

Institutional Partnership Model of Cassava Sustainable Agribusiness in Lampung Province

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Abstract

The research objective was to analyze a partnership institutional model that ensures the sustainability of cassava agribusiness in Lampung Province. The research was conducted in Central Lampung District using a case study at PT. ABC and survey methods to 131 cassava farmers taken purposively. The analysis used is descriptive qualitative. The result of this research is that the sustainable cassava agribusiness partnership institution was carried out in horizontal coordination between the cassava farmer institution and the tapioca factory so that the problems of farmers and factories can be resolved such as good selling price of cassava and continuous factory capacity.

Keywords: agribusiness, cassava, institutional, partnership, sustainable

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1. Introduction

The institutional economic approach is a set of rules that regulate the participants of their interest to the price and quantity of goods. The level of unique prices and quantities is determined by non-economic factors such as strength and negotiation skills between farmers and factory. Institutions in organizations are economic activities that are coordinated not by market mechanisms but by administrative or command mechanisms (Zakaria, Endaryanto, Ibnu, & Marlina, 2019). It means that the formation of an internal organization that brings together cassava farmers and tapioca factories under one management is one of the efforts to sustain the cassava agribusiness. Institutions is required to perform their board function as a law enforcement in the form of sanctions or incentives that provide stimulus to participants in behaving according to expectations (Raharjo, Falah,

Faiqotul, & Cahyono, 2019). In institutional engineering, it must be accountable including jurisdictional boundaries, ownership rights, rules of representation and law enforcement (Pakpahan, 1989) which are useful for overcoming the problems of free riders, commitment, loyalty and demands of external factors on the organization to produce good performance.

Institutions contribute in increasing economic development (Ikhsan, 2000; Rodrik & Subramanian, 2003; Acemoglu, 2003; Zakaria, Endaryanto, Ibnu, & Marlina, 2019). Economic development in rural areas comes from food plants (Zulkarnain, Haryono, & Kasymir, 2010), one of them is the cassava plant, where the economic potential of the cassava plant is highly large in world trade (Kristian, 2015), so that the cassava plant becomes a concern for increased production (Anggraini, Hasyim, & Situmorang, 2013). The development of cassava agribusiness

in Lampung Province consists of a downstream agribusiness subsystem controlled by medium/large entrepreneurs and a farming subsystem (on farm) controlled by farmers (Zakaria, Endaryanto, Mas Indah, Mellya Sari, & Mutolib, 2020). The cassava plant has a role as a source of raw material for the tapioca factory. According to (Sagala & Suwanto, 2017) tapioca factories assess the quality of cassava in the form of aci content, types of varieties, age of harvest and dirt carried over at the time of harvesting the cassava.

The low level of production causes most farmers to be subsistence in nature. Farmers' activities are subsystem in nature and far from market orientation (Asian Productivity Organization, 2003). The tightness of the market for cassava in the future caused the need of institution that can accommodate the interests of farmers to carry out farming activities, in line with (Sadikin, Nur Suhaeti, & Suradistra, 2004) argued that agribusiness development is inseparable from the agribusiness subsystem such as (a) procurement and distribution of production facilities, (b) farming, (c) processing of agricultural products, and (d) marketing (Winarso, 2012; Wiryati, Sunaryo, Susilawati, & Leilani, 2019). So that we need a partnership that has a target to improve the welfare of farmers in terms of (a) increasing the capacity of the bargaining position and income of farmers / agricultural business actors, (b) increasing farmers' access to productive resources, and (3) increasing farmers' knowledge and skills (DWP & Waridin, 2010).

Partnership is defined as cooperation by utilizing the ability of each party to achieve common goals (Anwar, Purwanto, & Fitriyah, 2020). This partnership is motivated by the complementary needs between farmers and factories by increasing organizational capacity and resources (Widjajanti, 2015). Factories have limitations in resources, therefore partnerships become access to major resources. Partnerships for farmers are beneficial for increasing income and improving welfare levels, while for factories it provides opportunities for business development in conditions of limited land and capital (Hafsah, 2000). The partnership is expected to foster a sense of farmer engagement which has an impact

on farmers' income (Kopsa, Sjarkowi, & Hamzah, 2016). Agribusiness partnership institutions aim is to increase efficiency, productivity, market demand and consumer preferences. The existence of partnerships cannot be separated from functional and structural aspects. Where the partnership includes a set of rules in the form of an agreement that is agreed upon and applied to be obeyed by the farmer and factory.

The partnership concept is a solution to addressing the economic inequality of large-scale businesses and small-scale businesses. With the desire to complement each other between the two business actors, a harmonization of partnerships can be created which ultimately benefits both parties. The success of the partnership is determined by the compliance between the partners in carrying out the partnership's business ethics (Suryana, 2014). The partnership that has been established between the factory and the farmer then experiences discomfort which eventually dissolves. Based on field observations, the cause of the partnership dissolved due to several things, namely poor administration, debt burden, contract termination by the factory, many agents, not in accordance with the agreement, no coordination from the factory or group, no clarity from the factory, already had capital alone and want to be independent. From several causes, contract terminations by factories were common, this was because the data on the area planted was different from the actual conditions. The system implemented by the factory is by lending capital to partner farmers and then the payment of funds borrowed from the factory is made at harvest time.

Management of agricultural resources requires an institution (Asiela, Syahputra, Nugroho, Fahmi, & Munawaroh, 2018; Abdul-Rahaman & Abdulai, 2020) Institutions have policies in the form of rules for resource management (Anantanyu, 2011; Nasir & Wardhono, 2018). In institutions, there are parties who have different roles in managing agricultural resources (Arief & Pradini, 2019). Direct intervention at the cassava market has not yet been implemented, which has an impact on the selling price of farmers. In classical economic theory, there are efforts to

increase the price of cassava that is received by farmers through the institutional economy by means of institutional engineering. The existing partnership institutions did not last long because the farmers did not benefit from partnering. The reason is that farmers and factories do not communicate well in running the partnership. Institutional engineering is a solution so that the higher price can actually be felt by the cassava farmers and the factory gets an adequate supply of raw materials according to the working capacity of the machine. Research by (Agiesta, Widjaya, & Hasanuddin, 2017) emphasize that the cassava partnership pattern is classified as adequate in terms of capital assistance, crop processing, production sharing systems, partnership requirements, and farm income, but has not yet determined the institutional model of the partnership. Research by (Zakaria, Nugraha, Mas Indah, & Mahmudah, 2018) stated that cassava farmers and tapioca factories must make partnerships to increase income, then (Zakaria, Endaryanto, Ibnu, & Marlina, 2019) conducted further research on the formation of new cassava partnerships to the extent that the partnership does not last long but has not yet created an institutional model for cassava partnerships that ensures the sustainability of cassava agribusiness. Partnerships were only developed in the medium term with a conditional contract pattern, but there was no institutional model for partnerships that involved the roles of other institutions (Zakaria, Endaryanto, Ibnu, & Marlina, 2019). Based on the problem formulation above, the aim of this research is to analyze the transaction partnership institutional model that ensures the sustainability of cassava agribusiness in Lampung Province.

2. Research Methodology

Research sites. The research location was in Central Lampung Regency, Lampung Province with the consideration that there were cassava farmers and tapioca factories who had collaborated.

Methods, Types of Data and Data Collection Techniques. Qualitative descriptive method with FGD. Primary and secondary

data types. Primary data is data obtained from direct interviews with cassava farmers, tapioca factories and other parties involved in this study. Secondary data is data obtained from related institutions/agencies, reports, publications and other literature related to this research. Data collection techniques include interviews, direct observation, documentation, and questionnaires.

Population and Sample. The study population was 854 cassava farmers. The sampling technique was obtained based on the calculation with the purposive method obtained as many as 131 samples and case study samples at PT. ABC as a factory that has partnered with cassava farmers (Sugiarto, Siagian, Sunarto, & Oetomo, 2003)

Data analysis. Data analysis consisted of (1) institutional analysis on the cassava agribusiness partnership, and (2) analysis of cassava income.

Institutional analysis. Institutional analysis on the cassava agribusiness partnership with a qualitative descriptive approach that includes situation analysis, structure analysis, behavior analysis and performance analysis. The institutional analysis adopted the model from (Mutaqin, 2013), which are described as follows

- 1) Situation analysis examines the inherent characteristics of the resource that presents data and information in accordance with real conditions at the research location.
- 2) Structural analysis examines the institutions chosen to control interdependent sources and through a complex interaction process.
- 3) Behavioral analysis consisting of (1) the behavior that should be (reflecting the institution that should be) and (2) the behavior that occurs (reflects the prevailing institutions and will ultimately affect performance).
- 4) Performance analysis consists of two, namely (1) the supposed performance (expectations), and (2) the occurred performance.

The institutional engineering of sustainable cassava agribusiness transaction partnerships is expected to be able to produce the expected performance. Organizational performance is determined by the complex interactions between

internal organizational factors. Analysis of the behavior and performance of the cassava organization is described through four institutional components of the transaction (Pakpahan, 1989), namely (1) jurisdictional boundaries, (2) property right, (3) rules of representation, and (4) law enforcement.

Analysis of cassava income. The income of cassava farming used income analysis (Soekartawi, 2016) as follows:

$$\begin{aligned}\pi &= TR - TC \\ &= TR - (FC + VC) \\ &= TR - (FC + VC)\end{aligned}$$

Information :

π	= Income (Rp.)
TR	= Total Revenue (Rp.)
TC	= Total Cost (Rp.)
VC	= Variable Cost (Rp.)
FC	= Fixed Cost (Rp.)

Criteria R/C ratio :

$R/C > 1$ = the farm is profitable and is feasible to run

$R/C < 1$ = the farm experiences a loss and is not feasible to run

3. Results And Discussion

3.1 Cassava Transaction Institutions Currently in Lampung Province

Jurisdiction Boundary. Cassava farmers and tapioca factories are the main actors of cassava plantations in Lampung Province. The trading pattern of cassava farmers and tapioca factories is independent. Farmers sell cassava to any area to get a good price, while factories buy cassava to any area to get cassava as raw material for production. According to (Sagala & Suwanto, 2017) the availability of raw materials is the key in the tapioca industry. The factory can reach across districts to get cassava to meet their production needs. The factory is located in Central Lampung Regency but the factory reaches to other regencies like Mesuji, North Lampung, East Lampung, Tulang Bawang and South Lampung. Tapioca factory is an alternative to improve the

economy of rural communities, the majority of whom are cassava farmers (Herdiyandi, Rusman, & Yusuf, 2016)

Property Right. Property rights are obtained through purchases, gifts, and gifts. The company invested in a tapioca processing plant with a production capacity of 1,100 tons of cassava per day. According to (Rochaeni, Soekarto, & Zakaria, 2007) availability of cassava raw materials and production infrastructure are supporting factors for the development of the tapioca industry. The factory needs raw materials to meet its production needs of 26,400 tons per month. From 2018 to 2019, the absorption of cassava raw materials in factories was not optimal. The factory has to wait 2-3 days to be able to mill cassava. This is in line with the research of (Pawitan & Desita, 2008) in production, factories often experience imbalances in production because factories have to wait for raw materials to arrive irregularly. On the other hand, the majority of tapioca factories do not have cassava plantations, so the factories look to any area to meet their production needs.

Rules of Representation. Rules of Representation for cassava farmers and tapioca factories are independent. Factory decisions such as setting the price of cassava, milling schedule, determining the reaction rate, determining whether or not to accept cassava to be milled at the factory, as well as matters relating to production. This is in line with research by (Sagala & Suwanto, 2017) which states that the factory looks at the quality of cassava from aci content, type of variety, age of harvest and there is a lot of dirt at harvest time. Farmers' decisions include planting and harvesting schedules, use of production inputs, and where to sell cassava. According to (Kusmaria, Asmarantaka, & Harianto, 2017) farmers choose a place to sell cassava with the consideration of obtaining farming capital.

Law Enforcement. Law enforcement in cassava farmers and tapioca factories has not been carried out optimally, causing losses to both parties. Farmers and factories are free to carry out their activities according to their ability without any binding rules. Tapioca factories and cassava farmers run their businesses without anyone

controlling them so that there are no sanctions that are detrimental to both parties (Zakaria, Endaryanto, Ibnu, & Marlina, 2019).

3.2 Sustainable Cassava Agribusiness Partnership Institution in Horizontal Coordination

The existing partnership institutions have not been able to provide guarantees to tapioca factories and cassava farmers regarding the problems they are facing. Sustainable cassava agribusiness partnership institution with a horizontal coordination approach is a solution to the problems of both parties. Cassava agribusiness partnership institutional with horizontal coordination approach is presented in Figure 1.

Figure 1 shows that the institution of sustainable cassava agribusiness association in the form of horizontal coordination is an alternative solution to the problem of the low price of cassava received by farmers and the lack of raw material availability for tapioca factories. Establishment of sustainable cassava agribusiness association to strengthen farmers and reduce transaction costs and increase market access. The commodity of cassava is characterized by uncertainty and complexity that affects the income of cassava farmers. Characteristics of uncertainty and complexity for cassava farmers include fluctuating cassava prices, inappropriate farming patterns, and perishable nature of plants (bulky). Meanwhile, for the factory, the availability of raw materials is not continuous, the milling of cassava is not routine, the quality of the raw materials is not according to factory standards. Therefore, it requires an agreement in the form of cooperation that has opportunism and bounded rationality.

Bounded rationality occurs due to incomplete information or information uncertainty. Meanwhile, opportunism is an individual attempt to gain profit through a lack of honesty in transactions, in other words, disclosing asymmetric information for the benefit of certain parties. Opportunism and bounded rationality need to be avoided so that factories and cooperating farmers can overcome the problem of the characteristics of these commodities. In addition, factories are not allowed to buy raw materials outside the factory

operational area that has been permitted by the government. On the part of the cassava farmers, the farmers must plant and harvest according to the farming pattern and not sell cassava products outside the factory operational area. The agreement between the two parties must be kept under government supervision so that the cassava transaction is sustainable.

The agreement aims to overcome the constraints in cassava farming and tapioca factories through a partnership system. Therefore, the partnership is expected to increase farmer productivity and income and provide benefits for partner companies. The farmers' interest in partnering is inseparable from the characteristics of bulky cassava that encourage farmers to sell it even though the farmers' bargaining position is weak which causes the price received by farmers to be low (Anggraini, Hasyim, & Situmorang, 2013). This was pointed out by (Sugino & Mayrowani, 2009) who stated that the structure of the cassava market at the tapioca factory level in Lampung Province has a structure with weak monopsony power. This caused the tapioca factory to exercise price control and determine the price.

Partnerships must produce interrelated businesses and ensure the creation of balance, harmony, integration that is based on mutual benefit, mutual need and mutual growth (Alam & Hermawan, 2017). The principle of mutual strengthening and interdependence in partnership institutions can be built through a horizontal coordination approach. The benefits of partnerships built by cassava farmers and tapioca factories with a horizontal coordination approach, namely improved farmer income, efficient and optimal production, reduced transaction costs, reduced cassava price fluctuations, prices set together with reasonable reactions, continuous availability of raw materials with quality good according to the factory production cycle, better equity (farmers are prohibited from selling raw materials to factories outside of operations and factories are prohibited from taking raw materials outside the operational area under the supervision of the government as policy maker).

The partnership of cassava in Lampung Province is currently diverse, with the longest

partner being 9 years in 2008 (Prasurvai data, 2018), but there are also farmers who have not resigned for a year yet, this is due to farmers' dissatisfaction with cassava prices and rafaksi so that farmers feel better without partnering in partnership, the factory asks for guarantees in the form of land certificates to bind the cassava farmers. After that, the factory provides business capital assistance which is used for fertilizers, medicines, and land processing costs. The problem that arises is that business capital assistance has not been received and farmers have started the process of cultivating cassava. Partnership farmers sell their crops directly to the factory and farmers still receive the price set by the factory, which sometimes goes up or down. Apart from the price, the factory still determines the different factions with the faction discount ranging from 15% -22%, so the current partnership between farmers and factories does not last long. This is a problem in the institutional partnership, which should have been the factory that was the partner of the farmer, while the partnership of cassava which was carried out by the factory was not working. The factory requires continuous raw

materials, where the factory capacity is quite large and at this time the factory still lacks raw materials for cassava (Zulkarnain, Zakaria, Haryono, & Murniati, 2020)

In this regard, as a partnership institution consisting of two parties in its implementation, conflicts may occur because each party maximizes its satisfaction. So far, many partnerships are no longer running because the relationship between the company (factory) and farmers is only limited to the relationship between employers and workers, where the company views the partnership as merely fulfilling the government's appeal, while farmers perceive that the company tends to take advantage of it and does not sincerely help. Even though an institutional partnership is associated with the benefits obtained by actors in the institution (Zulfiandri, Maarif, Hermawan, & Hardjomidjojo, 2017). Therefore, it is necessary to build a horizontal coordinating partnership institution that is compatible with the participation of institutions such as the government, non-governmental organizations, universities, research centers, and banks/ cooperatives.

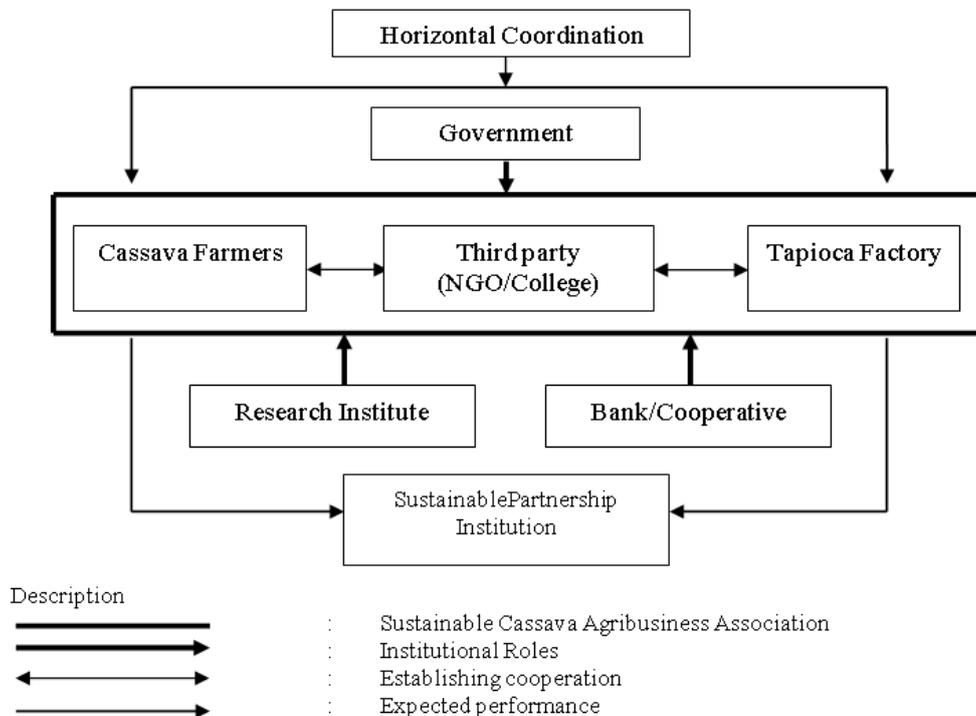


Figure 1. The partnership institution for cassava is in the form of horizontal coordination

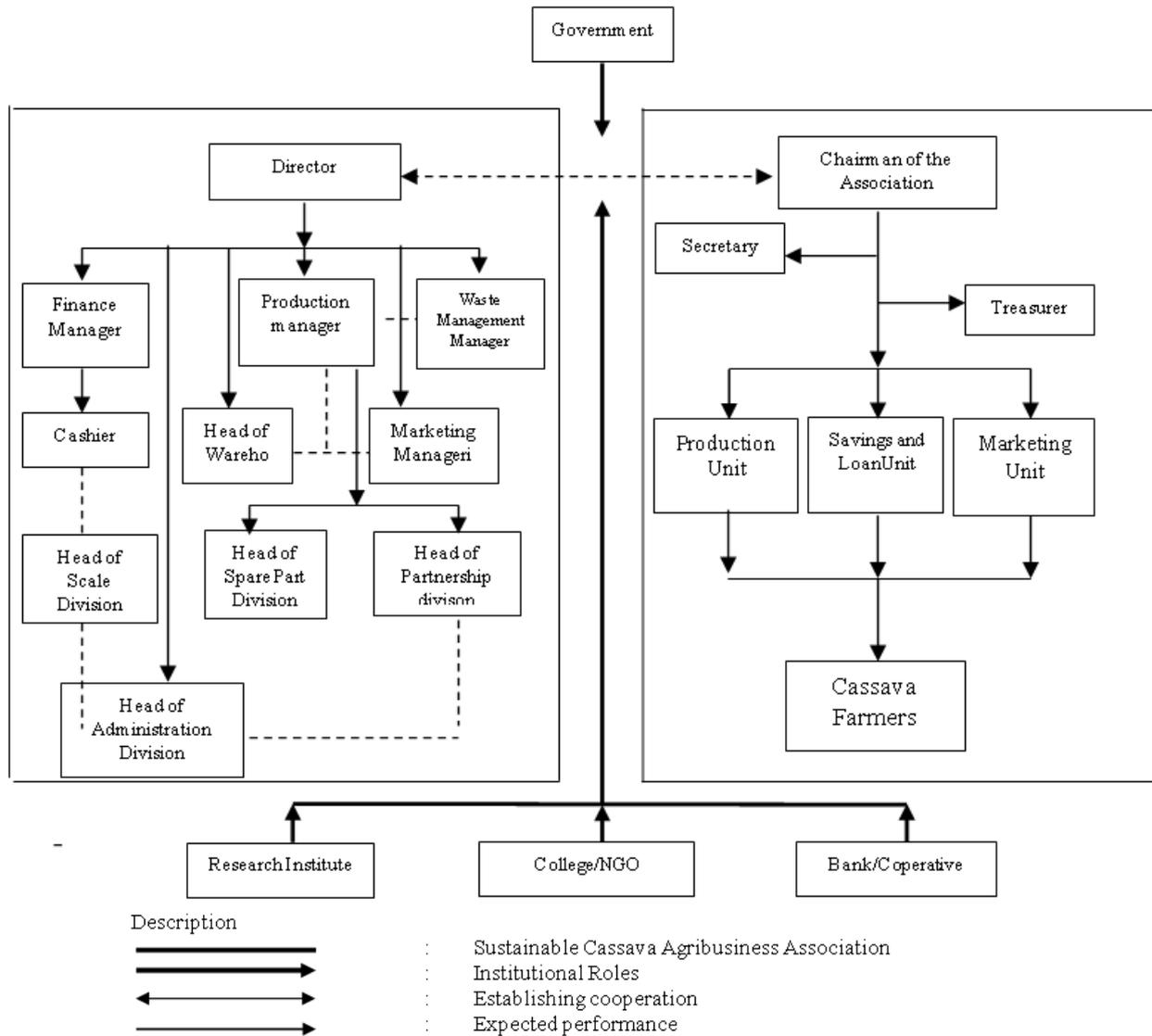


Figure 2. Institutional partnerships in PT.ABC's internal organizational structure with a horizontal coordination approach

3.3 Cassava Agribusiness Partnership Institution After Horizontal Coordination Approach in Lampung Province Changes in Jurisdictional Boundaries.

Cassava partnership institutional. There is a farmer association / farmer association so that farmers have a bargaining position to advocate, provide input, and make decisions. According to (Listyati, Wahyudi, & Hasibuan, 2014) farmer associations have a role in establishing partnerships with processing factories. However, the factory still has to make a profit, therefore the

partnership is protected by policies that are able to give a sense of fairness.

The timing of the transaction partnership. When the transaction partnership takes into account several things, namely soil fertility with intercropping, the price of cassava is decided together, and enforcement of regulations. According to (Zakaria, Endaryanto, Ibnu, & Marlina, 2019) the cassava partnership did not last long because both parties did not comply with the partnership agreement. Therefore, a partnership that is built to be sustainable must

comply with the partnership agreement. The best land capacity for planting cassava is 3 to 4 stages. Farmers and factories agree to form a cassava farming pattern. Farmers should form groups to arrange farming patterns (planting and harvest schedules) with the consideration of the factory in the distribution of group locations. In designing the planting and harvesting schedule for cassava, it takes 10 groups and each group consists of 100 people. The period 1 partnership agreement lasts for 3 phases or 31 months. In the partnership period 1, there were 24 harvest months. Post-harvest stage 3, the farmers do intercropping. After the intercropping is carried out, the period 2 cooperation is resumed.

Change of Property Right. In order to ensure the sustainability of the partnership agreement, a partnership legal entity is one of the mandatory requirements. Cooperation is very fragile if the partnership agreement is not a legal entity. According to (Aliyah, Rudy, & Wiryawan, 2019) the partnership agreement must clearly state and better understand all the legal consequences arising from the existence of a partnership agreement that is contrary to law. Regarding property right, the partnership regulates all matters related to the production of both cassava and tapioca which are regulated collectively. Cassava farmers cannot plant and harvest at will even though the land belongs to the farmer. Likewise with factories, factories cannot change the milling schedule unilaterally. Therefore, the cooperation agreement makes ownership rights over personal assets a right of use. According to (Nasty, 2021) the partnership is regulated in a written agreement (plasma nucleus agreement) that specifically describes the rights and obligations of the partnering parties and is made before a notary in order to have legal force for the partner.

Changes to the Rules of Representation.
Pricing and reactions. Price fixing and reactions are carried out jointly between factories and farmers under the supervision of the government to control prices. Price fixing considerations are the cost of producing cassava, the cost of producing tapioca, the cost of producing cassava, the parity price of cassava, and the market price

of tapioca. According to (Irawanti, Maryani, Effendi, Hakim, & Dwiprabowo, 2008) basic price determination is approached by calculating the market price, the price of arrears or stands and social or parity prices and (Zulkarnain, Zakaria, Haryono, & Murniati, 2020) pricing based on production costs and cost of goods manufactured. The consideration of the reaction, namely the age of harvest and aci content, this is in line with the research of (Kusmaria, Asmarantaka, & Harianto, 2017) who determined the ratio of harvest age and aci content.

The use of production inputs is in accordance with GAP standards. The use of inputs in cassava farming includes the use of seeds, fertilizers, labor, medicines, and others. In farming cultivation, farmers are guided by partner field assistants. Farmers must pay attention to the recommendation for the use of fertilizers from the Agricultural Research and Development Agency of the Ministry of Agriculture. The application of fertilizer is divided into 2 stages, namely (1) stage 1 is given urea fertilizer 100 kg/ha, KCL fertilizer 50 kg/ha, and manure 5-10 tons/ha at the time of making the mounds, (2) stage 2 is given 100 kg urea fertilizer/ha, TSP/SP36 fertilizer 100 kg/ha, KCL fertilizer 50 kg/ha after 1 month of planting. Apart from fertilizers, farmers must pay attention to good quality seeds with innovative techniques of dry resistant seeds. This is in line with the research of (Simamora & Luik, 2019) farmers must plant superior cassava seeds to increase production.

Partnership farmer farm capital loans. Farm capital loans for partner farmers are included in the agreement. The capital loan repayment system is entered into the agreement by cutting proceeds from sales directly from the factory. This aims to facilitate farmers in terms of repaying their loan capital. This is in line with research by (Syahza, 2003) that the rate of repayment of farmers' loans can be done by cutting directly the sale of agricultural products. The farm capital loan for partnership farmers is Rp. 7,050,000.00 with the following details: (1) piracy of Rp. 800,000.00, (2) purchase of seeds Rp. 750,000.00, (3) purchase of urea fertilizer Rp. 400,000.00, (4) purchase of NPK fertilizer Rp. 400,000.00, (5) the purchase of TSP

fertilizer Rp. 350,000.00, (6) the purchase of KCL fertilizer for Rp. 350,000.00, (7) manure buyer Rp. 1,200,000.00, (8) purchase of pesticides Rp. 300,000.00, and labor wages of Rp. 2,300,000.00 (Primary Data, 2019). In partnerships, with technical assistance and capital loans, the risk of production is reduced (Fanani, Anggraeni, & Syaikat, 2015).

Incentives for partnership farmers. Incentives for farmers who partner with factories are the net sales revenue sharing for cassava by-products such as onggok or drops. Incentives are an important factor for farmers because they motivate farmers to partner. Therefore, incentive points for farmers can be included in a partnership agreement that must be mutually agreed upon. According to (Zakaria, Endaryanto, Ibnu, & Marlina, 2019) partnerships that are effective, lasting and beneficial to farmers and factories, so there must be an agreement on the rules of the game in the form of incentives.

Procedure of decision making. The procedure of making decisions related to cooperation is regulated in a clear and detailed manner. The decision making is carried out jointly between farmers and factories. According to (Anwar, Purwanto, & Fitriyah, 2020) in carrying out partnerships, making decisions in work or solving problems prioritizes dialogue and deliberation.

Law enforcement changes. Law enforcement is a very important point. Law enforcement is not carried out optimally, causing losses to both parties. Sanctions should be stratified from minor to serious mistakes. In order to enforce the law in a fair manner, it is monitored by the government, and if problems arise, it can be forwarded to the competent judiciary. According to (Nugrohandhini, 2018) the partnership does not go according to plan and the absence of sanctions in the partnership which is one of the causes of the partnership is not sustainable. In addition, according to (Arsela, Roessali, & Mulyatno, 2021) the agreement contract contains the identity of the partnering parties and sanctions for violators.

3.4 Application of the Horizontal Coordination Approach to the Internal Organizational Structure of PT. ABC

Partnership institutions in the internal organizational structure with a horizontal coordination approach are able to guarantee the sustainability of farmers and factory. The institutional partnership on the internal organizational structure is presented in Figure 2.

Figure 2 shows that the cassava agribusiness partnership institution with a horizontal coordination approach in the agricultural sector is very important as an alternative to increasing farmers' income and encouraging rural resources to produce competitive products and guarantee the supply of raw materials for tapioca factories. In the internal organizational structure of PT. ABC there are parties who play a role in ensuring the sustainability of cassava agribusiness. The roles of transaction parties are presented in Table 1. (Attachment 1).

3.5 Simulation of Sustainable Cassava Agribusiness Partnership Institutional with Horizontal Coordination Approach on the Internal Organizational Structure of PT. ABC

Institutional indicators are used to achieve institutional partnerships for sustainable cassava agribusiness. The institutional form that collaborates to achieve the goals of farmers and factories is the sustainable cassava agribusiness association with a horizontal coordination approach. Simulations to achieve the institutional performance of sustainable cassava agribusiness partnerships are presented in Table 2. (Attachment 2).

Table 2 shows that a 10% change in harvested area is aimed at meeting factory capacity. The factory capacity is fulfilled after coordination is established, this can be used as a basis for determining government policies related to factory operational areas. Property right of farmers and factories become usage rights after partnering. The horizontal coordination approach should regulate both parties regarding factory capacity, selling price of cassava, loan capital, and sanctions. So that the goals of farmers and factories can be achieved, such as farmers' income increased by 47.82% - 60.49% and factory capacity 54.14%.

The selling price of cassava is a reference for farmers to sell their products. The condition of the selling price of cassava provides benefits for farmers so that the cassava production process continues. The expected price of cassava at the farmer level is Rp. 1,254.50. Therefore, the selling price of the cassava is a price for good performance. The price is entered into the agreement with a period of 3 stages. Every economic activity has transaction costs that cannot be avoided by business actors (Zulkarnain & Mangiring, 2017). The transaction cost of cassava agribusiness can be reduced by 27.57%, the transaction cost is suppressed by means of the sustainable cassava agribusiness association in horizontal coordination. This is the impact of the coordination and assistance process carried out by related parties within the institution.

Law enforcement is the sanction received by business actors, namely cassava farmers and tapioca factories. The application of sanctions aims to maintain the sustainable availability of cassava as an industrial raw material. Achieving these goals requires rules of the game which are set forth in the form of a cooperation agreement or contract. The contents of the agreement consist of the selling price and refraction of cassava, harvest age, loan capital, assistance, and quality of cassava. The agreement is mutually agreed upon which is carried out periodically by evaluating the results of the previous agreement.

The application of these institutional indicators can improve the farm performance of farmers and factories. Farmers' performance is seen from the production and income aspects. To produce good farm income, farmers need to apply GAP (Good Agriculture Practices). The implementation of GAP requires assistance from factories, government and research centers. Assistance from the factory aims to control the use of production inputs and the development of cassava so that the quality of the cassava that the factory gets is according to factory standards. Assistance from the government, in this case field extension workers, is to provide input information to farmers related to cultivation that can increase production. Then there is assistance from the research center which aims

to provide innovation in cultivation technology and create superior seeds. Cassava farmers have not received maximum income because the production obtained by farmers is still far from the GAP provisions. Cassava farmers apply GAP by using cassetart and Thai varieties so that cassava farmers can increase production by about 50% - 60%. Based on simulations using superior varieties, Cassetart varieties have a greater income compared to Thai varieties.

Factory performance is seen from the aspect of raw material absorption and selling price. Absorption of raw materials per day is still lacking around 80% -100%, this needs special attention by implementing institutional alternatives so that the shortage of raw materials can be met profitably to both parties (farmers and factories). The purchase price of cassava at the factory requires a more legal coordination by making an agreement that regulates the price and the range of reactions. The factory sets a minimum purchase price of around Rp. 1,232.70 with a maximum refraction of 18%. Refraction is one of the reasons why farmers decide where to sell their cassava. The percentage of refraction given must match the aci content contained in the cassava. The starch content test must be carried out by the farmer before selling it to the factory by using an aci level checking tool so that the farmer knows the estimated refraction. In the institutional process, regulating harvest time is the key to controlling aci levels. In current conditions, the average refraction is around 23% and can be reduced to 18% with harvest time settings. Therefore, institutional performance affects the cassava refraction.

Factory needs can be met through cooperation with 42 farmers per day (Primary data processed, 2019) which is carried out in horizontal coordination by applying a cropping pattern that has been mutually agreed in the agreement. The cropping pattern regulates the planting schedule and the cassava harvest schedule so that the plant's needs for cassava can be met. PT. ABC is located in Terusan Nunyai District, Central Lampung, which has a harvest area of 3,820 ha of cassava. Based on field observations, to meet the factory capacity, the factory only needed

a harvest area of around 1,015 ha so that in terms of land area, the tapioca factory problems could be resolved by committing to a horizontal coordination partnership.

5. Conclusion

The conclusion in this study is that the institutional sustainable agribusiness partnership is carried out in horizontal coordination between the cassava farmer and the tapioca factory which can control the transaction costs, the price of cassava, and the availability of cassava raw materials so as to increase the profits of cassava farming and tapioca factories by maximizing the role of the institution in the partnership. .

The role of partnership institutions that ensures the sustainability of cassava agribusiness, namely (1) government agencies play a role in making policies that regulate transactions of cassava plants and farmers in the form of factory operational areas, including (a) the boundaries of the factory operational area, (b) factory capacity, (c) number of factories, (d) operational permits and (e) sanctions; (2) universities / NGOs have the role of facilitating the creation of partnerships between farmers and factories. PT / LSM drafted an agreement by hearing input from farmers and mills; (3) the research center has the role of providing recommendations regarding farm cultivation technology and production technology for farmers and factories; and (4) financial institutions play a role in providing business capital loans to cassava farmers and tapioca factories.

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7. Appendix

Table 1. The institutional role of sustainable cassava agribusiness partnership in the structure internal organization of PT. A B C

No.	Institution	The Role of Institutions in Partnerships
1	Factory	<p>Carry out the tapioca production process in accordance with the Production Operational Standard (SOP) which is controlled by the quality assurance department of cassava.</p> <p>Entering into business agreements with farmers in the form of written cooperation and coordinating regularly. The agreement includes the price of cassava, cassava refaction, quality of cassava, harvesting age of cassava, use of production inputs, farming assistance, quantity of cassava, incentives and sanctions.</p>
2	Farmers	<p>Carry out a cassava farming process in accordance with Good Agriculture Practices (GAP) accompanied by the factory and the government (agricultural extension)</p> <p>Entering into a business agreement with the factory in the form of written cooperation and coordinating regularly. The agreement includes the price of cassava, cassava rafaction, quality of cassava, harvesting age of cassava, use of production inputs, farm assistance, quantity of cassava, incentives and sanctions.</p>
3	Government	<p>Making policies that regulate mill and farmer cassava transactions in the form of factory operational areas, covering (a) the factory operational area boundaries, (b) factory capacity, (c) number of factories, (d) operational permits and (e) sanctions</p> <p>Oversee the processing of cassava transactions between farmers and factories. The government conducts regular monitoring to ensure that the agreement goes well.</p>
4	College/NGO	<p>Become a facilitator in the creation of partnerships between farmers and factories. PT / LSM drafted an agreement by hearing input from farmers and factory.</p> <p>Conduct research for the use of the ubikyu plant so that it is sustainable.</p>
5	Research Institute	Provide recommendations regarding farm cultivation technology and production technology for farmers and factories
6	Bank/ cooperative (Financial institutions)	Providing business capital loans to cassava farmers and tapioca factories.

Table 2. Simulation of Institutional Performance of Sustainable Cassava Agribusiness Partnership In the Internal Organizational Structure of PT. ABC in Lampung Province

Description	Conditions Before Horizontal Coordination	Conditions After Horizontal Coordination	Δ %
Jurisdiction Boundary			
Harvest Area	12.180,00 ha/year	13.398,00 ha/year	10,00
Factory Capacity	596,00 ton/day	1.100,00 ton/day	54,15
Property Right			
Land	Freehold Title	Right to Use Together	Existed
Factory	Ownership Certificate & Business Use Rights	Right to Use Together	Existed
Rules of Representation			
The selling price of cassava at the farmer	Rp. 1.027,25	Rp. 1.232,70	10,00
The selling price of tapioca at the factory	Rp. 8.817,08	Rp. 10.139,64	15,00
Refaction	20% - 23%	18% - 20%	2% - 3%
Borrowed Capital	-	Rp. 7.050.000,00	0,00
Production			
➤ Cassesart varieties	23.677,03 ton/ha	38.000,00 ton/ha	60,49
➤ Thailandvarieties	23.677,03 ton/ha	35.000,00 ton/ha	47,82
Income			
➤ Cassesart varieties			
➤ Icome	Rp. 29.702.836,40	Rp. 47.671.000,00	60,49
➤ R/C	1,98	3,17	
➤ Thailandvarieties			
➤ Income	Rp. 29.702.836,40	Rp. 43.907.500,00	47,82
➤ R/C	1,98	2,92	
Transaction Cost	Rp. 752.419,20	Rp. 544.957,38	(27,57)
Law Enforcement			
Sanction	Not Maximum	Roles (Agreement)	Existed

Source: Primary and secondary data processed (2019)