

PROCEEDING

International Workshop “Agricultural Finance for Rural Development and Sustainability”

IPB International Convention Center, Bogor – Indonesia
20-21 November 2014

Editor :

**Dwi Rachmina
Anna Fariyanti
Netti Tinaprilla
Amzul Rifin
Siti Jahroh
Suraya Hanim Mokhtar
Ian McDonald**



Organized by
Faculty of Economics and Management
Bogor Agricultural University

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PREFACE

The food and agriculture sector has been successful in feeding an increasing and wealthier population in many parts of the world. With the introduction of policy reforms, new technologies and management practices, Asia's food production grew by leaps and lifted millions of people out of food insecurity and poverty. However, the vast majority of the people living in rural areas of developing countries who depend on agriculture for their livelihoods continue to earn meager incomes and be in abject poverty. This is primarily a result of the small size of operational land holdings; poor access to technology, capital and extension services; and extremely high risks and high transaction costs in participating in markets. As a consequence, rural farm households often engage in subsistence or near-subsistence agricultural practices and produce only a small marketable surplus.

Enhancing the system of agricultural finance including the banking sector and micro-financial instruments has been increasingly recognized as a potential vehicle for enhancing agricultural productivity; encouraging the adoption more commercial-oriented production systems and smallholder market participation; and removing the bindings constraints faced by smallholders such as lack of access to modern technology, poor knowledge on modern farm management and marketing practices. The available knowledge on agricultural finance is highly compartmentalized primarily due to lack of effective communication between the financial services industry, agricultural scientists, policy makers, extension workers and the academic community.

The Faculty of Economics and Management of the Bogor Agricultural University (FEM-IPB) in Indonesia, in collaboration with NICHE-Agribusiness and International Society for Southeast Asian Agricultural Sciences (ISSAAS) Indonesia had organized an international conference on *Agricultural Finance for Rural Development and Sustainability*, on November 20-21, 2014 at IPB International Convention Centre, Bogor, Indonesia. On the first day, 20 November 2014, Dean of FEM-IPB delivered an opening speech explaining the background of seminar. Afterwards, Prof. Dr. Herry Suhardiyanto, Rector of IPB, conveyed a keynote speech and officially opened the seminar. He also launched a new research unit of International Trade Analysis and Policy (ITAP) of FEM-IPB. The first plenary

session was moderated by Dr. Arief Daryanto, Director of Business and Management Graduate School IPB, with three speakers: Prof. Dr. Meine Pieter van Dijk (Maastricht School of Management, Netherlands), Prof. Dr. Hermanto Siregar (Bogor Agricultural University, Indonesia), and Dr Ian McDonald (Lincoln University, New Zealand). After lunch, parallel sessions were divided into several themes, i.e. Sustainable Agriculture and Entrepreneurship, Rural Development, Farm and Industry Level Analysis, Agricultural Finance, and Agricultural Marketing. On the second day, 21 November 2014, the second plenary session was moderated by Prof. Dr. Muhammad Firdaus, Vice Dean of FEM-IPB, with three speakers, i.e. Prof. Dr. Achmad Suryana (ICASEPS, Ministry of Agriculture of Indonesia), Dr. Suraya Hanim Mokhtar (University Putra Malaysia, UPM), and Prof. Dr. Bustanul Arifin (Lampung University and Chairman of PERHEPI). After lunch break and Friday Prayer, parallel session was divided into three themes, i.e. Farm and Industry Level Analysis, Agricultural Marketing, and Agricultural Finance. The closing ceremony was led by Prof. Dr. Muhammad Firdaus. There are some conclusions and recommendations from the seminar. First, there are many government regulations on the issue of agricultural finances, however they are lacking in implementations. Second, most of the farmers currently obtain the loans from the informal financial sector with relatively high costs of fund. Formal financial institutions are still needed by the farmers to meet the required working capital. Third, the farmers are actually bankable, thus the formal financial institutions should adjust their prerequisites to the agricultural sector, to give the farmers an access to assessing loans from the formal institution. Finally, involvement of private sectors in agricultural finance could also be increased.

This proceeding is documented some papers presented in the seminar. It is expected to feed directly into policy-making processes in Indonesia and elsewhere and also to contribute in agricultural development and farmers' welfare.

Bogor, November 2014
Yusman Syaukat

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AGRIMARKETING OF CASSAVA AND COCOA IN LAMPUNG PROVINCE

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ABSTRACT

Recently, marketing of agribusiness products lead to food industry and food marketing so that processing is very important to increase demand elasticity, profit, and value added. Many smallholder farmers as primary supplier face few traders in centralized market. This condition causes unfair margin and low farmer's share. Therefore, it is needed to make agribusiness products more efficient. The aim of this study is to analyze agribusiness marketing system of cassava and cocoa in economics perspective. This study was conducted in Terusan Nunyai District, Central Lampung Regency as production center of cassava and Sungai Langka Village, Gedong Tataan District, Lampung Province as production center of cocoa in Lampung. The number of respondents was 20-30 farmers who was chosen by simple random sampling method. Data analysis used operational efficiency with margin, farmer's share, ratio of cost and pricing, and marketing channels are the indicators. The results of this study showed that cassava farmers marketed their fresh product to local tapioca factory, namely PT. Bumi Waras (BW) , PT. Sinar Laut (SL) and PT Umas Jaya Agroustama (UJA) at the price around Rp600-900/kg. Tapioca factory set refraction at 13-16 percent. This study revealed that there are three marketing channels in cassava marketing. The first channel is from farmer to tapioca factory, the second channel is from farmer to stall, then to tapioca factory and the third channel is from farmer to trader or contractor, then to tapioca factory. In cocoa marketing, there four channels. The first channel is from farmer to small scale collector, large scale collector, large scale trader, large scale trader/warehouse, then to factory, the second channel is from farmers to large scale collector, large scale trader, large scale trader/warehouse, then to factory, the third channel is from farmer to large scale trader, large scale trader/warehouse, then to factory, and the fourth channel is from farmer to large scale/warehouses, then to factory. Farmer's share of wet cocoa beans is 39.68 % -61.74% while the farmer's share of dried cocoa beans is about 69.44%-77.78%. For the conversion, 1kg dried cocoa beans is produced by 1.43 kg wet cocoa beans. From four marketing channel, the second, third, and fourth (dried cocoa beans marketing) are more profitable for the farmers.

Keywords : agrimarketing, marketing channel, marketing margin, farmer's share,

1. INTRODUCTION

1.1. Background

Agribusiness system is more integrated and tends to consumer driven in globalization era. This condition will influence supply chain and determine what kind of product that has to be produced by farmers. This is opportunity for farmers and SMEs to increase efficiency, productivity, value added, and competitiveness to meet customer satisfaction. According to Shafneer *et al.* (1998) marketing can be viewed from micro and macro perspectives. Marketing system research is needed to result marketing efficiency especially cassava and cocoa in

Lampung. Lampung is the biggest producer of casava in Indonesia and cocoa has a big prospect in Indonesia's export to Malaysia, India and US.

There are two kind of marketing efficiency, namely operational efficiency and price efficiency (Purcell, 1979; Kohls and Uhl, 2002). The goal of these efficiencies is competitiveness. Competitiveness can be achieved by vertical and horizontal integration. In one hand, vertical integration can increase competitiveness through increasing of value added efficiently, that brings product reach becomes wider (economic of scope). On the other hand, horizontal integration can make business scale become bigger so that it is more efficient (economic of scale).

1.2. Objectives

This study examines agrimarketing of cassava and cocoa in Lampung, especially to analyze farmer's income and marketing system in economic perspective through concepts and review. This study start at household level, from farming to marketing. The aim of this study is to analyze agribusiness marketing system of cassava and cocoa in economics perspective. The specific objectives of this study are:

1. To analyze cassava and cocoa farmer income in Lampung Province
2. To analyze cassava and cocoa marketing system from economic perspective in Lampung Province

2. RESEARCH METHOD

This study is part of Hibah Kompetensi Research at 2013 which is conducted from June to November 2014. Primary data was collected by interview and observation from farmer's household, SMEs and cooperative. From each village and each commodity was choosen 20-30 farmers. Whereas secondary data was collected from many sources such as Central Bureau of Statistics (CBS), Ministry of Agriculture, journals and related publication. Farmer and SMEs respondents was determined by simple random sampling, while cooperative was determined by purposive technique. Snow Bowling sampling is used to examine the flow of value chain.

This study used qualitative and quantitative method such as crosstab, farmer's income, marketing channel, marketing function, market structure, marketing margin, and marketing efficiency.

Farmer income was analyzed using cost structure, revenue, and R/C ratio. (Soekartawi, 2002). Marketing system was analyzed using marketing channel, marketing function (physis, exchange, and facilities), and marketing margin.

Distribution of marketing margin can be seen from percentage of profit on marketing cost in each marketing institution. Besides that, farmer's share was analyzed by percentage of farmer's price on final consumer's price. Farmer's share will show the fairness of return for every party

3. RESULT AND DISCUSSION

3.1. Cassava Farmer Income

Farmer income was analyzed based on average cassava land using from 22 respondents. Average land using is 3.23 ha. Average price of cassava is Rp 790/kg. Average income on cash cost is Rp. 15,793,840.16, while average income on total cost is Rp. 11,689,481.69. R/C ratio on cash cost is 3,86 and R/C ratio on total cost is 2.22. For further information, it can be seen from Table 1.

Table 1. Revenue, cost, and income for cassava farmer per ha

| Description | Vol | Unit | Unit price | Total |
|-----------------------------------|--------|----------|------------|---------------|
| A. Revenue (Rupiah) | 26,984 | Kilogram | 790 | 21,317,549 |
| B. Cost | | | | |
| Cash Cost | | | | |
| Non Family Labor Cost | 68.10 | Work day | 50,000 | 3,404,953.56 |
| Fertilizer Cost | | | | 1,920,620 |
| Pesticide cost | | | | 177,026 |
| Rent Cost | | | | 21,109 |
| Cash Cost | | | | 5,523,708.84 |
| Imputed Cost : | | | | |
| Family Labor Cost | 5.33 | Work day | 50,000 | 266,666.67 |
| Depreciation Cost | | | | 21,057.97 |
| Seed Cost | | | | 354,771 |
| Land Rent | | | | 3,461,863 |
| Imputed Cost | | | | 4,104,358.47 |
| Total Cost | | | | 9,628,067.31 |
| C. Net Income on cash cost | | | | 15,793,840.16 |
| D. Net Income on total cost | | | | 11,689,481.69 |
| R/C on cash cost | | | | 3.86 |
| R/C on total cost | | | | 2.22 |
| Duration of one season | | Month | | 9 |
| Net Income per month on cash cost | | | | 1,754,871.13 |

From Table 1 it can be concluded that cassava farming is profitable. Farmer income per ha is Rp 11.69 to 15.79 million and R/C is 2.22 to 3.86. The highest cost is non family labor cost (61.64%) and fertilizer (34.77%).

3.2. Cassava Marketing

Cassava marketing channel in Gunung Batin Udik, Terusan Nunyai, Center Lampung District consist of three channels as figure shown below.

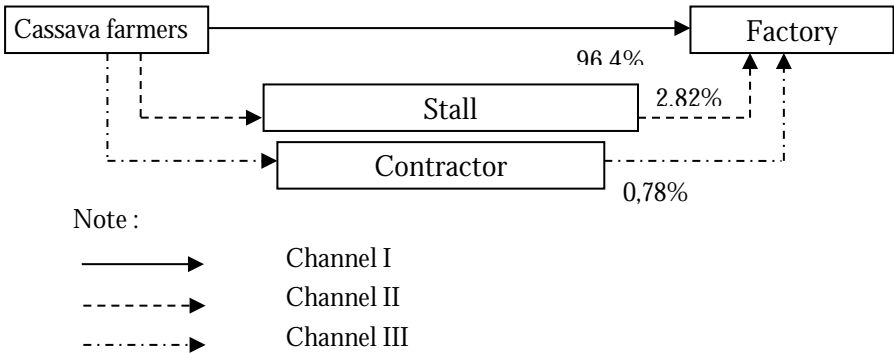


Figure 1. Cassava marketing channel in Gunung Batin Udik, 2014

Channel I is the only one channel that connects farmers to factory directly. Most of farmers use this channel (20 farmers) or 96,4% (1.848.500 ton) of total volume is traded in this channel. Farmers who located near the factory tend to sell cassava direct to the factory. There are three factories, namely PT Budi Acid Jaya (BW), PT Sinar Laut and PT Umas Jaya Agrotama. PT Sinar Laut is the most favorite factory because 16 farmers sell their product (84.6% or 1.623.500 ton) to him. Beside the near location, this factory also gives lower refraction than the others. Meanwhile, only 3 farmers who sell their product to PT BW (9,13% or 175.000 ton of total traded volume) and only one farmer who sells his product to PT Umas Jaya (2,61% or 50.000 ton of total traded volume). Cassava volume list from farmers to these three factories can be seen from Table 2.

Table 2. Cassava volume list from farmers to three factories in Gunung Batin Udik

| Factory | Farmers (men) | Volume (ton) |
|---------------|---------------|--------------|
| PT Sinar Laut | 16 | 1.623.500 |
| PT BW | 3 | 175.000 |
| PT Umas Jaya | 1 | 50.000 |
| Total | 20 | 1.848.500 |

Beside price and refraction, farmers also consider the distance to sell their product, because the further distance the higher transportation cost. Channel I is used by farmers who is located near the factory, while channel II and III are used by farmers who is located far from the factory. They sell their product to trader or stall who have network inside and outside the village.

According to interview, PT Sinar Laut can receive 400-500 ton cassava/day in the harvesting season, and PT BW can receive 800-1000 ton cassava /day. In the low season or dry season, there is cassava scarcity which caused factory to become idle in capacity. PT Sinar Laut only receives 70-100 ton/day and PT BW only 100-200 ton/day, while PT Umas Jaya refused to be interviewed. These three factories receive cassava then process it to be tapioca and then sell it to many region in domestically or overseas.

Only one farmer uses channel II or only 2.82% (54 000 ton) of total volume which is traded in this channel. Whereas channel III consist of farmers who sell cassava to contractor and then contractor sells cassava to the factory. Contractor is a trader who buys cassava from farmer directly in the field by future contract. In buying activities, trader doesn't use measurement equipment to determine cassava price/ha. He only uses subjective estimation. This makes farmer get more loss due to unfair product weighing. Traders do some similar functions than stalls, such as exchange function (buying, selling, collecting), physic function (transporting), and facilitating function (financial standardization, risk handling, market intelligence and market communication). However, this unfair product weighing has a potential loss for trader when price determination by the trader is higher than actual yield price. In Gunung Batin Udik, only a one farmers who use channel III or only 0.78% (15 000 ton) of total volume which is traded in this channel.

Marketing margin is related to marketing efficiency, while farmer's share is percentage of farmer price on consumer price. Farmer's share shows whether marketing activities give the balance return for every involved party. Farmer's share and marketing margin can be shown in Table 3.

Table 3. Farmer's share and marketing margin of cassava in Lampung

| No | Description | Channel 1 | Channel 2 | Channel 3 |
|----|---------------------------|---------------|---------------|---------------|
| | | Price (Rp/Kg) | Price (Rp/Kg) | Price (Rp/Kg) |
| 1 | Cassava farmer | | | |
| | COGS | 289.00 | 289.00 | 289.00 |
| | Labor cost for harvesting | 60.00 | 60.00 | 60.00 |
| | Transportation cost | 60.00 | 60.00 | 60.00 |
| | Profit | 512.70 | 416.00 | 377.67 |
| | Selling Price | 921.70 | 825.00 | 666.67 |
| | Profit ratio | 4.27 | 3.47 | 3.15 |
| | F's | 100.00% | 85.27% | 68.20% |
| | Margin | 0.00% | 14.73% | 31.80% |
| 2 | Trader | | | |
| | Buying price | | | 666.67 |
| | Labor cost for harvesting | | | 90.00 |
| | Transportation cost | | | 60.00 |
| | Profit | | | 160.83 |
| | Selling price | | | 977.50 |
| | Margin | | | 310.83 |
| | Profit ratio | | | 1.07 |
| 3 | Stall | | | |
| | Buying price | | 825.00 | |
| | Labor cost for carrying | | 40.00 | |
| | Transportation cost | | 30.00 | |
| | Profit | | 72.50 | |
| | Selling price | | 967.50 | |
| | Margin | | 142.50 | |
| | Profit ratio | | 1.03 | |
| 4 | Factory | | | |
| | Buying price | 921.70 | 967.50 | 977.50 |

Marketing efficiency also can be seen from Profitability Index (ratio marketing profit on marketing cost). Marketing channel can be said efficient if this value equal or more than one. Channel I is the most efficient (PI=4.27), then channel II (PI=3.47) and the last is channel III (PI=3.15). It can be concluded that farmers get more profit from channel I.

3.3. Cocoa Farmer Income

Average cultivating land of 30 cocoa farmers is 1.46 ha. In Sungai Langka Village, cocoa production period is March-October and harvesting period is March, April, May, and June. Intermediate harvest time is July, August, September, and October. However, climate change and bad condition in 2013 and 2014 caused cocoa flower blooming period has changed. Cocoa harvesting time usually go on two months and results 1 ton wet cocoa beans/ha. However, in the last three years, farmers cannot harvest their cocoa. In harvesting period, farmers get only a small volume of cocoa beans. Average volume of cocoa beans in harvesting period per ha can be seen in Table 4.

Table 4. Average volume of cocoa beans in harvesting period per ha per year in Sungai Langka Village, Lampung

| No. | Harvest condition | Harvest Volume (Kg) | Cocoa beans sells condition | Depreciation | Volume After conversion (Kg) |
|-----|-------------------|---------------------|-----------------------------|--------------|------------------------------|
| 1. | Wet cocoa beans | 349.42 | Drying <1 day (original) | 5% | 332.79 |
| 2. | Wet cocoa beans | 263.30 | 1 day drying (original) | 10% | 239.36 |
| 3. | Wet cocoa beans | 12.50 | 2 days drying (original) | 15% | 10.87 |
| 4. | Wet cocoa beans | 84.65 | 3 days drying /dried cocoa | 30% | 65.11 |
| | Total | 709.87 | Total | | 648.13 |

In Table 4, cocoa productivity in Sungai Langka is 709.87kg/ha wet cocoa beans. According to Plantation and Forest Office in Pesawaran District, cocoa productivity in Sungai Langka can achieve 1078.72kg/ha in 2013. This volume is higher than productivity in 2014. In 2014, yield volume is only 65.81% of productivity in 2013. This condition is caused by many unpredictable things such as weather, pest, plant diseases, etc. For further information, cocoa farmer income in Sungai Langka can be calculated as in Table 5. According to Table 5, in harvesting period (8 months) farmers got revenue around Rp. 8,623,470.32.-/ha/months and in non harvesting period (intermediate period) is only Rp. 1,007,933.79.-/ha/month. Cash cost is Rp.798,539.90.-/ha and imputed cost is Rp. 5,518,800.00.-/ha. Therefore, total cost is Rp. 6,317,339.90,-. Net farmer income on cash cost is Rp. 7,824,930.42.- and Net farmer income on total cost is Rp. 2,306.130.42.-. R/C ratio on cash cost is 10.80 that means each Rp1 cash cost will result revenue Rp10.80. R/C ratio on total cost is 1.37 that means each Rp1 total cost will result revenue Rp1.37. Both of R/C on cash cost and R/C on total cost are more than one. This indicates that cocoa farming in Sungai Langka Lampung is profitable.

3.4. Cocoa Marketing

Cocoa bean which is sold by Sungai Langka farmer is low quality non fermented cocoa. All of respondents do not ferment their beans due to takes time (4-5 days) and non significant profit. According to marketing institution (PT Papandayan and BT Cocoa), price difference between fermented cocoa and non

fermented cocoa is only Rp2000,-. The price of fermented cocoa will be high if farmers sell directly to the factory and they meet SNI quality standard. Besides water content, another quality standard of cocoa is size and cocoa waste.

Table 5. Cocoa revenue, cost, and income per ha in Sungai Langka, Lampung 2014

| Description | | Volume | Unit | Total (Rp.) |
|----------------------------|---|-------------|---------|--------------|
| Average for 1 cocoa farmer | | | | |
| Production period | | 1 | year | |
| Yield | | Cocoa beans | | |
| Average land : | | 1 | Ha | |
| A. revenue | | | | |
| 1 | Drying <1 day (original) | 332.79 | Kg | 3,417,260.27 |
| 2 | 1 day drying (original) | 239.36 | Kg | 3,281,004.57 |
| 3 | 2 days drying (original) | 10.87 | Kg | 217,351.60 |
| 4 | 3 days drying /dried cocoa | 65.11 | Kg | 1,707,853.88 |
| Total revenue | | 648.13 | Kg | 8,623,470.32 |
| B. Cost | | | | |
| 1 | Cash cost | | | |
| | Non family labor cost | 2.17 | Workday | 86,757.99 |
| | Organic fertilizer cost | | | |
| | Manure | 2,828.28 | Kg | 504,544.47 |
| | Chemical fertilizer cost | | | |
| | Urea | 25.11 | Kg | 44,155.25 |
| | TSP | 7.99 | Kg | 19,178.08 |
| | NPK | 19.41 | Kg | 103,424.66 |
| | Pesticide cost / liquid fertilizer | | | |
| | Fungicide | 0.18 | Bottle | 8,675.80 |
| | Insecticides | 0.16 | Bottle | 26,780.82 |
| | Liquid Leaves fertilizer | 0.14 | Bottle | 5,022.83 |
| | Total fertilizer cost /chemical pesticide | | | |
| | | | | 207,237.44 |
| Total cash cost | | | | |
| | | | | 798,539.90 |
| 2 | Imputed cost | | | |
| | Family labor | 38.84 | Workday | 1,506,073.06 |
| | Land rent (opportunity cost of land ownership) | | | |
| | | | | 3,500,000.00 |
| | Seed depreciation cost | | | |
| | | | | 40,000.00 |
| | Machine depreciation cost | | | |
| | | | | 54,810.96 |
| | Labor depreciation cost for land preparation and planting | 65.81 | Workday | 54,810.96 |
| | Imputed cost of organic fertilizer | 1,556.16 | Kg | 363,105.02 |
| Total of imputed cost | | | | |
| | | | | 5,518,800.00 |
| TOTAL COST | | | | |
| | | | | 6,317,339.90 |
| C. | NET INCOME ON CASH COST | | | |
| | | | | 7,824,930.42 |
| D. | NET INCOME ON TOTAL COST | | | |
| | | | | 2,306,130.42 |
| E. | R/C ON CASH COST | | | |
| | | | | 10.80 |
| F. | R/C ON TOTAL COST | | | |
| | | | | 1.37 |
| G | Duration of one season | Month | | 8 |
| H | Net income per month on cash cost | | | |
| | | | | 978,116.30 |

Most of respondents prefer to sell their wet cocoa beans due to the need of money eventually and reluctant to refuse the trader who comes to buy. They have liabilities which have to be paid as soon as possible. Description of 30 cocoa respondents can be explained by Table 6 below.

Table 6. Description of 30 farmer respondents based on cocoa condition and sold cocoa volume

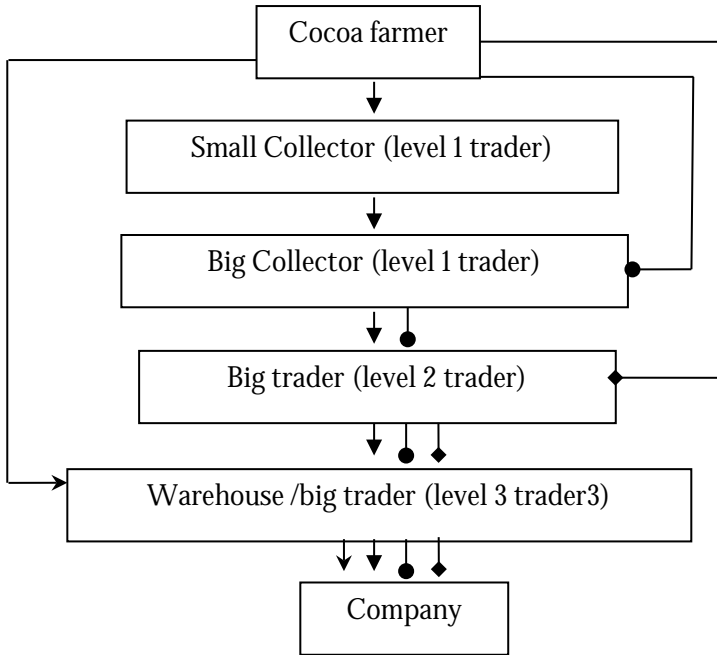
| No | Cocoa beans condition | Depreciation | Volume before depreciation (kg) | Volume After depreciation (kg) |
|-------|---------------------------|----------------------------|----------------------------------|--------------------------------|
| 1 | Drying <1 day (original) | ± 5% for beginning volume | 15,305 | 14,576 |
| 2 | 1 day drying (original) | ± 10% for beginning volume | 11,532 | 10,484 |
| 3 | 2 days drying (original) | ± 20% for beginning volume | 571 | 476 |
| 4 | 3 days drying/dried cocoa | ± 30% for beginning volume | 3,708 | 2,852 |
| Total | | | 31,116 | 28,388 |

From Table 6, it can be seen that there is no post harvest treatment for more than half (51.35%) of cocoa beans. Farmers dry cocoa beans only for less than 4 hours and water content decrease only 5%. Cocoa marketing channel in Sungai Langka, Lampung can be explained from Table 7.

Table 7. Cocoa marketing channel in Sungai Langka, Lampung, 2014

| No | Selling from cocoa farmer | Farmers (men) | (%) |
|-------|--------------------------------------|---------------|--------|
| 1 | to small collector only | 14 | 46.67 |
| 2 | to big collector only | 8 | 26.67 |
| 3 | to big trader only | 3 | 10.00 |
| 4 | To warehouse only | 1 | 3.33 |
| 5 | To small collector and big collector | 3 | 10.00 |
| 6 | To big collector and warehouse | 1 | 3.33 |
| Total | | 30 | 100.00 |

This study revealed that there are 4 marketing channels on several qualities of cocoa in Sungai Langka, Lampung (Figure 2).



Note :

- ← : Marketing channel 1
- — : Marketing channel 2
- ◆ — : Marketing channel 3
- ← : Marketing channel 4

Figure 2. Marketing Channel on Non Fermented Cocoa in Sungai Langka, Lampung

Short description related to figure 2 can be explained as follows :

1. Small collector (level 1 trader) is small trader in the village.
2. Big collector (level 1 trader) is big trader in the village.
3. Big trader (level 2 trader) is big trader in sub district and district
4. Warehouse/ big trader (level 3 trader) is big trader in province who has high sales volume
5. Company is divided into two types, namely exporter and domestic company

In these 4 channels, there is different price due to quality and water content.

These 4 channels can be explained as follows:

1. Channel 1 (volume 14 844 kg, 52,29%); farmers → small collector → big collector (level 1 trader) → big trader (level 2 trader) → warehouse/ big trader (level 3 trader) → Company (Exporter). Average price is Rp10 500.- for less than one day drying cocoa and Rp 13 875 for one day drying cocoa.

2. Channel II à farmer à Big collector (level 1 trader)à Big trader (level 2 trader)à Warehouse/ Big trader (level 3 trader)à Company (Exporter); Data show that 11184 kg cocoa was sold to big collector at variety of price. The biggest volume in this channel (21.98%) goes to big collector.
3. Channel III à farmer à big trader (level 2 trader)à warehouse/big trader (level 3 trader)à company. Data show that 1160 kg (4.09%) of cocoa beans was sold to big trader at variety of price. In this channel, big trader doesn't receive wet cocoa beans anymore.
4. Channel IV: farmer à big trader / warehouse (level 3 trader)à company. Data show that only 1,200 kg (4.23%) volume of cocoa beans was sold to warehouse at average price Rp. 28,000.-/kg. In this channel, warehouse bought dried cocoa only.

From these four channels, the longest channel is channel 1 then channel 2. However, these two channels are the majority channel for farmer. Every marketing institution in each channel do some marketing function such as exchange, physic, and facilities (Table 8).

Table 8. Cocoa marketing function based on marketing institution

| No | Marketing Institution | Exchange | | Trans- porting | Physic | | Facilities | | |
|----|-----------------------|--------------|-------------|-------------------|------------------|-----------------|---------------------------|------|------|
| | | Sell -ing | Buy- ing | | Ware- housing | Proce- ssing | Stan- dardi- zation | Risk | cost |
| 1 | Farmers | yes | No | yes | No | yes | No | No | No |
| 2 | Small collector | yes | yes | yes | No | yes | No | No | yes |
| 3 | Big collector | yes | yes | yes | yes | yes | No | No | yes |
| 4 | Big trader | yes | yes | yes | yes | yes | yes | No | yes |
| 5 | Warehouse | yes | yes | yes | yes | yes | yes | No | No |
| 6 | Company | yes | yes | No | yes | yes | yes | No | yes |

There is processing activities in physic function which consist of drying, sticky beans separation, cleaning, fumigation, and sack packing. Fully processing was conducted by big trader and warehouse, while farmer, small collector and big collector do drying and sticky beans separation only. Whereas company doesn't do processing activities but directly do advance processing. Quality standardization was conducted by big trader, warehouse, and company using equipment, namely *Cerra or Aqua Boy* to measure cocoa water content. Advance standardization was conducted by warehouse and company through laboratory test and others test to meet SNI quality standard.

Financial function was conducted by small collector, big collector, big trader, and company. Small collector, big collector and big trader usually lend farmer some money that has to be paid by cocoa beans. Meanwhile, company and warehouse made a contract which price is determined when contract was ratified and cocoa beans have to deliver in one week. These institutions were not always do financial function, because they sometimes bought in cash.

All of marketing institutions always know about cocoa price information. This information comes from international Basic New York (by internet). Therefore, cocoa price will follow international price. Price fluctuation will be influenced by world demand and exchange rate. For every institution, basic price is determined base on quality. Basic New York price at Indonesia spot price is Rp27 138,-/kg (the end of December 2013), Rp31 830,-/kg at the end of August 2014, Rp34 138,-/kg at the end of September 2014, and Rp31 031,-/kg at the end of October 2014.

There are 13 trader and company which consist of 3 small collector, 4 big collector, 2 big trader, 1 warehouse, and 3 company. From them, it can describe price distribution, marketing margin, and farmer's share (see Table 9).

Table 9. Margin and farmer's share for cocoa farmer in Sungai Langka, Lampung

| Channel | Price | Condition | F's | Mt |
|-----------|-----------|---------------------------|---------|---------|
| Channel 1 | 10,500.00 | Drying <1 day (original) | 41.67% | 58.33% |
| | 13,875.00 | 1 day drying (original) | 48.18% | 51.82% |
| | nothing | 2 days drying (original) | nothing | nothing |
| | nothing | 3 days drying/dried cocoa | nothing | nothing |
| Channel 2 | 10,000.00 | Drying <1 day (original) | 39.68% | 60.32% |
| | 14,500.00 | 1 day drying (original) | 50.35% | 49.65% |
| | 20,000.00 | 2 days drying (original) | 61.73% | 38.27% |
| | 27,000.00 | 3 days drying/dried cocoa | 75.00% | 25.00% |
| Channel 3 | nothing | Drying <1 day (original) | nothing | nothing |
| | 15,500.00 | 1 day drying (original) | 53.82% | 46.18% |
| | 20,000.00 | 2 days drying (original) | 61.73% | 38.27% |
| | 25,000.00 | 3 days drying/dried cocoa | 69.44% | 30.56% |
| Channel 4 | nothing | Drying <1 day (original) | nothing | nothing |
| | nothing | 1 day drying (original) | nothing | nothing |
| | nothing | 2 days drying (original) | nothing | nothing |
| | 28,000.00 | 3 days drying/dried cocoa | 77.78% | 22.22% |

Table 9 explain that the longer marketing channel the smaller marketing margin, on the other hand the shorter marketing channel the bigger marketing

margin that will farmer get. Farmer's share is very important to explain proportion of farmer price on consumer price. Farmer's share based on marketing channel can be seen at Table 10.

Channel 4 result the highest farmer's share (77.78%) which farmers sold dried cocoa beans directly to warehouse, while channel 3 result 75% farmer's share which farmers sold dried cocoa beans to big trader. Final consumer in this case is company. There are three big companies that lead and control cocoa production in Lampung. These three big companies are:

- a. PT. Bumi Tangerang (BT Cocoa) that has headquarter in Tangerang Banten.
- b. PT. Papandayan (Barry Callebaut; Delfi) that has headquarter in Bandung Jawa Barat
- c. PT. TMCI (Tanah Mas Celebes Indah) that has headquarter in Makassar, Sulawesi Selatan.

They were established in Java but they have big cocoa warehouse in Bandar Lampung.

From these three companies, only PT TMCI that exports his cocoa to overseas, while the others are domestic processing company. PT BT Cocoa processed cocoa beans to butter, powder and liquor, then export 80% of his cocoa to almost 50 countries in Europe and Asia, and 20% of the rest were sold to domestic retail. PT Papandayan processed cocoa beans to intermediate product and final product which ready to consume to overseas and domestic consumers.

PT TMCI is an exporter company who sells cocoa beans to many countries like India and Malaysia. He is also sold his cocoa beans to domestic processing company. According to PT TMCI, cocoa demand in 2014 is increasing so that they export 40% of his cocoa beans. The price of dried cocoa beans which ready to process is Rp38 000,-/kg. PT TMCI exports his product under Singapore flag. It is more profitable to export cocoa than sell to domestic processing company, because export tax in care of consumer, not exporter.

4. CONCLUSION

Cassava farming is more profitable than cocoa. Cassava farmer income on cash cost/ha/month is Rp1,754,871.13, whereas cocoa is only Rp.978,116.30/ha/month. There are three marketing channels in cassava marketing. The first channel is from farmer to tapioca factory, the second channel is from farmer to stall, then to tapioca factory and the third channel is from farmer to trader, then to tapioca factory. In cocoa marketing, there four channels. The first channel is from farmer to small scale collector, large scale collector, large scale trader, large scale

trader/warehouse, then to factory, the second channel is from farmers to large scale collector, large scale trader, large scale trader/warehouse, then to factory, the third channel is from farmer to large scale trader, large scale trader/warehouse, then to factory, and the fourth channel is from farmer to large scale/warehouses, then to factory. From four marketing channel, the second, third, and fourth (dried cocoa beans marketing) are more profitable for the farmers. The most efficient channel is the fourth channel (farmer's share is 77.78%) and the second channel (farmer's share is 75%).

5. IMPLICATION

Both in Cassava and Cocoa marketing in farmer level, there is no farmer group roles. Farmers marketed their product individually. This is adverse condition which result the low of price and the high refraction (in cassava). The price will be lower if quality standard cannot be achieved (water content in cocoa). Therefore, existing of farmer group is very important to increase efficiency. Farmer's share can be increased by shortening marketing channel. Farmers sell their product directly to the factory or export agent. Financial dependency between farmers and middleman or collector can be avoided by strengthen formal financial institution such as cooperative or commercial bank.

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