing institutions have experience ranging from 5 to 15 years, indicating that they have good capabilities in conducting FFB transactions at the farmer and palm oil mill levels.

Analysis of Palm Oil ISPO Marketing Channel

The marketing channels of ISPO-certified and non-certified palm oil in Batanghari District were analyzed descriptively to determine the pattern of marketing channels in the area. Based on information obtained from interviews with the respondents, it can be observed that there are several marketing institutions involved in the marketing of palm oil in Batanghari District, including palm oil mills, palm oil brokers, large-scale traders, and fresh fruit bunch traders.

Table 2. Characteristics of ISPO and non ISPO Palm Oil Marketing Institutions in Batang Hari regency

No	Attribute	Number (people)	
		ISPO	Non ISPO
1.	Age (years)		
	26 – 35	2	4
	36 – 45	9	9
	46 – 55	10	8
	56 – 65	8	7
	66 – 75	1	2
2.	Education level		
	Elementary School	19	22
	Elementary School	7	5
	Senior High School	3	3
	Bachelor's Degree	1	0
3.	Farming experience (Years)		
	5 – 15	29	27
	16 – 27	0	0
	28 – 39	1	3

Source : Primary data processed, 2022

The marketing channel model is determined by the marketing institutional tendencies to market and distribute fresh fruit bunches (FFB), resulting in the exclusion of farmer groups and cooperatives from the marketing channelThis finding is the same as in previous research, namely the market performance of each marketing channel shows that the margins, the share received by farmers and the biggest profits are in the marketing channel (Putriana et al., 2023). This is not aligned with the objectives of the local government of Batanghari District in establishing ISPO for ISPO-certified farmers in the Mutiara Bumi cooperative to sell

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directly to palm oil mills and obtain a different price compared to non-ISPO FFB. Based on the conducted research, the ISPO palm oil marketing channel formed in Batanghari District consists of four channels, namely:
Channel 1: Farmers - traders - wholesale - mill weighing traders - mills
Channel 2: Farmers -traders - mill weighing traders - mills
Channel 3: Farmers - mill weighing traders-mills
Channel 4: Farmers - mill weighing traders-mill Meanwhile, non-ISPO palm oil farmers in Batanghari District have the same four marketing channels as ISPO palm oil farmers, but they have different quantities of kilograms and the number of farmers selling to each marketing institution, as shown in the following diagram.

Marketing channel 4 involves farmers who also act as FFB traders. There is 1 farmer who acts as a trader and uses their own transportation to sell fresh fruit bunches to the palm oil mill. Overall, there are 11 farmers who act as fruit traders and FFB traders.This is in line with previous research which explains the Cooperation between farmers and traders generally have existed for a long time and it is difficult for farmers to break away from traders and wholesaler (Primalasari et al., 2017).

The total sales volume for ISPO-certified palm oil farmers is 15,980 kg, and for non-ISPO-certified farmers, it is 8,738 kg. The selling price for farmers is Rp 1,528/kg, and the mill buys it at a price of around Rp 1,970/kg. In each marketing channel, the price of fresh fruit bunches is determined by the palm oil mill, in this case, a private mill PT OPQ. The price determination is done by the Department of Plantation of Jambi Province, which is set weekly, referring to the global CPO (Crude Palm Oil) prices The purchasing system implemented by marketing institutions is based on weighing and cash payment to farmers. The processed fresh fruit bunches by the palm oil mill will result in refined CPO (Crude Palm Oil), which will be directly sent to Muaro Jambi District, Talang Duku Port, and subsequently exported overseas.

Marketing Function Analysis

Marketing function is the activity or business process that occurs within a marketing system, aimed at increasing or creating value to satisfy customer needs. In terms of functionality, there are several functions in marketing, namely exchange function, physical function, and facilitation function(Pratama & Eliza Tetu, 2015). The institutions involved in the delivery process of fresh fruit bunches of palm oil in the marketing channel formed in Batanghari District include FFB traders, large-scale FFB traders, mill weighing, and farmers who also act as fruit traders. Each marketing institution performs marketing functions according to their interests and objectives(Ratna Winandi Asmarantaka, n.d.). These marketing functions aim to facilitate the distribution of fresh fruit bunches of palm oil from farmers to the palm oil mill. Specifically, the marketing functions performed by producer farmers and each marketing institution for fresh fruit bunches of palm oil in Batanghari District are as follows:

In channels 1 to 6, farmers carry out exchange functions (sales), physical functions (transportation), and facilitate harvesting functions. In channels 1 and 2, FFB traders perform exchange functions (sales), physical functions (transportation), and facilitate functions (loan provision). In channel 3, there is a large-scale FFBtrader institution that collects FFB from FFB traders and farmers. The marketing functions performed include exchange functions (sales), physical functions (transportation), and facilitation functions (loan provision). In channel 4, there is a mill weighing marketing institution that has marketing functions such as exchange functions (sales), physical functions (transportation), and facilitation functions (sorting, market information, and risk management). Sorting involves separating ripe and unripe fresh fruit bunches, while in risk management, the mill weighing must deliver FFB that meets the requested and established standards of the palm oil mill,

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such as ensuring that the amount of impurities in the fresh fruit bunches does not exceed five percent. In channel 6, farmers who also act as FFB traders have similar marketing functions to fresh fruit bunch traders, including exchange functions (sales), physical functions (transportation), and facilitation functions (risk management, market information, and harvesting)

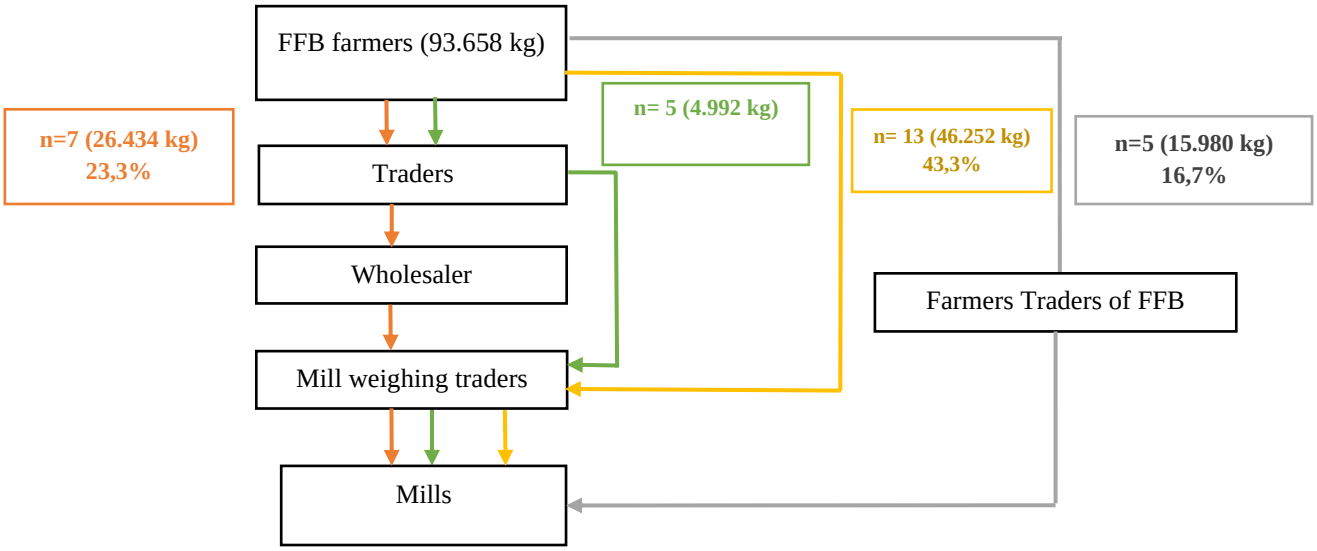

Figure 1. Marketing channels for ISPO certified palm oil in Batanghari Regency

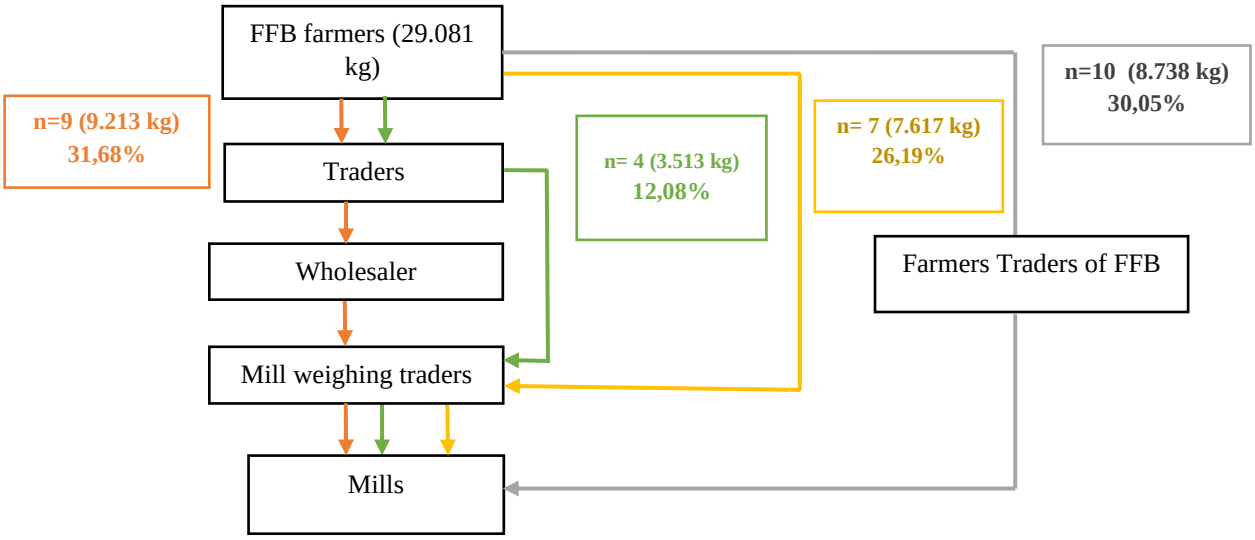

Figure 2, Marketing channels for non-ISPO certified palm oil in Batanghari Regency

Marketing Cost Analysis

Marketing cost refers to the expenses incurred by marketing institutions involved in distributing fresh fruit bunches to the end consumer, in this case, the palm oil mill. These costs are incurred through the marketing functions performed by each participating marketing institution. The analysis of marketing costs is conducted to determine which marketing channels incur the highest and lowest costs(Rodhiah, 2018). The marketing costs include transportation costs, labor costs, and fees. The marketing costs for ISPO and non-ISPO fresh fruit bunches of palm oil in Batanghari District can be seen in Table 3.

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In the marketing of palm oil in Batanghari District, the highest marketing cost structure occurs in ISPO farmers in channel 1, with a total cost of Rp 714.17/kg of fresh fruit bunches. This cost includes loading and unloading, transportation, apportioned costs, and operational costs. The high transportation cost is due to the long distance between farmers' plantations and large-scale FFB traders, as well as the distribution of fresh fruit bunches to the mill weighing and palm oil mill. On the other hand, the lowest marketing cost structure is found in channel 3, with a total cost of Rp 269.78/kg of fresh fruit bunches. In this channel, farmers directly deliver fresh fruit bunches to mill weighing, which is located near the palm oil mill, significantly reducing transportation costs. Mill weighing in this channel also only uses truck trailers as a means of transportation.

Table 3. Structure of marketing costs issued by marketing agencies for palm oil ISPO in Batanghari regency

Uraian	Marketing channel			
	Channel 1 (Rp/kg)	Channel 2 (Rp/kg)	Channel 3 (Rp/kg)	Channel 4 (Rp/kg)
Farmer				
Shutters FFB	1,00	1,00	1,00	6,00
Tool Shrinkage	5,00	5,00	5,00	5,00
Labor	2,00	2,00	2,00	6,00
Transportation	5,00	8,00	11,00	40,00
Total cost	15,00	18,00	21,00	63,00
Traders				
Unloading and loading	500,00			
Transportation	127,50			
Retribution	3,33			
operational	83,33			
Total cost	714,17			
Wholesaler				
Unloading and loading	175,00	225,00		
Transportation	42,50	51,00		
Retribution	7,50	7,50		
operational	112,50	112,50		
Total cost	337,50	396,00		
Mill weighing traders				
Unloading and loading	160,00	160,00	160,00	
Transportation	42,50	51,00	42,50	
Retribution	48,00	60,00	48,00	
operational	1,28	1,28	1,28	
Total cost	251,78	272,28	251,78	
Farmers traders of FFB				
Unloading and loading				266,67
Transportation				85,00
Retribution				2,67
operational				53,33
Total cost				407,67
Overall Total Cost	2634,89	1370,56	543,56	935,34

Source: Primary data processed, 2022

Based on table 3, the highest marketing cost structure for ISPO farmers in Batanghari Regency is in channel 1. In this channel, the largest marketing costs are paid by FFB traders, with total costs amounting to IDR 714.17/kg FFB. The costs consist of loading and unloading costs amounting to IDR 500/kg TBS, transportation costs amounting

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to IDR 127.5/kg TBS, levy costs amounting to IDR 3.33/kg TBS, and operational costs amounting to IDR 83.33/kg TBS. High costs for transportation are a result of the fuel costs used to collect fresh fruit from farmers and then transport it to FFB wholesalers (Alham et al. 2020). Marketing channel 3 has the lowest marketing cost structure, with a total cost of IDR 269.78/kg FFB. Marketing costs include loading and unloading costs of IDR 160/kg TBS, transportation costs of IDR 42.5/kg TBS, operational costs of IDR 48/kg TBS, and retribution costs of IDR 1.28/kg TBS. In this channel, farmers directly distribute ISPO FFB to palm oil weighing, which then distributes the FFB to palm oil mills. The advantage of this channel is that the palm oil weighing is located close to the palm oil mill, so transportation costs are not significant. Apart from that, this palm oil weighing also uses a truck with a capacity of 25,000 kg of FFB as a means of transportation.

Table 4. Structure of marketing costs issued by marketing agencies for palm oil non ISPO in Batanghari regency.

Uraian	Saluran Pemasaran			
	Channel 1 (Rp/kg)	Channel 2 (Rp/kg)	Channel 3 (Rp/kg)	Channel 4 (Rp/kg)
Farmer				
Shutters FFB	1,00	1,00	1,00	7,00
Tool Shrinkage	5,00	5,00	5,00	5,00
Labor	2,00	2,00	2,00	5,00
Transportation	9,50	9,50	12,00	50,00
Total cost	20,50	20,50	22,50	73,00
Traders				
Unloading and loading	600,00			
Transportation	153,00			
Retribution	4,00			
operational	100,00			
Total cost	857,00			
Wholesaler				
Unloading and loading	175,00	225,00		
Transportation	42,50	51,00		
Retribution	8,50	8,50		
operational	112,50	112,50		
Total cost	337,50	396,00		
Mill weighing traders				
Unloading and loading	160,00	160,00	160,00	
Transportation	42,50	51,00	42,50	
Retribution	48,00	60,00	48,00	
operational	1,28	1,28	1,28	
Total cost	251,78	272,28	251,78	
Farmers traders of FFB				266,67
Unloading and loading				85,00
Transportation				2,67
Retribution				53,33
operational				407,67
Total cost				955,34
Overall Total Cost	2931,56	1375,56	546,06	266,67

Source: Primary data processed, 2022

Referring to table 4, the highest marketing cost structure for non-ISPO palm oil in Batanghari Regency is in channel 1, namely IDR 1,466.78/kg FFB. The largest marketing costs in channel 1 for TBS traders are IDR 857/kg TBS. The costs incurred are loading and unloading costs IDR 600/kg TBS, transportation costs IDR 153/kg TBS, handling costs IDR 4/kg TBS, and operational costs IDR 100/kg TBS. In this channel, the same as ISPO farmers, traders use trucks and transport roads that are not good for vehicles, so they require high costs in distributing fresh fruit bunches. The lowest marketing cost structure is in channel 3, namely IDR 274.28/kg FFB. The largest marketing costs incurred in this marketing channel are loading and unloading costs of IDR 160/kg TBS, transportation costs IDR 42.5/kg TBS, operational costs IDR 48/kg

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TBS, and levy costs IDR 1.28/kg TBS. In this marketing channel, farmers directly distribute oil palm bunches to palm oil weighing who distribute fresh fruit bunches to palm oil mills. The oil palm weighing has 1 means of transportation, namely a truck with a capacity of 25,000 kg FFB.

Marketing Margin Analysis

Marketing margin refers to the price difference between the producer farmers and the end consumers. Marketing margin is also often referred to as price or a collection of services from marketing activities(Nasution et al., 2021). The concept of marketing margin indicates the added value from productive activities that occur after the commodity leaves the level of farmers, goes through primary producers, and is received by the end consumers(Lifianthi et al., 2022).

Table 5 ISPO and non ISPO palm oil marketing margins in Batanghari regency

Marketing channel		FFB price at farmer level (Rp/Kg)	FFB price at consumer level (Rp/Kg)	Marketing Margin (Rp/Kg)
channel 1	ISPO	1.635,00	1.970,00	335,00
	Non ISPO	1.392,00	1.970,00	578,00
channel 2	ISPO	1.650,00	1.970,00	320,00
	Non ISPO	1.532,00	1.970,00	438,00
channel 3	ISPO	1.835,00	1.970,00	135,00
	Non ISPO	1.730,00	1.970,00	240,00
channel 4	ISPO	1.600,00	1.970,00	370,00
	Non ISPO	1.528,00	1.970,00	442,00

Source: Primary data processed, 2022

Farmer's share analysis can be seen in table 5 for ISPO and non-ISPO oil palm farmers in Batanghari Regency. The marketing margin for ISPO oil palm farmers in Batanghari Regency is low in channel 3, namely IDR 135/kg and non-ISPO oil palm is IDR 250/kg. This is because channel 3 only involves one institution, namely the palm oil mill which sells directly to the final consumer, namely the palm oil mill. This results in a higher price position for farmers. Meanwhile, channels 2 and 4 have relatively the same margin, namely channel 2 for ISPO palm oil at IDR 320/kg and non-ISPO palm oil at IDR 438/kg. Channels 1 and 2 are similar to marketing channels in Batanghari Regency which require several marketing institutions to distribute their products to palm oil mills, so that marketing institutions can carry out marketing functions aimed at increasing utility or added value to ensure consumer satisfaction. also in line with previous research because marketing channel margins are not too high and marketing channels are shorter so marketing channels are efficient (Rahayu et al., 2021).

Farmer's Share Analysis

The farmer's share is the ratio between the price at the farmer level and the price at the retail level, in this case, the palm oil factory. It is used to determine the portion of the price at the consumer level, in this case, the factory, that can be enjoyed by the farmers. Farmer's share helps determine whether a marketing channel is efficient or not. A high farmer's share value indicates that the portion received by the farmers is relatively large, indicating an efficient marketing channel. A low farmer's share value indicates that the portion received by the farmers is small, indicating an inefficient marketing channel. Both ISPO and non-ISPO farmers sell to the same marketing institutions, so there is no price difference between ISPO and non ISPO.

Table 6 Farmer's Share in Marketing ISPO Oil Palm in Batanghari District

Marketing channel		FFB price at farmer level (Rp/Kg)	FFB price at consumer level (Rp/Kg)	Farmer's Share (%)
channel 1	ISPO	1.635,00	1.970,00	83,0
	Non ISPO	1.392,00	1.970,00	70,7
channel 2	ISPO	1.650,00	1.970,00	83,8
	Non ISPO	1.532,00	1.970,00	77,8
channel 3	ISPO	1.835,00	1.970,00	93,1
	Non ISPO	1.730,00	1.970,00	87,8
channel 4	ISPO	1.600,00	1.970,00	81,2
	Non ISPO	1.528,00	1.970,00	77,6

Source: Primary data processed, 2022

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The highest farmer's share is in marketing channel 3 at 93.1 percent for ISPO palm oil and 87.82 percent for non-ISPO palm oil. This is because farmers in this channel only involve one marketing institution, namely the palm oil mill, to sell to the palm oil mill. In this channel, farmers who have land close to palm oil mills can directly send their production using transportation. However, farmers still bear the marketing costs required to distribute fresh fruit bunches to palm oil mills.

Meanwhile, channels 2 and 4 have almost the same percentage of farmer's share. In channel 2 ISPO farmers have a farmers share of 83.3 percent, while non-ISPO farmers have 77.3 percent. In channel 2 it involves two institutions, namely fresh fruit bunch traders and palm oil mills. This is due to the proximity of farmers' plantations to wholesalers of fresh fruit bunches, so that farmers bear the costs of distributing the fresh fruit bunches. In channel 4, farmer's share among ISPO oil palm farmers is 81.2 percent, while non-ISPO oil palm farmers' share is 77.8 percent. Channel 4 only involves one marketing institution, namely the farmers themselves who also act as traders of fresh fruit bunches. In this channel, farmers and traders of fresh fruit bunches bear the costs of distributing fresh fruit bunches for sale to palm oil mills. Farmers in this channel have established long-term cooperation and have close family relationships. This is in line with previous research which explains that the involvement of marketing institutions influences the price level of fresh fruit bunches at the farmer level.(Rahmanta, 2017).

Profit and Cost Ratio Analysis

The profit-to-cost ratio can be used to assess the efficiency of a marketing system. The profit-to-cost ratio defines the magnitude of profit received relative to the marketing costs incurred. A profit-to-cost ratio value greater than one indicates that the channel is viable and has provided profits to the involved marketing institutions. The profit-to-cost ratio for each pattern of ISPO and non-ISPO palm oil marketing channels in Batanghari Regency can be seen in Table 7 below.

Table 7 Analysis of profit to palm oil ratio ISPO marketing channel costs and non-ISPO palm oil in Batanghari Regency

Marketing channel		Total Marketing Cost (Rp/Kg)	Total Marketing Profit (Rp/Kg)	Profit to Cost Ratio (Rp)
channel 1	ISPO	1.316,44	5.688,56	4,32
	Non ISPO	1.464,78	5.302,22	3,62
channel 2	ISPO	684,28	4.685,72	6,85
	Non ISPO	686,78	4.565,22	6,65
channel 3	ISPO	270,78	1.951,00	7,21
	Non ISPO	271,78	1.950,00	7,17
channel 4	ISPO	464,67	3.105,33	6,68
	Non ISPO	474,67	3.023,33	6,37

Based on Table 6 above, the highest profit-to-cost ratio for ISPO and non-ISPO palm oil in Batanghari Regency is found in channel 3. ISPO palm oil farmers have a profit-to-cost ratio of 7.14 rupiah, while non-ISPO palm oil farmers have a ratio of 7.1 rupiah. In this channel, farmers sell directly to the palm oil mill, resulting in higher prices received by the farmers compared to other channels. Farmers in this channel are able to sell fresh fruit bunches to the mill because they have transportation facilities and good road access to distribute to the mill. On the other hand, channel 1 has the lowest profit-to-cost ratio for both ISPO and non-ISPO palm oil. The ratio is 4.08 rupiah for ISPO palm oil and 3.57 rupiah for non-ISPO palm oil. In this channel, farmers sell fresh fruit bunches to the mill, incurring high loading and transportation costs, resulting in the lowest profit compared to other channels. Additionally, farmers sell to fruit bunch traders due to existing loan obligations with

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the traders. Moreover, farmers do not have adequate transportation access to sell fresh fruit bunches directly to the mill. It can be concluded that channel 1 for both ISPO and non-ISPO palm oil is not efficientThis is in line with previous research, namely that farmers only involve one marketing agency, thus cutting the palm oil supply chain so that the marketing channel is efficient(Kana et al., 2022).

Channel 3 should serve as an example for the ISPO cooperative, which consists of ISPO-certified palm oil farmers. The cooperative should facilitate the farmers in selling their products through the cooperative, and the cooperative can sell directly to the palm oil mill(Sumartono et al., 2018). The ISPO cooperative should proactively implement the ISPO program initiated by the Batanghari District Plantation Office, which has provided ISPO certification funding to farmers affiliated with the cooperative. The cooperative should also establish partnerships with palm oil mills and abide by the cooperation agreements. This way, it is expected that the ISPO cooperative can increase the income of ISPO farmers and achieve sustainable economic development.In the case of the ISPO application not working, this is the same as in previous research, namely the application of ISPO principles to independent smallholders in Bonti District. The institutional principle of farmers has not been implemented (Yurisinthae & Oktoriana, 2021).

CONCLUSION

In conclusion, the analysis reveals significant variations in profit-to-cost ratios among different marketing channels for ISPO and non-ISPO palm oil in Batanghari Regency, with Channel 3 emerging as the most profitable due to direct sales to the palm oil mill. Conversely, Channel 1 exhibits inefficiency with the lowest profit-to-cost ratios. Therefore, streamlined marketing channels are crucial for maximizing profit margins. To address this, ISPO-certified farmers are recommended to form cooperatives resembling Channel 3 to facilitate direct sales to mills, leveraging higher profit margins and fostering sustainable economic development.

Additionally, collaborative efforts with local governments and monitoring purchase prices by authorities are crucial for ensuring fair compensation and the successful implementation of ISPO principles. It is suggested that ISPO-certified farmers, through cooperatives, re-establish collaboration with discontinued palm oil mills, facilitated by consultations with village governments. Moreover, active oversight by the Cooperative Department and local authorities in monitoring ISPO palm oil marketing activities is essential for the economic prosperity of ISPO-certified farmers in Batanghari Regency.

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