

The Model of Institutional Synergy Empowerment in Fish Cultivators in Tanjung Jabung Timur District

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Abstract

The low income of fishers can be affected by natural conditions such as sea waves and rain. In this condition, the economic capacity of fishers is feeble. Fish cultivations can provide solutions so that fishers can still have an income. The fact is that the fisher's ability is not yet supporting to carry out fish cultivation. A synergy between institutions is needed to improve fisher's ability. This study aims to see a picture of fish cultivators and build an empowerment model for institutional synergy in fish cultivators. A quantitative descriptive research method. The sampling technique was purposive sampling, with a total of 92 fish cultivators as respondents: descriptive data analysis and focus group discussion. The study results describe fish cultivation in East Tanjung Jabung, for now, is only a side job. Fish cultivators still experience fish cultivation problems, including fish diseases, feed prices, capital, fluctuating prices, and abnormal fish growth. Marketing patterns still depend on intermediaries and have not been able to find their markets. The results of the analysis an institutional synergy empowerment model was built by mapping each institution's responsibilities by coordinating and communicating with each other to improve the capabilities of fish cultivators in dealing with problems.

Keywords

Empowerment, Synergy, Institutional, Fish Cultivators.

1. Introduction

East Tanjung Jabung Regency in Jambi Province is a coastal area. Generally, the livelihood of residents in coastal areas is as fishers. The lives of fishers in coastal areas are very worrying; they are still at the poverty line due to the difficulty of getting fish due to climatic factors (Kurnia Novianti, Henny Warsilah, 2016; Mussadun & Nurpratiwi, 2016). The coastal areas' climate condition is influenced by rain and sea waves, which causes changes in fishers' income (Azizi et al., 2017; Pangalila, 2010). Rain and large sea waves make it difficult for fishers to catch fish, so there is a decrease in catch value (Marfirani & Adiatma, 2012; Patriana & Satria, 2015). There was also damage to fishing gear, so fishers had to spend more capital on repairing or buying new equipment.

The dependence of fishers' income, who only rely on fishing, illustrates how few other opportunities are likely for fishers to spread their wings to other business types. When there is a large sea wave, fishers are usually faced with a dry season because they cannot catch fish for a while. For that, fishers must have another source of income. Coastal areas provide fish cultivation opportunities so that fishers do not have to depend on marine products entirely. Fishers do not need to worry about losing their income because fish cultivation can provide a good income for fishers. Several fishers have been doing fish cultivation in East Tanjung Jabung, but it has not provided maximum results yet, even though geographic conditions and government involvement have supported fish cultivation. The problem is that the fishers are still half-heartedly doing fish cultivation, so that cultivation has not provided maximum results for fishers. Another problem faced by cultivators is when the yield is high, fishers are faced with difficulties in selling (Budhathoki & Sapkota, 2018)

Cultivation can provide additional sources of income and reduce poverty levels (Al-Amin et al., 2012). It is proven by research (Nzeve et al., 2018) that fish cultivation can support the lives of fishers, fish cultivation has a significant contribution to the welfare of fish cultivator households in Central Cub-County Kitui. Fish cultivation can also create jobs by empowering people around the cultivators, such as housewives and other underprivileged groups who do not have jobs to make processed foods such as fish smoking (Hino, 2011; Raodah, 2013;

Nainggolan and Ginting, 2018). Other research results also prove that fishers who cultivate grouper fish in floating net cages can increase fishers's income and provide opportunities for diversification of agricultural businesses (Bian, 2010).

East Tanjung Jabung has the opportunity for fishers to cultivate fish by constructing pool, ponds, and floating net cages. However, until now, the development of fish cultivation production in East Tanjung Jabung is minimal, and the increase in the growth of capture fisheries production is minimal. See Table 1.

Table 1. Development of Capture Fisheries and Cultivation Production in East Tanjung Jabung Regency

Year	Capture Fisheries	Growth	Fish pool cultivation	Fish pond cultivation	Floating net cages cultivation	Fish Cultivation	Growth
2015	26.680,5	0	104,40	107,50	108,30	302,2	0
2016	23.810,54	(10,77)	142,70	140,90	60,40	344	13,8
2017	23.839,8	0,12	67,50	67,25	60,40	195,15	(42,17)
2018	23 890	0,22	382	288	-	670	70,87
2019	21 271	(10,96)	1 072	204	15	1.291	92,68
Jumlah	119.491,84		1.768,6	807,65	244,1	2.820,35	

Source: East Tanjung Jabung Regency Fisheries Agency

The development of capture fisheries production has fluctuated. There was a decline in 2016 of 10.77%. Furthermore, in 2017, there was a tiny change in the increase of around 0.12%. 2018 experienced an increase of around 0.22%, but in 2019 it decreased again by 10.96%.

The development of fish cultivation has increased significantly. Fishers in East Tanjung Jabung are still faced with fish farming problems, and not all fishers have done fish cultivation as an additional income when they are faced with natural conditions that do not allow them to go to sea. Marketing problems are still an obstacle for fish cultivation. The selling price of fish that fishers get is also low compared to market prices.

The fishers' success in conducting fish farming depends on the desire and knowledge level that the fishers have to carry out the cultivation process and infrastructure support from the government. Education dramatically affects the success of fishers in conducting fish cultivation. The national socio-economic survey results (2013) state that 70% of fishers have primary school education below, and only 1.3% have tertiary education.

The success of fish cultivation must be followed by good cultivator knowledge about how to do fish cultivation. Technology orientation is a concern for fish cultivators. The ability of the fish cultivators to use technology still needs to be improved. In general, cultivators' ability to use technology is minimal (Anam et al., 2019) due to limited knowledge, capital, and access to technology, so the cultivation business is still not optimal and has low productivity (Kementrian PPN, 2014). Mastery of technology can increase fish production and is an essential factor affecting business development (Sriyana, 2010).

The problems faced by several groups of fishers in East Tanjung Jabung are capital, high prices for fish feed, fish diseases, problems with pond conditions, and the inability to find a suitable market. Not to mention, the selling price is lower than the market price, and the fisher's inability to find a stable market to receive sustainable crops. Fishers are faced with an inability to overcome some of these problems and impact their cultivation's sustainability. Support from the Tanjung Jabung Timur government is needed to increase fish farming production through empowerment programs. The concept of empowerment must be clear, systematic by involving all stakeholders to answer cultivators' problems (Kusnadi, 2015: 10). The goal of empowerment is to develop and improve cultivators' ability (Bancin, 2011; Rafsanjani, 2013) and finally to improve the welfare of cultivators (Susan, 2016).

Fish cultivators are a group of Small and Micro Enterprises (UKM) that have technical problems and experience social problems and marketing channels. Efforts to improve cultivators' ability through empowerment programs should not only be under the responsibility of the Fisheries and Maritime Affairs Office. There is a need for

synergy between institutions, namely the Department of Cooperatives and SMEs (UKM), the Department of Industry and Trade, to strengthen Small and Micro Enterprises through an integrated empowerment program that is not carried out partially. Fisher's poverty will not be handled institutionally by the Fisheries and Maritime Affairs Office alone, but all related parties are needed to solve the problem so that the policies made can be comprehensive and not partial.

(Rahman et al., 2016) proved that partially handling by each institution is still experiencing problems for fish cultivators. The research found that even though the Bangladesh government has provided credit with good management, fish cultivators still experience problems with the price of feed, inadequate water, and diseases, and fish theft. Supported by (Mahfud, 2015) the constraints faced in the development of the Minapolitan area in the Blitar Regency are due to the lack of synergy between the relevant stakeholders (SKPD) so that they still have different commitments and understandings with their respective ego-sectors. Research (Abrahamsz et al., 2018) found ego-sectoral in fisheries management because each institution has a different plan and no integration of programs or activities.

Researchers argue that institutions need to build synergy by emphasizing coordination and communication to equalize perceptions to realize the same vision through an integrated, systematic, and directed approach. (van Hoof et al., 2012) stated that an integrated approach involving each sector allows policy identification and implementation systematically, synergistically, and efficiently. Synergy can produce better, more immense output and can be understood as a combined operation or combination of elements to produce better output (Najiyati & Rahmat, 2011). Based on the problems encountered, the purpose of this study was to determine the description of fish cultivators in East Tanjung Jabung and to find an empowerment model for institutional synergy to improve the performance of fish cultivators in East Tanjung Jabung.

2. Methodology

This study uses primary data by distributing questionnaires to fish cultivators and conducting a Focus Group Discussions attended by the Department of Fisheries and Marine Affairs, the Department of Cooperatives and SMEs, and the Department of Industry and Trade. Secondary data are in the form of documents and literature studies related to this research. Determination of the sample by purposive sampling, namely selecting samples according to the criteria determined by the study based on considerations of limited time, energy, and funds, making them cannot take large and distant samples. Also, purposive sampling was carried out on purpose with a note that the sample must represent the population to be studied, so the sample for the region was East Sabak and Kuala Jambi districts, with a sample of 92 fish cultivators. Data collection was carried out through structured, unstructured interviews, observation, and document study.

Quantitative descriptive data analysis was used to obtain a general description of the fish cultivator's description, so that information about fish cultivator problems would be sought to find a solution by forming a model to solve fish cultivator problems. To determine the model, conduct an in-depth analysis of the constraints found among fish cultivators, especially their difficulties in improving the quality of fish production, capital, and marketing the product. Then a Focus Group Discussion was carried out with the Department of Fisheries and Marine Affairs, the Office of Cooperatives and SMEs, and the Office of Industry and Trade to find suitable solutions to form a model for empowering institutional synergies in fish cultivators in East Tanjung Jabung based on the potential that exists in fish cultivators. Both originate from the external environment and the internal environment, which are aligned with the government's rules.

3. Result and Discussion

3.1. Overview of Fish Cultivators in East Tanjung Jabung

The education level of fish cultivators is Public Middle School, as much as 42%. There are still those who have a junior high school education level of 25% and primary school as much as 30%, while those who have a bachelor's degree only 3%.

The types of cultivated fish are catfish, tilapia, patin, milkfish, carp, and shrimp. Respondents who cultivated catfish were 47 cultivators, 29 tilapia cultivators, six patin cultivators, two carp cultivators, nine milkfish

cultivators. The average fish cultivator conducting his own cultivation with harvesting income can be seen in table 2.

Table 2. Fish cultivator total income

Total income per harvest	Cultivator Total	Percentage
≤ 1.000.000	8	9 %
> 2.000.000-3.000.000	61	67 %
> 3.000.000 – 4.000.000	14	15 %
> 4.000.000 – 5.000.000	4	4 %
> 5.000.000	5	5 %
Total	92	100 %

Source: Respondent (processed data)

Cultivators' income in Table 1 above for harvesting is the highest above Rp. 5,000,000 as many as five people and the smallest under 1,000,000 as many as eight people. If seen from the length of the harvest period between 4 - 6 months, the monthly average income of more than 5 million produces an average monthly between Rp. 1,000,000 - Rp. 2,000,000. while the maximum harvest income is around Rp. 3,000,000 - Rp. 4,000,000 means that they are only able to produce around Rp. 700,000 - Rp. 1,000,000. This amount is still considered unable to meet daily needs if the farmers' income during natural conditions does not support going to sea or is faced with a dry season. The small income received makes the cultivators stated that around 76% of the cultivators' income was not guaranteed for their survival, 2% stated that it did not guarantee their life's survival. Still, there were about 22% stated that they could guarantee the survival of the cultivators.

The small income received is because the cultivators are still not maximal and focused on raising fish, supported by constraints in conducting fish farming. The seriousness of cultivators in achieving cultivation will have an impact on the level of income. It can be seen that the difference in income can be seen from the size of the pond and the type of fish cultivated in table 3.

Table 3. The amount of income seen from the type of cultivated fish and the size of the pond

Type of Fish	Size of Pond	Income
Catfish	< 100 M ²	Rp. 1.000.000 – Rp. 2.000.000
Catfish	< 100 M ²	Rp. 3.000.000 – 3.500.000
Tilapia	< 100 M ²	Rp. 1.000.000 – Rp. 2.000.000
Tilapia	< 100 M ²	Rp..5.000.000
Carp Fish	< 100 M ²	Rp. 2.000.000
Milkfish	100 M ²	Rp. 2.000.000
Patin	< 100 M ²	Rp. 1.000.000
Patin	> 100M ² - 500 M ²	Rp. 3.000.000 – Rp.5.000.000

Source: Respondent (processed data, 2019)

Table 3 explains that there are stages between cultivators with the same pond area and the same type of cultivated fish. Catfish cultivators' stages have a pond <100 M², and tilapia cultivators having a pond <100 M². This difference illustrates the existence of different treatments, often cultivation, among which is the cultivator overcoming disturbances, such as fish stricken with disease, abnormal (slow) fish growth, lack of capital, high feed prices, capital greater than income, and technological support.

3.2. Constraints on Fish Cultivators

The following are respondents' statements regarding some of the obstacles to fish cultivation.:

Table 4. Constraints on fish cultivators in East Tanjung Jabung

Types of Constraints	Frequency	Statements	Approval Level		
		Agree	Quite Agree	Disagree	Percentage
Fish disease	F	45	23	24	74%
	%	49	25	26	
High feed prices	F	76	13	0	92%
	%	83	17	0	
Abnormal fish growth	F	37	20	35	67%
	%	40	22	38	
Marketing constraints	F	46	43	3	82%
	%	50	47	3	
Capital constraints	F	42	17	33	70%
	%	46	18	36	
Have not mastered good cultivation techniques	F	49	18	25	74%
	%	53	20	27	

Source: Respondent (processed data, 2019)

Table 4 explains that fish cultivators in East Tanjung Jabung still have obstacles, including 74% of respondents who stated fish diseases problems. The problem of disease causes the yield to be small so that the production cannot cover the production cost, and in the end, there is a loss. Also, the cause of high production costs is the high price of feed. The high price of feed significantly affects the fish's slow growth because the composition of the fish cultivators' amount of food cannot be fulfilled.

Marketing channels are also a problem for cultivators; around 82% of respondents stated that it is difficult to find a market. So far, respondents have sold fish to mediators, and only a few have their markets. Meanwhile, the price sold to mediators is much lower than the market price, and sometimes the price of fish is determined by the middlemen. According to respondents, the difference in fish prices between mediators and the market could differ significantly between Rp. 2,000 to Rp. 10,000.

In general, the problem of fish cultivators is that they have complaints about capital. Even though the government has assisted in fish seeds, fish maintenance requires a high feed cost. Fish cultivators should feel the cooperative's role as a place to borrow, but the surrounding fish cultivators do not yet have a savings and loan cooperative for fish cultivators in their place.

The success of cultivation is also determined by the cultivator's ability to master good cultivation techniques. In table 3, it is proven that there is a difference in income between one cultivator and another. This occurs because not all cultivators have mastered good cultivation techniques. According to the findings, this study found that around 74% (Table 4) of fish cultivators had not mastered good fish farming techniques. There are still cultivators with a junior high school education of about 30% and an elementary school about 25%. Therefore, cultivators must be given some training in cultivation techniques. Especially the ability to deal with fish diseases caused by natural conditions such as acidic water content, namely having a pH value below the required standard, the salt content is also below the required standard, soil conditions, tides of seawater which affects the state of the pool and the Human Resources factor itself.

It is supported by field findings that almost the average cultivator considers that fish farming cannot be used as the primary income to meet their daily needs. This occurs because the production results obtained by fish cultivators are not yet in line with expectations caused by the large number of fish that die from the disease, the growth of which is slow due to acid levels and salt levels that are not under the required standards, so the fish growth is disrupted, high feed prices, uncertain selling prices and various weather factors.

3.3. Empowerment of Fish Cultivators Model in East Tanjung Jabung

Fish cultivation in East Tanjung Jabung is based on findings that are still experiencing various problems, so that the results achieved have not been able to meet the needs of fishers when they are not fishing or faced with a low season. The ability to cultivate fish still needs to be improved, strengthening the cultivators carried out by relevant stakeholders such as the Fisheries and Marine Service through Field Extension Officers providing training and coaching, but fish cultivators still feel the intensity. This occurs because there are still minimum PPL personnel at the East Tanjung Jabung fishery office, supported by respondents 74% agree that they have not mastered good cultivation techniques (see table 4).

Strengthening fish cultivators is also carried out by the Cooperative and UMKM Office, the Industry and Trade Service, strengthening fish cultivators in the form of capital assistance and training to increase cultivators' capacity. However, the cultivators were still unable to increase their production. It was found that each institution was still partially running in empowering fish cultivators. Many strengthening programs are almost the same between the three agencies. This can impact budget waste, and the target of strengthening the capability of cultivators is not evenly distributed. Research conducted (Das et al., 2018) to increase fish cultivators' capability in Gazipur Sadar Upazila Bangladesh, fish cultivators wanted the government, non-governmental organizations (NGOs) and private organizations to jointly strengthen the capabilities of fish cultivators according to the problems and the needs of fish cultivators. Referring to (Das et al., 2018), To anticipate obstacles that cause fish production to decline, a synergistic model is formed. A synergy model is a form of cooperation produced through the collaboration of each party without feelings of defeat, complementing each other and complementing differences to achieve more significant results (Musdalifah & Nadjib, 2017).

The form of a synergistic model between institutions involving the Department of Fisheries and Marine Affairs, the Office of Industry and Trade, the Office of Cooperatives and SMEs, and the Village Empowerment Service, functions the BUMDes as a marketing and empowerment forum for Micro and Small Enterprises. This model will synergize the three institutional interests. In this case, the Department of Fisheries and Marine Affairs, the Office of Industry and Trade, the Office of Cooperatives and SMEs which leads to the empowerment of Fish Cultivators starting from the upstream (increasing the competence of fish cultivators, facilities and infrastructure) to downstream (marketing) which is described in Figure 1

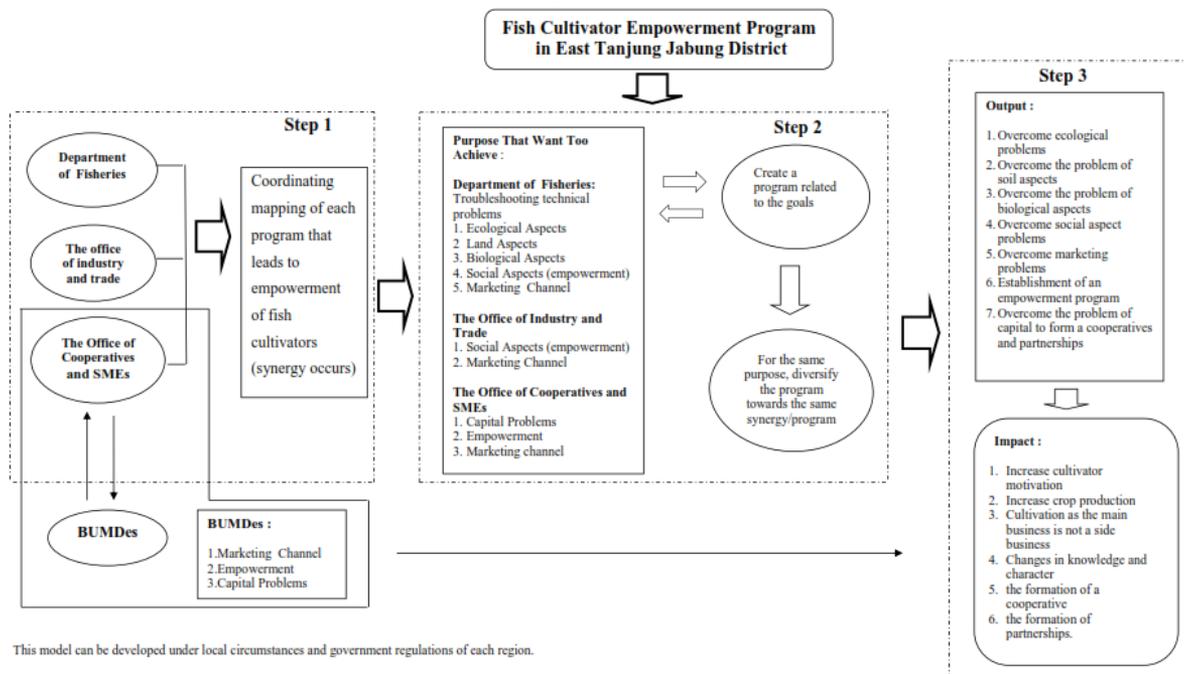


Figure 1. Institutional Synergy Empowerment in Fish Cultivators Model in East Tanjung Jabung

Caption :

I. Step One

1. Under the Constitution No. 20 of 2008, as an effort carried out by the regional government, the business world and the community in synergy in the form of business growth towards SMEs to grow and develop into strong and independent businesses. Under the objectives of empowerment in the MSME group as stated in Law no. 20 of 2008 as follows :
 - a. Realizing a balanced, developing and just national economic structure;
 - b. Growing and developing the capabilities of Micro, Small and Medium Enterprises to become solid and independent businesses; and
 - c. Increase the role of Micro, Small and Medium Enterprises in regional development, job creation, income distribution, economic growth, and poverty alleviation.
 - d.

Following these objectives, the empowerment of fish cultivators (UKM) to achieve the goal requires synergy between the Department of Fisheries and Marine Affairs, the Office of Industry and Trade, the Office of Cooperatives and SMEs. These three services must coordinate with each other to map empowerment programs for the growth of UKM (fish cultivators) businesses so that SMEs could grow and develop into independent company. Each of the concerned agencies conducts a mapping of their duties by making their respective work programs that lead to the empowerment process. The made programs are not in the same form so that schedules do not overlap and can accommodate all fish cultivators (UKM). Therefore, it is necessary to map the work area to accommodate all fish cultivators (UKM).

2. BUMDes is a village-owned business entity formed by the government to encourage development by managing village resources towards a prosperous village community. Law No. 6/2014 states that BUMDes is a form of community economic empowerment at the village level, reinforced by the Minister of Home Affairs Regulation No. 39/2010 that the presence of BUMDes is a centre for community economic program development by prioritizing the principles of openness and responsibility to the community. 51% of BUMDes sources of funds come from village funds managed in various forms of business to generate profits. According to the Regulation of the Minister of Villages Number 4 of 2015, article 23 explains that one of the efforts made by BUMDes in using village funds is the microfinance business, namely providing credit to the community. Therefore, in the empowerment model above, Cooperatives and BUMDes can partner (cooperate) to provide loans to fish cultivators (UKM). In this case, the cooperative includes funds to be managed by BUMDes, giving credit to fish cultivators. Also, because BUMDes is business-oriented, it can be a buyer (forming a savings and loan cooperative), a trade cooperative whose nature is to accommodate the harvest at an agreed price and sell directly to the market. BUMDes can also carry out empowerment, namely assisting farmers in managing loan funds so that loan funds can help develop the business.

II. Step Two

1. The goals to be achieved are carried out by the three SKPDs that can overcome various fish farming problems carried out in synergy among them are :
 - a. The Fisheries Office creates programs to overcome various problems from various aspects, namely by increasing the technical knowledge of Field Extension Officers (PPL) by constantly updating the latest developments in science/latest technology by participating in education and training so that they can overcome various problems in terms of:
 - 1) Ecological Aspects (climate, tides, water flows, quantity and quality of water (temperature, pH, salinity, and dissolved oxygen levels).
 - 2) Land Aspects (topography, soil texture, soil pH, nutrients, and organic matter content)
 - 3) Biological Aspects (Source of seeds, nature of organisms, vegetation and environmental sustainability)
 - 4) Social Aspects (Land status, transportation, labour, availability of tools, community conditions and local government support)
 - 5) Implementing empowerment programs in equipment assistance, seed assistance and coaching programs in knowledge sharing provided by PPL officers.
 - b. The Industry and Trade Agency makes an empowerment program for SMEs that process fish harvested into processed fish by providing training on how to process fish, how to make attractive packaging by paying attention to labelling, deadline for use (expire period) and participating in promoting processed fish products in bazaar meetings and exhibitions.

- c. The Office of Cooperatives and SMEs create an empowerment program, namely as an institution that provides financial assistance and guidance to fish cultivators (UKM). Regarding financial management so that SMEs (fish cultivators have business bookkeeping) and other forms of training, such as increasing fish cultivators' ability to produce processed food from fish production and empower non-working homemakers to make fish feed. The Department of Cooperatives and SMEs have also formed cooperatives for cultivators to solve capital and marketing problems.

III. Step Three

The synergy between 3 (three) institutions, namely the Department of Fisheries, the Office of Industry and Trade, the Office of Cooperatives and the SMEs, produces the following outputs:

- a. Resolved ecological problems (climate, tides, water currents, quantity and quality of water (temperature, pH, salinity, and dissolved oxygen levels).
- b. Resolved soil problems (topography, soil texture, soil pH, nutrients, and organic matter content)
- c. Resolved issues of Biological aspects (seed sources, nature of organisms, vegetation and environmental sustainability)
- d. Resolved social problems (land status, transportation, labour, availability of tools, community conditions and local government support)
- e. Resolved marketing problems (Forming cooperatives to buy crops and processed food, for processed food marketing can also be done by shoppers through promotions at exhibitions and bazaars)
- f. The establishment of an empowerment program in each SKPD that is able to accommodate fish cultivator (UKM) problems ranging from upstream to downstream.
- g. Resolved capital problems by forming cooperatives and partnerships.
From the output produced, it will have an impact on fish cultivators in the form of:
 - a. Increasing cultivators motivation
 - b. Increasing the yields production
 - c. Focus on fish cultivation as the main business
 - d. Changes in knowledge and character
 - e. Establishment of a cooperative
 - f. Establishment of a partnership

Conclusion

1. Currently, fish cultivation in East Tanjung Jabung is not the main job but a side job. Fish cultivators are still faced with various fish cultivation obstacles, including fish diseases, high feed prices, capital, fluctuating prices, and abnormal fish growth. The marketing pattern of fish cultivators still depends on mediators because the farmers have not been able to find their market. Current knowledge of fish cultivators has not solved the problem of fish cultivation, especially overcoming various kinds of fish diseases.
2. The empowerment model is a synergistic model between the Department of Fisheries and Marine Affairs, the Office of Industry and Trade, the Office of Cooperatives and SMEs to improve the ability of fish cultivators to overcome various fish cultivation problems which emphasize the mapping of empowerment programs intending to be able to accommodate all the problems of fish cultivators.

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