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Enhancing Competitiveness and Revenue of Coconut Sugar Farmers Through Market Transformattion And Changes (A Case Study In The Village of Karanggintung Kemranjen District of Banyumas)

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Abstract. This paper aims to analyze the process and patterns of coconut sugar from product perspective and market forms. This research considered as descriptive evaluative which aim is to get a real picture of the change in farmer's revenue and competitiveness due to changes in the coconut sugars business's pattern. It was conducted by comparing various aspect of the business pattern and structure of the market, both before and after the change occurs. The result provides some supports for the view that the level of competition can be increased through a fundamental change in people's way of thinking and change in market structure. These beneficial changes can only be done with programmed activity, through teamwork, and along with dissemination, training, mentoring, and assistances.

Keywords: Kindly provide up to 5 keywords. (Use "keywords" style)

Background

Banyumas is the biggest sugar producing areas in Central Java Indonesia. As such the district is considered as a barn of coconut sugar production in Indonesia even worldwide. In 2012, the average production of palm sugar in Banyumas has reached a figure of 80.458 tons per year, or about 40 percent of the total production of coconut sugar nationwide. The production is generated by 27,112 sugar farmers from 643,832 craftsmen from coconut trees scattered in an area of 4798.41 hectares.

Subdistrict Kemranjen is one of the districts producing large palm sugar in Banyumas district. District of Kemranjen produces 7. 676.36 kg per ha or equivalent to 3.73 percent of the total coconut sugar produced in Banyumas district. The material used for producing the sugar amount is derived from 15,601 trees which equivalent to 2.42 percent of all coconut trees in Banyumas district. Total number coconut sugar farmers are 1.170 people or 4.3 percent of farmers in Banyumas. The average ownership of coconut trees in the district is 13 trees, with an average yield of 0.49 kilograms of sugar per tree per day.

Substantial number of palm trees owned and the amount of revenue obtained by coconut sugar producers have not yet able to increase the farmers' welfare. The average revenue of farmers, from 13 trees, is Rp.41,405 prior to deduction on some operational expenses incurred during the production such as the cost of fuel, cost of equipment and labor costs- where they work in the morning, afternoon, and evening. Low levels of sugar farmers' income is due to price of coconut sugar they produce, which is only Rp.6.500 per kilogram.

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Farmers do not have control upon the price of the sugar because it is determined by the buyer in this case middlemen or wholesalers. To date, the market of coconut sugar is still a monopsony, where the buyer or wholesaler who is in control supply chain. The buyer can suppress the price, even using bonded labor system, where buyers lend money the farmers without collateral, but with the proviso to sell their products to wholesalers. This is the main problem issues faced by almost all coconut sugar farmers in the district Kemranjen, even in Banyumas, as well as other areas in Indonesia.

ASEAN Economic Community (AEC) is expected to sharpen competition among countries in the region. This condition is clearly not beneficial and even be very detrimental to the coconut sugar producers. Concerns of all parties, especially the academician is necessary to provide solutions for coconut sugar farmers in order not to become laborers in their own country.

Research Objectives

Based on the problems faced by the producers of palm sugar, this research aims to evaluate and analyze the process and patterns of palm sugar from product perspective and market forms. The study also assess the level of operational efficiency and marketing efficiency of farmers as well as finding the right model of empowerment in order to equip farmers with a better market power and competitiveness in the ASEAN Economic Community (AEC) in order to increase their income.

Having held discussions with some farmers in the preliminary study, one of the ways that are likely to be taken to improve the economic conditions of farmers and coconut sugar by changing the form of the market, so that no longer monopsony. Changes in the market will give bargaining power for farmers in determining the selling price of their products. However, a change in the shape of this market is expected to provide benefits to all parties in the value chain.

The proposition made in this study is built based on on the basis of the prevailing culture in the area of research and on the corresponding theory by means of a partnership. To lift the market strength and competitiveness of coconut sugar producers in this case, it is necessary to change the market of monopsony and bonded labor system into a system of partnership and cooperation. With the system, the partnership and cooperation between the farmers and collectors are in a system of mutual support, instead of dominating each other. If this can be achieved then the benefits will be very large, the farmers are able to determine the price of his products freely, which is of course higher than the price when the market is monopsony. High price of palm sugar production will increase their revenue and improved the farmers' welfare. In addition to the market system of partnership and cooperation, it will strengthen their competitiveness.

In addition, other factor that is also considered important in order to increase the competitiveness of coconut sugar in the market is through product innovation. Product innovation is necessary in order to improve the variability of product offered in the market. Based on community service activity performed by the Institute for Research and Community Service (LPPM) of Jenderal Soedirman University, it appears that the variety of coconut sugar produced is limited in the form of mould coconut sugar, hence there is a need to further develop the variance into sugar crystals which has a better selling price in the market. Based on the results of previous studies, this study tried to find an alternative market structure model so that the price of coconut sugar in the observed area is high. Such changes is expected to bring benefits to farmers and wholesalers in the form of high income.

Methodology

This research considered as descriptive evaluative which aim is to get a real picture of the change in farmer's revenue and competitiveness due to changes in the coconut sugars business's pattern. It was conducted by comparing various aspect of the business pattern and structure of the market, both before and after the change occurs. According to Sugiyono, 2006, this method is appropriate to examine the research that have complex and evolving object. The term evaluative is intended to examine the benefits of community-development activities organized by LPPM PKA through IPTEKDALIPI's program that has been working with local government Banyumas, Purbalingga, and Bank Indonesia since 2009.

Business pattern prior to the intervention of community-development team shows that farmer production is still in form of mold sugar and its market structure was monopolistic, in the sense that the market is controlled by coconut sugar broker and also there is existence of "ijon" system. This research examines the process that alters the production of mold sugar into crystal sugar from economics perspective such as product, market structure and its market price. Technical aspect and change in other aspect are not addressed in this research.

The intervention from the community-development team requires a long time to succeed. After the coaching has been successfully carried out, there is a change in process of production and the nature of the market. Process of production has transformed from mold sugar into crystal sugar and the market was run on the basis of partnership.

Marketing of mold and crystal sugar are considered as the object of this study. While farmers, coconut sugar broker and coconut sugar marketing agencies located in Kemranjen, Banyumas District, are considered as the subject of this study. This study was conducted in September 2014 located in Karanggintung Village, Kemranjen sub-district, Banyumas District, Central Java Province. The data used in this study were primary and secondary data.

The sampling techniques in this study were purposive and snowball sampling. Purposive sampling was used to determine how many farmers and coconut sugar broker included in this study, while snowball sampling was used to determine the sugar marketing agencies. From purposive technique we get 50 farmers and 5 coconut sugar broker, and from snowball technique we get Kemranjen sub-district as a sample of this study. Data collection techniques were participant observation and in-depth interview. As for the validity of the data, we used triangulation process. The obtained data is in the descriptive form or qualitative data, both primary and secondary.

Data Analysis Techniques

The study was carried out by continuous analysis, from beginning till end, through inductive technique to obtain the appropriate patterns and model. To get the description of the changing condition, we used comparison technique by comparing the condition before and after intervention.

"Before" is regarded as a condition before given intervention, where the production of the farmer is still in form of mold sugar. Whereas "after" is regarded as after intervention, where the farmer's production have transformed from mold sugar into crystal sugar.

According to Anwar, 2011, the main analysis of the before-after approach is the incremental change. Studied aspects in this comparative analysis include: process of production, cost of production, output of production, market structure and its price, operational efficiency, and profit.

Operational Efficiency analysis, according to Hanafi and Saefudin (1983), is to measure the ability of the firm or agencies in minimizing its marketing cost. Measuring the level of operational efficiency requires some indicators, such as marketing margins and industrial share, which refers to the share received by the producers. Marketing margins refers to the difference between price at the producer level and consumer level, and it is also used to measure the spread in every marketing chain. Marketing margins can be calculated using the following formula:

$$M = Pr - Pp$$

Where:

M = marketing margins

Pr = price at the retail level

Pp = price at the producer/farmer level

Industry's Share

Industry's Share (IS) is the portion of the price received by producers/farmers in the marketing system. It is obtained by comparing the price received by producer to the price received by final consumer, with the following formula:

$$IS = \frac{Pp}{Pr} x100\%$$

With the criteria that:

If the industry's share is greater than (>) marketing margin, so the channels of marketing is said to be efficient. Otherwise, if the industry's share is less than (<) marketing margin then the channels of marketing is said to be inefficient.

Profit is defined as differences in total revenue and total cost, so according to Sukirno (2005):

$$Profit = TR - TC$$

TR is total revenue which in this study is calculated from revenue derived from coconut sugar business. For the farmers, their total revenue is obtained from multiplying its output by its selling price. While for the coconut sugar broker or traders their total revenue derived from multiplying its sales volume by its selling price. TC is total cost, which in this study refers to all cost incurred in production process for farmers, in trading cost for coconut sugar broker and traders.

Result and Discussions

Overview of Respondent

There are 50 farmers that have been selected as respondent. From 50 farmers there are 28 farmers or 56 percent of their age is between 41 to 50 years old, 14 farmers or 28 percent are between the ages of 20 to 40 years old, and 8 farmers or 16 percent are above 50 years old.

The duration of running a business shows one's experience in managing business. It also can affect their skills or abilities. Logically, there is positive relation between the duration of running business and increased experiences or skills. The data shows that there are 28 farmers or 56 percent farmers who have business experience from 1 to 10 years. Farmers who have over 10 years of business experience as many as 28 people, even one of them has more than 30 years of business experience.

Education will affect the person's knowledge and ability to do things, including managing the business. The ability to managing business needs to be supported by farmer's experience and education level. Table 1 below presents an overview of the respondents according to the level of education.

Number	Level of education	Number	Percent
1	Do not completed primary school	5	10
2	Completed primary school	15	30
3	JSS	8	16
4	SLTA	22	44
5	College	0	0
	Number	50	100

From Table 1 we can see that most of the farmers (44 percent) only had high school education degree, even farmers who completed and did not completed primary school amounted to 40 percent. Then, it can be shown that they have relatively low level educational background. In effect, this situation could affect the mindset and attitude of farmers in accepting change.

Coconut sugar farmer in the study sites, most of them are not do business as a sugar farmer for their sole livelihood, they have another work such as farm workers (almost 66 percent) traders, clerks, and office employee.

In term of income, there are 26 coconut sugar farmers or 52 percent have a monthly net income between Rp 76.500,00 to Rp 628.000,00 with on the average as many as 19 trees that have been cultivated. Only 10 coconut sugar farmer or 20 percent have a monthly net income between Rp 1.190.000,00 to 1.750.000,00 with on the average as many as 30 trees that have been cultivated.

On the other hand, the lowest coconut sugar broker net income amounted Rp 1.600.000,00 even there are brokers who have net income above Rp 5.500.000,00. So, it is obvious that the coconut sugar broker income is much greater than the coconut sugar farmer. This condition occurs because the coconut sugar farmers do not have market power. Coconut sugar market in the concerned location of this study is a monopsony market where buyers (the coconut sugar brokers) set the price and the farmers, who produce coconut sugar, could only accept the setting price by the brokers. This can be seen in Table 2 below.

Table 2. Earnings per month from Coconut Mold Sugars Farmer and Coconut Mold Sugar Brokers

Performer	Earnings per month (Rp)		
	Minimum	Maximum	Average

Coconut Sugar Farmer	76.500,00	1.750.000,00	750.000,00
Coconut Sugar Broker	1.600.000,00	5.500.000,00	3.150.000,00

Minimum farmer's net income from coconut mold sugar production is amounted Rp 76.500,00 and maximum net income is Rp 1.750.000,00 with monthly average net income of the farmer is Rp 750.000,00. For coconut mold sugar brokers, their minimum net income is Rp 1.600.000,00 and their maximum net income is Rp 5.500.000,00 with monthly average net income of the brokers is Rp 3.150.000,00.

Farmers and brokers have a close relationship in coconut sugar business system. This kind of relationship start from business issues to other social issues. For instance, lending between farmers and brokers that are occur not only for the sake of business but sometimes also for the sake of family matters. The brokers, because relatively more capable than the farmers, often lend some money to farmers without asking for collateral. They trust each other, so that the assurance given by the farmers to the brokers is in the form of a promise delivery of coconut sugar at fixed price determined by the brokers. As the result, almost all coconut sugar farmers have a relatively high amount of debt. This condition makes their position became very weak and dependent, cause they couldn't sell their product to other markets that could have been willing to buy at a higher price.

The result of this study provides information that there are more than 90 percent of coconut sugar farmer who deeply in debt problems. Only a few farmers that is not tied to brokers' debt problem and able to sell their product to other places. Thus, there has been a bonded system between the farmers and the brokers. This system is known as "Ijon" system. This system has been going on so long and hereditary. It is very difficult to overcome without some fundamental changes.

There are four coconut sugar marketing patterns ranging from the farmers to the final consumers. First, the farmers sell to small traders or retailers and then small traders sell to consumers. Second, the farmers sell to the brokers, and then the brokers sell to customers. Third, the farmers sell to the brokers, then the brokers sell to small traders or retailers and then small traders sell to consumers. Fourth, the farmers sell to the brokers, and then the brokers sell to the wholesaler outside the region. Usually wholesaler brought the coconut sugar into large city, such as Jakarta, Bandung, on other big cities. These four marketing pattern can be seen in Figure 1 below.

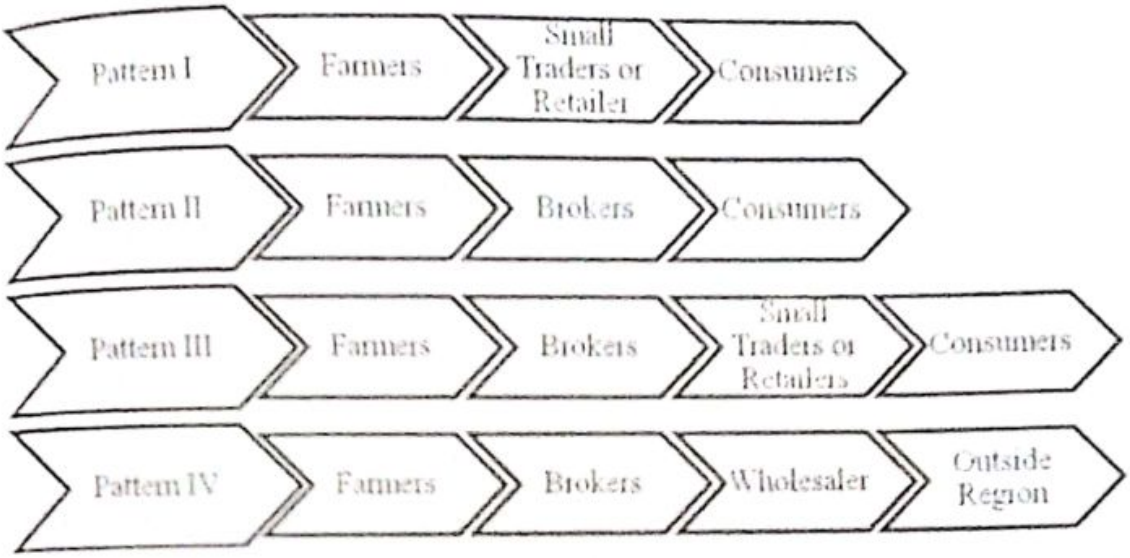

Figure 1. Four Marketing Pattern in Coconut Mold Sugar

Before Change Condition (Mold Coconut Sugar)

Market Margin

Overview of the market margin before farmer change its production can be seen in Figure 2 below:

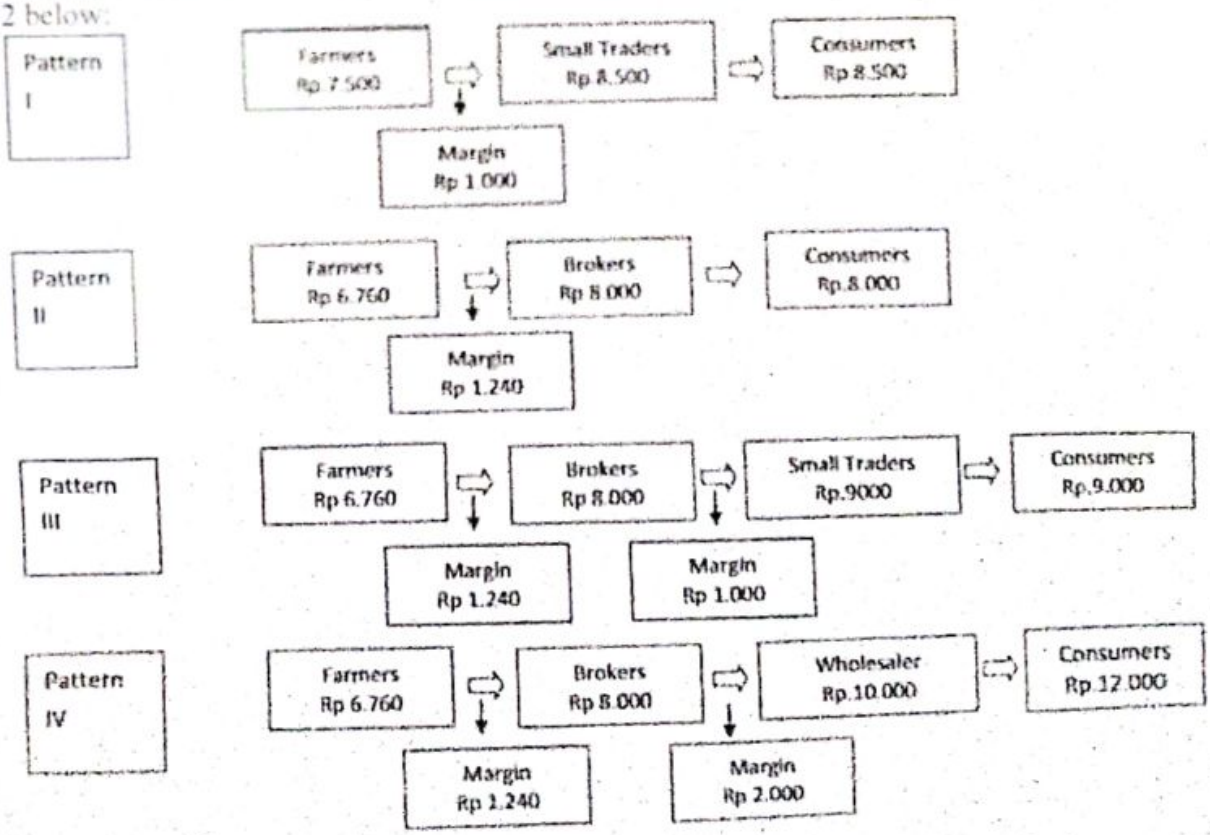

Figure 2. Market Margin of the Mold Coconut Sugar

From Figure 2, it seems clear that the average cost of production is Rp 6000 per kilogram. So, the smallest market margin is obtained by farmers, especially those who sell their product to the brokers. Their market margin is only Rp 760,00 per kilogram. If farmers sell directly to the small traders or retailers without going through brokers' channel, they can get Rp 1.500,00 per kilogram as a margin or profit. However, only a few farmers are able to do so. It is because, as explained earlier, that most of the farmers are in bonded debt with the brokers. So it is inevitably that they have to sell their product to some brokers that give smaller margin.

If we look again from the pattern of coconut sugar trade in Figure 2, those who benefit the most are the wholesalers. They earn average profit about Rp 2.000,00 per kilogram. Then followed by retailers who able to buy directly from the farmers and get Rp 1.500,00 profit per kilogram. While the brokers make an average Rp 1.240,00 per kilogram in profit.

Total market margin of the first pattern (Pattern I) is equal to Rp 1.500,00 per kilogram, while the second (Pattern II) is Rp 1.240,00 per kilogram. On the other hand, total market margin in the third pattern (Pattern III) is Rp 2.240,00 per kilogram and in the fourth pattern (Pattern IV), which has the largest market margin, has earned Rp 5.240,00 per kilogram.

Thus, it can be concluded that the longer marketing chain, the higher its selling price, and the bigger its price margin. As shown in Table 3 below:

Table 3. Market Margin of Mold Coconut Sugar

Marketing patterns	Margin Markets (Rp)	Percent Margin (%)
Pattern I	1,500	20.00
Pattern II	1,240	18.34
Pattern III	2,240	33.13
Pattern IV	5,240	77.51

Industry's Share

This analysis compares the price received by producers (farmers) to the price received by small traders or final consumers. These can be seen in Table 4 as follows:

Table 4. The Distribution of Industry's Share of Mold Coconut Sugar per Kilogram

Channel Marketing	The Selling Price of the Manufacturer (Rp)	Selling Price Retailers (Rp)	Industry's Share (%)
Pattern I	7500	8,500	88.23
Pattern II	6760	8000	84.50
Pattern III	6760	9000	75.11

Pattern IV	6760	12000	55.39

Table IV showed that the highest industry's share is created by Marketing Pattern I, amounting to 88.23 percent. While, the lowest industry's share is created by Marketing Pattern IV with amount of 56.39 percent.

Market Efficiency

The efficiency of the market is determined by comparing between industry's share and industry's market margin. The marketing channel is said to be efficient if the industry's share is greater than (>) marketing margin. Otherwise, if the industry's share is less than (<) marketing margin then the channels of marketing is said to be inefficient.

From the calculation, it is found that most of the mold coconut sugar marketing channels that operate in Kemranjen sub-district are relatively efficient. This is because three of four patterns (Pattern I, II, and III) operating in that area are efficient, while Pattern IV is not. Inefficiency in Pattern IV due to the production of mold coconut sugar were taken out and consumed by other population outside the area.

Table 5. Comparison of Industry's Share and Mold Sugar Margin Marketi

Pattern	Industry's share	Margin market	Criteria
I	88.23	20.00	Efficient
II	84.50	18.34	Efficient
III	75.11	33.13	Efficient
IV	55.39	77.51	Inefficient

After Change Condition (Crystal Coconut Sugar)

Some aspect is said to be changed after the alteration of the coconut sugar production. First, it is the aspect of cost. Apparently, to alter mold coconut sugar into crystal sugar requires additional processing, namely crystallization and sieving. The presence of these additional processes, not only affects the cost due to increasing in equipment, but also requires additional time. If the sugar making process is conducted using machine, it will take between one to two hours per 50 kilogram. On the other hand, if it is conducted traditionally by using human labor, it will require additional about a day.

Second, it is the aspect of market structure. Previously, market was dominated by the brokers and its market structure was monopsony. After the change, now the market is transformed into a form of partnership between producers (coconut sugar farmer) and brokers or wholesalers and all of them are in one system, and both of them are have a role in determining the market price. Then, the market price is determined together between farmers and brokers, so that the profit can be shared more fairly.

These changes take a long time, because it is very difficult to change a situation that has become a habit for decades. The community-development team had made some intervention in order to change farmers and broker's behavior in production of coconut sugar. These kind intervention such as training, mentoring, and supporting for production facilities are intended to the coconut sugar farmers. Then, the community-development team also gives dissemination about some benefits and advantages of producing crystal

sugar than mold sugar, and gives the guidance about how to produce coconut sugar in accordance with the standard of production. For the brokers, the community-development team provides some guidance regarding the recommendation to cooperate with the farmers in form of partnerships, no longer compete and pressing.

One thing that cannot be ignored in this process is an attempt to change the competition paradigm into cooperation and partnership paradigm. And also there is a description about the impact of free trade area to their business, such as the description of Asean Economic Community (AEC).

Globalization, which is identical to free competition, should be faced through alliance approach. This alliance is expected to provide benefits, either the substance or the mechanism, in the making of future cooperation scheme. Globalization has led to the emergence of new economic imperialism. The world then has a global economy without any global governance. Thus, there will be strong and widespread free competition. The strong getting stronger and the weak will always be subordinated.

This situation will be very difficult to deal with, or even to be conquered, without any substantial change in the paradigm of thinking and practical implementation. According to Swasono, 2004, a paradigm with a view that in order to grow or develop we must win the competition is should be changed into a paradigm that support cooperation and partnerships.

Competition should be slowed down like a race, where the loser's side are not discarded but empowered. This kind of cooperation should be carried out not only at the local level, but also at the national level, or even at international level. The cooperation should give win-win solution, mutual respect, and securing the interest of every single member or party. This concept is substantially different from the concept of competition who cannot compete will be crushed down or even die. In the system of cooperation, protection and subsidy are still possible to do as a stimulus and incentive. Cooperation is not conspiracy; it is a joint effort to support each other in order to seek mutual benefits, it is neither to look for weaknesses of others and nor to harm the weak. Through cooperation, it is expected that we shifting from self-interest principle towards mutual-interest principle.

The result of change process is as follows:

1. The production of crystal coconut sugar apparently has the same relative volume with mold coconut sugar production.
2. The cost of production rises from Rp 500,00 – Rp 1.000,00 to Rp 1.000,00 – Rp 1.500,00.
3. Price of mold coconut sugar rises from around Rp 6.500,00 – Rp 8.000,00 to Rp 12.000,00 Rp 16.000,00.
4. Bonded or ijon system which has been specter for farmers, has been disappeared and turned into cooperative partnership system.
5. Market expansion, farmer's products which marketed only to local surrounding begin to expand into export to various countries.
6. Profit and social welfare has risen.
7. Improving the accessibility to banks when there is need to rise for additional capital.

8. Production capacity is increased due to increased in demand, especially demand for foreign countries.

From the description above, it can be obtained some insight about the difference between before and after intervention, and create some changes. It can be shown on Table 6 below:

Table 6. Comparison of the Condition Before and After the change

No.	Aspect ratio	Before	After
1	Production	Mold sugar	Crystal Sugar
2	Cost of production per kilogram (Rp)	500 to 1000	1000 to 1500
3	Form of Market	Monopsony, debt bondage	Partnership
4	The craftsmen selling price (Rp / kg)	6500 to 8000	12,000 to 16,000
5	Market reach	Local	International
6	Advantages craftsmen (Rp / kg)	6.000 to7000	11,000 to 14,500
7	Banking access	Very limited access	Wider access
8	Demand	Limited, local	International, extensive

From Table 6 we can see that a change in business system in the Karanggintung's Coconut Sugar Production Village, Kemranjen sub-distric, Banyumas, has bring some visible positive impact. Very important point to be noticed is that there are some changes in production, market structure, and business profit that reflect more to social welfare. Production changes from mold coconut sugar to crystal coconut sugar, structure of the market transformed from monopsony and "ijon" to partnership and cooperative system. Profit generated from every kilogram sugar has risen from 6.000/7.000 to 11.000/14.500. And there are also significant increased in the level of competitiveness and market scope.

Conclusions and Implications

Conclusions

1. The level of competition can be increased through a fundamental change, ranging from fundamental change in people's mindset and change in market structure as a whole.
2. These changes can only be done with programmed activity, through teamwork, and along with dissemination, training, mentoring, and assistances.
3. Cooperation and partnership system is said to be more beneficial to all parties and give win-win solution so all parties feel the presence of fairness.

Implications

There is a need for coordination from various parties in order to improve the sustainability of micro and small enterprises.

There is a need for other models that could be implemented to uplift the existence and role of small medium enterprise in supporting national economic development.

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