

## EMPOWERMENT OF FISHERMAN GROUPS THROUGH E-COMMERCE BY ARUNA INDONESIA

**Lina Favourita Sutiaputri**

Bandung Polytechnic of Social Welfare, [linafavourita@poltekesos.ac.id](mailto:linafavourita@poltekesos.ac.id)

**Teta Riasih**

Bandung Polytechnic of Social Welfare, [tetariasih@yahoo.com](mailto:tetariasih@yahoo.com)

---

### *Abstract*

*Empowerment is a way in which people, organizations, and communities gain control over their own lives, including for fishermen groups which consist of economic, social, and environmental empowerment which is the focus of this research. In Indonesia, the fisheries sector is a great opportunity for business people because it is one of the pillars of Indonesia's current economy. Aruna is a digital startup or startup that focuses on fisheries. The goal is to connect small fishermen throughout Indonesia directly to the market using technology assistance. This is a site for fishermen to be able to learn integrated fisheries management, find out about the latest fishery data and fishery online trading systems, apart from strengthening the economy, Aruna conducts social and environmental empowerment for improving the welfare of fishermen and their families.*

*The research approach used is a qualitative approach, which describes the empowerment of fishermen groups by Aruna by using the technique of focus group discussion, interviews, and discussions with experts and informants consisting of fishermen, mira, community leaders, local heroes, management, and Aruna's founders, totaling 32 people.*

*The results showed that overall the economic empowerment that has been carried out has been very good, but the social empowerment carried out by Aruna still has limitations, especially in the availability of human resources to empower the Nelyan community who require expertise as a local academic influencer, namely someone who has influence and can influence the audience to make a certain choice or action. People who have this ability are social workers who can become agents of change. So that in the future it is necessary to involve social workers to carry out social empowerment for fishing communities.*

### **Keywords:**

*Empowerment, Groups, Fisherman, e-commerce*

## INTRODUCTION

Indonesia is the largest maritime country in the world. Its land area reaches 1.9 million square kilometers (km<sup>2</sup>) and the area of marine waters is recorded at around 7.9 million km<sup>2</sup>. The great potential of marine resources in Indonesia is also spread across 11 fisheries management areas with the potential for sustainable use reaching 9.93 million tons per year (Kepmen KP RI No.47/2016) or an equivalent value of 29.80 billion US dollars per year. The fisheries sector is a great opportunity for business people because it is one of the pillars of the Indonesian economy to date.

With this huge potential, of course, people living on the coast have a big opportunity to use and depend on the marine sector as fishermen. (Aribowo, 2013). But in reality, it is inversely proportional. According to data from the Ministry of Marine Affairs and Fisheries (2019), the majority of the 2.7 million fishermen in Indonesia live below the poverty line and contribute 25% to the national poverty rate.

With the abundance of fish resources, fishermen's income should be very adequate to meet their daily needs. However, in reality, this is not the case, poverty still affects the lives of many fishermen. From an economic point of view, the catch of fishermen is still far from sufficient to meet their daily needs. This is due to the lack of capital owned by fishermen, pressure from capital owners, unfair sharing systems, non-transparent trade or fish auctions (controlled by middlemen and the authorities do not have the authority to regulate and enforce rules, and work patterns or culture that are still as it is.

Aruna is a digital startup that focuses on fisheries. The goal is to connect small fishermen throughout Indonesia directly to the market using technology assistance. According

to General Manager Aruna, the biggest problem for fishermen is real-time data transparency. That is why the founder of Aruna created the "Aruna Fisherman Application". The Aruna fisherman application can record fishermen's catch data, starting from the type of community, the number, and so on. With this data, Aruna can help connect fishermen directly with buyers. This is a site for fishermen to be able to learn about integrated fishery management, know the latest fishery data (intelligent data), and the fishery online trading system. Fishers can access the market directly. Fishermen know where to sell and at what price.

In 2020 the number of Aruna fishing group partners was 1,701 groups spread across 15 points in several provinces from all over Indonesia, namely Aceh, South Sumatra, West Java, East Java, East Kalimantan, South Sulawesi, Southeast Sulawesi, Central Sulawesi, and West Papua. . which also develops a digital ecosystem for fishermen consisting of devices, connectivity, applications, and platforms.

Empowerment carried out by Aruna Indonesia not only includes economic empowerment for fishermen but also reaches social empowerment and even environmental empowerment where Aruna Indonesia in addition to strengthening the economy through e-commerce also carries out social empowerment for fishermen's families in the form of changes in the cultural values of fishermen and coastal communities whose culture is hard. and it is difficult to face new things to be able to accept changes in the system for managing their fisheries products, developing new networks, managing family finances so that they can meet their family

needs and maintain the marine environment so that it is preserved.

Based on the background of this problem, the research team is interested in researching the Empowerment of Coastal Communities through e-Commerce by Aruna Indonesia.

#### **A. Research Questions**

1. What is the mechanism/stages of economic, social, and environmental empowerment for fishermen groups carried out by "Aruna Indonesia"?
2. How is the availability of Aruna Indonesia's programs and human resources in organizing service group empowerment?
3. What are the factors that support the successful implementation of empowerment of fishermen groups by "Aruna Indonesia"?  
What are the factors that hinder the successful implementation of empowerment of fishermen groups by "Aruna Indonesia"?

#### **B. Research Purposes**

Through this research is expected to provide an overview of:

1. The mechanism/stages of economic, social, and environmental empowerment of the community groups carried out by "Aruna Indonesia".
2. The availability of programs and human resources for Aruna Indonesia in the implementation of empowerment of fishermen groups.
3. Factors that support the successful implementation of service group empowerment by "Aruna Indonesia".
4. Factors that hinder the successful implementation of service group empowerment by "Aruna Indonesia".

#### **C. Research Benefits**

The benefits of this research are:

1. Benefits to social work science

The benefit for the scientific development of social welfare and social work is the production of practice manuals that clearly outline the mechanisms and stages of economic, social, and environmental empowerment based on empowerment best practices carried out by Aruna Indonesia.

2. Practical benefits (for policymakers)

This research is very useful for the Ministry of Social Affairs to have the authority to provide social empowerment, especially for fishermen and coastal communities so that they can carry out a more comprehensive model of empowerment of coastal communities and strengthen social networks with non-government parties.

#### **D. Research Advantages**

The benefits of this research are:

1. Benefits to social work science

The benefit for the scientific development of social welfare and social work is the production of practice manuals that clearly outline the mechanisms and stages of economic, social, and environmental empowerment based on the best practices for empowerment carried out by Aruna Indonesia.

2. Practical benefits (for policymakers)

This research is very useful for the Ministry of Social Affairs to have the authority to provide social empowerment, especially for fishermen and coastal communities so that they can carry out a more comprehensive model of empowerment of coastal communities

and strengthen social networks with non-government parties.

This research aimed to obtain a comprehensive and in-depth picture of economic empowerment, the social environment carried out by Aruna Indonesia.

Some of the basic concepts used in this study are based on Ife (1995: 182) who explains that “empowerment means providing people with the resources, opportunities, knowledge, and skill to increase their capacity to determine their future and to participate in and affect the life of their community.” Empowerment is a means of providing people with resources, opportunities, knowledge, and skills to increase their capacity so that they can determine their future and participate in the life of their community. Ife further argues that empowerment is aimed at bringing disadvantaged communities to a more just society and will strengthen local community members and strive to create communities based on effective structures. In the process of community empowerment as a whole, they are involved and given the enthusiasm to exercise control over their activities, and through this program, they can have more ability to control the life of their community. The community is part of the empowerment process and empowerment becomes their own needs, so an empowerment process requires time, energy, commitment and requires structural changes that may have many obstacles and obstacles. (1995: 183).

In addition, five important things need to be done in a series and simultaneously, in community empowerment, namely: (1) efforts to increase the supply of necessities for the most powerless community groups; (2) awareness efforts; (3) institutional strengthening; (4) policy strengthening efforts and (5) network development. With this

strategy, it is hoped that the community can achieve the level of empowerment as expected. In stages, community empowerment can be described as follows: (1) the first level of empowerment is the fulfillment of basic needs (basic welfare); (2) the second level of empowerment is control and access to the various systems and resources needed; (3) third empowerment is having full awareness of the various potentials, strengths, and weaknesses of themselves and their environment; (4) the fourth level of empowerment, namely the ability to actively participate in various activities that are beneficial to the wider environment; (5) and the fifth level of empowerment is the ability to control oneself and the environment.

Discussion of community empowerment as a program and as an ongoing process is a thought which is also related to the position of community empowerment agents. If the community empowerment agent is an external party (from outside the community), the community empowerment program will be followed by termination or disengagement, whereas if the community empowerment agent comes from within the community, community empowerment will be more directed towards a sustainable community empowerment process (an ongoing process). Concerning this empowerment effort, it is the roles of change accelerators (enablers) or community workers that should be chosen by the agents of change. These two roles, in the case of Indonesia, are more directed at the role of a facilitator in a broader sense.

### **Overview of E-Commerce**

In simple terms, e-commerce can be defined as the concept of implementing the business of buying and selling goods and

services through electronic networks and usually involves electronic data transactions, automatic inventory management systems, and automatic data collection systems. The advantage of running e-commerce is that we don't need a shop or office like conventional (offline) businesses do as a place of business, but simply by using the internet we can buy and sell with unlimited consumer reach with the internet that can be accessed 24 hours. In E-Commerce marketing or marketing, goods that are sold can be promoted online so that the costs incurred for promotion will not be as much as the costs incurred when promoting conventionally.

## METHODOLOGY

This research was conducted using a qualitative approach. A qualitative approach is used to obtain a specific description of the problems, needs, and experiences of empowering coastal communities through e-commerce, social empowerment, and environmental empowerment; experience of officers/facilitators in providing services; as well as support for existing e-commerce policies in empowering coastal communities. This description is needed to strengthen the argument for empowerment models both economically, socially, and environmentally in coastal communities through e-commerce. The choice of this approach is following the characteristics of a qualitative approach which aims to gain a comprehensive understanding of the phenomenon under study that reveals various specificities in depth so as to reveal the meaning of the various views of people in the research situation. Sugiono (2009) argues that qualitative research examines phenomena in conditions of natural objects, data analysis is inductive/qualitative, and qualitative research results emphasize meaning rather than generalization.

Research on Empowerment of Fishermen Groups by "Aruna Indonesia" was conducted in three provinces out of 12 provinces in Indonesia. Currently, there are 1,701 fishermen group partners in Aruna, scattered in 15 points in several provinces throughout Indonesia, namely Aceh, North Sumatra, South Sumatra, West Java, East Java, South Kalimantan, East Kalimantan, North Kalimantan, Sulawesi. South, Southeast Sulawesi, Central Sulawesi, and West Papua.

The determination of three locations is related to the high number of people who work as fishermen in the area and the empowerment carried out by Aruna has been going on for more than 1 (one) year. Therefore, the selection of research locations from the area represents many residents who work as fishermen and have received the program. empowerment through e-commerce by Aruna Indonesia.

Fifteen points scattered in several provinces that have been mentioned above are in the western part of Indonesia, namely two from Java and three areas from Sumatra. Meanwhile, one other region is in Central and Eastern Indonesia. Therefore, to represent this distribution, the research locations were determined to be Sukabumi and Tasikmalaya Districts in West Java Province, and Tanah Grogot District, Balikpapan City in East Kalimantan Province. In addition, a limited discussion was held with experts, namely the central management of Aruna Indonesia, the Directorate General of Social Empowerment in Jakarta. The data source of this research consists of primary data sources and secondary data sources. Primary data sources include:

1. Representatives of fishermen groups in each city where the research is located are represented by 6 (six) people who have in-depth information about the empowerment carried out by Aruna Indonesia so that the number of representatives of fishermen

- groups in 2 (two) locations is 12 (twelve) people.
2. Representatives of fishermen's families in each group in the research location city are represented by fishermen's wives totaling 6 (six) people from 2 (two) research locations. The fisherman's wife who was chosen had in-depth information about the empowerment carried out by Aruna Indonesia.
  3. Aruna Indonesia's management representatives from the Head Office and (Local Heroes) in each city where the research is located. Management of Aruna Indonesia at the Head Office as many as 3 (three) people and Local Heroes every 3 people for each city location. Thus, the total number of representatives of Aruna Indonesia's management is 9 people
  4. Representatives of partners or community leaders at the location of fishermen groups participating in the empowerment program from Aruna Indonesia. Each fisherman/village group is represented by at least 2 (three) people. Thus, a total of 4 (four) people.

Data collection in this study was carried out by using the following techniques:

1. In-depth Interview

In-depth interviews were conducted to get an in-depth picture of the problem cases of fishermen groups and the empowerment provided by Aruna Indonesia, as well as policies on empowerment of coastal communities, especially fishermen groups.

2. *Focus group discussion*

Focus group discussions were conducted to obtain a more complete picture to complement the results of in-depth interviews based on the experiences of various cases of discussion participants. In each Regency/city where the research was located, there was a focused

discussion consisting of 12 representatives of fishermen group members, 4 fishermen families, 6 community leaders/partners, and 9 Aruna Indonesia's management, so that a total of 30 people.a

3. Documentation Studies

Documentation studies were conducted primarily to obtain data on the number of fishermen empowered by Aruna Indonesia, the Fisher Family, and policies/programs for the empowerment of fishermen groups by Aruna Indonesia. Documentation studies were also carried out to enrich the description of the coastal community empowerment program.

Data analysis was performed using qualitative data analysis. Before being analyzed the data obtained will be checked first. qualitative data analysis was carried out by identifying the key themes and issues presented by the data; categorizing data through domain, component, and cultural analysis; make interpretations, and formulate conclusions in answering research problems.

Based on the results of the analysis, the assumptions that underlie the thinking about models of economic empowerment, social empowerment, and environmental empowerment of coastal communities, especially for fishermen groups, are built based on empowerment best practices carried out by Aruna Indonesia.

## RESULTS

Aruna developed an e-Commerce application to facilitate fair, open, and transparent fishery transactions for coastal communities. Aruna's e-commerce product is [pasarlaut.com](http://pasarlaut.com). Through [Pasarlaut.com](http://Pasarlaut.com) fishery products are taken directly from fishermen group partners from all over Indonesia and buyers can order any fishery products in large quantities at competitive prices directly from fishermen.

The Aruna Distribution Chain consists of a Satellite Mini Plant (smaller scale), as a support supply mini plant; MitraMiniPlant / Qini Plant; Transit Point. At the point/city. One province and one city; Ware House / International Point (Tangerang, Makassar, Surabaya).

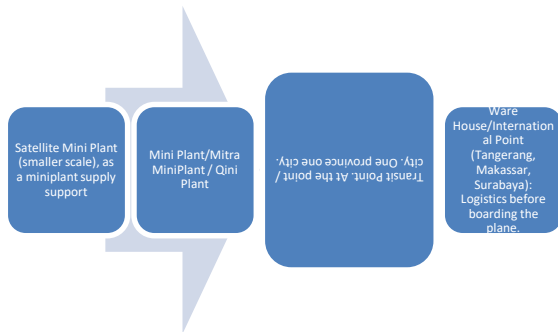


Figure 3

### Aruna Distribution Chain

The empowerment carried out by Aruna Indonesia does not only include economic empowerment for fishermen but also reaches social empowerment and even environmental empowerment. Social empowerment of fishermen's families in the form of changes in the cultural values of fishermen and coastal communities whose cultures are hard and difficult to face new things to be able to accept changes in the system for managing their fishery products, developing new networks, managing family finances so that they can meet their family needs and maintain the marine environment so that maintain its sustainability.

### Overview of Economic Empowerment Mechanisms by Aruna Indonesia.

The presence of Aruna Indonesia since 2017 in Balikpapan and its surroundings has been able to change the welfare conditions of the fishermen who are members of it as conveyed by the fishermen and their families during the FGD as follows:

#### *Get A Much Higher Price*

*We usually get limited income because the price of crab and all types of fish is determined by the collectors/middlemen only at low prices, now we can find out the price of fish from the application on their Android phone and get a much higher price.*

The same thing was conveyed by fishermen from Pasir Mayang Village who felt extraordinary benefits in increasing the economic welfare of their families as conveyed by 26-year-old Mn as follows:

*Alhamdulillah Our desire to increase our income was achieved by joining us in Aruna because the price of our catch is valued far from the price given by the collectors/middlemen, it can even be 2 times the previous price, if the wholesaler we sell crabs for Rp. 12,000 -Rp. 15,000 per kilo. At Aruna we can sell by harga Rp.25.000 – Rp.30.000,-*  
(Interview results, Mn 26 years old, Balikpapan)

#### *Get Transparent Prices*

Based on the results of the FGD, it was revealed that the benefits of fishermen being involved in Aruna were for fishermen for many years the prices of the superior commodities they produced in the form of lobsters, crabs, and shrimp offered by middlemen were often "dark" meaning that the price completely depended on the offer from the middleman, there was no good bargaining position fisherman. So that the profits obtained by fishermen are only small. Even sometimes they lose money because fishermen have to pay for fishing. After joining Aruna, fishermen get a

transparent price according to the price prevailing in the global market. So that fishermen can directly check the price of commodities produced shortly after fishing.

#### *Can Meet Family Needs*

The benefits felt by fishermen are increasing the ability to meet family needs, such as for the purchase of daily necessities, education costs, and family health

#### *Get a Bonus*

Since joining Aruna, another thing that will make fishermen feel good about their catch is getting bonuses in the form of necessities and fishing equipment.

#### *Knowing Where to Sell the Catch*

The results of the FGD showed another benefit felt by fishermen by joining the Aruna group, namely knowing clearly to which party and where their catch was sold so that they could find out the selling price in the destination area.

### **Forms of economic empowerment**

The forms of Economic Empowerment carried out by Aruna Indonesia are as follows:

#### *1. Fishermen grouping according to superior commodities*

Aruna grouped fishermen based on superior commodities based on regional potentials, such as lobsters, crabs, shrimp, and other types of fish with an average number of group members between 20 and 40 people. According to fishermen's admission, the reason fishermen want to join Aruna is transparency in weighing, and more importantly in sorting, meaning that if there are lobsters that are still alive, they will be quarantined and not shaken their cages so that they are deemed dead so that the price falls as is done by middlemen. other. What Aruna did on the contrary allowed the

fishermen to get more profit by preparing a quarantine so that more lobsters can be sold alive.

#### *2. Using Digital Technology*

Based on the results of the Focus Group Discussion with Aruna initiators, managers, and local heroes, it was found that there are currently three Aruna products. Namely Integrated Fishery Management (integrated application system for fisheries business management), Fishery Online Trading (Real-time and reliable fisheries sector data), and Fishery Data Intelligent (an innovative online fish and marine product trading system).

#### *3. Networking*

Another form of economic empowerment carried out by Aruna is developing a network as conveyed by the initiators of Aruna during the Focus Group Discussion, conveying that Aruna's products have been released to users, namely [Pasarlaut.com](http://Pasarlaut.com) (a site for buying and selling fish and seafood products online), e-TPI (Electronic Fish Auction Place Application), and [Infomaritim.com](http://Infomaritim.com) (maritime news portal), and several other products that are currently still being developed.

#### *4. Introducing the Banking System*

Through a Focus Group Discussion, it was revealed that fishermen who are members of Aruna Indonesia not only benefit from a higher income than when partnering with middlemen but more importantly Aruna introduced them to the banking system. Almost all fishermen already have savings at several government banks such as BRI and BNI, they have ATMs and set aside a portion of their income in these



savings. The payment system given to fishermen is through transfers by Aruna.

### 5. Managing Family Finances

Through the Focus Group Discussion, it was revealed that the fishermen who are members of Aruna Indonesia are also taught how to manage finances to increase the scale of their family's welfare. They are taught to share their income other than for family consumption, to set aside for education and health needs, and to prepare an emergency fund. Although it is not evenly distributed in all Aruna locations.

### C. Social Empowerment

Social empowerment will be successful if the party that empowers fishermen, namely Aruna, takes sides with fishermen, includes them in joint decisions, and uses a group approach.

For fishermen who are members of the Aruna group, they hope that there will be interactions among group members in the form of influencing each other, such as the success of some members of the fishermen's group will encourage other group members to do the same, such as for fishing gear using a spear, then other fishermen will use the same tools so that the results obtained will be more.

For fishermen who are members of the Aruna group, they hope that there will be interactions among group members in the form of influencing each other, such as the success of some members of the fishermen's group will encourage other group members to do the same, such as for fishing gear using a spear, then other fishermen will use the same tools so that the results obtained will be more.

The hopes of fishermen expressed through the FGD illustrated that fishermen hoped that through group media they would be able to build a sense of common sense among

their group members so that they could help each other among their group members, such as in fulfilling daily needs, for the continuity of education of children of fishermen or family health. fisherman. This shows that social empowerment in fishermen groups is still not optimal.

### D. Forms of Environmental Empowerment Conducted by Aruna Indonesia

The environmental condition has reached an alarming level with a trend that continues to decline, including on the coast where fishermen earn a living so that efforts to preserve the environment are a concern, including by Aruna. The efforts made by Aruna to maintain the environment were revealed in the results of the FGD as follows:

Restoring coral reefs in the area around the coast (habitat for monsters and shrimp and crabs), planting mangrove and ketapang trees around the coast, periodic cleaning of beaches by fishermen groups, prohibiting dumping dangerous water (mercury) gold mining into rivers; Collaboration with the police, Kopasus and Indonesian Navy, Prohibition of capturing with potassium and other toxic materials, Clean Friday movement along the coast to keep the beach and sea clean, Construction / Rehab of Uninhabitable Houses for Fishermen and cleaning operations once a week around the coast from rubbish that has piled up due to a large number of tourists.

### Availability of Aruna Indonesia's Program and Human Resources in the Implementation of Fishermen Group Empowerment

#### *Fishermen Empowerment Program*

Based on the results of the Focus Group Discussion, it was revealed that 90% of the fishermen who are affiliated with Aruna are

small fishermen. Their income averages Rp. 1.1 million per month. The small fishermen who catch their catch are usually only sold locally because they do not know where to sell, and how much money they can get. Currently, 20,000 fishermen who have joined Aruna are already using the application. About 10% or about 2100 are new members.

Since joining Aruna, their increase has increased by about 20% - 30%. Fishermen can access the market directly. Fishermen know where to sell and at what price. One fisherman from Grogot, East Kalimantan, DH, said that since joining Aruna, his income has tripled. Now he can buy his motorboat. Previously he was often tricked by the price of the collectors.

### ***Human Resources***

The human resources available in Aruna, especially for the management of Aruna and Local Hero, cover two main backgrounds, namely having a background in Information Technology and marine and fisheries, this is following Aruna's main focus in two things, namely the Integrated Fishery System (IFS) and Fisheries E-Commerce. IFS is a cloud-based platform to help companies, governments, and institutions involved in the fishing industry to manage, analyze and report data in real-time and easily so that people who are experts in the field are needed.

Local Hero skills are used in the Aruna Traceability System, which is an application to monitor the traceability of seafood products from catching to the hands of consumers. In addition, the use of Smart Fisheries is an application to collect and analyze fishery data that is intended for government and NGOs, which is the process of digitally monitoring fisheries activities in certain areas. This application can be used to collect data at each landing site and can analyze the analytical data features of the application in real-time.

By looking at the background and expertise of human resources in Aruna Indonesia, it is no wonder that his economic empowerment has been very good. However, social empowerment carried out by Aruna still has limited human resources available in Aruna, even though social empowerment requires expertise as a local academic influencer, namely someone who has influence and can influence the audience to make a certain choice or action. In the discussion of the research team and the Aruna team, people who have this ability are social workers who can become agents of change.

### **B. Discussion**

The results showed that most of the informants viewed the empowerment carried out by Aruna Indonesia at this time to be quite complex, related to many dimensions, namely economic, social and environmental:

#### **1. Mechanism/Stages of Economic, Social and Environmental Empowerment of Fishermen Groups Conducted by "Aruna Indonesia"**

In line with industry 4.0, Aruna has become e-commerce covering two main products or programs, namely the Integrated Fishery System (IFS) and Fisheries E-Commerce. IFS is a Cloud-based platform to help companies, governments, and institutions involved in the fishing industry to manage, analyze and report data in real-time and easily. Aruna's IFS products consist of 2 (two) categories, namely:

Aruna Traceability System is an application to monitor the traceability of seafood products from the catch to the hands of consumers. Smart Fisheries Smart Fisheries is an application for collecting and analyzing fishery data that is intended for government and NGOs, which is the process of digitally

monitoring fisheries activities in certain areas. This application can be used to collect data at each landing site and can analyze the analytical data features of the application in real-time.

Empowerment carried out by Aruna Indonesia does not only include economic empowerment for fishermen but also reaches social empowerment and even environmental empowerment where Aruna Indonesia, in addition to strengthening the economy through e-commerce, also carries out social empowerment of fishermen families in the form of changes in the cultural values of fishermen and coastal communities whose culture is hard. and it is difficult to face new things to be able to accept changes in the system for managing their fisheries products, developing new networks, managing family finances so that they can meet their family needs and maintain the marine environment so that it is preserved.

However, the urgency for the sustainability of the life of fishermen in Indonesia has so far received serious attention from all parties, not only from the government but from non-governmental parties such as Aruna Indonesia. while those who have concern and concern for fishermen groups and their problems are still inadequate. There are still many informants who expect increased empowerment, especially in social empowerment. This indicates the need to increase efforts in solving these problems. Efforts to increase social empowerment for fishermen groups, among others, relate to increasing the provision and utilization of resources that support this increase. Human resources are a very important source of support in the management of efforts to deal with these problems.

### **Availability of Programs and Human Resources for Empowerment of Fishermen Groups**

The human resources available in Aruna, especially for the management of Aruna and Local Hero, cover two main backgrounds, namely having a background in Information Technology and marine and fisheries, this is following Aruna's main focus in two things, namely the Integrated Fishery System (IFS) and Fisheries E-Commerce. IFS is a cloud-based platform to help companies, governments, and institutions involved in the fishing industry to manage, analyze and report data in real-time and easily so that people who are experts in the field are needed. Local Hero skills are used in the Aruna Traceability System, which is an application to monitor the traceability of seafood products from catching to the hands of consumers. In addition, the use of Smart Fisheries is an application to collect and analyze fishery data that is intended for government and NGOs, which is the process of digitally monitoring fisheries activities in certain areas. This application can be used to collect data at each landing site and can analyze the analytical data features of the application in real-time.

By looking at the background and expertise of human resources in Aruna Indonesia, it is no wonder that his economic empowerment has been very good. However, social empowerment carried out by Aruna still has limited human resources available in Aruna, even though social empowerment requires expertise as a local academic influencer, namely someone who has influence and can influence the audience to make a certain choice or action. In the discussion of the research team and the aruna team, people who have this ability are social workers who can become agents of change.

Social workers are one of the human resources that are legally protected to deal with social problems to improve social welfare, both in preventing and responding to and solving

problems that exist in fishermen groups. Laws that strengthen this mandate include Law on Social Welfare number 14 of 2019.

The strength of the resources of social workers who have been given the mandate to handle social empowerment is carried out in various communities including fishermen groups. The involvement of social workers can be realized as part of the implementation of the role of empowerment in the community. The involvement of social workers as an important party in social empowerment is very strategic in improving the livelihood of the community, including fishermen groups.

The results showed that the empowerment carried out in fishermen groups, especially in social empowerment, was still considered very limited, not sufficiently supportive for solving complex, multi-dimensional, and urgent problems in fishermen groups. Bappenas proposes 2019 human development priorities, including human development through poverty reduction and improvement of basic services, and reducing inequality. Poverty alleviation, realizing a healthy and prosperous life, including fishing groups, reducing inequality, peace, justice, and responsible institutions are part of the global agenda adopted by Indonesia for sustainable development. Thus the empowerment of communities including fishermen groups as part of coastal communities is an important part of realizing national development priorities and sustainable development goals.

Empowerment carried out by Aruna Indonesia, including social empowerment in addition to economic and environmental empowerment, can help fishermen groups to improve their family welfare. However, currently, empowerment, especially social empowerment that is currently being carried out, is far from ideal, this is because the availability of human resources who have the

capacity and competence to understand society, know the strategic strategy of working with the community is still limited, only one qualifies as an ideal local hero. and the local ideal hero is a social worker. The existence of the ideal local hero in Aruna is not sufficient to sustain social empowerment, which is currently still limited in number. The availability of the ideal local hero is not balanced with the number of fishermen groups so it becomes the main problem with the most number of informants conveyed.

The gap between the ideal numbers and the existing numbers is still very wide. Things that affect these conditions include the limited ability of local heroes in carrying out social empowerment, limited analysis of the needs of local heroes who have a social work background or community developer, recognition, and cooperation.

The need for strengthening forms of social empowerment and increasing the number of local heroes who social workers who meet the criteria are the main needs in Aruna. Of course, the formation cannot just be established. This formation must be proposed by the organization concerned and needs to be supported by the results of a needs analysis, which are following the company's financial regulations and capabilities. Information about the important reasons for the need for social workers in these positions, the strength of the results of the needs analysis, and advocacy and cooperation with social worker-producing universities are very important.

The need for designing forms of social empowerment and increasing the number of social workers to develop social empowerment for the community, especially fishermen groups, is a valuable investment to contribute to improving welfare and saving the sustainability of the community, especially coastal communities. Likewise, the

involvement of social workers in empowering fishermen groups becomes an investment in strengthening habit-changing and mental factors that can reduce poverty, especially for fishermen groups. Even so, this addition risks large budgeting which may be difficult to fulfill simultaneously by Aruna, so that it is more inclined to the possibility of the option of providing cooperation with universities that produce social workers such as polytechnic social welfare to collaborate, especially during student practicum. The provision of social workers is an option that is difficult to avoid, but Aruna also has to make strategic decisions that benefit fishermen groups as well as provide protection for the continuity and development of their welfare.

## **2. Supporting Factors for Empowerment of Fishermen Groups by “Aruna Indonesia**

In implementing fishermen empowerment programs, several factors support the successful implementation of the program. In economic empowerment, an open and egalitarian culture of the fishing community is also open to receiving suggestions and criticism for future business improvements. For example, educating them on the importance of income management, so that they can manage and use the income they earn to meet the needs of themselves, their families, and the continuity of their business. In the social empowerment program, Aruna conducts outreach to fishing communities about the need to live in groups to maintain good relations with fellow group members and with other coastal communities, Aruna also monitors the program to ensure the program is implemented properly. For economic and social empowerment programs to synergize with environmental empowerment, Aruna also educates fishermen

to catch fish or other commodities naturally and sustainably in the present and the future.

## **3. Inhibiting Factors Empowerment of Fishermen Groups by “Aruna Indonesia**

In implementing his program, Aruna found several obstacles, both from internal fishermen and from the external environment. Aruna's economic empowerment program, there is still a culture of fishermen who have not been educated because their level of formal education is relatively low. In addition, the consumptive nature of fishermen, where the results obtained from fishing are mostly spent on meeting secondary needs and even tertiary needs that are not needed and only a few fishermen allocate it to buy fishing business capital such as boats, nets, and other equipment. The life of fishermen who fully depend on the results of fishing is uncertain if the season and the waves improve, then their catch is abundant, but on the other hand, if the season is not good, they are unemployed. In social empowerment, the nature of the fishing community is still individualistic so that it experiences obstacles in group life because of the lack of cohesiveness between fishermen groups because they have different interests. In environmental empowerment, there are still many fishermen who are not aware of sustainable fishing methods, they only think for a moment's sake. There is a rejection of educational activities for environmentally friendly fishing methods because they are already in a comfortable and profitable zone and this situation is compounded by differences in the level of education in fishing communities.

Based on the field findings, the empowerment carried out by Aruna Indonesia consists of Economic, Social, and Environmental Empowerment. Of the three

forms of empowerment, what needs attention is social empowerment. For this reason, the Research Team and the Team from Aruna Indonesia, together formulate a welfare development plan for fishermen. Aruna Indonesia as an ecosystem, consists of: Aruna Indonesia, Aruna Cooperative and Fisherman Cooperative, and Yayasan Maritim Nusantara Lestari.

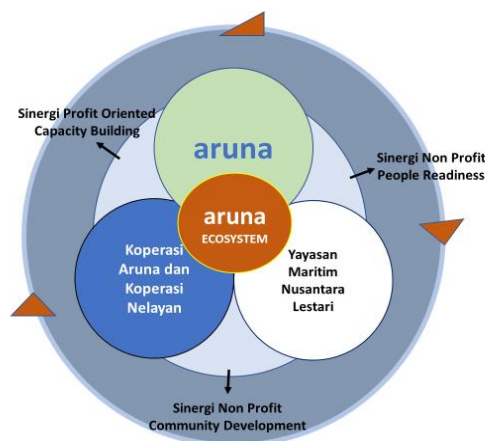


Figure 8

The formulation of the Aruna Indonesia Ecosystem Social Empowerment

In doing business, Aruna is driven by field workers known as Local Heroes (LH). Local Heroes focus on transaction operations. In its development, it turns out that to improve fishermen's welfare, "Business Development" and "Community Development" are needed. In this case, Aruna realizes the need for a supporting system or a support team, which can support the aspects of social empowerment for fishermen. In developing the business and developing the fishing community, Aruna needs human resources called "Academic Local Influencers", who can partner with "Local Heroes" to develop fishermen's welfare. Influencers are people who have influence and can influence their audience to make a certain choice or action.

## CONCLUSIONS AND RECOMMENDATIONS

### A. Conclusions

Based on field findings, Aruna's presence in improving fishermen's welfare is: fishermen get a transparent price, can meet family needs, get a bonus if they can get a catch that exceeds the target, know where their catch is sold. The forms of economic empowerment obtained by fishermen are grouping fishermen according to superior commodities, using digital technology, developing networking, introducing to the banking system, managing finance for product quality development (product hygiene and production processes), has the potential to reduce the work system for the next generation (has a contagion effect on the children and grandchildren), and the increased participation of fishermen's women/wives in increasing family income.

- Meanwhile, environmental empowerment Environmental conditions have reached an alarming level with a trend that continues to decline, including on the coast where fishermen earn a living so that efforts to preserve the environment of Harius are a concern, including by Aruna. The efforts made by aruna to defend the environment were revealed in the results of the FGD as follows:
- Strengthening the ability to protect the ecosystem, because of the unacceptable number of underweight, so that the small fish/shrimp / small lobster are not caught,
- Repairing coral reefs in the area around the coast (lobster and crab habitat), planting mangrove trees and crabs around the coast,
- Clean up the coast periodically by the service group, Prohibition of dumping hazardous water (mercury) gold into rivers; Cooperation with the police, Kopasus 82 the Indonesian Navy,

- Prohibition of capturing with potassium and other toxic materials, Clean Friday movement along the coast to keep the coast and sea clean,
- Construction / Rehabilitation of Uninhabitable Houses for Fishermen and cleaning operations once a week around the coast from the rubbish that has accumulated due to a large number of tourists.

In improving their business and the welfare of the fishermen, Aruna has established networks with various parties, such as banking, with several ministries such as the Ministry of Villages Disadvantaged Villages in collaboration with village assistants. The Ministry of Manpower which focuses on empowering coastal women, based on data that in Berau Regency, East Kalimantan, is the location with the highest productivity and the most women, as well as in Sorong West Papua, in Kampung Baru, Balikpapan City, Tanah Grogot Regency, East Kalimantan. In addition, cooperation is carried out with the Ministry of Communication and Information, the Ministry of Maritime Affairs and Fisheries, the Ministry of Cooperatives, the Ministry of Maritime Affairs for coordination of security issues. In addition to various ministries, Aruna is also collaborating with one of the foundations in Balikpapan, East Kalimantan, namely the Kopernik Foundation, in procuring solar-powered lights for coastal communities.

## B. Recommendations

In the discussion, the research team and Aruna's team are "Social Workers" who can become agents of change. The proposed recommendations are as follows:

### 1. Background

Empowerment is a development process in which the community takes the initiative to initiate a social activity process to

improve their situation and condition. Empowerment of fishermen can only occur if the fishermen themselves also participate. Based on the field findings, the empowerment carried out by Aruna Indonesia consists of Economic, Social, and Environmental Empowerment. Of the three forms of empowerment, what needs attention is social empowerment. Social Empowerment referred to in this recommendation is how fishermen and their families can be involved in improving their welfare or achieving "High-Quality Fisherman".

Increasing the welfare of fishermen refers to the Sustainable Development Goals (SDGs). The Sustainable Development Goals (SDGs) are a global action plan agreed upon by world leaders, including Indonesia, to end poverty, reduce inequality and protect the environment, as a world development agenda for the safety of humans and the planet. The SDGs contain 17 Goals and 169 Targets that are expected to be achieved by 2030.

- Reducing poverty and hunger.
- Achieve universal education;
- Improve gender equality and empower women.
- Reducing Child Mortality.
- Improve maternal health.
- Eradicate HIV, malaria, and other diseases.
- Guarantee the sustainability of the environment.
- Developing global partnerships for development.

### 2. General Purposes

Increasing the empowerment of fishermen and their families in their social aspects.

### 3. Particular Purposes

1. Increasing the capacity and welfare of fishermen

2. Increased capacity and well-being of female and male wives in community services
3. Increased welfare of children

#### 4. Targets

1. Fishermen
2. Fishermen's wives/women around the fishermen
3. Fishermen's Children

#### 5. Forms of Empowerment

1. Fisherman
  - a. Developing the Aruna Fishermen's Saresehan Forum: This workshop can be done once a month by each Local Heroes in their respective areas. In this workshop, the local Heroes carry out an assessment or reverse the needs of the parasite service. The method used is with a community meeting, or home visit, for example when a fisherman is sick, and he meets the children.
  - b. Fishermen Welfare Program:
    - *Increase Revenue Program*
    - *Cost Reduction Program by providing BBM (Fuel) and fishing gear.*
    - *Housewife Income Improvement Program: Provides training to develop catch production, and catch management.*
    - *Program to Improve the Ability of Housewives in Child Care*
    - *Children's Education Improvement Program. These is the following issues that often arise, namely: the need for fishing gear, assistance with skills training, and during the Covid 19 pandemic this is the problem of children who do not have a mobile phone to take lessons online.*

- *Fishermen Coin Program: Program from and by fishermen, which is a kind of "fundraising" or fund management, as social protection based on fishing communities.*

#### 2. Participant System

In carrying out the empowerment program in the social aspect, it requires the involvement of various parties. Based on the results of the discussion, one thing that is needed is the presence of "Academic Local Influencers". In developing the business and developing the fishing community, Aruna needs human resources called "Academic Local Influencers", who can partner with "Local Heroes" to develop fishermen's welfare. Influencers are people who have influence and can influence their audience to make a certain choice or action. In the discussion, the research team and Aruna's team are "Social Workers" who can become agents of change.

"Academic Local Influencer" together with Local Heroes are expected to get it:

1. Developing fishermen to become agents of change with education, exposure, and experience can open up local competitive advantages.
2. Forming a role model for catalysts of change for economic development in villages through technology-driven
3. Building the capacity and quality of the community with capacity building initiatives based on local wisdom and an entrepreneurial spirit for better productivity
4. *Lindayasos Study Program: Aruna Fishermen Group can be used as a laboratory for handling fishermen welfare/fishermen empowerment problems*
5. *Poltekesos: Collaboration is developed for the absorption of graduates and potential practitioners*



6. Ministry of Social Affairs: Can synergize its programs in handling communities in coastal areas

### REFERENCES

- Abbeduto, Leonard. 2004. *Taking Sides: Clashing Views on Control versial Issues in Educational Psychology Third Edition*. McGraw-Hill, Dushkin.
- Adedokun, O.M. C.W, Adeyamo, and E.O. Olorunsula. 2010. *The Impact of Communication on Community Development*. *J Communication*, 1 (2): 101-105.
- Aribowo.2013. *Kapital Sosial dan Pemerksaan Komuniti Nelayan Miskin di Kabupaten Indramayu Indonesia*. Universiti Malaysia.
- Chalid, Pheni. 2005. *Otonomi Daerah Masalah, Pemberdayaan dan Konflik*. Penebar Swadaya. Cetakan pertama. Jakarta.
- Chambers, R. 1985. *Rural Development : Putting The Last First*. London; New York.
- Depdiknas. 2003. *Kamus Besar Bahasa Indonesia*, Edisi Ketiga, Jakarta: Penerbit Balai Pustaka.
- Endang Retnowati .2011. *Jurnal Perspektif Volume XVI No.3 Tahun 2011 Edisi Mei. Nelayan Indonesia Dalam Pusaran Kemiskinan Struktural (Perspektif Sosial, Ekonomi dan Hukum*
- Foy, Nancy. 1994. *Empowering People at Work*, London: Grower Publishing Company.
- Friedman, John. 1992. *Empowerment The Politics of Alternatve Development*. Blackwell Publishers, Cambridge, USA.
- Glasserfield, E. (1987). *A Constructivist Approach to Teaching*. In L. Steffe & J. Gale (Eds.), *Constructivism In Education*. Hillsdale, NJ, Lawrence Erlbaum. (pp. 3-16).
- Ife, J.W. 1995. *Community Development: Creating Community Alternatives-vision, Analysis and Practice*. Melbourne : Longman.
- Jasper, James M. 2010. *Social Movement Theory Today: Toward a Theory of Action?.Sociology Compass (2010): pp.,965-976, 10.1111 /0.2010.000329.x.,New York: Graduate Center of the City University of New York.*
- Jimu, M.I. 2008. *Community Development. Community Development: A Cross-Examination of Theory and Practice Using Experiences in Rural Malawi. Africa Development, Vol. XXXIII, No. 2, 2008, pp. 23–3.*
- Koentjaraningrat. 2009: *Manusia dan Kebudayaan di Indonesia*. Djombangan. Jakarta. Longman.
- Lubis, Hari & Huseini, Martani. 1987. *Teori Organisasi; Suatu Pendekatan Makro*. Pusat Antar Ilmu-ilmu Sosial UI: Jakarta.
- Mubarak, Z. 2010. *Evaluasi Pemberdayaan Masyarakat Ditinjau Dari Proses Pengembangan Kapasitas 1 89 Program PNPM Mandiri Perkotaan Di Desa Sastrodirjan Kabupaten Pekalongan. Tesis. Program Studi Magister Teknik Pemberdayaan Wilayah Dan Kota*. Undip. Semarang.
- Pearsons, Talcot. 1991. *The Social System*. Routledge is an imprint of Taylor & Francis, an informa company.
- Prijono, Onny S. dan Pranarka A.M.W. (ed.). 1996. *Pemberdayaan: Konsep, Kebijakan dan Implementasi*. Jakarta: Centre for Strategic and International Studies (CSIS).
- Rusmanto, Joni. 2013. *Gerakan Sosial Sejarah Perkembangan Teori Kekuatan dan Kelemahannya*. Zifatama Publishing. Sidoarjo.
- Sadan, Elisheva. 1997. *Empowerment and Community Planning: Theory and Practice of People-Focused Social Solutions*. Tel Aviv: Hakibbutz Hameuchad Publishers.in Hebrew. [e-book].
- Shucksmith, Mark. 2013. *Future Direction in Rural Development*. Carnegie UK Trust. England.
- Sipahelut, Michel. 2010. *Analisis Pemberdayaan Masyarakat Nelayan Di*

- Kecamatan Tobelo Kabupaten Halmahera Utara. Tesis.* IPB. Bogor.
- Soetarso, 1992, *Praktek Pekerjaan Sosial*, Kopma STKS, Bandung
- Soetomo. 2006. *Strategi-strategi Pembangunan Masyarakat*, Yogyakarta: Penerbit Pustaka Pelajar.
- Suharto E. 2005. *Membangun Masyarakat Memberdayakan Rakyat. Kajian Strategi Pembangunan Kesejahteraan Sosial dan Pekerjaan Sosial*. Bandung: PT Refika Aditama.
- Sukmaniar. 2007. *Efektivitas Pemberdayaan Masyarakat Dalam Pengelolaan Program Pengembangan Kecamatan (PPK) Pasca Tsunami Di Kecamatan Lhoknga Kabupaten Aceh Besar. Tesis.* UNDIP. Semarang.
- Wilson, Terry. 1996. *The Empowerment Mannual*, London: Grower Publishing Company.