THE PERCEPTIONS OF SUGAR PALM FARMERS IN RELATION TO THE INSTITUTIONAL DEVELOPMENT OF SUGAR PALM AGRO-INDUSTRY

Sutan Pulungan1, Rahmat Syahni2, Nofialdi3, Novizar Nazir4

1Magister Program, Faculty of Agriculture, Universitas Andalas, Padang, Indonesia
2,3Departemen Social Economic, Faculty of Agriculture, Universitas Andalas, Padang, Indonesia
4Faculty of Agricultural Technology, Universitas Andalas, Padang, Indonesia

Email: 1) sutanpulungandp2017@gmail.com, 2) rahmatsyahni@agr.unand.ac.id, 3) nofialdi@agr.unand.ac.id, 4) nazir_novizar@yahoo.com

Abstract

This research was conducted in Tapsel Regency, North Sumatra for 8 months starting in April 2018, in 24 villages located in 4 sub-districts out of 14 sub-districts, determined by the Multistage Sampling Technique. Determination of respondents by purposive sampling technique. The respondents observed were 112 sugar palm farmers. Determination of respondents by purposive sampling technique. Research objectives: To describe the conditions and perceptions of sugar palm farmers in relation to the development of sugar palm agro-industry institutions. Data analysis techniques: Descriptive Analysis. Arranged variables; variable Y; Agroindustry Institutions, and variable X consists of 1. Human Resources, 2. Interaction, 3. Motivation, 4. Farmer Participation, and 5. Socio-Economic. Measured through 14 parameters spread over 49 lists of structured questions on the questionnaire. Farmers' responses to the questionnaire were assessed using a Likert Scale to identify and interpret the conditions and perceptions of sugar palm farmers. The results of the research produce recommendations: 1. Instilling confidence in sugar palm farmers, is important 2. Socialization is needed to sugar palm farmers, for example about; standard price of palm sugar, the technology used and the performance of the agro-industry. 3. The issue of agro-industry institutional leaders must go through a separate study.

Keywords: Agroindustry, Sugar Palm, Institutional, Perception

1. INTRODUCTION

Discussions about institutions, especially those related to agro-industry, are actually very broad and varied. As Malik (2015) argues, “institutional functions, in the context of industrial villages, in principle, a planned and structured effort to organize all elements involved in a series of community-based production processes. As an organization, institutions in the context of industrial villages are related to the agreed rules of the game. Because it is characterized by community participation, the rules of the game are drawn up based on a shared commitment to utilize various existing potentials, both the potential of human resources, natural resources, economic resources, as well as social and cultural resources. That is, institutions in industrial villages, values and social norms are a pillar of the institution, which is crystallized so that it becomes a productive collective force, especially economically”.

The opinion that links institutions with social institutions is as conveyed by Suradisastra (2008) who says, “In the life of a farming community, the position and function of farmer institutions are part of social institutions that facilitate social interaction or social interaction in a society. Institutional empowerment efforts to increase attention and motivation for farming will give more results if they take advantage of the meaning and potential of 3 (three) main keywords in the institutional context, namely; norms, behavior and conditions of social relations. The significance of these three keywords is reflected in the behavior and actions of farmers, both in individual actions and in communal collective actions. Every decision taken will always be related
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or limited by the norms and social institutions of the farming community in their environment. Vice-versa, Such conditions indicate that the decision-making process in farming communities is an action based on community conditions which can be used as an entry point for technology dissemination efforts”.

In South Tapanuli Regency, North Sumatra, there is one industry in the countryside that has the opportunity to be built, namely the sap processing industry, for example into palm sugar. With palm sugar products, it is hoped that it will provoke the interest of the village community to produce quality processed food products, increase income which leads to an increase in regional income. The sap, which is produced from the palm plant, has been cooked by palm farmers only to produce palm sugar. In fact, palm sugar has a higher selling value and is in demand by national and international markets. The palm sap processing industry can be packaged in an agro-industry policy. Evalia (2015), in her research concluded that the development of palm sugar agroindustry in the District of Lareh Sago Halaban is very important to implement. This is seen from the IFE factor value of 2.646, this means that internally it is very supportive in the development of the sugar palm agro-industry in the future. Likewise with the EFE value of 2.298 which indicates that there are still many opportunities that have not been utilized properly.

Gusti (2011), interprets that agro-industry includes processing agricultural products and industries that produce equipment needed in the agricultural sector. Thus, the agro-industry must be seen as a unified whole and broad which includes the upstream industry (on farm) from the agricultural sector to the downstream industry (off farm). Upstream industry is an industry that produces agricultural tools and machinery as well as industrial production facilities used in the process of agricultural cultivation, while downstream industry is an industry that processes agricultural products into raw materials or goods that are ready for consumption or is a post-harvest industry. Thus it can be said that the agricultural industry in agro-industry activities requires the use of technology. In supporting agricultural development, the presence of technology is important to increase productivity, improve quality and diversify products.

In South Tapanuli, there are actually several institutions that facilitate the interests of farmers, such as Village-Owned Enterprises, Farmer groups and farm shops that provide farming needs. According to data released by the Village Community Empowerment Agency (2019), From the existing 248 villages, 33 Village-Owned Enterprises have been formed For the 4 sub-districts that are the research sites, there are 323 farmer groups and 13 agricultural shops. But according to observations, the farm shop as an economic institution, has not functioned optimally in supporting the interests of farmer groups in producing palm sugar, especially for the palm agro-industry later.

Thus, one of the obstacles in the development of sugar palm agro-industry in South Tapanuli is the absence of an institution that is considered capable of managing agro-industry institutions. Therefore, this research considers that it is important to prepare an ideal institution that will manage the sugar palm agro-industry, before including technology. One of them is by absorbing the aspirations of sugar palm farmers whose involvement is very dominant in the sugar palm agro-industry as a provider of sap as the main raw material.

2. RESEARCH METHOD
The purpose of this research is to describe the conditions and perceptions of sugar palm farmers in relation to the development of sugar palm agro-industry institutions. This research was conducted for 8 months in South Tapanuli Regency, North Sumatra starting in April 2018 in 24 villages in 4 sub-districts which are considered representative of the fourteen sub-districts, because it is in the same area demographically. As Rianse and Abdi (2009) argue, “A clear and detailed map or aerial portrait of the research area is needed. The entire research area contained in the map or aerial portrait is divided into regional segments containing the number of research units. Determination of sample sub-districts and villages using the Multistage Sampling Technique”.

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This research uses primary data and secondary data. Primary data were obtained from respondent farmers who were selected through in-depth observation, oral and written interviews using a list of questions that were prepared in advance as many as 49 questions. Each question begins with a question sentence "do you agree ...?". While secondary data is obtained from relevant agencies and institutions in accordance with the data needed to achieve research objectives. In this research, the determination of respondents was carried out using purposive sampling technique, it was found that the respondents were 112 sugar palm farmers spread over 24 villages in 4 sub-districts out of fourteen sub-districts.

Bungin (2013) states that “variables are phenomena that vary in the form of quality, quantity, quality and so on. To operationalize the variable, the variable must be explained with parameters or indicators and the indicator or variable parameter is fully functional in detecting the variable to be measured. But keep in mind that indicators only emerge from the concept of predetermined variables. In this research, the agro-industry institution is the dependent variable (Y) which is the sugar palm farmer institution in South Tapanuli which contributes to the acceleration of the development of sugar palm towards an agro-industry that uses sap as raw material. The acceleration of the development of sugar palm which will be managed by agro-industry institutions, cannot be separated from the influence of the existence of several factors that determine the success of institutions that manage the sugar palm agro-industry, whose value is influenced by the X variable as described in the following table.

| Tabel 1. Hubungan dan Faktor-Faktor yang Mempengaruhi Variabel Penelitian |
|-----------------------------|-----------------|------------------|
| Variabel                    | Parameter       |
| Agro-Industry Institutions  |                 |
| 1. Human Resources          | 1. Education,   |
|                             | 2. Experience   |
|                             | 3. Skills       |
| 2. Interaction              | 1. Sanctions    |
|                             | 2. Tolerance    |
|                             | 3. Conflict     |
| 3. Motivation               | 1. Production Price |
|                             | 2. Energy Source |
| 4. Farmer Participation     | 1. Farmer Behavior |
|                             | 2. Leadership   |
|                             | 3. Communication |
| 5. Socio-Economic           | 1. Women Empowerment |
|                             | 2. Product Diversification. |
|                             | 3. Technology   |

In this research, what is meant by:
1. Human Resources is the ability possessed by someone who will manage the sugar palm agro-industry institutions in South Tapanuli to mobilize all the potential and resources that exist in agro-industry activities. The ability of a person is assessed based on the views or perceptions of sugar palm farmers using three parameters; 1. Education, 2. Experience, and 3. Skills possessed. Widajanti (2007), said "the quality of human resources is one of the important factors that determine the success of a business activity such as the management of institutions engaged in industry”.

2. The interaction in this study is the relationship that occurs between fellow sugar palm farmers in daily life, in social and community activities and in sugar palm farming activities. Relationships occur because of communication. The product of communication is the emergence of change. The changes that exist can be responded positively by sugar palm farmers and other community
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members. Changes that are addressed positively will give birth to tolerance. Meanwhile, changes that are addressed negatively will lead to conflict. Parameters arranged to measure interaction: 1. Sanctions, 2. Tolerance, and 3. Conflict. Examples of conflicts as mentioned by Hamyana and Romadi (2017), the findings in the field at the three stages of the implementation of the Special Efforts for Rice, Corn and Soybeans illustrate that the elites have had a fairly good impact and a positive response to program implementation. At least it is able to develop farming patterns through the help of machine tools and production facilities, increase production, and improve farming efficiency. Besides that, it is also able to encourage the process of cultural change, changing society to be more capitalistic.

3. The motivation in this study is the factors that encourage sugar palm farmers to want to be involved in agro-industry activities. These factors are psychologically the reason for farmers to follow all policies, programs and provisions made by agro-industry institutions. These factors are arranged in two parameters, namely; 1. the price of agro-industry production, and 2. the availability of energy sources. According to a report by CIFOR and CGIR (2013), “More than two billion people rely on wood for their energy needs for cooking and heating, especially in households in developing countries. In parts of Africa, wood for fuel is often the only source of domestically available and affordable energy providing nearly 90 percent of primary energy needs. Forecasts suggest that biomass energy in Sub-Saharan Africa will provide three quarters of the total energy needs of the population by 2030”.

4. The participation of farmers in this study is interpreted as a form of involvement and support of sugar palm farmers in the sugar palm agro-industry institutions in South Tapanuli in particular and in agricultural development in general. The involvement of farmers is reflected in their attitudes and behavior in participating in every activity and program of agro-industry institutions. The support given by sugar palm farmers can be seen from their willingness as members to comply with all institutional provisions made including receiving sanctions if they violate existing provisions. Another form of support is their willingness to become an agro-industry manager if needed. Farmer participation variables consist of parameters; 1. farmer behavior, 2. leadership, and 3. witnesses. Participation according to Soetomo (2013) is defined as "community involvement in a development process that is driven by determination and awareness of the meaning of its involvement. Involvement without determination and awareness is not participation”.

5. Socio-economic understanding in this study is the role of social factors in the sustainability of sugar palm agro-industry activities. In particular, the role of the social factors researched is the empowerment of women. Another understanding is, economic factors that are considered to play a role in the success of the sugar palm agro-industry, namely the technology used. With technology, sugar palm commodities will produce a lot of new products, which are in demand by the market which will ultimately provide benefits to people in rural areas, such as added value and the availability of new jobs. New products can be achieved through a diversification program. Thus, for socio-economic variables, three parameters are used: 1. women's empowerment, 2. product diversification, and 3. technology. According to Raidimi (2014), that in South Africa, women participate in production, harvesting, storage, processing and marketing. They perform all agricultural functions except early land clearing and heavy plowing. Most of them spend eight (8) hours or more per day doing agricultural work. They work more than men. The level of participation and involvement of women both in terms of time and number of days they spend doing work exceeds that of men.

The data analysis technique used is descriptive analysis by first mapping the data from observations or interviews in the form of tables based on the grouping of similar and uniform data.
to support the achievement of research objectives. Similar data that has been grouped, then a percentage (%) of each respondent's answer. The next step is the interpretation of each parameter of the respondents' answers so that the palm farmers' perceptions of the institutions that will manage the sugar palm agro-industry are known. Interpretation is carried out using a likert scale assessment of the responses/answers of farmers to the questionnaire given with indicators and assessment criteria as follows,

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<th>Tabel 2. Skala Likert</th>
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<td>Questionnaire Question</td>
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As Rianse and Abdi (2009) argue, “Descriptive method is a method that focuses on solving actual problems that exist in the present, which is carried out through the stages of data collection, compiling, analyzing, interpreting and drawing conclusions. Descriptive method aims to describe the facts about the problem under study as it is, also provide a description of the situation or provide a relationship between phenomena, and make predictions and implications of a problem to be solved”. From the above understanding it can be concluded that the descriptive analysis method with qualitative and quantitative approaches is a method that aims to describe systematically and factually about the facts and relationships between variables investigated by collecting data, processing, analyzing, and interpreting data according to the needs of the research objectives.

Regarding the likert scale, explained by Budiaji (2013), by saying that research on personal behavior that measures individual traits always uses a measuring instrument designed by the researcher himself, either through pre-test or eliciting because there is no definite measuring tool. The measuring instrument used is the question items that are considered as indicators of certain behaviors, such as knowledge or attitudes. These questions will be responded to by the individual whose behavior will be measured.

3. RESULTS AND DISCUSSION
3.1. Human Resources Variables
Education Parameters
64.29 percent of sugar palm farmers in South Tapanuli agree that "education is one of the requirements for people who will manage the sugar palm agro-industry institutions", 65.18 percent of sugar palm farmers agree that "people who have education certainly have the expertise to manage sugar palm agro-industry institutions". Experience Parameters
67.86 percent of sugar palm farmers in South Tapanuli agree that "people who have been managing sugar palm farming for a long time are the ones who will manage the sugar palm agro-industry" and 66.96 percent of sugar palm farmers also agree that "experience in sugar palm farming can be used as an indicator of the success of managing sugar palm agro-industry institutions". And, when compared between experience and education, 38.39 percent agreed that “experience is more important than education to manage sugar palm agroindustry”.

Skill Parameters
The support of sugar palm farmers for people who have worked in the industrial sector is believed to be 80.36 percent “worthy of being the manager of the sugar palm agro-industry”. And 63.39 percent of sugar palm farmers agree that "the person can guarantee that they will be able to manage the sugar palm agro-industry."
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3.2. Interaction Variables
   Communication Parameters
   As many as 44.64 percent of sugar palm farmers did not agree "if at every opportunity fellow palm farmers should talk about sugar palm". When asked "there is a need for regular meetings to discuss the sugar palm agro-industry", the number who disagreed was also higher, namely 51.79 percent. However, as many as 66.96 percent of sugar palm farmers believe that "regular meetings will be beneficial for sugar palm farmers".

   Tolerance Parameters
   Regarding the dependence of fellow sugar palm farmers, 66.07 percent of sugar palm farmers agree that "a lot of dependence on sugar palm farmers in managing sugar palm". The dependence of fellow palm farmers is on "the equipment used and the marketing of sugar".

   Conflict Parameters
   A total of 72.32 percent of sugar palm farmers in South Tapanuli agree that "there will be many differences of opinion from the people who will manage the sugar palm agro-industry". As many as 56.25 percent of sugar palm farmers agree that "differences of opinion will affect the performance of the sugar palm agro-industry". Regarding the resolution of differences of opinion, 70.54 percent of farmers agree that "differences of opinion can be resolved within agro-industry institutions".

3.3. Motivation Variables
   Production Price Parameters
   A total of 74.11 percent of sugar palm farmers agree that "the price of agro-industrial products is higher than palm sugar as a palm-derived product". Whether "higher prices are a motivation for farmers to be involved in the sugar palm agro-industry institutions", 71.43 percent of sugar palm farmers agree.

   Energy Source Parameters
   64.29 percent of palm farmers agree that "firewood as a source of energy in cooking sap into palm sugar is a matter of future palm sugar production". The opinion that "from now on there must be a policy to replace firewood as an energy source in cooking sap into palm sugar", is supported by 76.79 percent of palm farmers. The belief that "agro-industry can replace firewood as an energy source" is generally agreed by sugar palm farmers as much as 76.79 percent.

3.4. Farmer Participation Variable
   Farmer Behavior Parameter
   "The involvement of sugar palm farmers must be active in agro-industry institutions" approved by 69.64 percent of sugar palm farmers. Even sugar palm farmers 64.29 percent agreed that "if you need sap as raw material, then every farmer must distribute the sap" to agro-industry institutions. Regarding the existence of "rules governing the distribution of sap to palm agro-industry", 36.61 percent of sugar palm farmers refused to make regulations and those who agreed to make regulations were 48.21 percent.

   Leadership Parameters
   Whereas "the ones who lead the agro-industry institutions are from among the sugar palm farmers themselves", only 47.32 percent of the sugar palm farmers who agree. Then, when asked for an opinion, "if those who will lead the agro-industry institutions from among community leaders", only 35.71 percent of sugar palm farmers agreed. Those who stated neutral (undecided) were 33.93 percent and those who disagreed were 29.46 percent. Differences of opinion between
sugar palm farmers occurred again when asked that "people who lead agro-industry institutions are from outside sugar palm farmers, 40.18 percent of sugar palm farmers agree, 28.57 percent are neutral (undecided) and 29.46 percent disagree.

Sanction Parameters
There is a strengthening of the views of sugar palm farmers through the indicator of "sanctions to sugar palm farmers who violate the rules regarding the amount of juice distributed to the ago-industry", by giving approval of 66.07 percent. Similarly, regarding the sanctions given in the form of monetary fines, sugar palm farmers who agreed were 74.11 percent.

3.5. Socio-Economic Variables
Parameters of Women's Empowerment
"Women's involvement in the management of agro-industry institutions" is supported by husbands (sugar palm farmers) where 72.32 percent gave their consent. 64.29 percent of husbands also believe that "naturally women can take a role in the sugar palm agro-industry institutions. Furthermore, “the involvement of women will be able to improve institutional performance, approved by 69.64 percent of sugar palm farmers. Regarding the role of other women, 61.61 percent of sugar palm farmers agree that “capable women will be able to resolve differences of opinion in agro-industry institutions. However, regarding "women who will lead the agro-industry institutions", there is a clear difference of opinion among sugar palm farmers, where those who agree are 46.43 percent while those who disagree are 34.82 percent.

Parameters of Product Diversification
Farmers’ knowledge about palm sugar as one of the palm agro-industry products is considered to be very minimal. This can be seen from the question about “palm sugar can only be produced through agro-industry, it is agreed by palm farmers by 62.50 percent. "Sugar palm farmers are able to produce palm sugar", a neutral opinion (doubtful) is quite significant at 33.04 percent compared to those who agree with 58.04 percent. However, "the production of palm sugar will be able to produce new food products", in fact, 77.68 percent agreed by palm farmers. Although the knowledge of sugar palm farmers about palm sugar is considered to be minimal, 75.00 percent of palm farmers agree that "palm sugar is very attractive to the market".

Technological Parameters
Generally, sugar palm farmers in South Tapanuli, 80.36 percent agree that "agro-industry is synonymous with machine technology". 75.89 percent of palm farmers also agree that "palm sugar must be produced using machine technology". However, when asked "whether machine technology must be expensive", those who agreed were 55.36 percent. When asked "if you have to use machine technology, sugar palm farmers will not be able to produce palm sugar” then palm farmers who agree are 58.04 percent.

4. CONCLUSION AND RECOMMENDATIONS
4.1. CONCLUSION
1. The experience factor is a condition that must be possessed by someone who will be involved in managing the sugar palm agro-industry institutions in South Tapanuli in order to get support from sugar palm farmers. Including experience in managing sugar palm farming and has worked in industry.
2. One of the tasks that must be considered by the managers of agro-industry institutions is the potential for conflicts to arise both from internal institutions and from external parties. Internal institutional conflicts can arise due to differences of opinion from fellow agro-industry institutional managers. Conflicts can also come from sugar palm farmers who do not support the existence of agro-industry institutions.
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3. Sugar palm farmers in South Tapanuli support the existence of sugar palm agro-industry as an alternative to replace firewood as an energy source in cooking sap into palm sugar and from now on there must be a policy to replace firewood as an energy source. Thus, the technology used in the sugar palm agro-industry must use energy sources other than firewood to gain support from sugar palm farmers.

4. Sugar palm farmers must play an active role in the sugar palm agro-industrial institutions and even agree that they must distribute the juice to the sugar palm agro-industry. However, making regulations regarding the amount of sap that must be distributed to agro-industry, is not very supported by sugar palm farmers. So that future agro-industry managers must be careful about the sustainability of agro-industry activities in terms of procurement of raw materials. Because, in the palm agroindustry that produces palm sugar, sap is the main raw material.

5. Husbands (sugar palm farmers) agree on the managerial ability of women (wives) and solve problems so that husbands support women's involvement in agro-industry institutional activities, but do not become leaders in sugar palm agro-industry institutions. And, there is confusion and doubt among palm farmers about the concept of agro-industry and palm sugar as one of the products of the palm agro-industry in addition to the use of machine technology.

4.2. RECOMMENDATIONS

With the analysis carried out, in the development of the sugar palm agro-industry, this study recommends several things, such as:

1. Instilling confidence in sugar palm farmers, is important because it can be one of the keys to the success of the sugar palm agro-industry considering that palm farmers are the providers of sap as the main raw material.

2. It is necessary to disseminate information to sugar palm farmers, for example about: The standard price of palm sugar as a palm agro-industry product, the technology used and the expected performance of the agro-industry can also be a motivation.

3. The problem of agro-industry institutional leaders must go through a separate study. Considering the perception of sugar palm farmers in South Tapanuli on education, experience and women's empowerment.

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