Impact of Fisheries Capital Grants on Improvement of Fisheries' Income in The Bintan District Minapolitan

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Abstract—The purpose of this research is to (1) assess the performance of fishermen groups who have received capital supports from the government; (2) analyze the impact of fisheries capital grants to the number of working days and income of fishermen, and (3) measure the impact of fisheries capital grants to the rate of employment in minapolitan area. The analysis technique that is used in this research is divided into two parts, which the first, is the policy impact analysis of the changes of the numbers of working days, and the income of respondents, before and after the grant is given; the second is performance-group analysis. The result shows that implementation of minapolitan region development has given positive impact to the economic growth of the fishermen. This can be known by the fact that there is an increase of fishermen's working days up tp 50,4%, increase of employment rate, and also the increase of fishermen's income up to 76% (equal to Rp 896.550). Based on the performance analysis of the fishermen's group, some indicators that needs to be improved are: administrations of operational charges and productions fee, and the continuations of economic activities, and the applications of trainings and knowledge. To improve the development of minapolitan region in the future, government supports in providing the complementary industry for fishery activities is needed, especially the ones which provides fisheries seeds and foods.

Keyword : Capital Grants, Minapolitan, Performance, Policy Impact.

I. INTRODUCTION

Bintan Regency is an archipelago with an area of sea reaching 86,398.33 km2 or reaching 98.50 percent of the total area, while the land area is only 1,319.51 km2 or 1.50 percent. As an archipelago, Bintan Regency has considerable potential for marine fisheries resources including biodiversity. The overall potential of capture fisheries reaches 1,240.8 thousand tons per year and the number of catches allowed is around 992.8 thousand tons per year. This potential has been exploited by fishing communities through fishing business activities with production of 6,655.59 tons with a production value of 152.34 billion rupiahs, while aquaculture activities amounted to 156.97 tons with a production value of 62.58 billion rupiah. Even though it has not been optimally exploited, fisheries production from year to year has increased.

Ironically, the increase in fisheries production is apparently not able to improve the welfare of the fishermen, which is visually seen from the conditions of the fishing village and is able to provide a clear picture of the poverty of fishermen in the midst of a large marine wealth. Based on BPS data from Bintan Regency in 2009, there were 33.96 percent of households in poor social status and generally found in coastal areas [1].

In order to accelerate the development of the fisheries and marine sector, the government has developed a region-based marine and fisheries economy with a Minapolitan conception. The development of the Minapolitan area aims to (i) increase fisheries production, business productivity, and improve the quality of marine and fishery products, (ii) increase fair and equitable income of fishermen, fish farmers and fish processors, and (iii) develop the Minapolitan area as a center of economic growth in regions and fisheries production centers as a driver of the people's economy. While the development goals of Minapolitan are (i) the household economy of the small-scale marine and fisheries community is getting stronger, (ii) the middle and upper-class marine and fisheries businesses are increasing and highly competitive, and (iii) the maritime and fisheries sectors become national economic drivers.

The development of the Minapolitan area was carried out in 197 regencies / cities, where Bintan Regency was one of the areas designated as a Minapolitan area. The policy was then followed up by the Government of Bintan Regency by specifying the District of East Bintan, Sub-District of Bintan Coastal and District of Mantang as the Minapolitan Area of Bintan Regency [2].

In 2011, the local government of Bintan Regency has allocated funds of 38.6 billion rupiah for the development of the Minapolitan area in the form of strengthening business capital and regional infrastructure development, as shown in the following table.

Table 1: Government Investment in the Minapolitan Area of Bintan Regency, 2011

Name of activity	Amount of Funds (Rupiah)
1. Strengthening Capture Fisheries Capital (Assistance of 440 Unit Motor Ships)	4.500.000.000,-
2. Strengthening of Aquaculture Business Capital (KJA assistance as many as 19 units and Grouper Fish / Snapper Fish as many as 24,300 fish seeds)	4.500.000.000,-
3. Development of Freshwater Fishing Cultivation Business (Catfish Master Aid)	356.573.200,-
4. Development of Seaweed Cultivation (Training and assistance with seaweed seeds)	986.550.200,-
5. Regional Infrastructure Development	
• Construction of a Seaweed Drying Site	500.000.000,-
• Construction of Fisheries Port	6.500.000.000,-
• Construction of IPA in the Region	6.719.320.920,-
• Construction of Access Roads	6.000.000.000,-
• Village Electricity Development	8.537.761.200,-
6. Development of Fisheries Products Processing Business (Prioritized on women)	1.105.710.000,-
Total	38.600.205.520,-

Source: Bintan District Bappeda, 2011

The provision of fisheries venture capital assistance is expected to increase productivity and increase the income of fishermen in the Minapolitan area of Bintan Regency. For this reason, this study aims to: 1. Measure the impact of fisheries capital capital assistance in the Minapolitan area on the performance of groups of fishermen who have received capital assistance for fisheries; 2. Measuring the impact of fisheries business capital assistance on increasing working days and increasing income of fishermen in the Minapolitan area of Bintan Regency; 3. Measuring the impact of fisheries venture capital assistance on employment in the Minapolitan area of Bintan Regency.

II. LITERATURE REVIEW

Fisheries are defined as an attempt to take or use biological resources to fulfill the needs of the Weidya community [3]. Fisheries resources are one of the renewable resources, but their conservation needs to be taken into account so that they can be used by future generations. Fisheries activities are very diverse. Based on the type of location, fishing activities can be divided into marine capture fisheries and inland fisheries. While based on its activities, fisheries business can be divided into fishing, fish farming, and also fish processing.

In the context of economic activities, fisheries business consists of two principles of efficiency. These principles are technical and economic principles. Dwiyanto explained that technical efficiency is defined as the relationship or ratio of input-output in a production process either in physical units, values or a combination of both without specifically showing maximum profit [4]. While the notion of economic efficiency is a comparison between the numbers of inputs (inputs) to produce a certain level of output (output). One method that can be used in measuring the impact of policy is to measure the difference in Difference-in-difference (Double difference). In this method the baseline data of the beneficiary group (treatment group or action group) and the non-beneficiary group (control group) before the program intervention (baseline data), then the data is collected again after the intervention program. Then for each group, the value of the data after the program intervention was reduced by the initial data before the program intervention. Then subtract the two differences (this is the origin of the difference-in-difference terms). The value obtained is an estimate of the impact of the program [5].

III. RESEARCH METHODS

The focus of the research is in Bintan Regency, Riau Islands Province, precisely in the Minapolitan area, East Bintan District, Bintan Pesisisr District and Mantang District. The selection of the location of the control group (not the recipient of the program) is in the Gunung Kijang District and Teluk Sebong District. This study uses primary data with data collection techniques through questionnaire deployment and interviews. The sample is calculated using the Taro Yamane Sarwono formula (2006: 120). The followings are the selected sample of 99 fishermen with sample distribution of 44 fishermen in East Bintan District (action group), 12 fishermen in Bintan Pesisir District (action group), 10 fishermen in Mantang District (action group), 11 fishermen in Gunung Kijang District (control group) and 22 fishermen in Teluk Sebong District (control group). The selection of respondents using purposive sampling method, which means that selected respondents are considered to have sufficient knowledge to answer the questions asked. The selection of respondents is based on three criteria; (1) poor fishermen; (2) are of productive age; (3) have received assistance (for action groups) and have not received assistance (for the control group). In addition, to obtain a comprehensive picture of the income level of fishermen, the sample was also chosen proportionally according to the fisheries business activities per sub-district in the research area, namely capture fisheries, cultural fisheries, and fish.

Data from the questionnaire results were processed with validity tests. The analysis used is descriptive analysis that explains the development policy of the Minapolitan area in Bintan Regency. The method used is Importance Performance Analysis (IPA). Science aims to display information relating to service factors which according to users greatly affect loyalty and satisfaction. The IPA method is measured based on two dimensions, namely importance and performance. Provision of performance and interest priority assessments is calculated on a Likert scale. The Likert Scale moves from numbers 1 to 5 [6]. Giving these values is done by respondents in the questionnaire with criteria; not important and dissatisfied (value 1), less important and less satisfied (value 2), quite important and quite satisfied (value 3), important and satisfied (value 4), very important and very satisfied (value 5). The aspects assessed include organization, management of assistance and business minapolitan. After the questionnaire data is obtained, the next step is to place the results of the assessment in the importance-performance diagram.
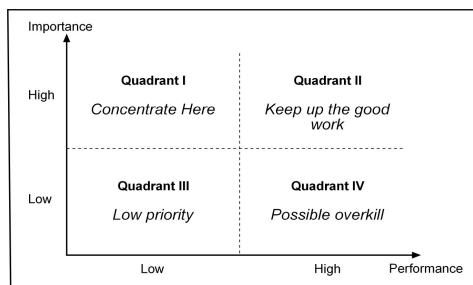

Figure 1. Diagram *Importance-Performance* (IPA)
(Source : Kotler, 2000)

After the IPA method, then it identifies the success of the development of the Minapolitan area with the method of impact evaluation. This method aims to measure the impact of the Policy on workdays, income and employment. This method is calculated based on two indicators before and after program intervention in the action and control groups. The indicator measured is the level of income per capita per month. The indicator before intervention is population income per capita per month in 2009 while the indicator after intervention is the level of income per head per month in 2017. The formulas used are as follows.

$$\Delta Y = (YA_1 - YA_0) - (YK_1 - YK_0)$$

YA_0 = Per capita income per month Action group before program intervention;

YA_1 = Per capita income per month Action group after program intervention;

YK_0 = Per capita income per month Control group before the program period;

YK_1 = Per capita income per month Control group after the program period

This calculation is processed using the SPSS version 19 application by carrying out the Independent Sample T Test and Paired Sample T-Test.

IV.   RESULTS AND ANALYSIS

Characteristics of Action Groups and Control Groups

Geographically, the two groups have similar regional suitability characteristics, which are very suitable to be developed as fisheries cultivation areas, fisheries product processing, and capture fisheries. While based on the social conditions of the respondents, both the action group and the control group had relatively low levels of education based on the data collected that those who completed their education to senior high school were usually located as Toke and also as leaders of fisheries activities, especially those who have activities in aquaculture. While those with low education generally earn a living as crew members and are also fishermen caught. Based on the experience of fishing around 88% of the fishermen respondents from the control group had more than at least 8 years of experience, while 78% of the respondents from the action group had more than 8 years of fishing experience. Respondents who have more than 8 years of fishing experience generally have served as boat charterers. Generally in the control group 76% of the respondents had family dependents as many as 1-3 people, while in the action group there were 56% of respondents who had dependents as many as 1-3 people and there were 41% of respondents in the action group who had as many as 4-6 people , this is far different from the control group which has a responsibility of 4-6 people which only ranges as much as 18%.

In terms of facilities, in the control group, all respondents (100%) had lighting facilities in their homes, while in the action group, as many as 29% of the respondents only had information sources provided from village generators, especially on the islands small area around Bintan Island. Likewise with the provision of clean water sources, control group respondents generally have better access to clean water sources, recorded at least 73% of the control group respondents had used PAM in their homes and the rest used wells as a source of clean water. In the action group, most of the people used PAM and Rural Water Treatment Plants (IPA) built by the government through the State Budget for Cipta Karya. In addition, in terms of sanitation facilities the action group tended to have poor sanitation, 61% of the action group respondents still did not use latrines for their sanitation media, while in the control group 61% had used latrines. The condition of poor sanitation in this action group is motivated more by the poor culture of settlement sanitation due to settlements located in coastal areas.

Based on the characteristics described above, it can be concluded that the action group and control group have the same characteristics, so that the control group is worthy of being used as a comparison group in assessing the impact of implementing fisheries business capital assistance in the research area.

Analysis of Fisheries Business Activities

1.   Capture Fisheries Business Activities

The amount of fish production caught by fishermen will affect the income of fishermen, besides that it is determined by several conditions including; fishing equipment / fleet used, market prices, revenue sharing systems. Fishermen in the action group (the Minapolitan area) receive business capital assistance in the form of assistance with motorboats measuring 1 - 2 GT equipped with fishing gear and GPS. In addition to this assistance, regional infrastructure support that has been built by the government, in the form of fish landing facilities and ice factories in each sub-district area, can reduce the operational costs of fishermen.

The Fishermen Revenue Sharing System in the action group and the control group is carried out between the owner of the capital (toke) and the boat captain (tekong) of the fishing worker (ABK) and not the monthly salary system. The income value of fishermen is obtained from the results of fish catches, after deducting operational costs / shipping logistics capital. The logistical cost of capital is returned to the owner of the capital or toke, then, from the rest of the catch, the sharing of the profit sharing system is carried out.

After the Program Implementation, Fishermen's Revenue Sharing System has directly given freedom to fishermen to sell the fish at the highest prices. In addition, fishermen also obtain a higher profit sharing value compared to the previous profit sharing system. After returning logistics capital, the profit sharing system is 15%: 85%. A percentage of 15% of the net value of the production is intended for ship maintenance and fishing equipment costs. Furthermore, the value of 85% of the value of production net is divided by 60%: 40%. For fishermen who get business capital assistance, the share is 40%. Whereas laborers/ crew members (maximum of 2 people) get a share of 60%.

2. Fisheries Business Activities

Aquaculture activities are one of the sideline or alternative economic activities for fishermen in Bintan Regency, in addition to capture fisheries activities which are the main activities. Besides being able to increase the income of fishermen who are more stable, cultivation activities are also encouraged to prevent overfishing and preserve the marine ecosystem. Cultivation activities in Bintan Regency are divided into two main activities namely inland aquaculture activities with catfish as the main commodity, and marine aquaculture activities with groupers as the main commodity. For inland aquaculture activities, assistance is provided in the form of mother catfish which are then bred by fishermen groups. As for marine aquaculture activities, assistance provided includes; (1) Procurement of floating net cages (KJA) for each group of fish farming with 22 plots of cages measuring 3x3 meters per plot; (2) Seed and feed assistance of Rp. 250,000,000.00 for each group. Because the capital provided is not small, the supervision of this assistance (so as not to be misused) goes quite tightly, especially with the role of facilitators / facilitators who guide members of the fish farming group (pokdakan) to

write accounting reports and also monitor their performance. In one floating net cage measuring 3x3 meters has a capacity of ± 400 seedlings with seedling prices reaching Rp 10,000.00-15,000.00 per head, the price of these seeds varies according to the size of the seeds which also determines the durability or ability of the seeds in survive, where the larger the size of the seed, the higher the endurance. To meet the needs of grouper feed for one unit of floating net cages (± 40,000 seedlings spread in 20 plot units), it takes around 240 kg of fish feed for one week, with feed prices ranging from Rp. 5,000.00 - Rp. 7,000.00 per kg. Yields can range from 3-5 tons which sell for SG $ 20 - SG $ 29 per kilogram. At the time of the survey, the price of fish ranged from SG $ 15 - SG $ 17 per kilogram. This condition has resulted in fishermen not selling their cultivation products and will be sold until the market buys a minimum of SG $ 20 per kilogram.

3. Fisheries Product Processing Business Activities

In addition to fishing and aquaculture activities, fisheries product processing activities are also one of the fisheries business activities in the downstream industry sector that must get attention, because it can produce higher economic value products compared to upstream industrial activities such as fishing and fish farming. Even so, it is unfortunate that the processing of fish products in Bintan Regency is still limited to the processing industry on a household scale, which produces several locally marketed fish processing products such as fish crackers, fish meatballs, salted fish, shredded catfish, and other products. One of the processed fish products from Bintan Regency is Abon Lele or known as ABOLE, which is a fish processing business made from raw catfish which is processed into abon. In one production, it requires at least 10 kg of catfish at a price of around Rp. 16,000.00 / kg, can produce 3 kg of shredded catfish and sold at a price of Rp. 15,000 / ounce or Rp. 150,000 / kg. The share of the sale of shredded catfish is done by a system of profit sharing and also salary. When there are large orders, each member of the Abon Catfish business group will make shredded food in their homes and hire several other people to help. The income after deducting the cost of production will be shared equally with each member who will then pay the workers.

Performance Analysis of Fishermen Group Receiving Bussiness Capital Assistance

Bintan Regency provides assistance for 1-2 GT motorboats equipped with fishing gear and assistance for aquaculture activities in the form of floating net cages, fish seeds and fish feed; this assistance is not submitted individually, but in the form of groups or what is called the Fisheries Marine Business Group (KUKP). As a group formed at the time of the enactment of the policy, the performance of a group in utilizing the proceeds of assistance and developing its business is also one of the determining factors in the success of the program.

Test Validity and Reliability

Based on the results of testing the validity shows that all statements in the questionnaire are significant and can be declared valid. The results of reliability testing show that all indicators in the questionnaire statement for importance data have an alpha value of 0.846. Whereas the satisfaction level data obtained an alpha value of 0.823. This shows that the possibility of measuring errors in the questionnaire filled out by respondents is reliable. After testing the validity and reliability of the answers to the questionnaires distributed to respondents, the next step is to evaluate the performance of Gapoktan using the Importance-Performance Analysis (IPA) method.

Based on the IPA quadrant, the indicators relating to the level of importance and the level of satisfaction of respondents in the marine fisheries business group in Bintan Regency can be grouped in each quadrant as follows: Quadrant I, there are several indicators with values that indicate a high level of importance and a low level of satisfaction. In this case, fisheries activity business groups need to improve performance on various indicators and make continuous improvements so that satisfaction levels can increase. The indicators include the indicators included in the aspects of business development, namely: increase in business capital (B3), bookkeeping of operational and production costs (B4), and business continuity (B5), as well as the application of the results of coaching and training (C4); Quadrant II shows indicators with a high level of importance and satisfaction, or in other words, this shows that the performance of the groups involved in indicators in Quadrant II has gone well and the existing performance system must be maintained in the future will come. Based on the IPA graph in Figure 6, it can be seen that there are at least nine indicators included in Quadrant II, among others; Planning work plans and production targets (A1); Implementation of work plans and achievement of targets (A2); Utilization of infrastructure facilities (A3), Maintenance of Infrastructure facilities and infrastructure (A4); Development of market targets and targets (B1); Increasing the quality and quantity of production (B2); Fostering groups by support staff / local government (C1); Application of technology (C2); and Increased work capacity in supporting the production process (C3); Quadrant III shows indicators with low levels of importance and satisfaction, or in other words, indicators in this quadrant have a low priority level, so that both expectations and performance are also low. Based on the IPA graph in Figure 6, there are two indicators included in quadrant III, namely; Evaluation of program implementation and product improvement (A5); and Collaboration with other groups (C5); Quadrant IV indicators are not found in this quadrant, because respondents assume that all performance indicators are considered important.

Impact Analysis

1. Analysis of the Impact of Business Capital Assistance on Working Days

After the assistance was implemented, there was a composition of the number of different working days in the two groups, where in the frequency action group the largest number of fishing days was 25-30 days (54.5% of the total action group respondents) while the majority control group worked during 15-20 days (31.8% of total control group respondents). The difference in the average working day of fishermen in the action group and the control group before and after the enactment of the policy turned out to be quite large, where in the action group the average working day changes to 9 days or 56.2% while the control group has a difference in the number of working days before and after the enactment of the policy for only one day or 5.8%. From the results of this analysis it can be concluded that the programs that have been implemented can increase the average working day of fishermen by 8 working days or by 50.4%.

2. Analysis of the Impact of Business Capital Assistance on Fishermen's Income

The enactment of fisheries business capital assistance has had an impact on increasing the income of fishermen in the action group which initially ranged from 500 thousand rupiah to 2 million rupiah to 1 million rupiah to above 3 million rupiah. Based on the results of the questionnaire, it was found that in the action group, the income of fishermen was dominated by fishermen with income of 2 million to over 3 million rupiahs, while in the control group the majority of respondents were in the range of 1 million to 2 million rupiah (93.9% of the control group). In the control group, there was an increase in average income of 20.86% and an increase in average income of 96.91% in the action group or an increase of almost double the income before the enactment of the policy. This increase in income can be fairly reasonable because the economic growth rate in Bintan Regency is quite high, but the difference in the magnitude of the increase in income between the action and control groups indicates that fisheries capital assistance has a positive impact on the income of fishermen in the Minapolitan area (action group).

3. Analysis of the Impact of Business Capital Assistance on Labor

The composition of the number of fishermen workers in both the action group and the control group has a similar proportion. Before the enactment of the policy, the majority or around 60% of the respondents from the action group and the control group did not have workers, while 30% only had one worker. After the enactment of the policy, it was seen that in the action group there began to be an increase in the number of workers who initially had no workers now starting to have as many as 2 to 3 people, while in the control group there were no major changes where 60% of the respondents did not have workers. Although there was a significant reduction

in the percentage of respondents who did capture fisheries, most of the respondents still went to sea each week both to fulfill their daily needs and to obtain bait raw materials for cultivated fish commodities. This is because the income from cultivation is only obtained at harvest time so that to meet urgent daily needs, they still go to sea. With changes in the types of business activities of respondents, as well as assistance in strengthening capital that can increase business scale, this also affects the number of workers owned by respondents.

V. CONCLUSION

The policy of developing the Minapolitan area in Bintan Regency aims to (i) increase fishery production, (ii) increase fair and equitable income of fishermen, fish farmers and fish processors, and (iii) develop the Minapolitan area as a center of economic growth in regions and fisheries production centers as a driver of the people's economy. To achieve the objectives of implementing the policy, in 2011 activities were carried out to strengthen business capital for fisheries activities (capture fisheries, aquaculture and processing of fishery products) with the aim of activities being poor fisheries households. In addition, the Regional Government of Bintan Regency also undertakes regional infrastructure development (basic infrastructure and supporting infrastructure for fisheries activities). The total government investment in 2011 for these two activities reached 38.6 billion rupiah.

Overall, the implementation of strengthening the business capital of the Minabisnis activity has been well developed. This can be seen from the increase in the development of business in the research area, especially in aquaculture activities which have a significant increase in production value where the production target has been achieved. Nevertheless, in the implementation of this program there were still several obstacles, such as the uneven distribution of assistance both in terms of area and allocation of funds for minabisnis activities, which tended to be more focused on aquaculture activities, compared to other activities such as fishing and fish processing activities. The amount of funding allocated specifically for aquaculture also causes dependence on financial assistance, especially in grouper aquaculture, where fishermen tend to have difficulty in developing business capital.

Based on the analysis of the importance and performance of group performance, there are several indicators in the aspects of performance that still need to be improved, namely indicators of increased business capital, accounting for operational and production costs, business sustainability, and the application of the results of coaching and training. While performance indicators that have been running well and need to be maintained include; Planning work plans and production targets; Implementation of work plans and achievement of targets; Utilization of infrastructure facilities and

infrastructure, maintenance of infrastructure facilities and infrastructure; Development of market targets and targets; Increasing the quality and quantity of production; Fostering groups by assisting staff / regional government; Application of technology; and Increased work capacity in supporting the production process. Even though it has the opportunity to improve the performance of fishermen, the evaluation indicators for implementation and collaboration with other groups have a low priority level, so that more intensive guidance from the facilitator or local government is needed.

Assistance in developing fisheries capital in the Minapolitan area of Bintan Regency has a positive impact on increasing workdays, fishermen's income and employment, especially for fishermen living in the Minapolitan area. This can be seen from the results of the analysis which show that: (1). Fisheries business capital assistance that has been implemented can increase the average working day of fishermen by 8 working days or by 50.4%; (2). The fisheries business capital assistance that has been implemented is able to increase the average income of fishermen in the amount of Rp. 896,555, - or an increase of 76% and (3). Fisheries business capital assistance that has been implemented is able to increase the absorption of labor where the average employment is 2 (two) people.

SUGGESTION

The development of business activities in the research area needs to be accompanied by more intensive supervision and guidance, so that the assistance to strengthen business capital that is of considerable value can be more effective in increasing fishermen's income, in addition to equitable distribution or decentralization of assistance, especially in more remote, so it's not centered on Bintan Island.

To improve the performance of indicators that have low priority (quadrant III), government intervention is needed in the form of: (a) educating groups through increasing the active role of facilitators in motivating, guiding and supervising the performance of fisheries business groups; (b) providing training on financial and capital management arrangements for fishermen groups; and (c) holding the best fisheries business group competition, and / or annual fisheries festival.

With the development of aquaculture activities, the need for seeds and feed will increase, so government support is needed to trigger the growth of supporting industries that can provide superior feed and seed production.

Fisheries capital assistance in floating net cage aquaculture activities which are only focused on grouper aquaculture will have an impact on the oversuply of grouper fish and will ultimately have an impact on the decline in fish prices, therefore the cultivation of red snapper aquaculture needs to be intensified also has a high market price.

REFERENCES

[1] Bappeda Kabupaten Bintan. (2010). *Studi Pengembangan Kawasan Budidaya Perikanan Di Kawasan Minapolitan di Kabupaten Bintan*. Tanjungpinang.

[2] Bappeda Kabupaten Bintan. (2010). *Rencana Tata Ruang Wilayah (RTRW) Kabupaten Bintan, 2010-2030*. Tanjungpinang.

[3] Weidya. (2009). *Karakteristik Perikanan Laut Indonesia*. Malang: Universitas Brawijaya.

[4] Dwianto, B M. (1991). *Perbandingan Efisiensi Teknis dan Usaha Antar Jaring Cantrang dan Jaring Dogol di Tegal, Jawa Tengah*. Skripsi. Fakultas Perikanan Institut Pertanian Bogor.

[5] Suryahadi, Asep. (2007). *Kumpulan Bahan Latihan Pemantauan Evaluasi Program-Program Penanggulangan Kemiskinan*. Modul 4: Persyaratan dan Unsur-Unsur Evaluasi yang Baik. Bappenas. Jakarta. www.ditpk.bappenas.go.id

[6] Riduwan. (2010). *Skala Pengukuran Variabel-Variabel Penelitian*. Bandung: Alfabeta.