## ENGINEERING MODEL OF ECONOMIC INSTITUTION INSUGARCANE AGRIBUSINESS PARTNERSHIP

# (Case Study on Sugar Cane Agribusiness Partnership between Farmers Cooperativeand Sugar Factory in Way Kanan Regency of Lampung Province-Indonesia)

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Abstract- The study aims to build the institutional model of sugarcane agribusiness and to know the impact of institutional engineering on the performance of sugarcane agribusiness in increasing incomes and welfare of farmers. The research was carried out inWay Kanan regency of Lampung province of Indonesia by using case studies, and the data were analyzed descriptively. The institutional engineering through building a model of farmer groups formation, the combining group of farmers and farmer cooperatives in the autonomous and powerful sugarcane agribusiness will be able to increase the sugarcane agribusiness revenue of Rp11,591,714.00 (increased by 94.33% from the previous income) and cane growers can obtain subsidies and other facilities from the government, sugar factories, a provider of production, access to capital of the Bank, thus increasing welfare.

**Keywords**: Engineering, Institutional, partnerships, income, sugarcane agribusiness.

#### 1. INTRODUCTION

### **Background and Problem Formulation**

One of the strategic food commodities is sugar produced from cane plantations. Sugarcane is a raw material in the manufacture of sugar (Rahardi, 1993). According to Masyhuri (2005), increased domestic sugar demand greatly affects the development of sugar cane plantations. The development of sugarcane is intended to increase the supply of raw materials to the sugar industry and is expected to improve the welfare of cane farmers by means of active participation of the sugarcane farmers.

Sugar is one of the strategic commodities in the Indonesian economy. Agri-based sugar cane industry is one source of income for the people and the sugar is also one of the basic needs of society and relatively cheap source of calories. Because it is a basic requirement, then the dynamics of sugar prices will have a direct influence economically both micro and macro against inflation.

Investment in agri-based sugar cane industry is quite large prospective that the aspect of market demand for sugar in the country and abroad is still wide open. Governments with a range of promotive and protective policies have created a favorable investment climate for the development of agri-based sugar cane industry. Not only to produce sugar, but also to produce energy which is an industrial raw material, food stuff, including proteins, pulp, board particle, fertilizers and other products (Pakpahan, 2004). Some cane derivatives products such as ethanol, yeast, inactive yeast, sugar cane tops wafer, particle board, fiber board, pulp, paper, Ca citrate and electricity (energy) have a fairly open market opportunities, both in the national and international markets

Productivity of sugar is heavily influenced by the sugar factory which is managed by a private company

with the scale of production that is quite large (more than 8000 TC) which is supported by the right to cultivate land tenure in the adequate area. Sugar Factory is able to increase efficiency by implementing management of cultivation and milling pattern in the same management and be able to apply modern equipment (which are capital intensive) on land management, logging and transport, and sugarcane water supply (Mardianto, 2005)

Lampung province is the second largest sugar producer in Indonesia after East Java, by contributing to the national sugar by 35% (Plantation Office of Lampung Province, 2013). One company factory that processes sugar cane into sugar and molasses in a large scale to meet the national demand for sugar is in the district of Sugar Factory Way Kanan namely PT. Pemuka Sakti Manis Indah (PT. PSMI) that supplies sugar to various regions in Indonesia. Sugar Mill Company to meet the needs of the company's raw material sugar cane is doing a partnership with sugarcane farmers through the program of Equal Operational cooperation (KSO). KSO has an important significance because through this program participants will be given the ease of credit and production facilities, operational management in order to increase farmers' income through the increase of productivity of sugar cane farming. This partnership is expected to support the development in the agricultural sector of sugarcane agribusiness and could improve the income and welfare of cane farmers in Lampung.

Based on these descriptions, the problems in the study areas are as follows:

1. How is the development and empowerment of farming communities in institutional engineering of sugarcane agribusiness partnership?

2. What is the impact on the performance of institutional engineering on built sugarcane agribusiness?

#### **Research Objectives and Purpose**

The research aims to:

- Building institutional model of sugarcane agribusiness
- 2. Knowing the impacton the performance of institutional engineering sugarcane agribusiness in increasing incomes and welfare of farmers.

This research is useful for:

- 1. Farmers in increasing productivity and farm income in the sugarcane agribusiness.
- 2. Industrial sugar mills to increase the volume of supply of the raw material of sugarcane.
- 3. The Government in taking measures and steps in the development of sugarcane agribusiness.
- 4. Material inputs to be developed in further research.

### 2. THEORETICAL FRAMEWORK

### Institutional engineering of Cane Agribusiness Partnership

Strategies in institutional change in society means that changes in the regulatory and organizational principle, behaviors, and patterns of interaction. Institutional change will push to change the conditions that then make a new adjustment required by external factors (permanent feedback process). Institutional change is a permanent transformation process that is part of the development. The main objective of any institutional change is to internalize the potential for greater productivity from improved resource utilization and then simultaneously creates a new balance (Yustika, 1999).

Institutional change approach is only from the aspect of costs and benefits and believes that the strength of the motive (motive forces) such as changes in relative prices in the long term can build more efficient institutions. The new technological opportunities can create revenue potential which can only be captured if the economic institutions that are running can be changed. Source of institutional changes that are interrelated due to changes in relative prices in the long term is the main reason for adopting new technological opportunities in the agricultural economic activities.

The success of the agribusiness partnership program can be seen from all sides, from the perception of farmers; Successful partnerships are partnerships that can improve the standard of living and well-being. In terms of the perception of the company's core; successful partnerships is if profitable and make them sustainable agribusiness, from the perspective of the government; if the partnership is able to drive the economic activity of society and the country as a whole (Hashim, 2005: 6). Policy of partnership program is one of the mainstays of government development strategies that favor small and mediumsized business community. This policy contains rules, guarantee the rights and obligations of the company's core and plasma, the pattern of relationship synergy between the core and plasma company as well as seating the government's role as a builder and facilitator and supporting the partnership program funds.

Politically from agricultural development the partnership program is an effort to empower farmers and to reduce economic disparities between large companies and small farmers' agro-industry. For farmers, the partnership program is the hope to increase business activities and income as well as to improve the level of welfare; while for the core company, partnership programs are opportunities for business development in conditions of limited land and capital.

#### **Engineering That is Built**

The farmers as the land owner currently play an important role in asset ownership of land because they have a fairly extensive agricultural land for sugarcane agribusiness. The company to obtain a land grant in the form Hak Guna Usaha (HGU) for sugarcane plantation is very difficult or even impossible. Land that is available today is only for a farmer ownership. If the Sugar Factory did not build a good partnership, then the partnership contract will not last long, so the goal or joint vision and mission will not be accomplished, such as the company's sugar mill will be a shortage of supply of raw material of sugar cane and the effectiveness and efficiency of the company will be low/declining.

Cane agribusiness is a form of sugar cane plantation agribusiness pattern "labor-intensive and capital-intensive", ie sugar cane plantation requires considerable manpower, especially the handling time of harvest, and requires substantial capital to its management until it becomes a final product. It means that a lot of institutions that will be involved in the process of sugarcane agribusiness development. With these conditions in order to achieve efficiency and performance increase of farmers' income as well as to run cane agribusiness sustainability in the long term it is in need of engineering/strategy to empowering farmers to become more active and to have a major role (the subject) in the process of sugarcane agribusiness.

Farmers that own lands gathered together in Farmers Group, joined the Farmers Group Association (union), and united in the business container that is in the Farmers' Cooperative whose members consist of all members of sugarcane farmers, not cooperative employee. Farmers' Cooperative Institutions of sugar cane make contracts as a whole with various institutions which are associated or concerned with the agribusiness of sugarcane, namely the Sugar Factory, financial institutions as credit giver (Bank), the distributor of the means of production (fertilizers, medicines), distributor of agricultural machinery, Investors as buyer of processed cane (sugar, molasses), and other institutions for the advancement cane farmers members in sugarcane agribusiness.

There are four criteria so that farmer institutions are strong and able to actively participate in the fight for their rights, namely: (1) the association has to grow from the farmers themselves, (2) the management is

derived from the farmers and chosen at regular intervals, (3) they have the institutional power of formal and, (4) participatory.

With the awakening of consciousness as above, it is expected that farmers are able to act as a strong and independent groups, so that farmers can improve their earnings performance and have access to market information and banking access.

With the establishment of an institution of Sugar Cane Growers Cooperative, whose members consist of all sugarcane farmers, they will have high bargaining power against the Sugar Factory and other institutions. Farmers will get a contract directly from the distributor to supply the means of production; fertilizers, medicines, tools, agricultural machinery, transportation, fuel, and others which are certainly at a cheaper price (by making use of price subsidiary from the government) than if the company buy at a price of industrial and tax load obligation to be paid for each transaction, as well as the costs of investment that are not effective. By this it can suppress or decrease the costs incurred in sugarcane agribusiness and farmers' income performance can be improved.

Investors as buyers of sugar, molasses, bagasse, manure, sewage etc will relate and interact directly with the farmers' cooperative, farmer groups and combined groups of farmers together with the sugar factory, and the farmer can know directly the sale value of the product obtained. In contrast to the condition of a partnership that is currently running, the farmers do not understand and are not aware of the value of sales of products resulted from the processing of sugar cane agribusiness.

Even the values of other products such as sugar, molasses, bagasse, organic fertilizer, or waste that can be utilized in the form of the sale value of the product are never taken into account in the results sugarcane agribusiness. Insurers will provide direct guarantees to farmers against the failure of the sugar cane agribusiness, and it has quite a small impact on one or more farmers who suffered major force not as a whole. Farmers can obtain guidance or counseling from the government, the Sugar Factory, university academicians, and sugar practitioners for the progress of sugarcane agribusiness towards farmers to become better and prosperous.

Farmers can obtain land titling directly from the National Land Agency (BPN) quickly, easily, and inexpensively. All agricultural lands ownership of farmers can be certified which can be used by farmers for other purposes.

The transformation of government-owned land that is not productive should be handed over to the community/folk farmers to be developed in the sugarcane agribusiness development program, for example forestry land (ownership of INHUTANI, registers) or lands of government whose business license had expired, discontinued or abandoned by the old company.

The current problems faced by the industry is that there is still a lack of sugar cane plantation area. With the expansion of sugar cane plantations, the sugar cane production is expected to grow, so that it can meet the needs of sugar both for consumption and for industrial needs. Currently society's sugar cane plantations dominate the sugarcane plantation area in Indonesia.

Institutional farmer is as a learning process container, a vehicle for cooperation, facilities and infrastructure provider unit of production, unit production, processing and marketing units and supporting services unit. Institutional can be referred as a form of group, the combination of group, association or corporation which are facilitated and empowered by government to grow and develop into a strong and independent organization so as to achieve the expected goals of its members.

Sugarcane farmers group is a collection of farmers/growers of sugar cane which was formed on the basis of shared interests, the same environmental conditions (social, economic, resource) and familiarity to enhance and expand the business of sugarcane farmer members. The combined group is a collection of several groups of sugar cane farmers who join and work together to improve the scale of economics and operational efficiency, and Cane Farmers are stewards of sugar cane farming.

The establishment of institutions to facilitate its members achieving most of what is needed or desired, with such awareness that every member wants and will try to make the group can be truly effective in carrying out its functions to improve the quality of interaction/collaboration in exploiting all the potential that exists in the members and their environment to achieve group goals. In Fig.1 it is described that institutional engineering model of community-based cane agribusiness of sugar cane farmers to increase the better farmers' income performance towards the self-sufficient and prosperous farming community.

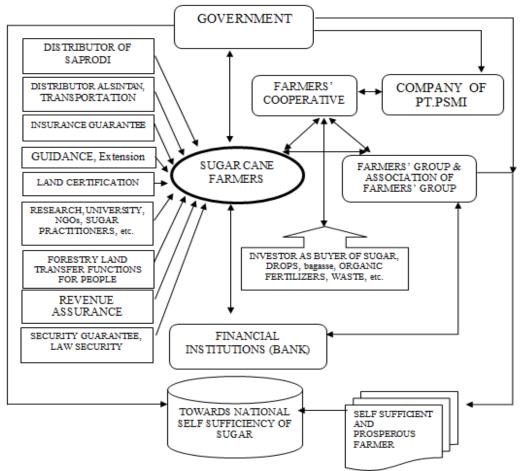


Figure 1. Institutional engineering schemes of sugarcane agribusiness based on sugar cane farming communities.

### The Development and Empowerment of Farmers Group and Farmers Group Association.

In the effort of development of farmer groups, what to be achieved is the establishment of dynamic farmer group, where farmers have discipline, responsibility and skillful in cooperation of arranging activities of farming, and in order to increase business scale and increase efforts towards greater and commercial nature, farmer groups can be developed through collaboration between groups by forming combined farmer groups which is a forum of cooperation between institutions of farmer groups.

Each group makes a coordination between groups to cooperate with each other group. They conduct meetings/consultations between the group administrators (representing a group) to make business agreements with larger scale in an effortto strengthen the bargaining position. They make rules that bind (preferably in writing) to the agreement of deliberations between these groups as well as sanctions in case of violation in the agreement.

### The Growth of Farmers Group

Farmers Group Executive Board fosters cooperation in carrying out farming and agreements that apply to farmers. They must follow the instructions and guidance of officers/extension to subsequently forwarded to the members of the group, along with officers/extension to plan group activities in the production, processing, marketing and so on, pushing

and moving activity, creativity and initiative of members, periodically, at least once a month holds a meeting/dialogue with the members of the group, which is attended by officers/extension.

### **Promoting Farmers' Cooperative**

Cooperatives seek to develop and empower themselves in order to grow into a strong and independent so as to improve the welfare of farmers in particular and society in general. A cooperative seeks a significant role to develop and empower the people economic order of farmers which is based on family principles and democratic society in order to realize advanced, just, and prosperous society. Cooperative development should be directed at strengthening the institutional and efforts in order for the cooperativeto become autonomous, healthy, strong, independent, tough, and thrive through increased cooperation, potential and economic capacity of members, as well as play a role in the national economy. Cooperative aims to improve the welfare of members in particular and society in general, as well as an integral part of the national economic order that is democratic and fair. The underlying values of cooperative activities are: a) Family, b) self-help, c) be responsible, d) democracy, e) equation, f) equitable, and g) independence. Cooperatives work for the sustainable development for the environment and their communities through policies approved by the members.

In Figure 18 it clarifies the engineering model of the importance of farmers' empowerment to institutional Farmers Group, Association of Farmers Group, and

Cooperative Farmers in the institutional development of community-based agribusiness of sugarcane farmers.

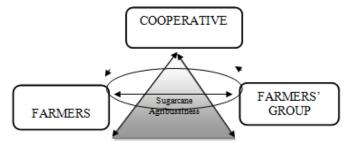


Figure 2. Engineering of institutional empowerment of farmers in the development of cane agribusiness based on community of sugarcane farmers

Institutional is needed in agribusiness systems and subsystems in the implementation of the sugarcane agribusiness. Sugarcane agribusiness is activities based on agribusiness sugarcane cultivation by means of cooperation between the sugarmills as raw material sugar cane processor (off-farm) and farmers as providers/suppliers of the raw material sugar cane (on-farm). Refiners are very concerned to help farmers in on-farm as collateral for cane raw material that is processed at the factory off-farm. Government is

obliged to help realize the good cooperation and mutual benefit between the parties, both sugar cane growers and sugar Mill Company.

The government issued a policy instrument that regulates the rights and obligations of the two sides (Arifin, 2003). Sugarcane agribusiness is described as a system consisting of subsystems and subsystems of supporting institutions which is described in Figure below;

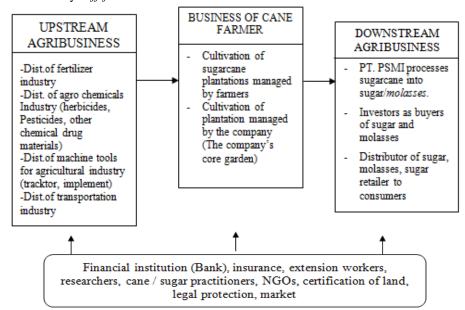


Figure 3. Sugarcane Agribusiness System
System of Agribussiness-www.google.com. Accessed on 2 March 2013.

### III. DISCUSSION

### The Impact of Engineering against the Total Cost, Production and Value of Operating Results

By empowering farmers and pay attention to them as the "main subject" of actors in the agribusiness of sugarcane and all elements in related institutions (practitioners of sugar industry, government, universities/academics, financial institutions, distributors of saprodi, insurance, law guarantee, etc.) together strengthening and fully support the overall totality (integrality), and the institutional transformation of the institutional empowerment of farmers in an effort to become farmers in sugarcane agribusiness autonomous, independent, strong, and competitive to achieve welfare and prosperity.

Engineering institutional agribusiness of sugarcane by empowering farmers gets a performance of higher revenues when compared with the partnership managed by companies with patterns of operational cooperation (KSO). It will be the basic determinant in the decision in an engineering empowerment of farmers to farmer institution that will be built for an increase in advances of sugarcane agribusiness.

The cost in engineering agribusiness (farming of sugar cane) per hectare (Plantation cost/ha) with the empowerment of farmers in Way Kanan regencyProvince Lampung\_Indonesia is lower than

those managed by the Sugar Factory(PT. PSMI) withpatterns of KSO, with a decline in fee of 32, 23%. The cost ofsugar cane farmingper hectaretobe managed by farmers is lower is because the management by farmers is not required for the costs of field drainage, tools (implements), workers transport, mechanicsafter work, replacement, the manufacture and maintenance of roads, drainage, bridges, housing, and others that require high investment costs.

What affect the substantial cost is the price of

fertilizer and fuel oil. Farmers can take advantage of facilities provided by the government through subsidized fertilizer prices.

Transport costs of harvesting sugar cane (cane harvesting transport cost) is to transport the cane up in the plant using fuel oil subsidized from the government. The comparison is achieved from the performance of the agribusiness of sugarcane before engineering (KSO pattern) managed by PT.PSMI and after engineering.By engineering in empowering farmers it makes them as the actors in agribusiness management by building institutional cane growers that are autonomous, strong, and healthy. It will increase revenue and reduce or decrease the costs of

sugarcane agribusiness investments, thereby increasing the yield advantage of agribusiness of sugarcane.

Difference in acceptance of partnership farmer of KSO pattern which is managed by the sugar factory (PT. PSMI) before and after engineering managed by landowners itself increases from Rp 12,288,049, - /ha to 23,879,763, - /ha with difference of Rp 11,591,714 /ha. If a stretch or block area of sugarcane partnership is at 100 ha, the revenue of money circulating in the community of sugar cane farmers increases to Rp 1,159,171,400, - (one billion one hundred and fifty nine million one hundred seventy one thousands and four hundred rupiah) or the increase of farmers' income performance is at 94.33%.

Table 2 of the following describes the agribusinessengineering costs, the total cost, production performance, results of operations (income), and a comparison of the performance of the agribusiness of sugarcane before engineering managed by the sugar mill company (PT.PSMI) and after engineering per hectare in Regency of Way Kanan in the year of 2013/2014.

Table 2. Comparison of the sugarcane agribusiness performance before engineering (KSO pattern) that is managed by the sugar factory (PT.PSMI) with after engineering (farmer empowerment) per hectare in Way Kanan regency year 2013/2014.

Description	Performance Before Engineering (Rp)	Performance After Engineering (Rp)	Difference (Rp)	(%)
1	2	3	4	5
credit loans from financial institutions (Bank)	22.000.000,-	15.000.000,-	-7.000.000,-	(31,81)*
2) plantation cost	19.296.930,-	13.076.930,-	-6.220.000,-	(32,23)
3) The total cost of building sugar cane agribusiness	21.896.930,-	14.326.930,-	-7.570.000,-	(34,57)
4) The amount of the reserve fund from the remaining loans	103.070,-	673.070,-	+570.000,-	553
5) Production Result (sugar/molasses)	40.860.000,-	40.860.000,-	0	0
6) Time Results of Operations (SHU)	17.066.736,-	23.879.763,-	6.813.027,-	39,91
7) Revenues: - Farmers - PT.PSMI - Cooperative - Reserved fund	12.288.049,- 3.498.681,- 426.669,- 853.337,-	23.879.763,- (for farmers)	11.591.714,-	94,33

<sup>\*( )</sup> states declining

### CONCLUSION

- 1. Institutional Engineering of sugarcane agribusiness by establishing and building institutional peasant (farmer groups, the combined group of farmers and farmer cooperatives) will increase the value of farmers' bargaining position. Empowerment of farmers through farmer institution in the agribusiness of sugarcane is autonomous, healthy and strong to be able to capture the benefits of
- economic values of the agribusiness of sugarcane, and the economical business scale in both the provision of means of production variables required and in marketing and public access of farmers to subsidies as well as the facilities provided by the government.
- 2. Through the institutional engineering of sugarcane agribusiness, the total revenues of sugar cane farming communities will increase of Rp

17,066,736, - to Rp 23,879,763, - (up 39.91%). The results of farmers 'income will increase from Rp 12,288,049, - to Rp 23,879,763, - with the increase of farmers' income Rp 11,591,714 (94.33% increase); which contributes to total revenues for each location of block/expanse of plantation area of 100 Ha which is Rp 1,159,171,400, - (one billion one hundred and fifty nine million one hundred seventy one four hundred rupiah).

### **SUGGESTIONS**

- 1. The community of sugarcane agribusiness needs to continue to improve their farm productivity and income and have a better bargaining position in the agribusiness of sugarcane, with the formation of farmer institution and play an active role in the process of sugarcane agribusiness systems and subsystems, thereby they can improve the performa of sugarcane agribusiness to become better; for the independent, advanced, and prosperous farmers.
- 2. For the sugar mill industry they need to continuously increase the volume of raw material supply of sugarcane, increase the sugarcane agribusiness partnership on an ongoing basis, give full authority to farmers in sugar cane farming business management, foster a continuous basis, and help needs required by sugarcane farmers through farmer institution.
- 3. For the government in adopting policies and measures in the development of sugar cane farming they need to support through policy, guidance, counseling, supervision, and institutional empowerment of sugarcane agribusiness partnership that is advanced, powerful, and able to compete.

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