



The Prohibition on Using Cantrang Fishing Gear and the Adaptation Strategy of Fishermen to the Economic Condition of the Fishing Community

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Abstract

The aim of this research is to analyze the effects of the Policy of Regulation of the Minister of Maritime Affairs and Fisheries No.2 of 2015 concerning the prohibition on using cantrang fishing gear and the adaptation strategy of fishermen to the economic condition of fishing community in Medang Deras District, Batu Bara Regency. The type of this research is causal associative research using quantitative approach. Sampling technique used is Taroyamane formula with 5% precision, and then 364 samples are obtained. Data is collected by the writer through observation, interview, and questionnaires. Data is analyzed using descriptive statistics, and multiple linear regression tests, while hypothesis test is through f-test, t-test, and determination test. The results of the test show that there is a positive and significant effect of the Policy of Regulation of the Minister of Maritime Affairs and Fisheries No.2 of 2015 and Adaptation Strategy of Fishermen to the Economic Condition of Fishing community in Medang Deras District, Batu Bara Regency. The results of determination test show that the strength of the effect between the Policy of Regulation of the Minister of Maritime Affairs and Fisheries No.2 of 2015 and Adaptation Strategy of Fishermen to the economic condition of fishing community in Medang Deras District is 37.6%.

Keywords: *The Prohibition on Using Cantrang Fishing Gear; Adaptation Strategy; Economic Condition of Fishermen*

Introduction

The 1945 Constitution of the Republic of Indonesia states that the Republic of Indonesia has judicial sovereignty over the territorial waters and the authority to determine regulations regarding the management and utilization of fish resources. Management and utilization of fish resources including fishing and fish farming activities are expected to increase prosperity for people in the coastal areas. Utilization of fish resources as much as possible to develop the nation and the state must still pay attention to the principles of sustainable development, fish resource sustainability, and marine habitat for maintaining fisheries in Indonesia.

Indonesia is known as the largest maritime country in the world, which has 17,505 islands, of which 16,065 islands have been standardized and registered to the United Nations through the 10th United Nations Conference on Standardization of Geographical Names. The abundant natural resources make the sea area has a very important meaning for national development. Indonesia's strategic position is not only seen from the position in the crossing between two continents, namely Asia and Australia, and two oceans, namely the Pacific Ocean and Indian Ocean, but also between the South China Sea and the East Asian Sea and the Indian Ocean. It makes Indonesia be in an important position for creating the stability of politics, economics, as well as regional and international security (Artika Sari, 2019).

Fish resources in Indonesian waters are proven biological resources that can provide a major contribution to the survival and welfare of the nation. However, there is a lot of literature and previous researches saying that until now the fishing community, both in groups and as a whole, are still classified as poor people, when compared with other community groups in the agricultural sector.

Poverty condition is getting complex due to the use of fishing equipment that is not environmentally friendly. Moreover, weak law enforcement against environmental damage, limited post-harvest processing technology, limited employment opportunities in the non-fisheries sector available in fishing villages, the condition of nature and fluctuation, and geographical isolation of fishing villages also disrupts the mobility of goods and people (Bengkel Ginting, 2018).

The nature of existing fish resources, although renewable, should be used carefully to ensure their sustainability. Good management of the fish resource system is expected to contribute to future regeneration. The nature of fish power also provides opportunities and open access, assuming everyone has the right and free use of fisheries resources, both local fishermen inside the area and outside the area.

There is no prohibition for individuals or groups to use the existing fish resources, making many coastal communities go to the fisheries. The rich diversity of fisheries resources in Indonesian waters will be very beneficial if managed optimally and responsibly. The fact is that there is a lot of destruction and violation of the fisheries ecosystem environment in the Indonesian seas. Destruction of marine ecosystem caused by the exploitation of fish in a large-scale is not in accordance with the code of ethics of fisheries that are responsible, and this condition causes environmental damage at sea.

One of the government's efforts to optimize and to utilize sustainable fish resources is by issuing the Regulation of the Minister of Maritime Affairs and Fisheries (PERMEN KP) of the Republic of Indonesia No. 02 of 2015 concerning the prohibition of using trawls and seine nets in the fisheries management of the Republic of Indonesia. Regulation of the Minister of Maritime Affairs and Fisheries (PERMEN-KP) No. 2 of 2015 is a reaffirmation of Law No. 31 of 2004 concerning fisheries, in which article 9 paragraph (1) mentions about the prohibition of ownership and use of fishing gear that damages the sustainability of fish resources in the territory of Indonesia, including trawl nets and compressors. Regulation of the Minister of Maritime Affairs and Fisheries (PERMEN-KP) No. 2 of 2015 sees that many fishing communities exploit fish resources using trawl and seine nets that are considered environmentally-unfriendly. The impact of that exploitation is damaging marine ecosystems, which results in a decrease in fish resources. Fishing gear in the form of cantrang nets is prohibited because it damages coral reef ecosystems in aquatic waters about 4-12 miles from the coast and dense cantrang meshes also catch all types of fish, including small fish that are not targeted by fishermen, causing a decrease in production.

The uncontrolled use of large and modern fishing gear causes increasingly higher competence and fight over fisheries resources between large fishermen (commercial fisher-industrial fisher) and traditional small fishermen (peasant-fisher), even this competition often triggers conflicts like trawl burning (*pukat harimau*, *pukat langgai*, *pukat teri*) and so on. The use of large and modern fishing gear

provides great benefits for entrepreneurs in the fisheries sector. However, it greatly causes the increasingly high socio-economic inequality and widespread poverty in coastal areas (Bengkel Ginting, 2018).

In addition to the impact of the prohibition of fishing gear for the fishermen, the implementation of Regulation of the Minister of Maritime Affairs and Fisheries (PERMEN-KP) No. 2 of 2015 concerning the prohibition of using trawl fishing gear raises new problems for the trawl fishermen. The findings of a research done by Ambarwanti, et al (2019), new problem for communities that use cantrang fishing gear in Rembang Regency is, according to data in 2018, a fluctuation in the amount of the production of fish yields from ships using cantrang fishing gear. The fluctuation causes the cantrang fishing community to experience changes in various aspects of their lives.

The prohibition on the use of cantrang fishing gear affects the structure of fishermen's socio-economic life. Thus, the fishermen must carry out an adaptation strategy to Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015. According to Sugihardjo (2012), adaptation is a part of cultural evolution, and the process includes a series of activities of human efforts to adjust or to respond to temporary changes in the physical and social environment. Adaptation is a strategy that humans use in their lifetime to anticipate changes in the environment, both physically and socially.

Literature Review

According to Carl J, Federick defines policy as a series of actions/activities proposed by a person, group, or government in a particular environment where there are obstacles (difficulties) and opportunities for implementing the proposed policy in order to achieve certain goals. This opinion also shows that policy involves behaviors that have intentions and goals, which are the important part of policy because, after all, policies must show what is actually done rather than what is proposed in some activities on a problem (Agustino 2008).

According to Dunn, public policy is a series of interconnected choices made by government agencies or officials in the fields related to governmental tasks, such as defense, security, energy, health, education, public welfare, crime, urban areas, and others (Pasolong 2010). Dye, George C. Edwards III, states that public policy is what is stated and done or not done by the government that can be stipulated in legislation or in a policy statement in the form of speeches and discourses announced by political officials and government officials that are immediately followed up with government programs and actions (Suwitri 2008: 9).

According to Muhadjir, evaluation of public policies is a process of assessing how far a public policy works by comparing the outcomes and the objectives or targets of the public policy (Widodo 2008: 112). Policy evaluation is an activity to assess the level of performance of a policy. Evaluation can be done if a policy has been running for a long time. Evaluation that is carried out too early cannot identify yet the outcomes and impacts of a policy. The more strategic the policy, the longer the time needed to conduct an evaluation will be. Conversely, the more technical the policy or program, the quicker the evaluation can be done since the implementation of the relevant policy (Subarsono, 2005).

Hierarchically, Regulation of the Minister of Maritime Affairs and Fisheries No.2 of 2015 (Permen-KP/2015) concerning the prohibition on the use of trawls and seine nets is an explanatory rule for the Law Number 45 of 2009 concerning amendments to the Law Number 31 of 2004 concerning fisheries. Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 is made based on the decrease in Fish Resources, which threatens sustainability. For the sake of sustainability, it is necessary to prohibit the use of trawls and seine nets. Thus, the main purpose of this policy is to maintain

the sustainability and progress of the fisheries sector can be realized, not decrease the fishermen's livelihoods. In the condition of overfishing and habitat destruction, as happened in Indonesia nowadays, the enactment of Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 will have an impact on the recovery of fish stocks and habitat resources. This will increase the catch per unit of business (CpUE) from fishermen because the stock is recovering.

Adaptation is a human responsive behavior to environmental changes. Responsive behavior allows them to arrange certain systems for their actions or behaviors, so they can adapt to the situation. The behavior mentioned above is related to the necessities of life after previously experiencing certain circumstances, developing a strategy and certain decisions to deal with the subsequent conditions. Thus, adaptation is a strategy used by humans in their lifetime to anticipate changes in the environment, both physically and socially (Bennet and Pandey in Helmy, 2012).

According to a number of researches, fishermen is a group of poor people, even when compared to other community groups in the agricultural sector, especially fishing workers and traditional fishermen, and they can be included in the poorest groups. Living in dense, slum, and polluted settlement, as well as having low income and high vulnerability is a general illustration of fishing community (traditional fishermen) in Indonesia. Everybody has different socio-economic condition; some have high, medium, and low socio-economic conditions. Social understanding and economic understanding are rarely discussed simultaneously. One important factor for building a prosperous society is economic development. Throughout history, human beings have continued to find out how these natural resources can be used properly.

Methodology

The type of this research is causal associative research using quantitative approach. The total population is 3076 people with a livelihood as fishermen. The samples are selected using Taroyamane/Slovin formula with a precision of 5%, with a confidence level of 95%. The samples selected are 364 people or fishing communities in 5 coastal areas in Medang Deras District, Batubara Regency. Data collection techniques that the author uses in this study are primary data and secondary data. Primary data is obtained through observation, interview, and questionnaires. Secondary research data is done through the study of books/references, scientific journals, which are theoretically useful, legislation, government regulations, and documents. Descriptive statistical analysis technique is multiple linear regression analysis. To test whether the proposed hypothesis is accepted or rejected, a simultaneous test (F-test), partial test (T-test) and Determination Test (R^2) are conducted.

Results

The majority of 364 respondents state that Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 is not good to be implemented, as seen in the result, that is, 39.8%. This can be seen from the rejection made by cantrang fishermen about that policy. The community does not know the purpose and function of the regulation, and there is a lack of socialization and the absence of compensation for using environmental-friendly fishing gear. Adaptation Strategy to the Regulation No. 2 of 2015, according to 364 respondents, carried out by the fishing community is quite well seen, that is 41.8%. The adaptation is to the same extent as the usual adaptation to climate and weather condition. Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 have not yet been fully implemented, only a temporary prohibition. Based on the explanation from the majority of 364 respondents, the economic condition of fishing community due to the policy is not good, amounting to 57.1%. This is because fishermen's income is only enough for their daily needs, their income cannot be allocated for savings.

Hypothesis Testing

Before determining which hypothesis is accepted or rejected, determine the t table first with a significance level of 5%: $2 = 0.025$ (2-sided test) and the degree of freedom (df) $n-k-1$ or $364-3-1 = 360$ by testing the two-sided results obtained for t table of 1,625.

Table 1: Partial Test Results (T-Test) Coefficients a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.724	.483		-3.569	.000
	Policy of the Minister of Maritime Affairs and Fisheries Regulation No. 2 of 2015	.070	.011	.283	6.419	.000
	Adaptation Strategy of Fishermen	.149	.014	.459	10.396	.000

a. Dependent Variable: Economic Condition

Based on the regression results, it can be seen that variable the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 has a regression coefficient of 1.625 and the value of t count of 6.416 with a sig value of 0.000. This shows that t count is $>$ t table or $6,416 > 1,625$ then H_a is accepted so that variable the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 statistically with ($\alpha = 0.05\%$) has a positive and significant influence on the economic condition of fishing community. This can be seen in the significant value ($0,000 < 0.05$).

The regression results also see that variable the adaptation strategy of fishermen has a regression coefficient of 1.625 and a t count of 10.306 with a sig value of 0.000. This shows that t count is $>$ t table or $10,306 > 1,625$ then H_a is accepted so that variable the adaptation strategy of fishermen statistically with ($\alpha = 0.05\%$) has a positive and significant influence on the economic condition of the fishing community. This can be seen in the significant value ($0.000 < 0.05$).

F-Test Statistic

F-test shows whether all independent variables included in the regression model have simultaneous effect on the dependent variable (Ghozali, 2011). If the significance value is < 0.05 then independent variables can simultaneously influence the dependent variable.

Table 2: Results of F-Test (Simultaneous) ANOVAa

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	162.560	2	81.280	110.322	.000 ^b
	Residual	265.967	361	.737		
	Total	428.527	363			

a. Dependent Variable: Economic Condition

b. Predictors: (Constant), Adaptation Strategy of Fishermen, Prohibition on Using Fishing Gear of the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015

Based on table 2 above, it can be seen that this equation has a significance level of 0.000 smaller than alpha 0.05. This means that all independent variables the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 and the Adaptation Strategy of Fishermen have significant influence

toward the dependent variable, namely the economic condition of the fishing community in Medang Deras District due to the implementation of the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 and the Adaptation Strategy undertaken. The results show that F count is greater than F table and Sig is smaller than alpha, then the independent variables simultaneously have an influence on the dependent variable. Therefore, it is concluded that the regression model can be used to predict the effects on the economic condition of the fishing community in Medang Deras District.

Coefficient of Determination

The coefficient of determination (R^2) can be used to measure how much the ability of the independent variables to explain the dependent variable. Coefficient of determination is between 0 and 1. Small R^2 value means that the ability of the independent variables in explaining the variation of the dependent variable is very limited.

Table 3: Results of Coefficient of Determination Model Summary b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.616 ^a	.379	.376	.858

a. Predictors: (Constant), Adaptation Strategy of Fishermen, the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015

b. Dependent Variable: Economic Condition

Based on the table above, it can be seen that the value of R (Correlation Coefficient) is 0.616, which indicates that the correlation/relationship between variable x and variable y have a moderate linear correlation. The value of adjust R Square is 0.376 or 37.6%. This shows that the variable Economic Condition of Fishermen can be explained by variable the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 and Adaptation Strategy of Fishermen, which is 37.6. The remaining 62.4 is explained by other factors outside the analysis model such as Climate, Fisheries Community Culture, and so on. The Standard Error of the Estimate (SEE) is 0.858. This small value indicates that the regression model can accurately predict the dependent variable, where the smaller SEE, the more precise the regression model in predicting the dependent variable.

Discussion

The Influence of Regulation of the Minister of Maritime Affairs and Fisheries No.2 of 2015 concerning the Prohibition on Using Fishing Gear towards the Economic Condition of Fishing community

Regulation of the Minister of Maritime Affairs and Fisheries No.2 of 2015 statistically with ($\alpha = 0.05\%$) has a positive and significant influence on the economic condition of fishing community. This can be seen in the significant value ($0,000 < 0.05$). The prohibition on using the cantrang fishing gear and the like indeed has a significant effect on people who use cantrang.

Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 concerning the prohibition of the use of cantrang fishing gear in Medang Deras District, Batubara Regency is also in the bad category. Regarding the benefits of the policy for the sustainability of the marine ecosystem, the community does not know yet that the prohibition on using cantrang fishing gear will give benefits for marine ecosystem. It means that the policy of the prohibition on using cantrang fishing gear has not run optimally due to the lack of socialization by Maritime and Fisheries Service or the local government,

which is seen through the response of the community, where people do not get information about the danger of using cantrang fishing gear for the marine ecosystem. Moreover, the government assistance program in the form of giving environmental-friendly fishing gear has not been realized properly, so that it becomes an obstacle in reducing the use of cantrang fishing gear.

The implementation of the prohibition on the use of cantrang fishing gear and the community involvement in handling the prohibition on using cantrang fishing gear in Medang Deras District has not been running optimally. It means that the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 has no effect in reducing the number of the use of cantrang, even the number of cantrang increases. The economic condition of fishermen can be seen from the results of fishing and their income level. This condition depends on the fishing technology used in fishing activities such as the type of boat used, the time spent at sea, the size of the ship used, and the number of crew (ABK) that go to sea. Generally, fishermen who use cantrang have more income and greater fishing expenses than fishermen who do not use cantrang.

The average income of fishermen comes from fishing. The income of cantrang boat owners is averagely higher than the crew and fishermen who do not use cantrang. The majority of fishermen who use cantrang are in the lower level, which consists of cantrang boat owners who do not use freezers and fishermen or the crew. The higher the level of fishing technology, the higher the income of fishermen per trip. Likewise, the economic level of the majority of fishermen who do not use cantrang is at the lower level because of the diversity of fishing gear used. The less the variety of fishing gear used, the less the fishing yields will be. Fishermen in Medang Deras District who are not permitted to go out to sea after the enactment of the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 has experience a decrease on their economy, and the activity of the fish auction will also be less. Fishermen who depend their lives on marine products are also affected, for example workers who depend on fishermen's products also such as fish sellers, ice sellers, etc.

Fishermen who are affected by the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 see that there is no appropriate and profitable solution for them. The fishing community in Medang Deras District believes that the government does not think of the economic and social impacts. The economic condition of fishermen after this regulation is a very significantly decreased due to the reduction in income. Before the regulation, fishermen are able to feed their families. However, after this regulation, fishermen are unable to support their families anymore. A number of fishermen go back to sea despite a prohibition by the government on using fishing gear. Fishermen clarify that they can no longer bear the cost of living. The purpose of the issuance of the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 concerning the Prohibition on Using Fishing Equipment like trawler is to temporarily stop the use of fishing equipment considered to damage the environment, and this policy aims to avoid the extinction of fish resources. Moreover, this policy also wants to restore fish resources that have been reduced/damaged until they can be optimally utilized again.

The Influence of Adaptation Strategy of Fishermen to Respond to the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 towards the Level of Economic Condition of Fishing community

The adaptation strategy of fishermen that is calculated statistically with $\alpha = 0.05\%$ has a positive and significant influence on the economic condition of the fishing community. This can be seen in the significant value ($0.000 < 0.05$). Even though, up to now, there is no legal certainty regarding the implementation of the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015, fishermen using cantrang or those who do not use cantrang, who mostly use *arad* nets, have not taken an adaptation or adjustment strategies for survival when the regulation is implemented. Currently, fishermen who use and do not use cantrang fishing gear have taken adaptation strategies to deal with weather

changes and sea operations carried out by government officials after the issuance of the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015. Several adaptation strategies undertaken are in the form of diversification of economic activities, diversification of fishing gear, building social networks, and other adaptation strategies such as increasing fishing time and expanding catchment areas.

The income sources of fishermen who use or do not use cantrang are mostly from the sea products they get. Fishermen who use cantrang think that the work they can do is only going to sea, and if they do work on land, it is not sufficient to meet their daily needs. Such mindset is formed due to lack of land skills and insight of the fishermen. In addition, the work time spent by fishermen while at sea and routines after finishing at sea such as repairing boat engines and repairing fishing gear make them not have much time on land. Conversely, fishermen who use cantrang do not work outside of fisheries because the fish yields are enough to cover their living needs.

Cantrang (Danish seine) is a change or modification of trawl fishing gear such as fish trawl, shrimp trawl, arad nets, dogol, lampara, and so on. Trawl began to be modified since the adoption of Presidential Decree 39 of 1980 concerning the prohibition of trawl nets. This is done by fishermen to keep producing maximum catch. The Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 is based on a joint agreement between the government and a group of fishermen carried out since 2009 to follow up on the previous policy. Determination of the policy on the prohibition of fishing gear is also based on the condition of Indonesian fisheries, which began to decrease every year. The decrease of fisheries production is due to the damage of marine ecosystems such as seagrass beds and coral reefs.

Ecological damage is caused by the use of fishing gear that is not environmental-friendly, so that the seabed is stirred and breaks the food chain, resulting in the decrease of the number of fish. In addition, the stipulation of this regulation affects the structure of socio-economic life of fishermen. Thus, the fishermen must take an adaptation strategy to survive if the regulation is enforced. However, since its issuance, the ministerial regulation has been rejected by fishermen, so the government has re-issued the Regulation of the Minister of Maritime Affairs and Fisheries No. 71 of 2016 concerning Pathways.

The Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 is made due to the decrease of fish resources, which threatens sustainability. For the sake of the sustainability of fish resources or marine ecosystems, it is necessary to prohibit the use of trawl fishing tool. Thus, the purpose of this regulation is to preserve and advance the fisheries sector, not to kill fishermen's livelihoods. Coastal communities are often referred to as marginal groups due to the poor condition of people in the middle of the region's abundant resources. Poverty, which is close to the coastal communities, is caused by structural condition that are not conducive to social structures, economic structures, and political structures, such as mismanagement in fisheries resource management.

The implementation of the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 concerning the prohibition on using trawls gets a negative perception from the community. It is related to the economic condition of the fishermen, calculated from the net income per trip, both for traditional fishermen and fishermen who use trawls or cantrang fishing gear. The economic condition can be seen in the economic layers of fishermen per trip, both of fishermen who use and do not use cantrang. The results of research show that the economic layer of fishermen who use cantrang is divided based on the ownership of boats used by fishermen who use cantrang, namely fishermen who use their own boat and fishermen whose role as the crew. Fishermen who owns boats are divided into two layers, namely upper class and lower class.

The Influence of the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 Concerning the Prohibition on Using Cantrang Fishing Gear and Adaptation Strategy of Fishermen upon the Implementation of the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 towards the Economic Condition of Fisherment Community

There is a positive and significant influence of the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 and the Adaptation Strategy of Fishermen towards the Economic Conditions of Fishing Community in Medang Deras District. The result of the decision to calculate that F count is greater than F table; Sig is smaller than alpha; and F count > F table ($110.332 > 3.89$) with a significant value of $0.000 < 0.05$. The enactment of the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 has caused an impact on the economy of fishermen, where their income is reduced. According to one fisherman, the number of fish they catch does not decrease at all even they continued to catch fish in an unspecified zone. The fishing community is very ignorant about the introduction of the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015. For them, the implementation of this policy will kill their livelihoods. Fishermen who use cantrang only rely on the fish yields to feed their families.

The result of this research is supported by a research done by Ermawati et.al. (2016). It is seen that the implementation of this policy will give some impacts. First, there will be social impacts, such as the increasing number of unemployment, decreasing welfare of fishing communities, and high rate of crime. Second, there will be economic impacts, such as the decrease of fish yields, income, and economic condition cause them to have more day-off (30%), they search for another jobs (40%), and they take part-time work at fishing base (30%).

The Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 has not been implemented optimally in Batubara Regency. Now, fishermen who use cantrang or called as trawls and grendong, still work in spite of the implementation of the policy. However, there are monitoring and raids done by the Water Police, so the fishermen who use cantrang cannot continue going to sea. In the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015, the jobs of the Water Police are to monitor and to raid fishermen in Medang Deras District, Batubara Regency who use cantrang, so the police prohibits them to go to sea.

Adaptation strategy to the implementation the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 is the same as the adaptation strategy carried out due to climate and fluctuations that cause fishermen not to go to sea for a while. However, to overcome this, the fishing community has an adaptation strategy with the prohibition to go to sea. Most fishing communities in Medang Deras District do not do anything when the catch decreased, or when they could not go to sea. Thus, the adaptation strategy to overcome such condition is to find other side jobs by involving their wives to work. The implementation of the double income pattern is a strategy to support the economic life of families who are no longer able to depend entirely on fishing activities. The activities of the fishermen's wives to participate in earning a living are taking peeling work, splitting salted fish, choosing fish, and laundry workers. The involvement of the wife in earning a living is called the Double Income Pattern. However, this does not apply to all fishing families who become the respondents of the study. Only a small portion of the respondents who have side jobs, and the rest only depends on the activities and fish yields.

This is in line with the research done by Putra Parura, et al (2013). The adaptation strategy carried out by fishing families is an internal strategy that is derived from the fishing families themselves, namely by applying double income pattern even though not all fishing families have adaptation strategies to respond to the decline in catch production. The development of this double livelihood strategy aims to ensure that fishermen do not depend on fishing. This needs to be done especially by the fishermen at the lower layer where the limited facilities cause them not able to go to sea throughout the year. The double

income pattern is carried out by becoming a laborer in the process of making fish crackers, where the production process is carried out in Sungai Kakap Village.

Conclusion

There is a positive and significant influence of the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 and the Adaptation Strategy of Fishermen towards the Economic Conditions of Fishing Community in Medang Deras District. The results of the decision to calculate that F count is greater than F Table; Sig is smaller than alpha; and F count > F table ($110.332 > 3.89$) with a significant value of $0.000 < 0.05$. The influence of the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 and the Adaptation Strategy of Fishermen towards the Economic Conditions of Fishing Community in Medang Deras District is 37.6. Meanwhile, the remaining 62.4 is explained by other factors outside the analysis model such as Climate, Culture of Fishermen Communities, Age, and so on.

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