THE STRENGTHENING OF REGIONAL COMPETITIVENESS THROUGH THE PARTNERSHIP MODEL OF FRESH WATER FISH FARMING IN MUARO JAMBI REGENCY

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Abstract

The pattern of the partnership is one solution to help the problems faced by farmers of catfish in the district of Kumpeh Ulu of Muaro Jambi regency. The catfish farmers have a broad enough market share, not only in the province of Jambi alone but has been extended to provinces Riau and South Sumatra. While catfish farmers have a market contraints. Subcontracting partnership pattern and the pattern of general trade partnerships, could not break the problem of catfish farmers, especially in meeting the needs of the market. The purpose of the study was to determine the existing condition of catfish farmers in the district of Ulu Kumpeh Muaro Jambi of Regency, and how to model a partnership as a reinforcement of the competitiveness of catfish farmers in the district of Ulu Kumpeh Muaro Jambi of Regency. The method used was a case study with descriptive research type. A sample of 50 respondents. How sampling was done purposive sampling. Technical analysis of data using descriptive analysis. The results show that the pattern of subcontracting partnership and general partnership pattern of trade has not been implemented in accordance UU No 20 in 2008 when a partnership is not profitable catfish farmers and government intervention not maximized as a coordinator, facilitator and supervisor (UU No 20 Tahun 2008 tentang Usaha Mikro, Kecil dan Menengah, 2008). Pattern of Partnership Plasma core is a partnership model that can improve the performance of farmers catfish, involving BUMDes (the core) to implement downstream fishery policy (marketing), and provider of capital, together with state-owned enterprises, and universities to transfer knowledge and transfer of technology, so that catfish of farmer (as plasma) competitiveness. The study results recommend to make a model of partnership pattern plasma core, Partner is BUMDes and catfish farmers (as plasma). The government increased its function as a facilitator, coordinator, and supervisor in partnership pattern plasma core

I. INTRODUCTION

One of the subsectors of agriculture sector is the fishery. It is a sub-sector that gives a promising business opportunity to increase fish farmer income. However, for the current fishery condition, it is experiencing a slow growth and is influenced by the production factor of the fish itself which starts to decrease, while the need for fish increases along with the increase of population. Cultivation of freshwater fish is one way to overcome the lack of marine fish production and offset the decline of marine fish productivity
caused by various factors. To overcome the decrease of marine fish production, Jambi Province cultivates freshwater fish, the development of freshwater fish production in Jambi Province can be seen in table 1.

**Table 1:** The Amount of Freshwater Fish Production in 2010 – 2014 in Jambi Province

| Year | Production Amount (Ton) | Production Development |
|------|-------------------------|------------------------|
|      | Pond Fish               | Cage Fish              |
| 2010 | 16.078,5                | 12.203,7               |
| 2011 | 20.325,6                | 12.282,0               |
| 2012 | 24.226,1                | 11.597,9               |
| 2013 | 32.290,4                | 11.778,7               |
| 2014 | 31.452,7                | 199,5                  |

(Source: BPS (2015))

The development of freshwater aquaculture total production from 2010 to 2013 has improved, but in 2014 it decreased. While the population is increasing, it is feared that freshwater fish aquaculture production, if continues to decrease, will be insufficient to meet the needs of the population. Muaro Jambi Regency is the largest freshwater fish producing district in Jambi Province, as seen in table 2.

**Table 2:** The Number of Fish Ponds in Jambi Province

| No | District / City       | Number of Pond + Cage (unit) | Amount of Fish (ton) |
|----|-----------------------|------------------------------|----------------------|
| 1. | Kerinci District      | 490                          | 3,547,39             |
| 2. | Merangin District     | 1066                         | 989,58               |
| 3. | Sarolangun District   | 443                          | 2,204,4              |
| 4. | Batanghari District   | 1500                         | 9,154,74             |
| 5. | Muaro Jambi District  | 6500                         | 24,521,9             |
| 6. | Tanjung Jabung Barat District | 450 | 1,359,5 |
| 7. | Tanjung Timur District| 115                          | 171                  |
| 8. | Bungo District        | 200                          | 695,79               |
| 9. | Tebo District         | 116                          | 680,14               |
| 10.| Sungai Penuh District | 1104                         | 211,4                |
| 11.| Jambi City            | 525                          | 2,258,88             |
| Total|                       | 12,509                      | 45,794,72            |

(Source: Fishery Agency of Jambi Province (data is processed in 2015))

Based on table 2 above, the largest number of freshwater fish is Muaro Jambi regency, especially the production of catfish in Kumpeh Ulu sub-district. But catfish farmers still have problems. The marketing of catfish aquaculture is still traditional, farmers sell fish directly to fish collectors. Then the collectors distribute to the fish traders in traditional markets, restaurants, and food traders. Prices of fish today are still expensive. The high fish price is due to the expensive fish feed. Capital becomes a problem in the development of catfish farming, government assistance in the form of credit through cooperatives and the banking sector still has not solved the solution for the development of catfish farming. The results of Imawan's research (2014) found that generally catfish farmers have limited capital. In addition to capital, the result of fish quality also affects the selling price, the fish that have stunted growth will affect the selling price, plus the factor of the estimated percentage of live fish from hatchery to the harvest. Marketing is a problem because fish farmers have limited market access.

The result of a research (Wiji Lestari, Rudi Hartadi, & Aryo Fajar S, 2014) found the same problem as this research where the gourami fish farmers in the village of semboro of semboro sub-district in Jember Regency in which the cultivation of gourami fish suffers from the problems of capital limitations, uncertain weather so that it is vulnerable to disease, price, and unsatisfactory government support.

Strengthening the competitiveness of catfish farmers through partnership to overcome the problems faced is one of the solutions and become a government program as contained in Law Number 20 of 2008 which outlines that together with local governments, businesses and communities facilitate, support, and stimulate partnership activities with mutual need, mutual trust, and strengthen and benefit each other (Article 25 paragraphs 1 and 2).

Law Number 20 reinforces the role of government in a partnership pattern, which is as coordination, facilitation, and supervision. In the Law Number 20, government roles have been set forth in Article 34 and Article 35. Article 34 explains that through the Minister of Cooperatives and MSMEs, can be established a coordinating agency of national and regional business partnership to monitor the implementation of partnership. Article 35 prohibits large businesses from having and/or controlling micro, small, and/or medium enterprises as partners in conducting partnership relationships. Thus, through the role of government, the concept of partnership is one of the solutions to solve marketing problems in the SME group with the principle of mutual benefit and mutual need between the seller (partnering) and the buyer (partner).

By adhering to the principle of mutual need and mutual benefit, partnerships can also provide solutions to social imbalances such as uneven employment opportunities and income inequality (Tira, 2012). A research result (Hasibuan, Pulungan, Binni, & Harahap, 2015) found that with the
application of farmer earnings partnership schemes is increasing if compared to before implementing partnership schemes. (A research by Ramli (2016) reinforces the opinion of (Tira, 2012).) The result of this study recommends that one strategy to improve the development of grouper fish aquaculture in Sitobondo is to build partnerships towards a more structured and systematic direction.

The temporary illustration of partnership that happens in catfish farmer in Kumpe Uluh Sub-district of Muaro Jambi District is that it has not done full partnership, most of the catfish farmers have not built mutually beneficial cooperation relationship, similar to partnership pattern that happens in grouper fish farming in Sitobondo Regency that is yet to applying the concept of partnership in a structured and systematic way (Ramli, 2016). The partnership is currently only limited to provide equipment and feed aid, but does not participate in raising or growing the business through coaching or marketing problems.

The sales of the catfish cultivation currently are through collectors and some are directly through traders. The cooperative system that occurs is that collectors a the financier provide assistance to catfish farmers in the form of feed assistance, and fish seeds, with the requirement that the fish harvest will be purchased by the collectors in accordance with the market price and the agreed upon fish weight.

The role of the government in increasing the ability of fish farmers is only seen through the field extension but in general it has not been able to make catfish farmers have the ability and skills in handling various business problems, such as the limited ability of management, the ability to find new markets due to lack of information, and the ability to create Extensive network related to marketing activities. Based on the results of the interim survey obtained through one of the collectors, there is a considerable market demand for catfish to be shipped out of provinces such as to Riau, but has constraints on the quantity and scale of the fish so it is unable to meet market demand. The search results found no integration and coordination between collectors and catfish farmers in Muaro Jambi district to meet market needs. While in fact, if integration occurs and is facilitated by the government, the need for market demand for catfish can be met.

Based on the phenomena that happened, this research aims to know the existing condition of freshwater fish farming in Jambi Province and determine the model of partnership pattern to strengthening the competitiveness of freshwater fish (catfish) aquaculture in Kumpe Ulu Sub-district of Muaro Jambi District.

In Law Number 20 of 2008 on Micro, Small and Medium Enterprises, Partnership implies a cooperative relationship between two or more synergistic and voluntary parties on the basis of mutual need, mutual strengthening, and mutual benefit.

According to Soemardjo, et al (2004), in the agribusiness system in Indonesia, there are 5 (five) forms of partnership between farmers and large entrepreneurs:

**A. Plasma-Core Partnership Pattern**

The plasma core partnerships are the relationship between farmers, farmer groups or partner group as the plasma with core companies. The core company provides land, production facilities, technical guidance, management, storage, processing, and marketing of products. While the partner group is in charge of meeting the needs of the core company in accordance with the agreed requirements. The advantages of the plasma core system include the creation of interdependence and mutual benefit. Small businesses as plasma get capital loans, technology, and management coaching, production facilities, processing and marketing results from partner companies. The core company obtains industry-standard raw material that is more secure and sustainable. The pattern of plasma-core partnerships will create an increase in business, where small businesses as plasma become more economical and efficient because of the guidance of the core company. The core companies capability and marketplace are increasing because it can develop commodities so that the production goods produced have the advantage and are more able to compete in the wider market, either national, regional, or international market. Furthermore, core-plasma partnership pattern can encourage economic development.

The development of core-plasma partnership encourages the growth of emerging new economic central. This condition leads to partnerships as a medium of equitable development and prevents social gap between regions. The weakness of this plasma system, among others, is that the plasma parties still do not really understand the rights and obligations so that the agreement that has been set is not running smoothly. The core companies’ commitment is still weak in fulfilling its functions and obligations in accordance with the agreement as expected by the plasma. There has been no partnership contract that guarantees the rights and obligations of plasma commodities so that sometimes the core entrepreneurs are toying with the price of plasma commodities.

**B. Sub-Contract Partnership Pattern**

The subcontract partnership pattern is a partnership pattern between a business partner company and a business partner group that produces the components required by the partner
company as part of its production. The excellence of subcontract partnership scheme. Sub-contract partnership is characterized by an agreement on joint contracts that include volume, price, quality, and time. Subcontract pattern is very beneficial for the creation of technology transfer; capital, skill and productivity, and the guarantee of product marketing in partner group. The weakness of the subcontract partnership pattern, among others, is that the longer subcontracting relationship tends to isolate the small producers leading to monopoly or monopsonies, especially in the supply of raw materials as well as in marketing. The sub-contract partnership scheme can also lead to reduced partnership values between both parties and strict product quality control, but not matched by an appropriate payment system.

C. Public Trade Partnership Pattern

The public trade partnership pattern is a business relationship in the marketing of products. The party involved in this pattern is the marketing party with the commodity supplier business group needed by the marketing party. Profits derived from price margins and product price warranties that are traded, as well as product quality in accordance with the agreement of the partnering parties. The excellence of public partnership schemes: Partner groups or farm cooperatives act as suppliers of needs required by partner companies. Meanwhile, partner companies market partner group products to consumers. The condition is beneficial to the partner group because it does not need to bother marketing the products to the hands of consumers.

The disadvantage of public trade partnership pattern, among others, is that the public trade partnership pattern of price and volume of its products are often determined unilaterally by partner entrepreneurs to the detriment of partner groups and the trading system is often found to be transformed into consignment form.

D. Agency Partnership Pattern

The agency partnership pattern is a partnership consisting of partner companies and partner groups or small entrepreneurs. The partner company gives special rights to the partner group to market the goods or services the company supplied by the partnering large entrepreneurs. Large/medium companies are responsible for the quality and volume of products (goods and services), while their small business partners are obliged to market their products or services. Among the partners, there is an agreement on targets to be achieved and a number of commissions received by those who market the product. The profits of small-scale enterprises (partner groups) of this partnership pattern are sourced from commissions by partner entrepreneurs in accordance with the agreement.

The advantage of agency partnership scheme is, among other things, this pattern enables to be implemented by small entrepreneurs who have a lack of capital because they usually use consignment-like systems. In contrast to the public trade pattern in which usually big companies that nod more profits and the partner groups must be strong in capital. The weakness of the agency partnership pattern, among others, is that small business partners set the price of products unilaterally so that the price becomes higher at the consumer level, small businesses often market the products of some business partners only so they are unable to read market segments and meet the target.

E. Agribusiness Operation Cooperation (KOJA) Partnership Pattern

The KOA partnership pattern is a business relationship run by a partner group with a partner company. The partner group provides land, facilities, and labor, while the partner companies provide the cost, capital, management, and procurement of production facilities to cultivate an agricultural commodity. The partner company also acts as the product market guarantor by increasing the value added of the product through processing and packaging. KOA has been done on plantation business, such as sugar cane plantation, tobacco, vegetable, and fish farming business. In KOA there is an agreement on the sharing of results and risks in the business of agricultural commodities being partnered.

The excellence of agribusiness operational cooperation partnership pattern: The benefit of this partnership is the same as the core-plasma system benefits. This agribusiness operational cooperation partnership pattern is mostly found in rural communities, between small-scale enterprises in villages and household enterprises in the form of profit sharing. The weaknesses in agribusiness operational cooperation partnership pattern, among others, is profit taking by partner companies handling the aspect of marketing and processing of product is too big so that it felt less fair by group of small business partner, partner company tend to monopsony so as to minimize profit obtained by small business partner and there is no third party that plays an effective role in solving the above problem.

Law Number 20 Year 2008 on Micro, Small and Medium Enterprises which then further described in Government Regulation Number 17 Year 2013 regarding the Implementation of Law Number 20 Year 2008, as regulated in Article 1, point 4 that: Partnership is a cooperation in business linkage, either directly or indirectly on the basis of the

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principle of mutual need, trust, strengthen and benefit that involve micro, small and medium business actors with big business. The law also states that the partnership includes empowering small businesses through the transfer of skills in the fields of production and processing, marketing, capital, human resources, and technology in accordance with the pattern of partnership. Business empowerment is also carried out by local governments by undertaking business development, partnerships, licensing, and coordination and control.

**THINKING FLOW FRAMEWORK**

Cultivation of freshwater fish is one solution to overcome the shortage of sea fish needs, given the level of production of sea fish that starts to decrease. In addition, freshwater fish cultivation can improve the welfare of fish farmers, it’s just that currently freshwater fish farmers are still faced with the problem of marketing and the high price of feed.

Partnership pattern is one strategy that can solve the problem of catfish farmers in Kumpeh Ulu Sub-district of Muaro Jambi District. Based on the concepts from the experts and previous research, the framework in this research is:

**PARTNERSHIP CYCLE**

**II. METHOD**

The method used in this research is survey research method, which is a research done to a population by using a sample. The type of this research is a descriptive qualitative with a quantitative approach, where descriptive research is done to obtain a description of an existing condition of the variables studied. The variable of this research is variable of the partnerships; the researcher makes some question referring to some model of partnership so that can be concluded the model of partnership that is occurring and as a basis for creating a model suitable for enhancing the competitiveness of freshwater fish farming.

Sampling method or sampling technique to determine the village and determine the number of catfish farmers is by Purposive Sampling, in which the sample is carefully chosen and sample selection criteria are in accordance with the provisions so that it becomes relevant to the research. The number of samples, according to Singarimbun (2011) which stated that the smallest sample is ≤ 30. Based on the minimum sample requirement, this research only examines 50 catfish farmers in 4 (four) villages selected based on the villages that produce a lot of catfish production.

**The role of Government in partnership as:**

1. Coordination
2. Facilitation
3. Supervision

**Image 1:** Partnership Pattern of Freshwater Fish Aquaculture in Muaro Jambi District
This will answer the question of a closed and open questionnaire. Data collection technique is conducted by structured interviews, unstructured interviews, observation, and documentation study. Data analysis is conducted with descriptive analysis to describe the condition of the respondent and the determination of partnership model is formed based on the obstacles found in the cultivation of catfish especially the difficulty in marketing the product. These obstacles are analyzed in depth, so as to find a suitable solution to form a partnership model based on the potentials of the catfish farmers from both the external environment and from the internal environment, which is harmonized with the rules set by the government.

### III. RESULT AND DISCUSSION

#### A. Existing Condition of Catfish Farmers in Muaro Jambi District

The research process is conducted in Muaro Jambi District in Kumpeh uluh subdistrict, consisting of some sub-villages or villages such as lopak alai village, pusak village, karang urban village, and tarikan village. Catfish aquaculture in Kumpeh ulu Subdistrict Muaro Jambi District uses ponds. For further, can be explained the existing condition of the freshwater fish farmers.

A partnership program is a form of strengthening to boost economic growth through increasing the income of freshwater fish farmers, currently cultivating catfish farmers in Kumple subdistrict based on the answers of questionnaires are found around 22 percent implementing subcontract partnership pattern and about 78 percent uses trade partnership pattern. Some catfish breeding problems in the way of cooperation with the buyers/fish buyers who act as the partner, where among the partners do not get the same benefits, one party profits and the other party detriments. This is what needs to be re-evaluated, and rebuild the partnership pattern in accordance with the concept of a mutually beneficial partnership of the partners. The following illustrates the condition of catfish cultivators in Kumpel Ulu Subdistrict of Muaro Jambi District, where the partnership pattern has not led to the concept of real partnership.

Based on table 3, the pattern of partnership on aquaculture fish farmers has not implemented the concept of true partnership, in the concept of partnership now the farmers already feel advantaged, but still have obstacles in the effort, although the current partners are not from organizations or institutions but from individuals who are able to give Farmer assistance in the form of equipment and feed (it is the form of sub-contract partnership pattern), i.e. there is an agreement between the partner and the partnered party to recognize price, volume, quality (fish quantity), and time.

Furthermore, aquaculture fish farmers in Kumpeh Ulu Subdistrict also leads to the pattern of trade partnership. Marketing is done through the sword of the collector (middleman). The type of partnership pattern in aquaculture fish farmers in Kumpeh ulu subdistrict is around 22 percent subcontract partnership pattern and 78 percent of trade partnership pattern, but they are still unable to solve the problems faced by catfish farmers, in which the problems faced by farmers can be described in the

| PARTNERSHIP PATTERN | IMPLEMENTATION |
|----------------------|---------------|
| The existence of the partnership agreement will accommodate the harvest in accordance with the agreed agreement | Implement 100% |
| The type and weight of the fish is determined by partners | Implement 100% |
| Partners provide capital assistance and equipment | Implement 22% in the form of tools and feed, 78% do not get assistance |
| Partners provide fund assistance | Not implemented (only aid in the form of equipment and feed) |
| Fish Pricing | 91% of fish price is determined by mutual agreement, about 9% of fish price is determined by buyer |
| The existence of agreement on the amount and number of fish that will be purchased by the partners | Implement 67%, about 33% do not implement because the fish price is only determined by buyers |
| The existence of the standard of specified fish number | 54% is fulfilled according to standard, 46% is not fulfilled |
| Cooperation in the form of contract system of work between the partners and partnership | Implement 22%, do not implement 78% |

Source: Respondents (data is processed in 2016)
Table 4: Table of Problems or Obstacles for Catfish Farmers in Kumpele Ulu Subdistrict of Muaro Jambi District

| Problems or Obstacles for Freshwater Fish Farmers | Number of Respondents Complaints | Percentage |
|--------------------------------------------------|---------------------------------|------------|
| Capital problem                                  | 45                              | 90%        |
| Feed problem                                     | 4                               | 8%         |
| Market problem                                   | 5                               | 10%        |
| Fish Disease problem                             | 13                              | 30%        |
| Material                                         | 8                               | 16%        |

Source: Respondents (data processed)

Table 4 above illustrates some of the problems of freshwater fish farmers, the problem that is almost perceived by all freshwater fish farmers among others:

1) **Capital Problem**

The capital problem, in which about 90% of catfish farmers have problems about capital. The average aquaculture catfish farmers get very little capital assistance from financial institutions, both banking and non-banking. The reason for the difficulty to get a loan is they are unable to meet the requirements as a creditor, that is fulfilling the collateral. This is evident from the results of research by Harash, Al-Tamimi, Alsaadi (2008) on which finance affect company performance, has been a controversial issue in accounting and finance. This study was undertaken to highlight the issues facing small and medium enterprises (SMEs) which find that entrepreneurs cannot receive financing from financial institutions, in this case, banking, due to the inability to give collateral. Another problem encountered is that aquaculture fish farmers in running their business are unable to make good accounting as required by banks, most have not made a financial separation between personal and business finance (Pusat Kebijakan Perdagangan Dalam Negeri, 2013) so that the development of capital is not visible.

2) **Feed Problem**

Nowadays the feed used by catfish farmers is commercial and self-made feed. Catfish farmers have problems with the high price of commercial feed, which has an impact on the high operational costs. When the market price is unstable, it will affect the farmers' productivity. While raw materials for making traditional feed can still be obtained easily, but catfish farmers do not have the capital to buy traditional feeding machine.

3) **Market Problem**

The current partnership pattern for catfish farmers from subcontract partnership pattern is still able to fulfill market requirement because of the help of feed from the partners, but for the trade partnership pattern, sometimes it is unable to fulfill the market requirement because the collecting merchants want the fish to weigh at least 8 ounces. The weight of 8 ounces can be harvested between 7 to 8 months. While most farmers are unable to meet the needs of feed before the 7th month. Finally, the price of fish sold does not comply with the mutual agreement and is bought at a low price.

4) **Fish Disease Problem**

Furthermore, the problems faced by farmers and the impact on the production of fish is the problem of fish diseases, about 26 percent of catfish farmers complain about fish diseases, where fish suddenly suffer from bulging disease and immediately die in large quantities. It brings harm to the freshwater fish breeders. Currently, it is signaled that the death of fish is due to unfavorable water pH, and this is often the case in the dry season because water change is rarely done. Meanwhile, what is done by catfish farmers when there are a lot of fish die, they then change the water.

The process of transfer of knowledge and transfer of technology in the pattern of sub-contract partnership is not done, the role of the government is not so intense through agricultural extension. The role of government in controlling fish diseases is expected, the government should go through universities to do research on how to control fish diseases. Thus the transfer of technology and transfer of knowledge can be perceived by farmers of aquaculture fish. Umar (2008) states that the progress of rapid technological developments, both in the field of business and in areas that support business activities, greatly affect the business state of a company. In order for each business activity to continue running continuously, the company must always follow the technological developments that can be applied to products and services produced or in the way of operation. Thus technological progress can overcome the problems of fish diseases.

5) **Material Problem**

To anticipate the high cost of commercial feed, the solution obtained is to make self-made feed (organic feed), the problem is freshwater fish
B. Partnership Model of Strengthening Competitiveness of the Cultivation of Catfish in Kumpeh Ulu Subdistrict Muaro Jambi District.

The partnership pattern of freshwater fish farmers in Kumpeh Ulu Subdistrict is currently at 22 percent leading to a subcontract partnership pattern and 78 percent of public trade partnership. The concept of subcontract partnership scheme has not been implemented in accordance with the concept of real partnership and still has constraints, the agreement between the partners (buyers) and the partnered party (catfish farmers) has not led to mutually beneficial cooperation, the agreement built is only beneficial to one side. The (buyer) partners have not been oriented and interfered in maintaining product quality. Product quality is the full responsibility of catfish farmers. Because of the role of government, in this case, is necessary to bridge between the partners and the partnered party so that the benefits are not perceived only by the partner but also felt by the partnered party (catfish farmers).

The pattern of public trade partnership is about 78 percent, there is a cooperation in the form of a marketing agreement. The parties involved in this pattern is the marketing party (partner) with the freshwater fish farmers as a supplier of commodities required by the marketing party. The profits are derived from price margins and product price warranties that are traded as well as product quality is in accordance with the agreement of the partnering parties. The excellence in public trade partnership scheme: Partner groups or farm cooperatives act as suppliers of needs required by partner companies. The pattern of trade partnerships benefits the catfish farmers because they do not have to bother to market their products to consumers. The weakness in the pattern of public trade partnerships, in practice, is that the price and volume of their products are often determined unilaterally by partner entrepreneurs to the detriment of the partner group. And trading system is often found turning into consignment forms (Sumarjo, et al 2004).

The model of sub-contract partnership and public trade partnership is now more dominated by the partners, in this case not in the form of company or agency but individual, in the implementation of cooperation there is no intervention from government in the form of coordination, facilitation, and supervision as stated in Law Number 20. The partnership requires the quality of the products (fish) but does not build the ability of fish farmers in increasing fish productivity, such as improving the ability of farmers through training and transfer knowledge and transfer of technology to minimize the barriers in increasing freshwater fish farming production.

The pattern of subcontract partnership and public trade partnership in Kumpeh Ulu Subdistrict of Muaro Jambi District is very helpful for the farmers in the downstream product because the farmers do not bother with marketing, what needs to be thought and guarded by freshwater fish farmers is the problem of fish quality in accordance with the agreement. The current constraint is that the partners only demand the quality of products according to the mutual agreement, but do not think about how the quality of the fish can be obtained.

Given the market opportunities for catfish farmers have a large market share, not only in Jambi province itself but has expanded into the province of Riau and South Sumatra. Therefore, it is necessary to improve the partnership model to refer to Law Number 20 Year 2008, involving the role of government as coordinator, facilitator and supervisor, so that the cooperation will benefit the buyer and the partner (freshwater fish farmers).

Findings on catfish farmers in Kumpeh Ulu Subdistrict of Muaro Jambi District, for the pattern of subcontract partnerships, the partners are non-corporate and instead are individuals who have the capital to provide equipment and feed aid with the provisions that the farmers must sell the harvest to the partners. However, the assistance provided is not maximal so that the farmers suffer from a lack of capital to fulfill the desire of the buyer. Meanwhile, the public trade partnership pattern does not provide assistance; it is only for marketing, harvesting the products to be marketed to the merchant, either the subcontract partnership pattern or the public trade partnership pattern does not pay attention to the complaints of freshwater fish farmers, in terms of capital requirements, quality improvement of production, and there is no transfer of knowledge and transfer of technology.

Therefore, formed a Village Owned Enterprises (BUMDes). The purpose of establishing BUMDes is to encourage or accommodate all activities in increasing the income of the community as well as the economic activities that are handed over to be managed by the community itself with the assistance given by the village head as a shade in building the business (Agusliansyah, 2016). BUMDES consists of a group of people who have capital in cooperation with the village apparatus to form a profit-oriented BUMDes through improving the performance of catfish farmers so that with the existence of BUMDES is able to answer all complaints of catfish farmers regarding capital, feed, fish diseases, and market problems. The designed partnership model is a core-plasma partnership model. (Budiarsana & Hidayat, 2012) modeled the partnership
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pattern of Core Plasma at the Local Chicken Farm Business, and succeeded in increasing the income of the local chicken. Supported by the results of research by Reni, Nesa and Made (without years), it explains the pattern of core plasma partnerships, it will serve as a model of shrimp farming pond by the government in this case conducted by the CTF then gives the authority to the local government namely the Department of Marine and Fisheries in several districts In South Sulawesi (Takalar, Pinrang, Maros, Pangkep). Sukardi et al (2006) explain that the core plasma partnership pattern has been successfully applied to the shrimp farmers, where the company as the core has carried out the responsibility of fostering plasma’s rights (shrimp farmer group) well, but for the government role in doing the puncture is not yet effective. Furthermore, the supporting research is a research by Oktivira, Anantanyu and Riptanti (2014) which explains that the pattern of plasma core partnership done in dairy farmers in Boyolali district can improve the performance of dairy farmers.

In the core plasma partnership scheme recommended, BUMDes acts as the core of the downstream of the crop (marketing), and the provider of capital, together with state-owned enterprises and colleges, and conduct transfers of knowledge and technology, so that the catfish farmers (as plasma) have competitiveness. Core plasma pattern involves the government as coordination, facilitation, and supervision in accordance with the law. Number 20 of 2008 on partnership. Furthermore, plasma core partnership model can be seen in figure 2.

The model of core plasma partnership, BUMDes as core and catfish farmer as plasma. The role of BUMDes provides capital to catfish farmers, provision of facilities and infrastructure. To that end, the district government of Muaro Jambi, together with the stakeholders (BUMDes) increase the competitiveness of catfish farmers. The integration of the defined model can be described as follows:

1) The Role of Village-Owned Enterprise (BUMDES)
   - Make a collective agreement between BUMDes as the core with catfish farmers as plasma known by the Village Head and endorsed by District Head.
   - As a provider of capital, facilities, and infrastructure, transfer of knowledge and transfer of technology in the form of training.
   - Categorize activities, i.e. carry out marketing activities, transfer of knowledge and transfer of technology to catfish farmers.
   - BUMDes reinforces capital using the Rural Expenditure Budget (APBDes), and borrows from Banks, or other financial institutions to meet the capital requirements of catfish farmers, and

![Image 2. Model of Core Plasma Partnership Pattern of Catfish Aquaculture](image-url)
• BUMDES as plasma to accommodate all the production of catfish farmers. As marketers, BUMDes in cooperation with the government build and find new markets.

2) The Role of Catfish Farmers
• Produce quality and quantity of catfish cultivation in accordance with the agreement that has been established with BUMDes
• Performing obligations as the partner (as core) in accordance with the mutual agreement.

3) The role of Government
• Creating a conducive business climate
• Provide counseling and training in cooperation with BUMDes to improve the competence of catfish farmers
• Cooperate with universities to create the technology needed to improve the productivity of catfish cultivation
• In cooperation with BUMDes in providing facilities assistance in the form of equipment needed by catfish farmers
• Carry out supervisory functions, by creating legal partnership laws that protect catfish farmers as plasma, BUMDes as the core.
• Provide capital assistance from both local government and central and state-owned enterprise.

IV. Conclusion
Partnership pattern on catfish farmers in Kumpeh Ulu Subdistrict of Muaro Jambi District has not run optimally according to the concept of partnership, about 22 percent leads to subcontract partnership pattern and 78 percent leads to public trade partnership pattern. These types of subcontract partnership pattern and public trade partnership pattern on Catfish culture farmers in Kumpeh Uluh sub-district have not run in accordance with the concept of partnership, aquaculture catfish farmers still have problems such as capital problems, feed problems, fish disease problems, raw material problems, and market problems. The Plasma Core Partnership Pattern is a model of partnership recommended for improving the performance of catfish farmers, involving BUMDES (as the core) of down-harvesting (marketing), and providers of capital, together with state-owned enterprises and colleges to transfer the knowledge and technology, so catfish farmers (as plasma) have competitiveness.

To overcome the problems of catfish farmers in Muaro Jambi District regarding capital, feed, fish diseases, and marketing problems, Muaro Jambi Subdistrict Government should build a pattern of partnership towards a more structured and systematic direction. The government through the Agency of Fisheries and Marine should form a core plasma partnership model involving BUMDes as the partner (core), catfish farmers as the partnered party (as plasma). Muaro Jambi Subdistrict Government must be more intensive to run its function as coordinator, facilitator, and supervisor on the success of the proposed plasma core model pattern to solve the problem of catfish farmers.

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