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SUPPLY CHAIN ANALYSIS OF COCONUT PALM SUGAR IN KOKAP SUBDISTRICT, KULON PROGO REGENCY

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ABSTRACT

Granulated coconut palm sugar is one of the potential export products in the Kulon Progo Regency. This study aims to determine (1) the level of marketing margin, farmer's share dan monopoly index (MPI), and (2) the performance of the supply chain for granulated coconut palm sugar in Kulon Progo Regency. Marketing margin is the difference between the price in consumers with price at the level of producers. Farmer's share is the percentage of share that producers get. The higher value of the marketing margin, then the farmer's share value will be lower. The structure of the market is analyzed by measuring the monopoly index (MPI). The greater the MPI values indicate a growing monopoly. The supply chain is the cooperation between the institutions to create and deliver products to consumers until the end by observing the flow of products, information flow, and money flow. Supply chain performance can be analyzed using a Likert scale questionnaire on the product flow, flow of information, and money flow. The results showed that the shortest marketing tract has the lowest margin value, and the value of the farmer's share is highest. The highest MPI values in the longest marketing tract with Tiwi CPU as collecting traders have the highest index of a monopoly. The performance of the supply chain of granulated palm sugar in district Kokap, Kulon Progo Regency overall belongs to quite smoothly on all three channels of marketing, whether made from the dominant raw material of coconut sugar, made from sweet sap coconut sugar, or both.

Keywords: granulated coconut palm sugar, marketing margin, farmer's share, monopoly index, supply chain

INTRODUCTION

As one of the plantation commodities with high economic value, coconut can produce coconut sugar, coconut oil, nata de coco, and other related products. Coconut sugar comes from concentrating coconut juice through the evaporation process. There are several types of coconut sugar products, such as coconut palm sugar, printed sugar, which is often called brown sugar or brown sugar, and liquid sugar. Coconut sugar is yellowish-brown to dark brown depending on the raw material and the manufacturing process. Coconut sugar has a unique taste that other types of sugar cannot replace its use. Another function of coconut sugar is to give chocolate color. The weaknesses of printed and liquid coconut sugar products are their short shelf life (around 2-4 weeks), the absence of good packaging, and less practicality in serving (Zuliana et al., 2016).

Coconut palm sugar is a solution to overcome the weaknesses of both printed sugar and liquid coconut sugar. Coconut palm sugar is dried through a crystallization process to have a longer shelf life and can be served easier. Coconut palm sugar in powder form gives the advantage of being easy to dissolve and easy to pack. Apart from being sold in the domestic market, Indonesian coconut and sugar products have also been marketed overseas, such as in Japan, the Netherlands, the USA, Singapore, and Taiwan (Zuliana et al., 2016).

Kulon Progo Regency is a district with the largest coconut plantation in the DIY area. Kulon Progo Regency, which is located in the coastal area, is very supportive of coconut cultivation. The coconut is sold in the form of fruit and processed into coconut husk, coconut *wingko*, coconut oil, and coconut sugar, especially coconut palm sugar. People in Kulon Progo Regency tend to use coconut juice as raw material for coconut sugar because it is considered more profitable. Coconut juice can be taken every day, in contrast to coconuts, which bear fruit only at certain times. The coconut and sugar from Kulon Progo have good quality, which can be seen in its brownish yellow color and is durable even though it is not wrapped (exposed to outside air).

Competition in the industrial world, including in the sugar industry, is getting tighter. The industry must design and have a supply chain management strategy to direct the goals to improve company performance to survive in the

competition. The supply chain is a network of companies that jointly work together to create and deliver products to the end consumers, from upstream to downstream, and convert natural resources, raw materials, and basic components into finished products will be distributed to the final consumer (Chopra and Meindl, 2007).

Supply chain emphasizes the flow of materials and information, while supply chain management emphasizes efforts to integrate supply chain collections. At the agro-industrial level, supply chain management pays attention to supply, supply, and distribution transportation as a strategy to reduce the risk of damage or a decrease in the total quality of the product (Suliyanto, 2013).

The coconut palm sugar industry in Indonesia is still classified as a small scale, so that the supply chain starts with coconut sap tappers who are also coconut sugar processing craftsmen. Collectors or cooperatives then purchase coconut sugar. There are three main links in the coconut sugar supply chain for industries such as the soy sauce industry, namely the tappers as producers, the collectors and sugar dealers as intermediaries, and the soy sauce factory as buyers. *Penderes* is a term for people who carry out coconut sugar production activities, from tapping coconut sap to cooking and printing sugar. Meanwhile, collectors and dealers are the parties who buy sugar from *penderes* and sell it to buyers, for example, soy sauce factories (Efendi, 2016).

This study aims to determine the extent of marketing margins, farmer share, and monopoly index (MPI) on the marketing of coconut palm sugar in Kokap District, Kulon Progo Regency, and knowing the performance of the coconut palm sugar supply chain in Kokap District, Kulon Progo Regency.

METHOD

This research uses the basic descriptive approach method, which describes each actor's distribution pattern of marketing coconut palm sugar in Kokap District, Kulon Progo Regency. The sampling method used was a multi-stage sampling method: Stage I, namely the selection of research locations carried out purposively in Hargorejo Village and Hargotirto Village, Kokap District, Kulon Progo Regency, which are coconut palm sugar craftsmen villages. Samples of craftsmen took as many as 15 active sugar craftsmen from each village; Stage II is the determination of the institutions connected in the supply chain with the snowball technique.

The data analysis methods used are:

1. Marketing Performance

This research examines the size of the marketing margin, the farmer's share, and the monopoly index (MPI). The marketing margin is calculated by looking at the price difference between marketing agencies, which is mathematically formulated in equation (1).

$$Mp = Pr - Pf \quad \text{..... (1)}$$

in which:
Mp = Marketing Margin (Rp/kg).
Pr = Price on trader level (Rp/kg).
Pf = Price on craftsman trader level (Rp/kg).

Farmer's share formula on equation (2).

$$FS = \frac{Pf}{Pr} \times 100\% \quad \text{..... (2)}$$

in which:
FS = Price accepted by craftsman traderz (%).
Pf = Price on craftsman level (Rp/kg).
Pr = Price on rtailer leecel (Rp/kg).

The monopoly index calculates the trader's monopoly power on the marketing channel (MPI) formulated on the equation (3).

$$MPI = \frac{m}{Cv} \quad \text{..... (3)}$$

in which:
MPI = monopoly index.
m = marketing margin
Cv = variable cost

2. Supply Chain Performance

Supply chain performance is seen using the interview method. The Likert scale questionnaire model was used to measure the craftsmen's attitudes, opinions, and perceptions of the smooth flow of products, financial flows, and information flow described in items that could be statements or questions (Sugiyono, 2012). There are five answer choices for each indicator, namely not according to the weighted score of 1 (one), less according to the weight of the score 2 (two), sufficient following the weight of the score 3 (three), according to the weight of the score 4 (four), and very suitable with a weighted score of 5 (five).

The questionnaire was tested using the product-moment validity test and Cronbach's Alpha reliability test with the SPSS version 21 test program. The validity test was conducted to measure the accuracy and accuracy of a measuring instrument or instrument in measuring the research variables. The reliability of measurement reflects an error-free measurement to provide consistent measurement results under different conditions and on each instrument (Sekaran, 2003).

The answers from respondents to the questionnaire indicators that have been valid and reliable are categorized into three categories, namely substandard, moderately fluent, and very fluent. The flow of products, money flows, and information flows in the supply chain can be determined by categorizing using the Sturges formula. The supply chain performance is jointly determined by knowing the three flows' total mean then categorized using the Sturges formula (4).

$$I = \frac{X-Y}{K} \quad \text{..... (4)}$$

in which
I = interval.
X = highest score
Y = lowest score
K = number of criteria

RESULTS AND DISCUSSION

1. Supply Chain

The supply chain is defined as a set of activities involved in transforming and distributing goods from the earliest raw materials to the end consumers' finished products. Supply chain management is the chain of procuring goods to customers to ensure materials' availability and minimize costs (Indrajit and Djokopranoto, 2005). The marketing channels in the coconut palm sugar supply chain in Kokap District, Kulon Progo Regency, are described in Figure 1.

Figure 1 shows three marketing channels for coconut palm sugar in Kokap District, Kulon Progo Regency, namely short channels, medium channels, and long channels based on interviews with 30 craftsman respondents. It should be underlined that in the medium channel, the product being distributed is dominated by coconut palm sugar products made from the dominant raw material of printed coconut sugar. Only one out of fifteen craftsmen use the dominant raw material of ant in the medium channel. The long channel is dominated by craftsmen with a dominant raw material of coconut juice and only one out of twelve craftsmen who use the dominant raw material for printed sugar. In the short marketing channel, one in three craftsmen uses the dominant raw material for printed sugar.

In the short channel, the sugar craftsmen directly sell their products to consumers in markets, stalls, or relations outside of Kokap Subdistrict, with shipping costs borne by the consumers or craftsmen under ongoing negotiations. The average selling price of coconut palm sugar at the craftsman level in this channel is IDR 20,688 per kg, which is relatively higher than that of the other channels. The craftsman can act as a price maker, meaning that the craftsman is the determining party for the price. Pricing is based on production costs, shipping, and prevailing market prices. The marketing channel is currently the dominant channel, with a percentage of 43%. The relationship between the seller and the buyer in this channel is a subscription with a bond because the craftsmen are members of the KUB Nyawiji Mulyo, who act as collectors traders. KUB Nyawiji Mulyo is a KUB fostered by KSU Jatirogo, which acts as an exporter. Channel 3 also has a centralized connection like channel 2.

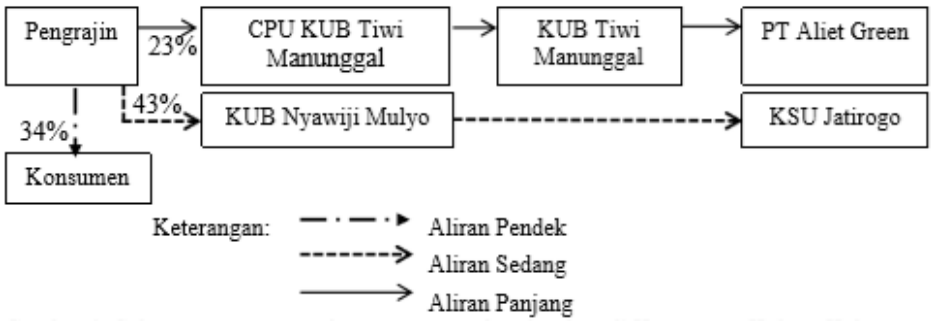

Figure 1. Marketing Channel of Coconut palm sugar in Kokap District, Kulon Progo Regency
Source: Primary Data Analyzed in 2017

2. Marketing Performance

Marketing performance can be measured by several indicators, including analysis of marketing margin and farmer's share. There are several expenses for implementing activities of the sugar craftsmen and traders in coconut palm sugar marketing. Costs for each marketing agency differ because they perform different functions (Cristoporus and Sulaeman, 2009). Marketing efficiency is assessed by knowing how much farmers can enjoy the margin of a marketing channel if the total profit taken by traders is relatively small towards marketing costs, the marketing channel is said to be economically efficient (Muslim and Darwis, 2012).

Table 1. The Result of Marketing Margin, Farmer's Share, and Monopoly Index based on Dominant Input each Marketing Channel Coconut palm sugar in Kokap District 2017

Indicator	Coconut Nira			Sugar			Total		
	1	2	3	1	2	3	1	2	3
Marketing Margin (Rp/kg)	0	5,500	11,008	0	5,536	10,917	0	5,533	11,000
Farmer's Share (%)	100	77	62	100	76	62	100	76	62
Monopoly Index (MPI)	0	2.93	4.12	0	2.95	4.08	0	2.94	4.09

Source: Primary Data Analyzed in 2017

In Table 1, marketing channel 1 has a marketing margin of Rp. 0.00 / kg, farmer's share of 100%, and the monopoly index (MPI) of 0 (zero). Although in data analysis, channel 1 is the best channel with the lowest margin and MPI value and the highest farmer's share value, channel one is not chosen as the best channel considering its small market share. Small market share means channel 1 is less promising if used as the dominant marketing channel for craftsmen.

The results show that according to the theory, the value of a farmer's share is inversely proportional to the amount of marketing margin formed. When the marketing margin is large, the farmer's share value is small (Herawati et al., 2015). The craftsmen's most part based on the farmer's share calculation occurred in the marketing channel 2 with coconut sap as raw material. For products with dominant raw materials of coconut juice, printed sugar, and as a whole, the channel that gives a bigger share to craftsmen with a lower marketing margin is found in the marketing channel 2. Marketing activities can be economically efficient when the marketing margin value is low and has the farmer's share value is more than 40%. The best marketing channel of the three is channel 2, with the lowest margin and the highest farmer's share in a large market share.

The MPI value of channel 3 is higher than channel two, which means that channel 3 has the power in the selling price decision maker and even dominates the marketing channel with the collectors in the marketing channel 3. CPU KUB Tiwi Manunggal, the collectors in the marketing channel 3, has the highest monopoly power in the coconut palm sugar marketing channel. The greater the MPI value, the higher the degree of monopoly, which means that the trading system's performance is increasingly inefficient. The greater MPI value also means that the marketing agency's influence in the supply chain is increasingly dominant (Kuntadi and Jamhari, 2012).

Channel 2 is dominated by coconut palm sugar products made from predominantly printed sugar, while channel three is dominated by coconut palm sugar products with a dominant raw material of coconut juice. Channel 2 has a smaller MPI value than channel 3, which means that the dominance of traders in the marketing channel for coconut palm sugar products made from dominant coconut juice is greater than products made from dominant raw materials of printed sugar. It also shows the weak position of the craftsmen in determining the selling price of the product. The performance improvement of KUB as a business group that assists craftsmen in marketing coconut palm sugar production needs to be improved.

3. Supply Chain Performance

Supply chain management is a cross-functional approach to managing raw materials' movement into the organization and the movement of finished goods out of the organization to the final consumer. The supply chain's smooth running is seen from the three flow factors' smoothness, namely product flow, information flow, and money flow. Each stream's smoothness is known from data collection using a Likert scale identified by several question indicators in each stream. Indicators that have tested their validity and reliability are then categorized according to the Sturges formula. The average answer score 1-2.3 is classified as a substandard category, the score 2.4-3.7 is classified as quite smooth, and the score 3.8-5 is classified as smooth.

Table 2 shows the smoothness of the statement indicators proposed on the product flow. The three most smooth indicators for the combined product are the indicator for the statement of the aroma of coconut palm sugar according to the order, the freshness of the coconut palm sugar according to the order, and the durability of the coconut palm sugar according to the preservation standard. The three indicators are considered the smoothest and the strength of the coconut palm sugar products sold in the supply chain for coconut palm sugar in the Kokap District. The coconut palm sugar products produced come from organic raw materials and are of high quality, giving rise to a distinctive aroma of coconut palm sugar, and are durable when stored. The durability of coconut palm sugar can be seen from the sugar that does not change color, aroma, and shape or does not melt. On the other hand, the coconut palm sugar products produced are always new because most craftsmen apply the make-to-order system or

produce when there is an order so that the products do not accumulate in storage for long, always new.

Table 2. The Average Response Score of Product Flow Indicator

No	Indicators	Marketing Channel			
		1	2	3	Combination
1	The amount of coconut palm sugar sold according to order	Smooth	Quite Smooth	Quite Smooth	Quite Smooth
2	Coconut palm sugar weighted according to order	Smooth	Smooth	Smooth	Smooth
3	The shape and size of coconut palm sugar sold according to	Smooth	Smooth	Smooth	Smooth
4	The color of the coconut palm sugar sold according to the standard is colored	Smooth	Smooth	Smooth	Smooth
5	The aroma of coconut palm sugar is sold according to order.	Smooth	Smooth	Smooth	Smooth
6	The cleanliness of the coconut palm sugar is sold according to	Smooth	Smooth	Smooth	Smooth
7	The freshness of the coconut palm sugar is sold according to	Smooth	Smooth	Smooth	Smooth
8	The durability of the coconut palm sugar is sold according to durability standards.	Smooth	Smooth	Smooth	Smooth
9	The water content of the coconut palm sugar according to consumer orders.	Smooth	Smooth	Quite Smooth	Smooth
10	The package of coconut palm sugar is sold according to order.	Quite Smooth	Smooth	Quite Smooth	Quite Smooth
11	The type of coconut palm sugar sold according to order	Quite Smooth	Quite Smooth	Quite Smooth	Quite Smooth
12	The availability of transportation according to order	Quite Smooth	Smooth	Quite Smooth	Quite Smooth
	Overall	Smooth	Smooth	Smooth	Smooth

Source: Primary Data Analyzed in 2017

The thing that needs to be considered in the overall product flow is the first indicator, namely the amount of coconut palm sugar sold according to order. Some respondents answered that they disagreed with this statement, and respondents who answered agreed were classified as lower than the other statement indicators so that the average answer score was quite smooth. Several times, the producers find it challenging to meet the amount of production desired by the buyer. The main factor that influences it is the weather factor. During the rainy season, the sap's quality tends to be inadequate because it is too thin, mixed with rainwater, and dirty. The runny sap produces less coconut palm sugar because it also evaporates in cooking the sap into coconut palm sugar. It also affects the cleanliness, aroma, and color of the coconut palm sugar produced. At times like this, the craftsmen should use additional raw materials in organic printed sugar to still fulfill orders or buy coconut palm sugar from independent craftsmen (non-KUB members) who have the same organic standards.

In channel 1, the overall product flow is classified as smooth with constraints on quite smooth indicators, namely, packaging of coconut palm sugar sold according to order, types of coconut palm sugar sold according to order, and transportation availability according to order. In channel 1, the product is sold directly to consumers in regular plastic or *longsong* plastic if purchased on a small scale. The packaging is deemed less attractive to consumers. The type of coconut palm sugar sold is deemed unsuitable for household consumer orders because they have different non-organic or added coconut milk mixture preferences.

In channel 2, the biggest obstacle is the indicator of the amount of coconut palm sugar that is sold to order. As previously explained, the rainy season affects the quality of the sap. In channel 2, which uses the dominant raw material for printed sugar, the sap's quality during the rainy season has the same effect because printed sugar is still produced from coconut sap. The advice given is to store printed sugar from the dry season as a supply of raw materials during the rainy season. Another suggestion that can be applied is to buy organic printed sugar from outside Kokap District.

In channel 3, the indicator with the lowest average score referring to Appendix 7, indicates the water content of coconut palm sugar sold according to consumer orders and packaging of coconut palm sugar sold according to order. Channel 3 is dominated by coconut palm sugar products made from dominant coconut juice so that the water content tends to be more. Coconut palm sugar with a lot of water content, when the oven will produce less product due to water evaporation. KUB Tiwi Manunggal carries out the oven to have a water content according to the standard. The packaging of coconut palm sugar in *longsong*

plastic is not good because it can be torn during transportation using a motorbike or pick-up. The advice that can be given is to use a stronger container packaging.

Table 3. The Average Score Response of Information Flow

No	Indicators	Marketing Channel			
		1	2	3	Combination
1	Exchange of information regarding the type of coconut palm sugar produced accordingly	Smooth	Smooth	Smooth	Smooth
2	Information exchange regarding supply/production accordingly	Smooth	Smooth	Smooth	Smooth
3	Exchange of information regarding requests/orders accordingly	Smooth	Smooth	Smooth	Smooth
4	Exchange of information regarding the purchase price accordingly	Quite Smooth	Quite Smooth	Quite Smooth	Quite Smooth
5	Exchange of information regarding the selling price accordingly	Quite Smooth	Quite Smooth	Quite Smooth	Quite Smooth
6	Exchange of information regarding the quality or appropriate quality	Quite Smooth	Smooth	Smooth	Smooth
7	Information exchange of delivery time accordingly	Quite Smooth	Quite Smooth	Smooth	Quite Smooth
8	Exchange of information regarding appropriate transportation capital	Quite Smooth	Quite Smooth	Quite Smooth	Quite Smooth
9	Information exchange regarding distance & destination address accordingly	Smooth	Smooth	Smooth	Smooth
Overall		Quite Smooth	Quite Smooth	Quite Smooth	Quite Smooth

Source: Primary Data Analyzed in 2017

Table 3 shows the respondents' average category score to the statement indicators submitted to the information flow. Four of the nine indicators are stated to be quite current, and the rest are declared smooth for the combined product. There are no indicators that are stated to be less smooth in the flow of information. The overall flow of information is stated to be quite smooth.

The highest average answer score is found in the exchange of information regarding the type of coconut palm sugar produced according to the seller and the buyer and the exchange of information regarding the distance and the appropriate destination address between the seller and the buyer. Both can be said as indicators of the smoothest flow of information. Both of these information are the main information needed between the seller and the buyer so that the buying and selling process occurs smoothly and does not cause harmful errors. Producers openly convey what kind of coconut palm sugar products are produced and align them with the buyers' wishes regarding the desired coconut palm sugar products according to their orders, considering that the dominant party determining the product is the buyer. It is also supported by an exchange of information regarding the quality or quality according to the seller and the buyer as the third smoothest indicator because quality and quality are the main things in selling sugar. The suitability of the information on distance and destination of buyers is important to estimate shipping costs so that it is the main thing communicated at the time of buying and selling transactions.

The lowest statement indicator scores are indicators number four and five. According to the seller and the buyer, indicators numbers four and five are regarding exchanging information regarding the buying and selling price. These statements were deemed inappropriate by some respondents who were craftsmen respondents. The craftsmen feel that sometimes the selling price received is less profitable and lower than their expectations. On the other hand, the craftsmen do not know the selling price of coconut palm sugar in the national and global markets, so they cannot determine the selling price properly and act as a price maker. The craftsmen who sell directly to consumers admit that it is difficult to determine the product's selling price and choose to deduct based on the production cost.

In channel 1, the information flow indicator with the lowest average score is the exchange of information regarding the purchase price according to the seller and the buyer and the exchange of information regarding the selling price according to the seller and the buyer. This lack of information occurs due to the lack of transparency between the craftsmen and household consumers. On the other hand, the craftsmen also do not understand the price of coconut palm sugar

that is prevailing in the domestic market, so they tend to estimate in determining the price.

In channel two and channel 3, the biggest obstacle is exchanging information regarding the selling price according to the seller and the buyer. The craftsmen did not know the price of coconut palm sugar on the international market and received the price determined by the collectors. Collectors also set prices according to the bidding price at the next marketing level. In channel 2, it is better if KUB Nyawiji Mulyo as a collector and the business group needs to know the price of sugar in the international market, not necessarily to accept the price provisions from the exporter. On channel 3, it is necessary to supervise the CPU KUB Tiwi Manunggal to not arbitrate in determining prices and monopolizing products.

Table 4 shows the mean score of respondents' answers regarding each statement indicator. All statement indicators on the flow of money are stated to be quite smooth. The stream with the highest average score is the accuracy of product payment and the suitability of pricing with the prevailing price. The accuracy of the number of payments made is necessary for the smooth running of the next production. In general, craftsmen use capital obtained from previous sales. If the buyer does not pay on time, the craftsmen admit that they have difficulty reproducing.

The indicator with the lowest score is the suitability of the transaction payment based on the agreement. The dominant product payment system that occurs is a delay payment system based on a predetermined agreement. Each agency that purchases from the previous marketing agency adheres to the repayment time well, and even if there is a delay, it will be communicated in advance, and the maximum delay time is two weeks. This indicator was deemed inappropriate for some producer respondents because producers often waited a long time for payment. It can be because money flows in quite a long flow from exporters to wholesalers, then to collectors and then to craftsmen.

Table 4. The Average Score Response of Money Flow

No	Indicators	Marketing Channel			
		1	2	3	Combination
1	Appropriateness of the way of dealing with suppliers	Quite Smooth	Quite Smooth	Smooth	Quite Smooth
2	Product payment accuracy	Quite Smooth	Quite Smooth	Smooth	Quite Smooth
3	The suitability of the transaction payment based on Agreement	Quite Smooth	Quite Smooth	Smooth	Quite Smooth
4	The way to get capital	Quite Smooth	Quite Smooth	Smooth	Quite Smooth
5	Pricing suitability	Smooth	Quite Smooth	Quite Smooth	Quite Smooth
6	The timing of the return on investment	Smooth	Quite	Quite	Quite
	Overall	Quite Smooth	Quite Smooth	Smooth	Quite Smooth

Source: Primary Data Analyzed in 2017

The flow of money on channel one is classified as relatively smooth, with the biggest obstacle is the suitability of the transaction payment time based on the agreement. It can happen because sometimes, buyers delay payment. The craftsmen often tolerated delays because generally, consumers on channel 1 are craftsmen relations. The same problem was experienced on channel 2.

The unsuitable payment time on channel two should have been resolved by a written agreement between KUB Nyawiji Mulyo and KSU Jatirogo and between KUB Nyawiji Mulyo and the craftsmen. Written agreements can include payment times, maximum postponement of payment, and buyers' sanctions when late in completing payment. It is so that the cooperation formed is professional, and each marketing institution is disciplined in making payment payments. KUB's position as a valid legal entity must be strengthened and empowered so that the flow of money becomes smooth and the craftsmen's position is stronger.

In channel 3, the flow of money is classified as smooth with constraints on the suitability of pricing, especially among craftsmen. It happened because of the dominance of the CPU Tiwi Manunggal. The suitability of pricing, in this case, the craftsman, felt that the price received was different between one craftsman and a craftsman even though the difference was not far apart. It means that there is a need for guidance on the CPU Tiwi Manunggal.

In Table 5, the flow of products is classified as smooth in each marketing channel, while the flow of information and money flows tends to be classified as not smooth in the three marketing channels. It means that the craftsman position is weak in every marketing channel. The non-smooth cash flow indicates that the exporter considers his

position to be higher than that of the craftsmen and underestimates payments. There needs to be a written agreement with the consequences so that payment is on time. KUB can agree with a business group with the craftsmen.

Table 5. The Average Score Response of Supply Chain Flow

Indicators	Marketing Channel							
	1		2		3		Combination	
	Score	Information	Score	Information	Score	Information	Score	Information
Product Flow	3.91	Smooth	3.91	Smooth	3.80	Smooth	3.87	Smooth
Information Flow	3.58	Quite Smooth	3.71	Quite Smooth	3.65	Quite Smooth	3.66	Quite Smooth
Money Flow	3.73	Quite Smooth	3.24	Quite Smooth	3.90	Quite Smooth	3.58	Quite Smooth
Overall	3.74	Quite Smooth	3.62	Quite Smooth	3.78	Quite Smooth	3.70	Quite Smooth

Source: Primary Data Analyzed in 2017

The flow of information is classified as not smooth, meaning that there is information asymmetry. Information asymmetry is one of the causes of market failure. Information asymmetry is a state of incomplete information flowing between the two parties, such as buyers and sellers who do not have the same information so that one of them may be disadvantaged. This situation can lead to conflicts between marketing agencies so that there is a need for information alignment.

CONCLUSIONS

Conclusions

1. There are three channels in the home industry for sugar ants in Kokap District, Kulon Progo Regency, namely short channels (craftsmen - consumers), medium channels (craftsmen - collectors traders - exporters), and long channels (craftsmen - collectors traders - wholesalers - exporter). The medium channel is dominated by ant sugar products made from predominantly printed sugar, and the long channel is dominated by ant sugar products made from coconut sap dominant.
   a. The longer the marketing chain for products made from the dominant raw material of printed sugar, coconut sap, or the whole, the higher the marketing margin.
   b. The longer the marketing chain for products made from the dominant raw material of printed sugar, coconut sap, or whole, the smaller the farmer's share is.
   c. The longer the marketing chain for products made from the dominant raw material of printed sugar, coconut sap, and the whole, the higher the monopoly index (MPI) value is 4.12; 4.08; and 4.09. Traders in the long channel have the most monopoly, and CPU Tiwi Manunggal as collectors traders have the highest monopoly index.
2. The performance of the supply chain of ant sugar in Kokap Subdistrict, Kulon Progo Regency as a whole, is relatively smooth in the three marketing channels.
   a. The product flow is classified as smooth with the biggest obstacle in the rainy season, the craftsmen cannot meet consumer demand.
   b. The flow of information is relatively smooth, with the biggest obstacle being the lack of information on the product's selling price from the seller to the buyer.
   c. The flow of money is quite smooth, with the biggest obstacle being the inaccuracy of payment repayments, especially from traders, collectors, to craftsmen.

Suggestions

1. In the short channel, coconut palm sugar products have a small market share in the domestic market. Ant sugar, an innovative product of printed coconut sugar, needs to be promoted in the domestic market so that Indonesians start to recognize and consume ant sugar in their daily activities. Promotion can be in the form of product introduction in schools and hospitals, especially for diabetics as a substitute for sugar cane. Promotion can expand the domestic market share and reduce the monopoly level of traders.
2. Suggestions on supply chain constraints:
   a. Concerned about product flow constraints, craftsmen should have a supply of printed sugar from the dry season as raw material for production during the rainy season.
   b. The non-smooth flow of information and cash flow indicates the craftsmen's weak position in the supply chain. There needs to be a written agreement provided by the

relevant KUB, as the legal entity in charge of the craftsmen, in selling the sugar to the next trader. The agreement contains product criteria, pricing, and sanctions for both parties if they violate the agreement.

REFERENCES

Chopra, S., and Meindl, P. 2007. Supply Chain Management: Strategy, Planning, And Operation. Third Edition. Pearson Education, Inc, New Jersey.

Cristoporus dan Sulaeman. 2009. Analisis produksi dan pemasaran jagung di Desa Labuan Toposo Kecamatan Tawaeli Kabupaten Donggala. Jurnal Agroland 16 (2): 141- 147.

Efendi, R. 2016. Program pemberdayaan sebagai aktivitas corporate social responsibility studi kasus pemberdayaan penderes di pangandaran. UMBARA : Indonesian Journal of Anthropology 1(2): 89-103.

Herawati, A. Rifin, dan N. Tinaprilla. 2015. Kinerja dan efisiensi rantai pasok biji kakao di Kabupaten Pasaman, Sumatera Barat. Jurnal TIDP 2(1): 43–50.

Indrajit, R. E. dan Djokopranoto, R. 2005. Strategi Manajemen Pembelian dan Supply Chain. PT Grasindo, Jakarta.

Kuntadi, E. B., dan Jamhari. 2012. Efisiensi pemasaran cabai merah melalui pasar lelang spot di Kabupaten Kulonprogo, Yogyakarta. Jurnal Sosial Ekonomi Pertanian 1(1): 95-101.

Muslim, C. dan V. Darwis. 2012. Keragaan kedelai nasional dan analisis farmer share serta efisiensi saluran pemasaran kedelai di Kabupaten Cianjur. Jurnal SEPA 9(1): 1-11.

Sekaran, U. 2003. Research Methods for Business: A Skill Building Approach 4th edition. John Wiley & Sons, Inc, USA.

Sugiyono. 2012. Metode Penelitian Kualitatif Kuantitatif dan R & D. Bandung: Alfabeta.

Suliyanto. 2013. Analisis Rantai Nilai Industri Kecil Gula Kelapa di Kabupaten Banyumas. Prosiding Seminar Nasional Manajemen Teknologi XVII. Program Studi MMT-ITS, Surabaya.

Zuliana, C., Widyastuti, E., dan Susanto, W. H. 2016. Pembuatan gula semut kelapa (kajian ph gula kelapa dan konsentrasi natrium bikarbonat). Jurnal Pangan dan Agroindustri 4(1): 109-119.