Comparative Study of Social Economic Local and Migrant Fisherman in Arafura Beach-Merauke, Papua

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Abstract—The purpose of this study was to analyze comparison of socio-economic conditions of local and migrant fishermen on the Arafura coast. The research result could be a reference knowledge and give the proper approach in empowering and managing coastal communities. The research method used descriptive statistical analysis, analyzed with cross-tabulation and correlation. The sample methodology using random sampling. Correlation tests show that there is a significant correlation between the economic status of local fishermen and migrants. This can be seen from the ownership of the marketing of fishery products, the status of house construction, the status of home ownership, the level of income and ownership of equipment to fishing activity. Likewise, with the social status of the community, there is a correlation between the tribe with involvement in the group, and the level of education. The government has played an important role in increasing the local fishermen income by forming groups of fishing and fish processing groups with various assistance provided and also build the fisherman housing. The results of this study conclude that we need more strategic efforts to improve the economy of local fishermen, especially in the field of financial literacy and management so that the assistance provided can be optimized to improve the welfare of local communities and their families.

Keywords—social economic, local fisherman, Arafura beach

I. INTRODUCTION

Merauke Regency is located at the eastern of Indonesia, which borders with the Indian Ocean. This condition made most of the area bordering with the sea. Coastal communities are fishermen and groups of people who live in coastal areas whose economic resources depend directly on marine and coastal resources [1]. Merauke in Figures noted in Merauke District that the number of fishermen was 852 fishermen consisting of fishermen, group of fish processing, group of fish collectors and fish farmers. The number of fisherman is 346 people [2]. Poverty is a stigma attached to fishermen in Indonesia, including the Arafura coast in Merauke. Resource economists state that coastal poverty factors are related to the characteristics of resources and the technology used. Smith (1979) and Anderson (1979) in [1] says that the rigidity of fishery assets is the main reason why fishermen are in poverty and there seems to be no effort from them out of the problem. The diversity of fishery assets is due to the difficulty of changing their form and function so that they are used for other purposes. As a result, when the productivity of these assets is low, fishermen are unable to transfer their functions, even fishermen themselves continue to carry out fishing operations even though they are economically inefficient. Subade and Abdullah (1993) in [1] proposed another opinion about the poverty of fishermen because of the low value of opportunity cost. Opportunity cost is the possibility or alternative of the best economic activities or businesses that can be obtained other than catching fish. Sugiharto also stated that many results of studies on the level of welfare among fishermen have shown that poverty and socio-economic inequality or income inequality are crucial issues faced by fishermen and not easy to overcome [3].

Overcoming the above phenomenon, various programs have been implemented by the government and other institutions to overcome fishermen’s poverty. This is also done by the regional government of Merauke Regency. But the increasing number of population and the extent of coastal areas have resulted in unsatisfactory results. The government program includes motorization of the fishing fleet, cold supply chain, procurement of port infrastructure, development of fisheries cooperatives, joint business groups, and business partnerships. All these programs have not been able to bring the welfare of fishermen, the question is whether what is done is not in accordance with the needs? Nikijuluw argued that the lack of involvement of coastal communities in development is one of the factors that failed the government program to alleviate poverty. Community empowerment is very important in planning, implementing and evaluating programs to suit the needs of fishermen. The responsibility of community empowerment is not only in the hands of related ministries but also all parties so that the program can be carried out more comprehensively, integrated and taking into account the economic, social and cultural aspects of the local community.

The context of the coastal community in Merauke consists of two categories. First is local fishermen from indigenous tribes who inhabit the Merauke region and second, migrant
fishermen who come from areas around Merauke such as Makassar, Bugis, and Mollucas. Although the local fisherman has already become fishermen for a long time and know the condition of the coastal Merauke, the culture influences the level of interest of local fishermen. They only catch the fish for family needs and not profit oriented. This makes the two categories of fishermen have different characteristics, seen from the level of welfare. This study aims to estimate the economic and social disparity of migrant fishermen and local fishermen. It is expected that if we know the socio-economic data of fishermen, we could provide coastal management strategy through government programs, empowerment fisherman with the right approach and the right target.

II. RESEARCH METHODS

This research was conducted in June-August 2017 on the Arafura coast, namely Payum and Lampu Satu Beach. Payum Beach is a representative area of local fisherman and Lampu Satu is an area with the majority of migrant fishermen. The population is all fishermen in the two regions. Because of the unknown number of fishermen population, sampling is done by a quota system. Quotas based on the minimum amount of data needed for statistical analysis is 30 respondents. The selection of the thirty fishermen samples was carried out by probability sampling with a random sampling model. Primary data collection is done through interviews using a questionnaire. Data analysis method with descriptive statistics consisting of frequency analysis and cross tabulation.

III. RESULT AND DISCUSSION

A. The Characteristic Respondent

The result of the questionnaire indicate that the number of respondents is mostly male (81%) while women only 19%. Based on ethnic origin 36% are local fishermen from the Marind and Asmat tribes while 64% are migrants from the Makassar, Bugis and Kei tribes. The average number of household members is 5 people. The highest level of education of respondents was graduated from elementary school (42.9%) while the lowest was graduated from junior high school and not from school (11.9%). The profession as a fisherman has long been occupied by respondents, with the largest percentage of more than 10 years (71.4%). As many as 45.2% of fishermen only use drag nets to do fishing activities, and only 21.4% use motorized vessels. Many fishermen do not have side jobs and only rely on jobs as fishermen. As many as 61.9% do not have side income and 38.1% already have a side job in the form of stores, construction workers and work making boats. Only 21.4% were included in the fishermen group, and the remaining 78.6% did not yet join the fishing group. The average income of fishermen per month ranges from Rp500,000-1,000,000, with the largest percentage being 52.4%; income above Rp2,000,000 as much as 33.3% and the remaining 14.3% claimed to earn monthly income of Rp1,000,000-2,000,000.00.

The description of the social conditions of the community is reflected in the ownership of house and the construction process. Based on the survey results, as many as 71.4% of the ownership status of houses is private property which was built in stages and 14.3% is a private house built by the government. As many as 78.6% types of houses are permanent houses with roofs made from roofing; 9.5% is a house with a palm leaves roof and wood wall; 7.1% of semi-permanent houses and only 4.8% are permanent housing types. Type of fisherman houses states in Figure 1 (One). For the sale of fishery products as much as 52.4% said they did not pay for sales facilities because most of them were directly purchased by collecting traders. But there are also people who use pick-up cars to sell their catch to the market as much as 26.2%; 16.7% use motorcycles and 4.8% use bicycles. Based on ownership of electronic devices at home, 51% of respondents have a television, 14% have a CD/DVD and speakers, 10% have a refrigerator, 7% have a rice cooker and 6% each have a cellphone and freezer.

![Figure 1 House Type of Fisherman](image-url)

**B. Cross-tabulation Between Fisherman Status and Social Economic Condition**

Cross-tabulation is one descriptive analysis to compare the status of fishermen as local fisherman or migrants with socio-economic factors of fishermen. The results of this cross tabulation can also provide a level of significance of the relationship between variables compared with other dependent factors. The results of the cross tabulation of the status of local/migrant fishermen with education levels indicate that local fishermen have a higher level of education than migrants. As many as 11.9% of migrant fishermen did not attend school, while there were no local fishermen respondents who did not attend school. Likewise, with the Elementary School level, as many as 16.7% of migrant fishermen attended primary level but did not graduate and only 19% graduated from elementary school. Local fishermen 23.8% graduated from elementary school. At higher levels, namely junior and senior high school, the largest percentage is in migrant fishermen. This shows that the government program with 9-year compulsory education is quite successful among local fishermen, but not so with a higher level. The community feels they have enough to complete elementary school and do not continue to a higher level as evidenced by the low percentage of junior and senior high school graduates compared to migrant fishermen. Free or non-paying school programs may...
also be a trigger factor for many people who complete basic education programs.

Another economic indicator that is cross-tabulation with the status of fishermen is the use of equipment owned by fishermen to carry out fishing activities. The cross-tabulation results show that local fishermen only have rowing/canoe and net boats each at 2.4% and 33.3%; while migrant fishermen have all the equipment from the boat/chart, motorboat, canoe paddles, and nets. The largest percentage of equipment ownership is a ship/chart of 19%. Ownership of equipment to catch fish is an important factor of production in fishermen's livelihood. This data shows that local fishermen still use traditional methods to catch fish. It is very difficult for local fishermen to compete with migrants. Lack of utilization of technology in fishing activities will cause low production and give impact on fishermen's income. With regard to the use of technology in the field of fisheries, difficulties in accessing technology are caused also by the absence of extension agents who function as facilitators and catalysts. The extension agent is very important for identifying the level of technological needs at the community level and the process of adopting an innovation in the community.

Community income level is a dependent factor that is cross-tabulated with fisherman status. The results of cross-tabulation show that local fishermen have an income level in the range of Rp500,000-1,000,000.00 / month as much as 28.6%. Only 2.4% said that their income was above Rp.2,000,000.00 / month. The highest percentage of the income level of migrant fishermen based on respondents' recognition was 31% in the range of over Rp.2,000,000.00 / month and only 7.1% claimed that their income was in the range of Rp1,000,000-2,000,000.00 / month. This result the same with the fisherman in Cilacap. The R/C ratio for fishery activities only 1.17 that indicate the powers of fisherman are still less. The role of stakeholder toward coastal area community is still poor. The fisherman needs empowerment by giving loan, reviving in the fisherman groups and giving information about proper fishing [4].

Other economic factors examined in this study are sided jobs by local fishermen and migrants. As many as 28.6% of migrant fishermen have side jobs and only 9.5% of local fishermen have side jobs. The most types of side jobs are a mini store, fish products processing business and labor. Family economic resilience will appear on family income. Families who only have one source of livelihood are certainly vulnerable to poverty, especially the livelihood of fisherman very dependent on nature. So there is a time when fishermen do not engage in fishing activities due to weather / uncertain natural factors. Livelihoods as fishermen cannot be the main source of livelihood in order to family needs. Communities need to have alternative livelihoods that are more stable and sustainable. This is in line with what was conveyed by [1] that the development of alternative livelihoods for fishermen is a must. The development of alternative livelihoods is directed as additional income. On the other hand, the side job of fisherman should be friendly environmental and sustainability perspective. According to research in Arafura Coastal about sand mining, most of the fisherman in Urumb, Wendu, and Nasai Beach have a side job as beach sand seller [5].

The social aspect examined in this study is the involvement of fishermen in a group of fishermen. The results of cross-tabulation show that local fishermen are more involved in groups of fishermen than migrant fishermen. As many as 14.3% of local fishermen are members of the group and only 7.1% of migrant fishermen join the fishing group. This type of group is a fishing group, fish processing group and suitability group related to the environment. There are no fishermen groups who have survived for a long time. The participation of fishermen in the group is still very small at only 21.4%. This may be due to the absence of a group of fishermen who are able to prosper their members so that fishermen have not felt the benefits of a group of fishermen. In the farming development strategy, groups/associations are supporting factors for the success of a business. The fisherman community in Gangga Dua village still become a closed community or has characteristic of social capital bounding. The typology of the fisheries community has been greatly influenced by various economic aspect in economic activity of their life [6]. The fisherman group in Merauke also have the same typology with the fisherman in Gangga Dua, North Minahasa, the fisherman group build by government as a requirement to get loan and aid from government and bank.

The funding pattern for housing finance, based on cross-tabulation data for both local fishermen and migrants, they use more personal funds for the construction of houses where they live. However, when compared with the involvement of the government in the financing sector, local fishermen who get the largest percentage compared to migrant fishermen. As many as 11.9% of government funding support to local fishermen compared to immigrants who only 2.4%. This shows that the government program for the provision of housing for the community is on target.

![Table 1. Status * Home Condition Cross Tabulation](image-url)
The condition of the houses of fishermen between local and migrants can be seen in the cross-tabulation data in Table 1 (One). Both local and future fishermen have a type of wooden house with a roofing roof. There are still local fishermen who live in the wood wall with leaves roofs and there are no houses with semi-permanent and permanent houses; whereas migrant fishermen have semi-permanent and permanent houses. Home ownership is one indicator of fishermen's welfare. This data shows that local fishermen are still at a low level of welfare compared to migrant fishermen.

The type of transportation used for marketing fishery products. As many as 31% of local fishermen did not use the transportation to market fishery products, they only sold to collector traders who came to the beach and only 21.4% of migrant fishermen sold to middlemen. The highest percentage of the use of transportation facilities for the marketing of fishery products is a pickup truck owned by migrant fishermen, amounting to 26.2%. The strategy to shorten the marketing chain seems to have been understood by immigrant communities so that they sell their fisheries themselves to the market. The absence of marketing facilities such as motorbikes, or pick-up cars might be the reason for local fishermen so they sell their fisheries product to collector traders. This research result similar with fisherman in Benua Baru Ilir Samarinda, 85% fisherman classified with medium welfare level and only 15% classified family with high welfare level [3]. That research using the BPS indicator, they are income, consumption, home condition, home facility, family health, health facility, education family, and transportation family.

IV. CONCLUSION

From various social and economic variables, it can be concluded that the level of welfare of local fishermen is still low compared to migrant fishermen. This data can be the basis for the management of coastal communities. More strategic efforts are needed to improve the economy of local fishermen, especially in the field of financial literacy and management so that assistance provided by both the government and the private sector can be optimized to improve the welfare of local communities and their families.

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