

## MARKET ANALYSIS ON SUPPLY CHAIN OF PISANG MAS FROM LUMAJANG REGENCY, EAST JAVA

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### Abstract

The purpose of this study was to determine the supply chain model and the pattern of “Pisang Mas” or Golden Bananas marketing in Lumajang, as well as to recognize the role and functions of the existing supply chain players in the system. The research was carried by conducting survey to agribusiness and contract players such as farmers, traders, collectors, distributors, partner companies and traders from outside these regions who operated their business in these regions. The result showed that agribusiness of this bananas in the studied areas would be giving a greater economic benefit. The pattern of contract marketing gave a better benefit to farmers and marketing partner companies than other pattern. This model required business improvement and corporate partners should participate in the improvement from cultivation to marketing activities.

*Keywords: supply chain management, contracts marketing, pisang mas, Lumajang, East Java*

### Introduction

In the recent years, the specific of bananas’ type, namely “Pisang Mas” or Golden bananas had been growing rapidly in Lumajang regency’s market in East Java. Many of local and foreign consumers praised the quality of this banana type. They believed it had a good taste, aroma and typical appearance as well as good quality [1]. In year 2007, the total area of central plantation in just two sub-districts (Senduro and Pasrujambe) reached more than 386,6 ha and in year 2009 had reached 574.44 ha [2]. On demand-side, the potential market for Golden bananas was high. Each month, the demands from distributors or marketing company had reached more than 300 ton/month in year 2007. Nevertheless, the commodity supply only can reached around 150 – 200 ton/month.

Economically this bananas agribusiness in Lumajang Regency provides direct benefits to local farmers and gives multiplier effects to the surrounding community. In the field, the marketing system involved many players on the market structure in which is a combination structure of perfect competition and contract marketing. Although the potentials were very large, however most of the bananas farmers still exist in a poor

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category. It is needed to increase farmers bargaining position through development of farmer's institution, capital institution and marketing institution. Technology improvement on cultivation and post-harvest is needed to be organized to improve productivity and product quality. Due to imbalance availability of demand and supply of Golden bananas in the studied area, and the need to improved farmers livelihood, the government incorporated with farmers and businessman, worked together to develop the agribusiness of Golden bananas in Lumajang, through a contract marketing system.

In East Java, contracts marketing are widely used to supply raw-material for processing industries and agribusiness firm. This example includes fresh milk in dairy industry, food crop, fresh vegetables, hybrid seed production, as well as for some industrial crops such as tobacco, cotton, sugarcane and cocoa [4][10][6][7][8]. Contract marketing refers to a system where a central processing or exporting unit purchases the harvest of independent farmers and the terms of the purchase are arranged in advance through contract [3][11]. Regarding Warning and Key [12], the liberalization of agriculture markets and the removal of trade barriers have accelerated the formation of these vertical relationships between growers and agro industrial firms. At the macroeconomic level, the contract can help to remove market imperfections in produce, capital (credit), land, labor, information and insurance market, lead to better coordination of local production activities which often involve initial investment in processing, extension, etc., and can reduce transaction cost [9][5]. This institution can have potential benefits both for farmers as producer and for the contracting firms which act as marketing channel, and overcome some of the market failures inherent in rural economic systems in developing countries such as Indonesia.

The success of many farms contract in developing country in other part of the world inspired to review this kind of bananas agribusiness institution in Lumajang, one of the main banana producers in East Java province. Subject of this research is to determine the benefits of contract marketing for Golden bananas farmer in Lumajang. To understand how this system works, first it must discuss the structure of market under contract exists in the field. Following, examine how contract marketing may impact market structure. Finally, consider contract marketing in the studied region. Survey conducted on Lumajang since it is likely to be most developed region in banana agribusiness by smallholders in East Java. Subsequent data collection and research analysis will focus on two sub district in Lumajang that are Senduro and Pasrujambe. The purpose of this study was to determine the model of agribusiness of supply chain of the golden bananas in Lumajang regency from farmers to

consumers through pattern of contract marketing that had already exist. Another purpose was to notice the roles and functions of the existing supply chain players in this system.

### Research Methodology

Location of the research was the area of central development of Golden bananas in Lumajang regency, namely Senduro and Pasrujambe sub-district. The research was conducted in February to march 2008, by conducting a survey to agribusiness players of Golden bananas such as farmers, traders, collectors, dealers/distributors, partner companies and trader partners from outside of these regions who operated their business in these regions.

The primary data was obtained by the method of Participatory Rural Appraisal Survey (PRA) and Focus Group Discussion (FGD), a two-way interview involved several groups of respondents for several times discussions. The secondary data was obtained from official documents that issued by Agriculture department of Lumajang regency and East Java province. The analysis of data and information were made to obtain a rich picture of the pattern components of the existing contract in these regions. Furthermore, to determine the strategy and policy improvement of supply chain management (SCM) for agribusiness development of Golden bananas in the future.

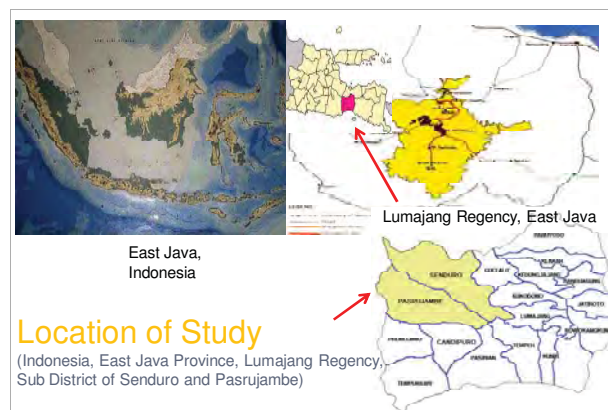


Figure 1. Map of location of study

### Result and Discussion

#### Agribusiness Player of Golden Bananas

Currently, location of this studied region had 94 farmer groups or more than 2000 farmers whose activity was to produces various kind of agricultural commodities (mix farming). There were some prominent agricultural products in these areas and mostly the business was operated hereditary. The agricultural activities of the local residents were

generally cultivating plantation crops (coffee, cloves), fruits (jackfruits, durian, lanzones, etc) and livestock (dairy cows and goats). However, the commodity that had been increasing rapidly and the favorite commodity for the farmers were Golden bananas. According to Table 1, 60% of farmer groups in Pasrujambe sub-district and 30 % of farmer groups in Senduro sub-district were Golden bananas growers. The structure of golden bananas in these locations were a combination between form of perfect competition market and contract farming which represented by the pattern of contract marketing. There were about 1000 farmers/producers and 77 market players in the agribusiness of Golden bananas.

Table 1. Agribusiness Players of Golden Bananas in The Studied Areas

| Business Players                        | Numbers                |
|---|------------------------|
| <b>Producers</b>                        |                        |
| Pasrujambe sub-district (farmer groups) | 40 groups, 60% farmers |
| Senduro sub-district (farmer groups)    | 54 groups, 30% farmers |
| Total numbers of farmer groups          | 94 farmers groups      |
| <b>Market Players</b>                   |                        |
| Local traders and collectors (person)   | 45                     |
| Inter regional traders (person)         | 19                     |
| Outside regional trader (person)        | 10                     |
| Agribusiness partner company (Company)  | 3                      |
| Total (Players)                         | 77                     |

Source: Field Survey, 2008

Table 2. Description Of Agribusiness Companies Involved Contract Marketing In Studied areas

| Name of Company                     | Sewu Segar        | Catur Kirana /UD Tropical Fresh Nusantara | Karya Pratama   |
|-------------------------------------|-------------------|---|-----------------|
| Brand's name                        | Sun Fresh         | Tropical Fruit                            | Star fruit      |
| Early on site contract (year)       | 1999              | 1999                                      | 1999            |
| Realization of purchase (ton/month) | 120               | 20  | 25              |
| Quota/Company demand (ton/month)    | 180               | 30  | 40              |
| Number of packing house             | 13                | 2   | 2               |
| Headquarter's location              | Tangerang         | Mojokerto                                 | Mojokerto       |
| Main market destination             | Surabaya, Jakarta | Surabaya, Solo                            | Jogya, Semarang |

Source: Field Survey, 2008

In these regions, there was no seasonal crop of Golden bananas, almost evenly throughout the year. The production of golden bananas could be regulated as desired in

detail per unit time and location. Since, the early of year 2000, the existence of marketing companies in implementing the contract system in these regions were a best opportunity to get more efficient marketing channels and affected the marketing system. In addition, the operation of agribusiness sub terminal in Senduro sub-district since year 2005 also encouraged the development of agribusiness passion, especially the bananas commodity. The partner companies since the beginning had acted as collectors especially in center production of Golden bananas by applying the pattern of contracts marketing (Table 2).

### Contract Marketing in the studied area

The results of cooperation between several horticultural agribusiness companies (Sewu Segar Nusantara, Catur Kirana and Karya Pratama) through a pattern of contract marketing between farmers and agribusiness companies achieved a lot of benefits and its advances. Through this scheme, farmers were more independent in performing post-harvest treatment and packing. Partners company that had signed contracts with farmer groups providing management guidance to these groups for post-harvest operation without much directly involved in it. All those three companies' partners in Lumajang regency sold their bananas to the minimarket and the supermarket in a number of cities in Indonesia and neighboring countries.

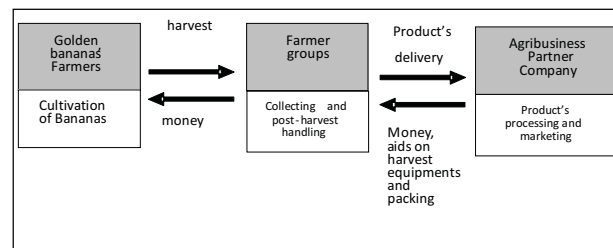


Figure 2. Pattern of golden bananas' contract marketing



Figure 3. Illustrations of golden banana contract marketing scheme in the studied area

A very profitable of the appliance of the contract system in these regions was farmers were involved in some stages of standarization of operation in handling post-harvest, through farmer groups such as: handling of harvest (criteria, time, and manner of harvesting), freight handling to the packing house (cutting and wasing, fungicide treatment, drying and packing), freight of packed bananas to refrigerated containers (cool storage) which were then transported through company whose the owner of transportation equipment partners. A farmer group that had a partner company who had their own packing house straighted to this stage, all activities related to post-harvest handling were conducted in this place, post-harvest handling of the farmer group ended up in packing stage, weighing and receiving payment, the next stage was then done by partner company (Figure 2 and 3).

### Analysis of Marketing Pattern

To recognize the advantages of every supply chain pattern, the marketing chain analysis were conducted in the research location. Table 3 shows; there were five main marketing chains. For Golden bananas, most of fresh products were distributed through contact pattern of the agribusiness partner companies (75%). The remainder of the products (25%) was distributed to local retailers, local traders and the interregional traders which took the bananas from the collectors (Figure 4).

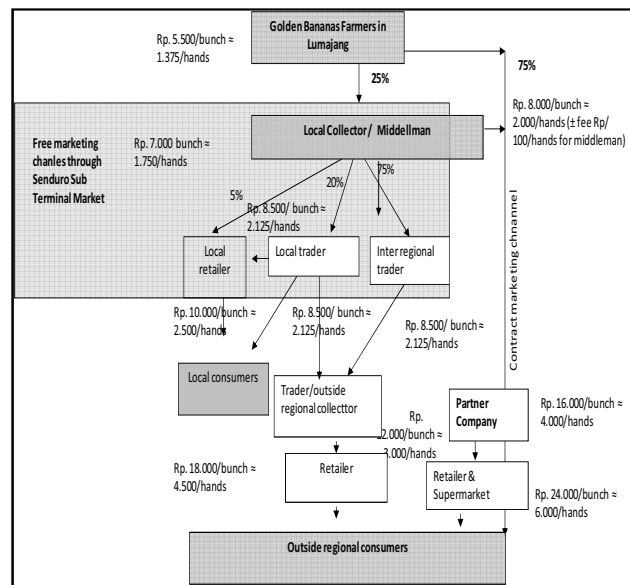


Figure 4. Product distribution and average price received in each channels

From the five of main marketing chain, most of bananas were sold for consumers in outside these regions. It appeared chain which passed through partner companies was the most effective chain due to the shortness of the marketing chain. It indicated distributing commodity from producers to consumers outside the regions was going efficiently. For the average price received by farmers (farm gate price), the fifth chain gave directly bigger return for farmers, for amount Rp.2000 / hands. While farmers who were outside the farmer groups of partner companies, however they wished to sell their bananas to a company, and got return Rp. 1375/hands before it sold to a partner company. This return was the same as received by others chain marketing for the amount Rp. 1750/hands where sold through local collectors.

Table 3 and 4 showed the pattern of contracts marketing (chain 5 and chain 4) that provided the highest added value of marketing activities which the average sale's prices at the consumer level reached Rp. 6000/hands. The highest value added received was followed by chain 3 and chain 2 where the average received price by consumers were Rp. 4500/hands. While in others chains, the prices at the consumers' level only Rp. 2500/hands. It concludes that the pattern of contract marketing gave maximum benefit to the players that involved in the supply chain. Another advantage that was achieved from contract marketing was it would attract more farmers and other agribusiness components to be involved in this system.

Table 3. Chain of Marketing and Received Prices for Golden bananas' Marketing

| Marketing level (Share) | I (Rp/hands)     | II (Rp/hands)           | III (Rp/hands)                | IV (Rp/hands)                      | V (Rp/hands)                 | VI (Rp/hands)            |
|-------------------------|------------------|-------------------------|-------------------------------|------------------------------------|------------------------------|--------------------------|
| Chain 1 (5%)            | Farmer (1.375)   | Local Collector (1.750) | Retailer (2.500)              | Local Consumer                     |                              |                          |
| Chain 2 (10%)           | a Farmer (1.375) | Local Collector (1.750) | Retailer (2.500)              | Local Consumer                     |                              |                          |
|                         | b Farmer (1.375) | Local Collector (1.750) | Retailer (2.125)              | Retailer (2.500)                   | Local Consumer               |                          |
|                         | c Farmer (1.375) | Local Collector (1.750) | Retailer (2.125)              | Outside Regional Collector (3.000) | Retailer (4.500)             | Outside Region Consumers |
| Chain 3 (10%)           | Farmer (1.375)   | Local Collector (1.750) | Interregional Trader (2.125)  | Outside Regional Collector (3.000) | Retailer (4.500)             | Outside Region Consumers |
| Chain 4 (50%)           | Farmer (1.375)   | Local Collector (2.100) | Partner Company (4.000)       | Retailer and Super market (6.000)  | and Outside Region Consumers |                          |
| Chain 5 (25%)           | Farmer (2.000)   | Partner Company (4.000) | Pengecer Super market (6.000) | dan Outside Region Consumers       |                              |                          |

Source: Field Survey, 2008.

Table 4. Price, cost and margin in each channels of Golden Banana marketing

|                     | Channel 1 (Rp) | %  | Channel 2a (Rp) | %  | Channel 2b (Rp) | %  | Channel 2c (Rp) | %  | Channel 3 (Rp) | %  | Channel 4 (Rp) | %  | Channel 5 (Rp) | %  |
|---------------------|----------------|----|-----------------|----|-----------------|----|-----------------|----|----------------|----|----------------|----|----------------|----|
| <b>1. Farmer</b>    |                |    |                 |    |                 |    |                 |    |                |    |                |    |                |    |
| Selling price       | 1375           | 55 | 1375            | 55 | 1375            | 55 | 1375            | 55 | 1375           | 55 | 1375           | 55 | 2000           | 33 |
| <b>2. Collector</b> |                |    |                 |    |                 |    |                 |    |                |    |                |    |                |    |
| Buying price        | 1375           | 55 | 1375            | 55 | 1375            | 55 | 1375            | 30 | 1375           | 30 | 1375           | 23 |                |    |
| price               | 1750           | 70 | 1750            | 70 | 1750            | 70 | 1750            | 39 | 1750           | 39 | 2100           | 35 |                |    |
| Selling price       | 375            | 15 | 375             | 15 | 375             | 15 | 375             | 8  | 375            | 8  | 725            | 12 |                |    |
| price               | 200            | 8  | 200             | 8  | 200             | 8  | 200             | 4  | 200            | 4  | 300            | 5  |                |    |
| price               | 75             | 3  | 75              | 3  | 75              | 3  | 75              | 2  | 75             | 2  | 425            | 7  |                |    |
| Margin of marketing |                |    |                 |    |                 |    |                 |    |                |    |                |    |                |    |
| Marketing cost      |                |    |                 |    |                 |    |                 |    |                |    |                |    |                |    |
| Margin of profit    |                |    |                 |    |                 |    |                 |    |                |    |                |    |                |    |



|   | Channel<br>1 (Rp) | % | Channel<br>2a (Rp) | %   | Channel2b<br>(Rp) | %  | Channel<br>2c (Rp) | %  | Channel<br>3 (Rp) | %  | Channel<br>4 (Rp) | %  | Channel<br>5 (Rp) | %  |
|---|-------------------|---|--------------------|-----|-------------------|----|--------------------|----|-------------------|----|-------------------|----|-------------------|----|
| <b>3. Inter<br/>Reg.<br/>Trader</b>         |                   |   |                    |     |                   |    |                    |    | 1750              | 39 |                   |    |                   |    |
| Buying<br>price                             |                   |   |                    |     |                   |    |                    |    | 2125              | 47 |                   |    |                   |    |
| Selling<br>price                            |                   |   |                    |     |                   |    |                    |    | 375               | 8  |                   |    |                   |    |
| Margin of<br>marketing<br>Marketing<br>cost |                   |   |                    |     |                   |    |                    |    | 200               | 4  |                   |    |                   |    |
| Margin of<br>profit                         |                   |   |                    |     |                   |    |                    |    | 175               | 4  |                   |    |                   |    |
| <b>4. Local<br/>Trader</b>                  |                   |   | 1750               | 70  | 1750              | 70 | 1750               | 39 |                   |    |                   |    |                   |    |
| Buying<br>price                             |                   |   | 2500               | 100 | 2125              | 85 | 2125               | 47 |                   |    |                   |    |                   |    |
| Selling<br>price                            |                   |   | 750                | 30  | 375               | 15 | 375                | 8  |                   |    |                   |    |                   |    |
| Margin of<br>marketing<br>Marketing<br>cost |                   |   | 250                | 10  | 150               | 6  | 150                | 3  |                   |    |                   |    |                   |    |
| Margin of<br>profit                         |                   |   | 500                | 20  | 225               | 9  | 225                | 5  |                   |    |                   |    |                   |    |
| <b>5. Outside<br/>Reg.<br/>Trader</b>       |                   |   |                    |     |                   |    | 2125               | 47 | 2125              | 47 |                   |    |                   |    |
| Buying<br>price                             |                   |   |                    |     |                   |    | 3000               | 67 | 3000              | 67 |                   |    |                   |    |
| Selling<br>price                            |                   |   |                    |     |                   |    | 875                | 19 | 875               | 19 |                   |    |                   |    |
| Margin of<br>marketing<br>Marketing<br>cost |                   |   |                    |     |                   |    | 350                | 8  | 500               | 11 |                   |    |                   |    |
| Margin of<br>profit                         |                   |   |                    |     |                   |    | 525                | 12 | 375               | 8  |                   |    |                   |    |
| <b>6.<br/>Company</b>                       |                   |   |                    |     |                   |    |                    |    |                   |    | 2100              | 35 | 2000              | 33 |
| Buying<br>price                             |                   |   |                    |     |                   |    |                    |    |                   |    | 4000              | 67 | 4000              | 67 |
| Selling<br>price                            |                   |   |                    |     |                   |    |                    |    |                   |    | 1900              | 32 | 2000              | 33 |
| Margin of<br>marketing<br>Marketing<br>cost |                   |   |                    |     |                   |    |                    |    |                   |    | 1200              | 20 | 1300              | 22 |
| Margin of<br>profit                         |                   |   |                    |     |                   |    |                    |    |                   |    | 700               | 11 | 600               | 10 |

|                     | channel<br>1 (Rp) | %   | channel<br>2a (Rp) | %   | channel2b<br>(Rp) | %   | channel<br>2c (Rp) | %   | channel<br>3 (Rp) | %   | channel<br>4 (Rp) | %   | channel<br>5 (Rp) | %   |
|---------------------|-------------------|-----|--------------------|-----|-------------------|-----|--------------------|-----|-------------------|-----|-------------------|-----|-------------------|-----|
| <b>7. Retailer</b>  |                   |     |                    |     |                   |     |                    |     |                   |     |                   |     |                   |     |
| Buying price        | 1750              | 70  |                    |     | 2125              | 85  | 3000               | 67  | 3000              | 67  | 4000              | 67  | 4000              | 67  |
| Selling price       | 2500              | 100 |                    |     | 2500              | 100 | 4500               | 100 | 4500              | 100 | 6000              | 100 | 6000              | 100 |
| Margin of marketing | 750               | 30  |                    |     | 375               | 15  | 1500               | 33  | 1500              | 33  | 2000              | 33  | 2000              | 33  |
| Marketing cost      | 300               | 12  |                    |     | 100               | 4   | 500                | 11  | 500               | 11  | 1000              | 17  | 1000              | 17  |
| Margin of profit    | 450               | 18  |                    |     | 275               | 11  | 1000               | 22  | 1000              | 22  | 1000              | 17  | 1000              | 17  |
| <b>8. Consumer</b>  |                   |     |                    |     |                   |     |                    |     |                   |     |                   |     |                   |     |
| Buying price        | 2500              | 100 | 2500               | 100 | 2500              | 100 | 4500               | 100 | 4500              | 100 | 6000              | 100 | 6000              | 100 |

Source: Field Survey, 2008

### Conclusions and Policy Implications

The agribusiness of Golden bananas in the studied locations has a great potential development. Its potency that exists could be further developed to yield greater economic benefits. The contract marketing scheme through a signed contract between companies and farmer groups had bound on both parties to accept and just selling products with specifications and prices that both of the parties agreed. The pattern of contract marketing had shown a better benefit to farmers and partner companies than other marketing system.

This model of agribusiness development required improvements such as partner companies should actively participate in the development of cropping system and fruit's product quality. The involvement of partner companies were extremely needed for improving productivity and product quality of Golden bananas by engaged in supervision and the application of appropriate technology, strengthening the farmer groups' institution, as well as providing initial capital and production's facilities. Products' quality and price determination process should involve both parties (farmers and partner companies) transparently for mutual benefits. The implementation of this contract pattern can be developing in other areas as an agribusiness model, especially for Golden bananas or other horticultural commodities.

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