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The Management Product in the Farmers Level and The Role of Supporting Institutions for Cocoa Fermentation Process

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Abstract

Indonesian cocoa production is significantly increasing, but the resulting quality is still low and varied. The main issue in improving the quality of cocoa, primarily in Blitar, and Jember, lies not in the lack of capacity of the processing industry, but rather on a strong commitment to implement fermentation seriously. Research objectives were to know the management of cocoa products, the marketing of cocoa at the farm level, and possible vertical integration between traders and farmers. Determining the location of the research used the purposive methods. There were in Blitar, and Jember, the both were center cocoa production areas in the East Java and Bali province. The sampling method used the snowing ball method. Data analysis was used the descriptive analysis and vertical integration of market used the concentration ratio analysis. The result of the research showed that most small farmers who do fermentation, the main factor, there were no pricing incentive for fermented cocoa. Marketing cocoa in Blitar district had a more complex marketing channels compared in Jember district. Key actor in the cocoa market in Blitar district was Gapoktan, which was able to export and processing. Key actor in the cocoa market in Jember district was Subak Abian. In addition, the price of cocoa at the farm level in the Jember district was affected by the price at the wholesalers, while in Blitar the wholesaler price was not affected.

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1. Introduction

Indonesia can be said to be one of the countries in the world which controlled most of the strategic agricultural commodities. Call it a commodity cane, coffee, oil palm, cocoa, and more. Ironically, Indonesia does not get the added value of these commodities. Industry thrives in other countries, while Indonesia only exporting raw materials. Indonesia is a producer of raw materials world's third largest cocoa after the Ivory Coast and Ghana. From the world cocoa production which is 3 million, 50 percent or 1.5 million tons came from the Ivory Coast, while Indonesia dominate the market for about 6 percent, or about 580,000 tons. Indonesian cocoa production still about 590 thousand tons per year under the Ivory Coast which reached 1.3 million tons and Ghana that about 650 thousand tons per year. Despite as the third world's largest cocoa' producer, the fact that the cocoa industry is difficult to grow and develop in Indonesia (Tamindael, 2007).

For International Cocoa Standard was initiated by the Food and Drug Administration (FDA) of the USA, further standards adopted by almost all the cocoa producing countries. Standard cocoa beans that are traded in the international market, the first to be fermented with 7 percent water content. Second, the cocoa beans must be free of live insects. Third, the cocoa beans are packed quality should be uniform, not mixed with bark and other foreign objects. According to data AIKI, the volume of Indonesian cocoa exports to the US approximately 100,000 tons per year, but the quality is still low, even moldy because the drying process is not correct (Wagu, 2007). Approximately 90 per cent of cocoa exports are unfermented cocoa. Unfermented cocoa beans do have markets in the world. However, the price is very low compared to fermented-cocoa.

In the aspect of demand for cocoa, in fact Indonesia has a great opportunity to be able to compete with the world's largest supplier of cocoa is the Ivory Coast. However, until now Indonesia has not managed to outperform the Ivory Coast, although the current export Ivory Coast declined because of the political crisis, in terms of quantity and quality, Indonesia could not pursue the Ivory Coast. In terms of quantity, for example, Ivory Coast could reach at least the production of 1.5 tons per hectare, while Indonesia is still around 0.5 tons per hectare. Indonesian cocoa market is still around America or standard Fair Average Quality (FAQ) and has not been able to penetrate the European market or standard Well Fermented Cocoa Beans (WFCB). Through the price of cocoa on the FQAQ standard become more expensive than WFCB standard (Amos, 2007; Taslim, 2007).

So far, all parties still focus attention on improving the productivity of the cocoa plant and ignore quality issues. Indonesian cocoa production is significantly increasing, but the resulting quality is very low and varied, among other less fermented, not quite dry, seed size was not uniform, high bark content, high acidity, taste is very diverse and inconsistent. The main issue in improving the quality of cocoa in East Java and Bali, lies not in the lack of capacity of the processing industry, but rather on a strong commitment to implement fermentation seriously. Farmers did not fermentation their cocoa because they did not get the difference price from traders. The actual level of welfare of cocoa farmers can be improved by pushing it fermentation before selling it to collectors. That effort will only succeed if adequate FEA available at the farm level.

The research objectives were to know the management of cocoa production at the farm level, marketing of cocoa at the farm level, and possible vertical integration between traders and farmers.

2. Methods

Location of the study was set intentionally (purposive) in the Province of East Java and Bali with consideration of Statistics database comparison cocoa plantations with high and low productivity. The areas were Blitar, and Jembrana Regency. To answer the first and second issues, analytical description used to explain the phenomena related to management of cocoa products at the farm level in Blitar, and Jembrana Regency, including explanation of cocoa marketing channels in the two areas.

Addressing issues of market integration, market integration approach in the short term was used as quantitative analysis. This analysis was often called the elasticity of price transmission (Yuniarti et al., 2009). This analysis could be used to look at the structure of the market because this approach would be a response at the level of the price of cocoa farmers (farm gate price) was due to changes in the price of merchant exporters. Short-term vertical integration was formulated as follows:

$\ln Pf = a_0 + a_1 \ln P$; Where P_f = farm gate prices, P_r = exporter price, a_0 = constant, a_1 = coefficient of elasticity of transmission. This model was used to determine the influence of changes in the price of the exporter price toward producer price (Gujarati, 2004). Testing parameters were done by using t-test as $t\text{-calc} = a_1 / (Se(a_1))$

3. Results and discussion

3.1. Description of Product Management Cocoa Farmers

Handling of cocoa beans at the farm level is an activity that must be done by the farmer to ensure product quality and prevent contamination of insects, fungi, and dirt. In the end destination management activities is to ensure the quality of cocoa beans and can meet the Indonesian National Standard ISO 01-2323, with particular attention to the contamination of insects, mildew and dirt. The operating procedures of handling activities cocoa beans according Wahyudi (2003) included harvesting, ripening fruit, solving fruit, fermentation, drying, and storage.

Only 35% of the total respondents of Blitar' farmers handled products through fermentation and drying, without storage. While the rest of 65% farmers were without fermentation. In general, respondents farmers both fermentation and did not carry out fermentation stage of ripening fruit, although ripening fruit is highly dependent local conditions and the level of maturity of fruit. Curing is not recommended in wet areas because it will increase the risk of fungus. Fermentation was performed in Blitar by using sacks or perforated buckets. Actually The Local Plantations Office have provided assistance in the form of crates / boxes fermentation but was not widely used by farmers. Farmers sell their cocoa as wet or dry basking at 3-4 days to Gapoktan (Farmers Group Association) or Farmer Group. In general, farmers have already dried cocoa with assumption of through fermentation process for 3-4 days. In Blitar, Gapoktan "Guyub Santoso" deeply held roles in marketing. With full awareness of farmers sell their crops to Gapoktan, and further Gapoktan that will sell to wholesalers or processing cocoa into a variety of derivative products. Based on observations known to control levels of cocoa marketing in Blitar nearly 80% controlled by Gapoktan, thus approaching the monopsony market conditions, where there is only one trader who determines the price.

In contrast to the farmer in Blitar, farmers in the district of Jembrana quite consciously perform fermentation. In general, farmers in the district of Jembrana did fermentation individually but, fermentation was done jointly by members of Subak Abian. Subak Abian collected cocoa farmer members in the form of wet cocoa (broken skin) and dried cocoa. Wet cocoa processed through fermentation, whereas dry cocoa directly sold to the cooperation. Three (3) kg of wet cocoa will be 1 kg of fermented cocoa. Fermented cocoa price was 10% higher than the price of wet cocoa. The fermentation process was done with the ripening of up to 50% moisture content and then dried to moisture content of 7.5%.

One of the reasons that makes farmers reluctant to do the fermentation is still open market would accept random cocoa and cocoa price difference between non-fermented cocoa fermentation with very little. Besides, adherence to the cocoa farmers "*awig-awig*" (unwritten rule) to always deposit the cocoa to Subak Abian for fermented always kept by the farmer members of Subak Abian.

3.2. Cocoa marketing channels

Similarity marketing of cocoa beans in Jembrana and Blitar is the existence of a cooperative whose role is to bridge the sale to exporters. In Jembrana farmers sell most of their cocoa to Subak Abian. Wet cocoa from farmers will be processed fermented by Subak Abian, while dry cocoa from farmers will be sold directly by Subak Abian to the Cooperative. Only a small part only cocoa farmers who sold to collectors, generally they sell to middlemen by reason of urgent need. Dry cocoa cooperatives received from farmers (through Subak Abian) will further dried to a moisture content reached 7.5%. Or dry cocoa cooperatives sell fermented cocoa to cocoa exporters (in this case CV. Papandayan). Institutional marketing of cocoa in Jembrana quite good and fair, which gives a premium to farmers cooperative when receiving profits were from the sale of cocoa to exporters.

Cocoa marketing in Blitar was unlikely in Jembrana. Marketing agencies that hold the role is Gapoktan (Farmers Group Association) "Guyub Santoso". All production of cocoa purchased by Gapoktan hereinafter further processed into cocoa ready for export or processed into cocoa derivative products. Gapoktan act as a single buyer, acts as a cooperative once served as agro-processing cocoa. Various processed cocoa offered by the cooperative "Santoso

Guyub" to consumers through tourist packages Kampung Chocolate. Foods made from chocolate were offered in the village of chocolate as chocolate noodles, candy, cookies, ice cream and others.

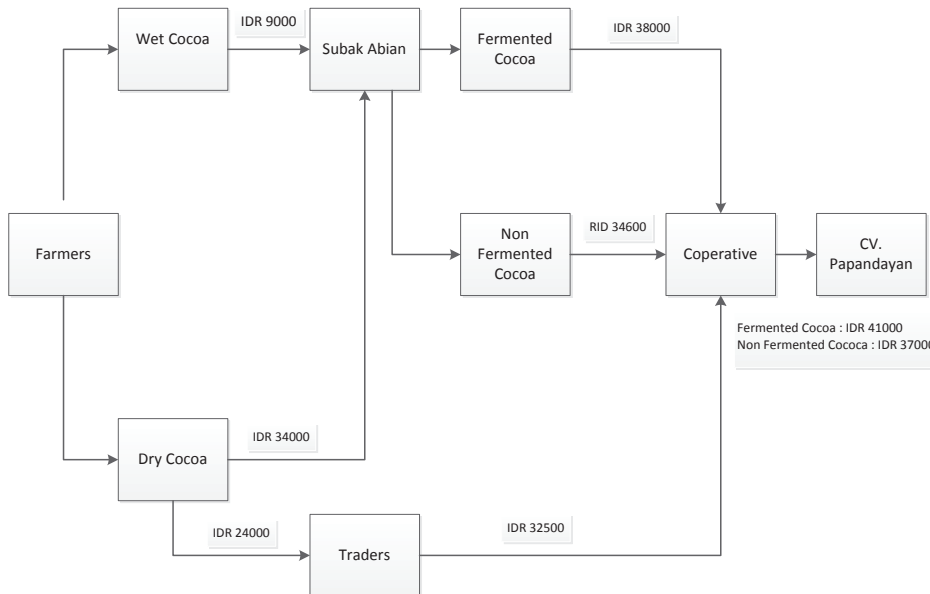


Figure 1. Cocoa Marketing Channels in Melaya sub-district, Jembrana Regency, Bali Province

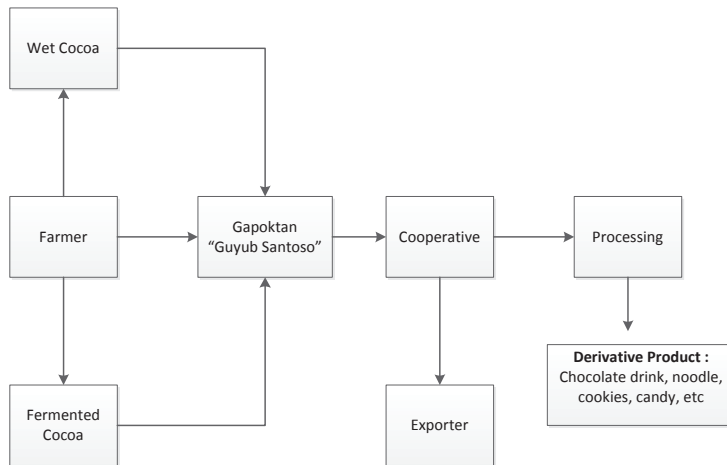


Figure 2. Cocoa Marketing Channels in the Kademangan sub-district, Blitar Regency East Jawa Province

There was a striking difference between the cocoa market in Jembrana and Blitar, namely from the aspect of price. Wet cocoa prices in Jembrana was Rp. 9000, - / kg, dry cocoa Rp. 34 600, - / kg when sold to corporation and Rp. 24 000, - / kg when sold to collectors. The selling price of cocoa in the Blitar Regency was Rp. 18000,-. Pricing cocoa in Jembrana is very open and is higher than the price in Blitar. Gapoktan is the sole purchaser of cocoa farmers, so the price is more likely to be determined if Gapoktan. Blitar assume cocoa farmers generally dried 3-4 days as cocoa fermentation. Gapoktan Gusan (Guyub Santoso) has had a random cocoa processing technology into products processed cocoa. Scheme cocoa marketing channels in Blitar, and Jembrana district is presented in Figure 1 and 2.

3.3. Market integration cocoa

Quantitative analysis was performed by using an integrated approach of the market in the short term and long term. This analysis is often called the elasticity of price transmission. Analysis was used to look at the behavior of the market because of this approach will be a response at the level of the price of cocoa farmers (farm gate price) was due to changes in the price of merchant exporters. Results of the analysis of market integration was explained by the elasticity of the transmissions were presented in Table 1.

Table 1. Elasticity Transmission Market Value Analysis Cocoa in Blitar and Jembrana

Variables	Coefficient	t-value	Significant	R-square	F Value	DW
<i>Cocoa market in Blitar</i>						
Constanta	5,857	1,030	0,309	0,012	14,501	1,165
Ln pr (X)	0,385	0,674	0,505			
<i>Cocoa market in Jembrana</i>						
Constanta	-15235	-2,262	0,030	0,266	13,796	0,925
Ln pr (X)	2,496	3,714	0,001			

Based on the results of the regression analysis (Table 1), the regression coefficient obtained was about 0.385, which gives the sense that if cocoa prices at wholesale level increased by 10%, the price of cocoa at the farm level will be increased also by 3.85%, but this influence did not significant because the probability value was 0.505 (greater than the tolerable error of 5%). This reinforces the real conditions in the field that the single buyer of cocoa farmers in Blitar is Gapoktan, so prices at farm level is not influenced by the price at the level of the exporter. Transmission coefficient of elasticity in Jembrana was 2,496, which gives the sense that if the price of cocoa at the provincial level wholesalers / exporters increased by 10%, the price of cocoa at the farm level will be increased also by 24.96%, significant at 95% confidence level, In Jembrana, the dominant party in the process of determining the price of coffee on a daily basis people are wholesalers provincial / exporter located in Jembrana. The farmer knows the price of cocoa traders and information from Subak Abian. The interesting phenomenon was very enthusiastic middlemen in the purchasing farmers' cocoa. Middleman ready to buy farmers' cocoa in the form of wet cocoa (broken skin) and dried cocoa. To become a middleman traders face market entry barriers (entry barrier to the market) was not easy, in addition to requiring substantial capital, brokers should also be able to establish cooperative partners. Compliance cocoa farmers on "awig-awig", where farmers with high consciousness always sell cocoa to Subak Abian, so that middlemen often did not get the cocoa.

4. Conclusion

Most small farmers who do fermentation, the main factor cause, there's not a price incentive for fermented cocoa, Marketing cocoa in Jembrana district has a more complex marketing channels Compared in Blitar district. Key actors in the cocoa market in Blitar regency is Gapoktan, the which are able to export and processing, the price of cocoa at the farm level in the Jembrana district is affected by the price at the wholesalers, while in Blitar the wholesaler price is not affected

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