**Research Article**

# Management for Alleviating Poverty Among Fishermen Through Empowering Female Fishermen in North Kalimantan

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**Abstract.**
Research related to poverty alleviation models for fishermen has been widely carried out. However, models involving female fishermen have not been thoroughly investigated. This article explores the public policy management model in alleviating poverty in fishermen by involving female fishermen. In this study, the researchers employed the descriptive-qualitative method with a documentation study by reviewing the results of relevant previous studies. The collected data were analyzed using an inductive approach to social phenomena related to female fishermen. Results showed that: (1) poverty in fishermen was caused by the low monthly income, the use of traditional fishing gear, the lack of corporate effort, and the low level of education of fishermen; (2) the ineffectiveness of poverty alleviation policies, among others, were caused by inaccurate program targets, being not in line with objectives, administrative problems, resource problems, misuse of assistance, the lack of socialization, inaccuracies of data, the low commitment of program participants, education level of program participants, low community participation, and lack of technical performance of program management; and (3) the right model for alleviating poverty in fishermen with the concept of women's empowerment is through business development in the form of the establishment of cooperatives for female fishermen. Therefore, affirmative action is needed for the management of the cooperatives so that these female fishermen can manage their businesses more efficiently and productively through an empowerment model by collaborating with local governments, universities, and private sectors/companies. The local government may provide a series of training and assistance for the management of the cooperative, while the private sector reinforces managerial, production, and marketing aspects. Furthermore, universities can implement their Tri Dharma of higher education by helping the government and cooperatives managed by female fishermen, thereby improving the fishermen's family economy.

**Keywords:** Poverty, Women's Empowerment, Collaboration.

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# 1. Introduction

Poverty is a global problem faced by many countries in the world, including Indonesia. North Kalimantan as the 34th province in Indonesia was established with the hope of realizing the welfare of the people in the northern region of the island of Kalimantan. However, the reality is that there are still many people living in poverty. Some of the things that cause poverty in North Kalimantan as stated in the Regional Medium Term Development Plan (Indonesian: *Rencana Pembangunan Jangka Menengah Daerah* (RPJMD)) of North Kalimantan for 2021-2026 are as follows. (1) From the consumption dimension, North Kalimantan is still classified as having a relatively high poverty rate as seen in the increasing trend of the poverty depth index and poverty severity index. (2) From the educational dimension, poverty in North Kalimantan is closely related to the low level of public access to education. (3) From the health dimension, the low level of public access to health services is the cause of poverty problems in North Kalimantan. (4) From the basic infrastructure dimension, poverty is caused by the low affordability of access to basic infrastructure services, which is associated with housing and settlement affairs, the inadequate coverage of drinking water & sanitation services, and the low electrification ratio. (5) From the economic dimension, the cause of poverty is low income as seen in the high number of people living below the poverty line. (6) In addition, the problem of poverty is related to the inability to meet food needs. The limited availability and adequacy of food indicate the presence of poverty due to basic needs and basic rights of the community to food that cannot be fulfilled.

Based on data from the Central Bureau of Statistics for North Kalimantan in September 2021, the percentage of poor people in North Kalimantan is 6.83%, or 52.86 thousand people. The percentage of poverty in North Kalimantan is still lower than the national poverty percentage in the same period (i.e., 9.71%). Based on data from the Directorate General of Population and Civil Registration of the Ministry of Home Affairs, at the family level, the number of poor families is 45,104, or about 21% of the total family heads in North Kalimantan (i.e., 212,297).

Poverty is one of the reasons for the low Human Development Index (HDI) of Indonesia, thereby making the quality of Indonesian people as a whole relatively low compared to other countries. The HDI is published by the United Nations Development Program (UNDP). It determines the success of efforts to build the quality of human life, the ranking of the development of an area, and government performance measures with indicators of how the population of a country can access development outcomes in obtaining

TABLE 1: Number of Poor Population by Regency/City in 2019-2021(per thousand people).

| No | Regency/City | Total | | |
|----|--------------|-------|------|------|
| | | 2019 | 2020 | 2021 |
| 1 | Tarakan | 16.11 | 17.33 | 17.57 |
| 2 | Nunukan | 12.69 | 13.76 | 13.94 |
| 3 | Bulungan | 12.40 | 13.08 | 13.48 |
| 4 | Tana Tidung | 1.34 | 1.46 | 1.49 |
| 5 | Malinau | 6.23 | 6.16 | 6.39 |
| 6 | North Kalimantan | 48.78 | 51.79 | 52.86 |

Source: Central Bureau of Statistics for North Kalimantan, 2022

health services, educational facilities, and income. The HDI is an important indicator to measure the success of development to build people's quality of life.

The low quality of life of the community which has an impact on the low quality of education may cause the birth of a generation that has low competitiveness. Low competitiveness in the labor sector may result in low absorption of labor in the business world and has an impact on high unemployment rates.

The open unemployment rate in North Kalimantan reached 4.58% in 2021. This percentage is still low compared to the national open unemployment rate of 7.07%. The regency/city with the highest open unemployment in North Kalimantan is Tana Tidung Regency.

TABLE 2: Open Unemployment Rate in North Kalimantan in 2019-2021.

| No | Regency/City | Open Unemployment Rate (Percent) | | |
|----|--------------|-----------------------------------|------|------|
| | | 2019 | 2020 | 2021 |
| 1 | Tarakan | 5.30 | 5.86 | 4.94 |
| 2 | Nunukan | 3.76 | 4.14 | 4.24 |
| 3 | Bulungan | 4.39 | 4.45 | 4.54 |
| 4 | Tana Tidung | 4.54 | 4.83 | 5.26 |
| 5 | Malinau | 3.99 | 5.08 | 4.14 |
| 6 | Kalimantan Utara | 4.49 | 4.97 | 4.58 |

Source: Central Bureau of Statistics for North Kalimantan, 2021

In the Sustainable Development Goals (SDGs) of the United Nations, the issue of poverty is one of the important issues. Moreover, point #1 of these SGDs is to eradicate extreme poverty by 2030 with the slogan "*no poverty*". The World Bank defines absolute (or extreme) poverty as people living on under $1 a day. Furthermore, the UNDP defines poverty as a condition related to the inability to meet basic needs (hunger, no place to live, inability to seek medical treatment, lack of access to education, no job, inability to access clean water, powerlessness, and no freedom). Meanwhile, Indonesia's Central

Bureau of Statistics defines poverty as a condition in which a person can only fulfill their food with less than 2,100 calories per capita a day. According to Sayogjo [1], the measure of poverty is based on rice consumption per person per year in rural and urban areas. He adds that the poor are those who consume 320 kg of rice (in rural areas) or 480 kg (in urban areas) per year.

One of the real poverty phenomena in everyday life is poverty in fisherman communities. Based on data from the Ministry of Maritime Affairs and Fisheries in 2019, the number of fishermen in Indonesia is 2,736,218 people. Of this number, 97% are small and traditional fishermen who live under the poverty line. It is an irony amid abundant fisheries and marine potential. Furthermore, three-quarters of Indonesia's territory is territorial waters with a coastline length of 95,181 kilometers and is the second longest in the world with an area of marine waters reaching 5.8 million square kilometers and constitutes 71% of the total territory of Indonesia. This undeniably shows that Indonesia has enormous marine and fishery potential.

The coastal area is an ecosystem area for fishermen, which becomes their source of livelihood. Good management of fishing coastal areas will also make a good contribution to fishermen and their families. However, no integrated and appropriate coastal area management between provinces and cities, stakeholder participation that has not been optimal in community empowerment in coastal areas, the lack of leadership commitment related to increasing institutional capacity for coastal area management, and the absence of information technology-based coastal management policies have caused poverty problems for fishermen in coastal areas [2].

Additionally, several things that cause poverty among fishermen include the use of traditional fishing gear, education aspects, no fish auction place [3], the difficulty of accessing banking capital, not having the power to determine the selling price of the catches, the behavior of fishermen who are consumptive, indebted, and hard to save money [4], having no bargaining power, the high dominance of the role of money lenders (*pengambe'*) in the fishery trading system, and the low capacity of fishermen's households caused by lack of access to banking, educational facilities (including the ability to access technology), and limited asset ownership [5] . The causes of poverty are not only caused by aspects that come from within the fishermen and their surrounding environment but also due to government policies that hinder the improvement of fishermen's welfare, namely aspects of the empowerment program. The existing empowerment programs for fishermen have not been maximized due to the government's failure to understand the causes of the vulnerability of the community to poverty, causing fishermen to remain under the poverty line [6].

Kusnadi [7] argues that one of the characteristics of poverty in fishermen is that their income is not fixed (daily basis) and the amount is difficult to determine and very dependent on the season and the status of the fishermen themselves so that they find it difficult to save money. This is in line with the argument of Pramesti [8] that poverty in fishermen involves an unproductive and efficient lifestyle. For this reason, fishermen are always filled with uncertainty in running their business because the famine season always comes every year and the weather conditions at sea are very erratic.

Kusnadi [9] states that poverty among fishermen is caused by two factors, namely (1) natural factors (i.e., those concerning fluctuations in fishing seasons and the natural structure of village economic resources) and (2) non-natural factors (i.e., those related to the limited reach of fishing technology, inequality in the profit-sharing system, the absence of definite labor social security, weak control of marketing networks, and the existing fisherman's cooperative which is not yet functioning). Arif Satria [9] also argues that poverty faced by fishermen is a result of two factors but different from the previous two factors, namely (1) community internal factors (e.g., lazy culture, limited capital & technology, limited management, and conditions of natural resources) and (2) external factors (e.g., policies that are not in favor of fishermen).

Based on the results of a study conducted by the Ministry of Maritime Affairs and Fisheries [10], the causes of poverty in fishermen are grouped into four: (1) limited access to technology and information, (2) limited access to capital, (3) the neglection of traditional community institutions and rights, and (4) the strong role of traditional institutions that dominate the capital and marketing of fishery products.

Rokhmin Dahuri in the book written by Puryono [11] claims that the majority of fishermen in Indonesia are still in poverty due to structural factors, such as government policies and programs that are not conducive to the progress and welfare of fishermen, including the expensive and difficult fuel, fishing gear, rice, and fishing supplies, especially for fishermen on the border and remote islands. In addition, he also mentions that the difficulty of accessing sources of capital for small fishermen may exacerbate poverty in fishermen.

Based on the aforementioned conditions, this study explores the following questions. (1) Why do fishermen in North Kalimantan remain poor? (2) Why are government policies unable to solve the problem of fishermen's poverty? (3) What is the appropriate poverty alleviation model for fishermen from a collaborative perspective through women's empowerment?

This study aims to describe the conditions of poverty in fishermen, explain the causes of the existing public policy management that is unable to alleviate poverty in fishermen,

and propose the appropriate public policy management model approach in alleviating poverty among fishermen by involving female fishermen in North Kalimantan.

## 2. Theoritical Framework

### 2.1. Public Policy

In the context of global competition, the task of the public sector is to build an environment that allows every actor, both business and non-profit, to be able to develop to be competitive actors both domestically and globally. This environment can only be created by public policy. The best public policy is to encourage every citizen to build their respective competitiveness and not to plunge them into dependence.

Amir Santoso [12] compares various definitions of experts on public policy. Some opinions equate public policy with government actions in the sense that all government actions can be referred to as public policy. Additionally, public policy has three spheres, namely policy formulation, policy implementation, and policy assessment or evaluation.

### 2.2. Public Management

Public policy management is defined as a process related to planning, implementation, and supervision [13]. According to Overman [14] public management is an interdisciplinary study of general aspects of the organization and a combination of planning, organizing, and controlling functions with human, financial, physical, information, and political resources. Stoner and Freeman elucidate that management aims to realize organizational goals. Therefore, a process of using all organizational resources is needed which includes organizing, planning, controlling, and leadership [15]. Public management is a whole process in stages (formulation, implementation, and performance evaluation) covering several elements (i.e., technical aspect, content, actors, and institutions) at each stage to perform the principles of good governance.

### 2.3. Collaboration

Collaboration, according to Emily R. Lai is a mutual interaction, involvement between parties, and interdependence [16]. Ansell & Gash distinguish collaboration into two. The first is collaboration as a process, which is a series of activities to manage or govern institutionally with the involvement of several institutions, both government and
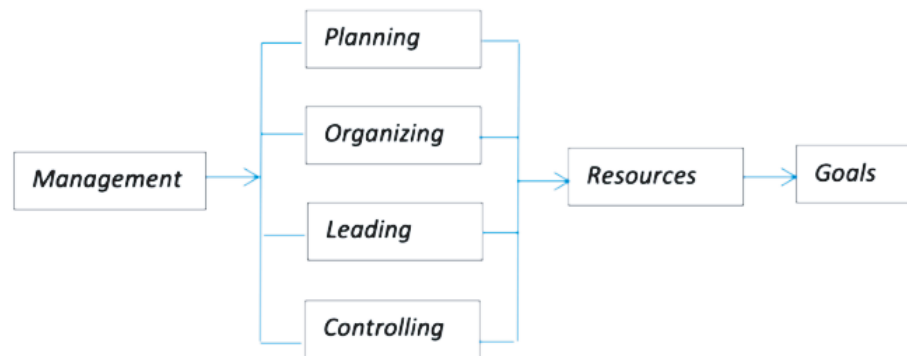
**Figure** 1: Function of Management.

non-government institutions including communities. The second is collaboration in a normative sense, which is related to the goals or aspirations of the government in interacting with its partners [17].

## 2.4. Community Empowerment

Chamber argues that community empowerment is a concept of economic development that reflects the new paradigm of development, namely people-centered, participatory, empowering, and sustainable [18]. The key to successful empowerment is participation. Mikkelson states that participation means that people or groups take the initiative to do something. Participation is interpreted as giving space to the community to be subject to the process of social change and decision-making [19].

## 3. Methods

This research is a descriptive study addressing poverty alleviation efforts using the poverty alleviation model for fishermen with the involvement of female fishermen. In this study, the researchers collected secondary data. Data were collected by studying works of literature sourced from journal articles, books, reports, and others. The obtained data were compiled, analyzed, and concluded to get an understanding of the appropriate model of poverty alleviation for fishermen with the involvement of female fishermen. The analyzed data were from the results of scientific studies related to poverty in fishermen and the empowerment of female fishermen.

# 4. Results and Discussion

## 4.1. Poverty in FIshermen

The phenomenon of poverty in North Kalimantan is something important considering the potential of natural resources possessed by this province. The number of poor people in North Kalimantan in 2020 was 51,790 people.

TABLE 3: Number of Poor Population by Regency/City in 2018-2020 (per thousand people).

| Regency/City and Province | Number of Poor Population by Regency/City in 2018-2020 (per thousand people) | | |
|---|---|---|---|
| | 2018 | 2019 | 2020 |
| Malinau | 6.63 | 6.23 | 6.16 |
| Bulungan | 13.03 | 12.40 | 13.08 |
| Tana Tidung | 1.34 | 1.34 | 1.46 |
| Nunukan | 13.38 | 12.69 | 13.76 |
| Tarakan | 15.97 | 16.11 | 17.33 |
| North Kalimantan | 50.35 | 48.78 | 51.79 |

Source: Central Bureau of Statistics for North Kalimantan, 2021

Based on data from the Office of Maritime Affairs and Fisheries of North Kalimantan, the number of households dependent on the fishing sector in North Kalimantan is 10,190 families with a total of 1,502 labor fishermen and 11,692 independent fishermen.

In addition, based on the results of a survey conducted by this office from January 2020 to October 2021 on these households, 323 families have a net income of fewer than 1 million rupiahs per month. In addition, from the total sample of 546 families, the most fishery households with income below 1 million per month are found in Tarakan with a total of 174 families.

Based on data from the Ministry of Maritime Affairs and Fisheries in 2019, the number of fishermen who use boats without motors in North Kalimantan is 27 fishermen, the number of those using boats with outboard motors is 6,619 fishermen, and the number of those using motorized boats is 3,284 fishermen, in which the majority of fishing gear used is only nets (gill nets) and they only operate close to the coast.

Fishermen's business activities in North Kalimantan are dominated by 20,968 individual businesses. Only 133 business units are in the form of corporations. Moreover, concerning the educational background, most of these fishermen only graduated from elementary school, totaling 7,089 people. Furthermore, 2,493 people are junior high school graduates, 2,073 people are senior high school graduates, and 186 people are university graduates.
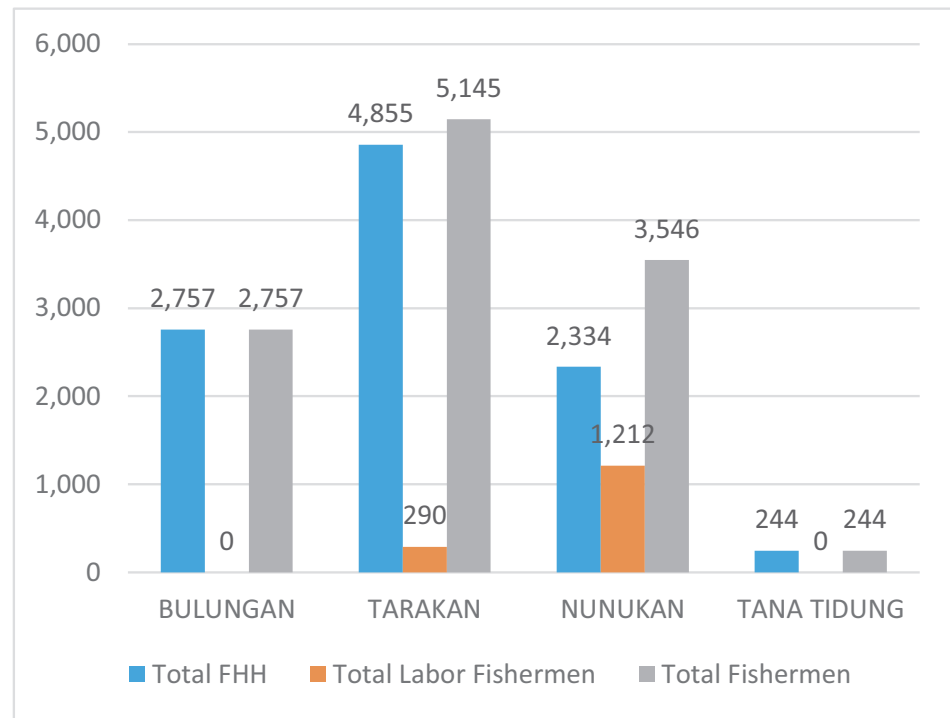
Note: FHH = Fishery Household

**Figure** 2: The number of fishery households and fishermen catching fish in the sea until semester 1 of 2020.

Kartasasmita (in Hayat [17]) explains that the policies regarding poverty alleviation are divided into three policy directions, namely (1) indirect policies focusing on creating conditions that ensure the continuity of any poverty alleviation efforts, (2) direct policies aimed at low-income groups, and (3) special policies to prepare the poor and responsible officials to be directly involved in the program being implemented.

Several government policies related to the acceleration of poverty alleviation in Indonesia are the Rice for the Poor Program (Indonesian: *Program Beras Miskin* (RASKIN)), Direct Cash Assistance (Indonesian: *Bantuan Langsung Tunai* (BLT)), the Hope Family Program (Indonesian: *Program Keluarga Harapan* (PKH)), the National Community Empowerment Program (Indonesian: *Program Nasional Pemberdayaan Masyarakat* (PNPM)), People's Business Credit (Indonesian: *Kredit Usaha Rakyat* (KUR)), Cheap Houses (Indonesian: *Rumah Murah*), Cheap Electricity (Indonesian: *Listrik Murah*), Community-Based Drinking Water and Sanitation (Indonesian: *Penyediaan Air Minum dan Sanitasi Berbasis Masyarakat* (PAMSIMAS)), and the Improvement of Fishermen's Lives (Indonesian: *Peningkatan Kehidupan Nelayan* (PKN)). The general challenges of these programs are the inaccurate targeting of the poor and the lack of complementarity between programs [20].

In the field, the implementation of the RASKIN program still indicates the distribution that is still not in line with the predetermined provisions. Some poor households that should get RASKIN do not get it, and vice versa [21]. It means that the implementation of the RASKIN program has not been in line with its objectives and has not run optimally due to administrative inaccuracies which have caused delays in the payment of RASKIN by target households to village distributors [22] . Nugraha [23] adds that the policies are still not right on target, the amount received is not as it should be, and the availability of resources is still lacking.

Apart from that, the evaluation of the Hope Family Program (Indonesian: *Program Keluarga Harapan* (PKH)) still does not meet the indicators of efficiency, equity, and accuracy. In addition, its implementation is still experiencing several obstacles, such as the lack of resources, the difficulty of changing the mindsets of the program recipients, and the uneven distribution of assistance [24]. This program has not been able to reduce the poverty rate because of being influenced by the low quality of poor families and the misuse of assistance by participants [25]. Some beneficiaries even still do not understand their rights and obligations, not all poor families have received assistance, and socialization has not been optimal [26]. There are cross-sectoral communication problems. It is exacerbated by program participants who do not carry out their commitments [27].. Furthermore, inaccurate data sources, social jealousy between beneficiaries and the local community, and low capture power of beneficiaries due to low levels of education also become problems in this program [28].

One of the marine and fisheries national community empowerment programs is the Resilient Coastal Area Development Program (Indonesian: *Program Pengembangan Kawasan Pesisir Tangguh* (PKPT)) which is set in the Minister of Marine Affairs and Fisheries Regulation No. 07/Permen-KP/2012. The activities in this program consist of human development, business development, community or infrastructure development, and disaster or climate change preparedness. This program is also considered ineffective because not all communities or beneficiaries have high enthusiasm or participation in the implementation of this program due to the lack of socialization in the community and the ineffectiveness of program resources [29]. In addition, another policy related to coastal communities is the Coastal Community Economic Empowerment Program (Indonesian: *Program Pemberdayaan Ekonomi Masyarakat Pesisir* (PEMP)) which aims to strengthen the economy with productive economic capital from the community itself. However, the participation of the targeted community in decision-making is still low and passive. It is aggravated by the lack of community resources and less effective technical performance of program managers [30]. One of the things that affect the success of

public policy programs is the involvement of the community in policy programs starting from the early stages of planning to field implementation.

The public administration paradigm in this study is related to stakeholder collaboration. Stakeholder collaboration is part of good governance, which good governance itself is contained in the NPM paradigm which includes the principle of empowerment.

Collaborative governance is a governing arrangement in which one or more public institutions directly involve non-state stakeholders in a formal, consensus-oriented, and deliberative collective decision-making process. In addition, it aims to make or implement public policies or manage public programs or assets [31].

In collaborative governance management, among stakeholders, the government serves as the facilitator. It requires the community's active participation, institutional strengthening, and private sector assistance in community empowerment, thereby resulting in a real contribution to national poverty reduction.

In efforts to reduce poverty, the poor are no longer the object of mitigation but are subjects in the whole process involving the community. With this empowerment program, the community has jobs and eliminates the culture of the poor who only depend on direct assistance from the government [32]. Participation and involvement should not only be addressed to the community but also to the government and the private sector in the management of coastal areas. The role of the government and the private sector is needed to support the acceleration of development by applying a collaborative approach so that the development of coastal areas can always be monitored and evaluated [33] .

To overcome poverty among fishermen, the concept of empowerment is highly needed. Various empowerment concepts that have been researched are those involving the community and stakeholders by utilizing local resources, strengthening local professional institutions, establishing cooperation to support the development of fisherman villages, improving the quality of human resources and education, and empowering coastal women in handicraft production and product marketing management [34]. The concept of empowerment with the involvement of various parties has also been investigated, especially those regarding the triple helix empowerment – the labor empowerment model carried out by the government in collaboration with universities and industry to reduce poverty among fishermen. In this case, the government may play a role in increasing people's incomes, improving community independence, and reducing poverty. In addition, the industry plays a role in the fishing sector by implementing good governance and administration to support production, improve marketing, and determine the right production costs and prices to increase industry competitiveness.

Meanwhile, universities can carry out the *Tri Dharma* of higher education by helping the government, the industry, and labor fishermen for reaching a better life [35].

The network and the role of each stakeholder in poverty alleviation programs in coastal areas need to be mapped. The key stakeholder is the Office of Social Affairs responsible for providing poverty data as the basis for managing poverty alleviation programs. The primary stakeholders in collecting poverty data are the district and sub-district government offices. Meanwhile, the secondary stakeholders are the Indonesian Traditional Fishermen's Union, Joint Business Group, and the Head of the RT who assist fisherman communities by collaborating with the government in accelerating government programs. Finally, tertiary stakeholders are the community who acts as recipients and implementers of policies [36].

Poverty alleviation with the concept of women's empowerment or gender-based programs has been widely studied. Empowerment of women and gender equality in business development in the form of a cooperative entity for women through its unique focus has provided benefits to its members rather than the traditional corporate structure. Fishermen's wives can take advantage of their spare time to process fishery products to be sold through cooperatives so that it will bring economic change for better family progress [37]. The presence of economic problems faced by fishermen's families encourages the creative behavior of the wives of fishermen in lending a hand to improve their family economy [38] . Economic problems in fishermen's families also trigger the motivation of women to carry out activities outside their homes (public sector). This motivation is driven by physiological, safety, and social needs. Thus, the fishermen's wives will implement a livelihood strategy, namely diversification (doing work as laborers, traders, and tailors) or migration (doing work outside the village as laborers in the agricultural sector) [39].

Women's participation in empowerment programs can be seen in planning, implementation, monitoring, and evaluation, all of which involve female participants who contribute ideas that are driven by their awareness. Thus, they can become subjects of development [40]. Empowerment of fishermen based on local institutions with a gender perspective in coastal communities still has a gender bias so that, at the household scale, affirmative action is needed to increase access and control of female fishermen as members of female fisherman groups so that they can manage businesses more efficiently and productively through a series of training and assistance. From the institutional side, it is necessary to carry out affirmative action to encourage women's participation as members and administrators of female fisherman groups and business

groups proportionally. Therefore, they need to be assisted in managerial, production, and marketing aspects [41].

The empowerment model that can be applied by fisherman groups is the regional-based group approach model by considering the characteristics of the people in their respective regions. The most appropriate empowerment pattern is those involving all stakeholders using partnership schemes. These stakeholders include local governments, universities, the Regional People's Representative Assembly (Indonesian: *Dewan Perwakilan Rakyat Daerah* (DPRD)), and the private sector (i.e., companies) [42].

To overcome the poverty of fishermen, the concept of community empowerment is needed. The key to successful empowerment is participation. Participation is interpreted as giving space to the community to be subject to the process of social change and decision-making. It is expected that, from the concept of empowerment, the community may have jobs and eliminate the culture of the poor who only depend on direct assistance from the government. Participation and involvement should not only be addressed to the community but also to the government and the private sector in the management of coastal areas. Thus, the role of the government and the private sector is needed to support the acceleration of development by applying a collaborative approach or partnership scheme.

The right concept or model of poverty alleviation for fishermen with the women's empowerment or gender-based programs in North Kalimantan can be carried out through business development in the form of cooperatives for female fishermen to help improve the family economy. The presence of a fisherman's cooperative is expected to be able to motivate female fishermen to fulfill their social needs and contribute ideas that are driven by their awareness so that they can become the subject of development. For this reason, a public policy is needed in the form of affirmative action to increase access and control of female fishermen as members of female fisherman cooperative groups so that they can manage businesses more efficiently and productively. Moreover, it is also to encourage women's participation as members and administrators of female fisherman cooperative groups and business groups proportionally.

The most appropriate empowerment pattern is those involving all stakeholders, such as local governments, universities, and the private sector (i.e., companies). The local government may play a role based on its authority to provide a series of training and assistance (planning, implementation, and evaluation) for the management of female fisherman cooperatives. Meanwhile, the private sector plays a role in reinforcing the management of the cooperatives in managerial, production, and marketing aspects. Furthermore, universities play a role in implementing the *Tri Dharma* of higher education

by helping the government and the female fisherman cooperatives. Thus, the economic life of fishermen's families may become better.

# 5. Conclusion

Based on the result of the analysis, the following conclusions are obtained:

1. Poverty in fishermen in North Kalimantan is caused by the low income of fishermen, the use of traditional fishing gear, and low levels of education.

2. Poverty alleviation policies for fishermen need to pay attention to several aspects, such as program goals and objectives, administration, resources, socialization, data availability, program participant commitment, education level of participants, and community participation in the program.

3. The right model of poverty alleviation for fishermen in North Kalimantan is through women's empowerment in business development in the form of the establishment of cooperatives for female fishermen.

4. An affirmative government policy is needed for the development of cooperatives for female fishermen by collaborating with the government, private sector, and universities.

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