

Capacity Building: Fisherman's Society Institution Empowerment Against the Industrial 4.0 Age in Indonesia

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Abstract---Local resource management strategy is a description of development management that tries to answer the challenges of development in the form of poverty, deteriorating environment, lack of community participation. Local resource management is a people centered development planning mechanism that emphasizes social learning technology and program formulation strategies that aim to improve community capacity through capacity building. A number of points in the management of local resources include: (1) Institutional strengthening that meets the needs of the fishing community at the local level and has an identity and recognized role (2) Management of local resources strengthens the ability to direct and address assets in the local fishing community to meet their needs (3) Strengthening institutions with the support of autonomous organizations and independent fishermen by utilizing modern technology. This study wants to try to provide a basis and analysis in strengthening the institutional (capacity building) of the Coastal Fishermen of Surabaya East Java in order to advance, independent and prosper.

Keywords---*Capacity Building*-Fisherman- Independence and Prosperity

I. INTRODUCTION

In reality, communities around the seacoast work as fishermen. Fishermen are hereditary businesses where the management used by fishermen still use traditional customs, limited education and networks, lack of assistance and almost no plans at various stages. Under these conditions, fishermen's businesses are not prospective, because they always depend on the season, market conditions, working capital, fishermen production facilities which lead to high-cost economic businesses. If further elaborated, it actually boils down to the potential of human resources and fishermen's capacity building which is very limited, therefore it becomes an obstacle to sustainable fishermen's progress, especially in the current industrial 4.0 era.

The major actor in marine and fisheries actors are the majority of small-scale businesses that they lack access to development and the institutional model is aimed more at the active role of the community as the subject of development in the region. The main groups of effective and good marine and fisheries actors must have the following 5 characteristics:

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- 1) Is an effective small group (about 20 people) to work together with technology learning, fisheries business management and so on
- 2) Make decisions and take responsibility for their implementation.
- 3) Producing and maintaining the preservation of natural resources and;
- 4) Other activities that involve a common interest
- 5) Have the same interests, especially in the fisheries business sector. (Coil, January 23, 2018)

Some 1 Million Sovereign Fishermen program designed by the Ministry of Maritime Affairs and Fisheries of the Republic of Indonesia aim to increase the economic sovereignty of Indonesian fishermen through technology 4.0 support. That way, this scheme will increase the utilization of marine resources and 7 percent to a minimum of 17 percent. As well as reducing the national poverty rate by 25 25 percent and rearing Indonesia's maritime sovereignty by involving fishermen as the frontline guards of state sovereignty. This program must be fully supported by all parties so that it runs optimally and sustainably (Data of 2017).

The context is a hope for the number of Indonesian fishermen in total of 2.7 Million (Data of KKP 2017), the number is decreasing over the years because of low interest in becoming fishermen. The majority of fishermen with nearly 3 million are on the threshold of the poverty line and account for 25 percent of the national poverty rate. Even though the fisheries sector is one of the sectors that contributes the highest income (Data of KKP 2017).

As fishermen in the coastal region of Kenjeran, Surabaya, East Java, the research location shows an interesting area of fishermen. Based on the Surabaya City Zoning Plan (RZWP) in 2012-2032, the east coast area (east coast of Surabaya) is generally a muddy beach and faces the Madura Strait. The mainland area is dominated by tourism activities, fishing settlements, fisheries and mangrove forests ecosystems while the territorial waters are limited to capture fisheries and marine tourism activities, shooting zones and sea mines. (RZWP Surabaya City, 2012-2032)

The problems of fishermen in the coastal area of Kenjeran, Surabaya, East Java are: First, there is no fish port but a unique and colorful fishing village, which has the potential to attract tourists to come to the fishing village of Kenjeran. Secondly, the community is very constrained by marketing their catch fish. Usually the catch is only marketed within the fishermen 's own environment, and many also sell their fish to traders. Third, the low level of education among Kenjeran coastal residents, it is necessary to build synergy between the government, business world, and community in order to provide equitable and quality educational services for Kenjeran coastal communities. (RZWP Surabaya City, 2012-2032)

These factors are of concern to all parties so that coastal fishermen in Kenjeran. could move quickly, willing to learn and adjust together to face the challenges of the current industrial era. The problem is the internal factors, namely the fishermen themselves, as well as external factors where the prevailing market mechanism places fishermen as end users in their activities. It is necessary to increase human resources through the concept of capacity building in answering the goals of a smarter, more advanced, prosperous and sustainable fishing community.

The concept of capacity building is the correct solution to strengthen coastal fishermen institutions. Grindle's (2007) opinion in capacity development has dimensions of focus and type of activity. Dimensions of focus and types of activities consist of (1) dimensions of human resource development with a focus: professional personnel and technical abilities as well as types of activities such as training, working climate conditions. (2) dimensions of organizational strengthening with a focus on management procedures to improve the success of roles and functions,

such as, organizational culture, leadership and communication, and (3) The role of government, such as principles and rules, policies for fishermen. The institutional characteristics of the main actors of fishermen can be seen from the condition of the community and resource management which includes: the application of technology is developed by taking into account the specific conditions of the location, participatory, familial approaches, regional approaches, regionala and pproaches.

Table 1: Dimension of Capacity Building of Fishermen Organization. Source: Grindle (2007)

Dimension	Focus	Activity
Human Resources	Professionalism	Training Work climate
Organizational Strengthening	Organizational System	Organizational culture Leadership Communication
Role of the Government	Facilitation	Basics and Rules Appropriate policies

The above problems need to be assessed that strengthening fishing communities needs a new path to face the industr 4.0 era, namely the concept of capacity building. With the concept of capacity building the fishing community is expected to increase the work ethic, the spirit of togetherness, furthermore the fishing community is able to contribute to increasing sustainable economic growth for families, and regions.

II. Research Method

This study uses descriptive qualitative approach which aims to understand a social situation, events, roles, interaction and groups. The location of this research was done in Kenjeran coastal fishermen, Surabaya, East Java. There are 5 groups of Kenjeran coastal fishermen, namely 1-5 groups. The informants in this study were the Chairperson and members of the 1-5 Fishermen Group, the Head of RT, RW, Village, village officials, Related Office and Community Leaders. Data collection techniques were done through observation, in-depth interviews and documentation in order to get primary data and secondary data. Data analysis techniques were done using qualitative analysis with the stages of data collection, reduction, classification, analysis and reporting.

III. Results and Discussion

The role of internet technology has become a tool for various changes in all lines of life, until now the era of the industrial revolution 4.0. In the industry 4.0 era it is evident that every work process is demanded to be more efficient through fast and sophisticated automation and computerization. Thus, the demands and mastery of technology has continued to grow to play an important role in the midst of global competition. Indonesia, with its potential in human and natural resources, should be able to become a superior country in the industry 4.0 era. But until now our ability to master technology is still lagging behind. Our science and technology capacity is still in class-3, where more than 75% of technology are imported (UNDP, 2010). Meanwhile, the speed of our internet connection is still low compared to countries like Singapore, Thailand, Malaysia, Vietnam, Brunei and the Philippines. Even more sad, the

assessment of digital competitiveness in improving the economy and efficiency in various fields, in 2018 Indonesia was ranked 62 out of 63 countries (IMD, 2018). These conditions undoubtedly put Indonesia in a newly literate country to welcome the revolution of industry 4.0 (WEF, 2018).

However, it does not rule out the possibility for the development sector to be able to apply industry 4.0 technology, one of the potentials is the fisheries sector (fisheries and marine), the application of these applications is not yet massive and often experiences technical obstacles. Therefore, in practice, the fishermen and fisheries and marine businesses are still mostly using traditional technology. The application of industry 4.0 technology for fishermen and the fisheries-marine sector is able to further explore potentials, streamline resources, increase productivity and add value, expand market and capital access, and modernize organizations and management (Suseno, 2015).

The results of research on Fishermen in Coastal Area of Kenjeran Surabaya East Java showed that in the industry 4.0 era which is currently becoming huge talks and the demands had not yet had an impact on the demands of fishermen to move to change and take the facilities. This is because the access and budget constraints and facilities have not made it possible to use technology in the fishing community institutions and fishermen activities. In addition, capacity building in institutional empowerment of the Coastal Fishermen of Kenjeran Surabaya, East Java in the industry 4.0 era is not optimal and still needs attention from related parties such as government, universities, NGOs and mutual concern in internal fishermen. Aspects of capacity building research in the institutional empowerment of the Coastal Fishermen of Kenjeran in Surabaya, East Java are as follows:

1) Strengthening Fishermen Human Resources

The importance of human resources lately has increasingly received attention from various parties, both from the public sector and private sectors. Various seminars organizing, training, and courses, workshops, and the like, all emphasize human resources moreover in the era of industry 4.0. All parties have realized just how important human resources are for institutions and organizations such as the fishing community institutions. In the development of institutional human resources of the fishing community is very important, because managing the institutional resources of the fishing community is essentially the future of Indonesia. Therefore, the preparation of competent human resources is very important and needed to succeed in the successful development of fishermen (marine and fisheries). The stigma of fishermen and coastal communities as the lower class or included in the poor category is still inherent. There is a habit that is still happening and carried out by the fishing community is to spend the profits of the catch quickly. The mindset they use is still fixated on the traditional mindset, assuming there are still many fish that can be caught at sea. Where in reality, the supply of fish in the sea is very limited.

Kenjeran Coastal Fishermen Community in Surabaya, East Java consists of 5 groups with a total membership of approximately 1,000 (one thousand) members. This number will continue to decrease and increase in line with the conditions and expectations of the Kenjeran Coastal Fishermen in Surabaya, East Java. The existence in strengthening fishermen's human resources has been running through the Kenjeran fishermen organization since 2011. Various programs and assistance have been carried out by the government and the private sector, studies and research, seminars and FGDs, therefore real progress can already be felt by Coastal Kenjeran Fishermen in Surabaya, East Java . Coastal Fishermen of Kenjeran Surabaya East Java today is not only a fisherman but also a new tourist attraction for the community; even the handicrafts are quite developed. However, in strengthening community institutions through capacity bulding aspects, it is still not optimal to be a program and means to progress both internal individuals and

fishermen institutions. The results showed that each fisherman tended to be individualistic in addressing the fishermen's problems. The existence of communities, organizations and community institutions received less attention. Therefore the level of mastery, education, experience, and atmosphere of fishermen with each other is different, and the groups are different from one another.

The results of the interview with the Chairman of Group 1 of the Coastal Fishermen of Kenjeran Surabaya, East Java are as follows:

“The level of education, experience, skills, use of tools, the atmosphere of fishermen with each other is indeed inadequate and uneven, especially with technology where they don't know about or inability to use them. This is because of the limitations that currently exist. The existence of organizations such as fishing groups has not been maximally employed and its role. Everyone is still thinking individually, while the organization is only made as the resort when needed. We actually wanted to do our best but human resource and enthusiasm needs to be approached. (Interview July 5, 2019).

The target to improve the quality of institutional resources of the Kenjeran Coastal Fishermen community by moving the organization and membership of fishermen does not appear to be the main measure, but rather on a seasonal basis without continuing. The instruments used in the development and training process also lack support. Therefore, it is not surprising that the frequency and number of fishermen attending the training did not significantly influence the improvement of work ethics and views on fishing activities.

Modernization in the development of human resources of Kenjeran Coastal Fishermen must be done so that the utilization of Kenjeran Coastal resources by fishermen can be optimized. This is very necessary, for efforts to strengthen, and move the institutional community of Kenjeran Coastal Fishermen to be more active, optimal, sustainable and possess superior power both individually and in organization in advancing Kenjeran Coastal Fishermen, ready to face the challenges of industry 4.0 era, so as to improve the welfare of the fishing community and bequeath the wealth of fishermen to their children and grandchildren in the future.

2) Strengthening Fishermen Community Organizations

In the capacity building of fishing communities is an organizational system that shows the system of relationships and division of tasks that occur within an organization of fishermen groups. The complexity handled by the Kenjeran Coastal Fishermen community, the number of existing units determines the effectiveness of the implementation of fishermen's activities and the achievement of the goal of providing better services to fellow fishermen. The wheels of a good organization are those that are able to spin quickly in the sense of being able to adjust the development of community needs. For this reason, Kenjeran Coastal Fishermen organization must have a clear vision and main function of its equipment according to the potential of its resources so that the program of activities can provide outputs and impacts that are of great benefit to the Kenjeran Coastal Fishermen. In strengthening the organization as one of the institutional strengthening of the fishing community using indicators including organizational culture, leadership and communication, which are binding in the implementation of the Kenjeran Coastal Fishermen community organization.

One form of solution for carrying out Kenjeran Coastal Fishermen community organizations is through strengthening community institutions that are based on the development of a centralized area to encourage growth and strengthening fishing communities. Efforts to improve the institutional organization of fishermen communities

need to be organizational culture, leadership and communication models that are carried out in managing the Kenjeran Coastal Fishermen community organizations.

The results of the interview with the Chairman of Group 3 Kenjeran Coastal Fishermen is as follows:

"In carrying out the organization, there are obstacles in the field including: in the unity of leadership and work culture carried out by the management of the fishing group. We are gradually making efforts to strengthen and the running of the organizational wheel in Kenjeran Coastal Fishermen, our obstacle is the proper arrangement of fishermen and administrators who want to work sincerely and lightly, but at present it is the obstacle. (Interview July 5, 2019).

The aspect of strengthening fishing community organizations is the dimension of organizational structure with regard to who has to implement or do what has been decided. The aspect that must be regulated is the division of work units including duties, functions and responsibilities within the organization. Therefore, the quality of fishermen and institutional fishing communities will be better, stronger and can meet the general objectives of the Kenjeran Coastal Fishermen community.

3) The Government's Role in Strengthening Fishermen

Kenjeran coastal area is a potential area, because this area is a center of population activity. Kenjeran Beach is one of the potential areas to be developed as a trade and service area, tourism and commercial area. In advancing Kenjeran Coastal Fishermen, the City Government of Surabaya has developed this area to be very interesting

- a) Tourism Development. These are Kenjeran beach, Ria Kenjeran beach, Bulak park, Kenjeran theme park, Kenjeran education park, Kenjeran Kya-Kya tour, Dewa Empat Muka statue, Sanggar Agung temple, Tian Ti pagoda, entertainment and sports, kite festival & boat ornamental, Kenjeran circuit, Kenjeran waterpark. As well as culinary tours and souvenirs, shellfish trinkets, fish crackers, smoked fish (grilled fish). All tourism activities in the Kenjeran coastal area can be developed and have the potential to attract visitors and can benefit local residents.
- b) Improving the Quality of Facilities of Fishermen Housing in Kenjeran. Improving the quality of the environment of urban settlements is carried out systematically by applying the principles of revitalization in the form of environmental improvement and rebuilding. The development of fishermen settlements back on new land that are located close to the shoreline so that it will produce a new face of fishing settlements that are far from slums and facilities and infrastructure that supports fishing settlements and coastal activities in general.
- c) Making coastal schools. Considering that coastal management by the community is lacking, such as not caring about the future of Kenjeran coast by throwing all garbage into the sea and also septic tanks dumped into the sea, causing the sea to become dirty with trash, there needs to be a program like a coastal school, how to use, develop and preserving coastal areas so as not to harm anyone and can still be used forever.
- d) Development of coastal infrastructure. From the problem of fishing boats that are anchored at the edge of Kenjeran Beach which reduces the aesthetics of the beach, and also the lack of optimal management and sale of marine products such as fish and shrimp, the development strategy can be carried out with the construction of a fishing port which also has a Fish Auction Place. In addition to be a fishing port for fishing boats, fishing ports are also a place for fishermen to sell their catches, can be a place for fish auctions, fish canning places, as well as places for fish fuming and other processed fish. Therefore, with the existence of a fishing port, fishing boats

can be tidier and more structured, and the processing and sale of sea products can be increased. (Surabaya City RZWP, 2012-2032).

But along with the program there are also problems including the following:

- a) Problems of the Surabaya City Government with the Kenjeran fishing community. That is the plan to evict the land in the fisherman settlement area of Kenjeran because there will be a plan for the construction of the Surabaya Eastern Outer Ring. Initially, it began with the construction of the Suramadu Toll Bridge to Mount Anyar. The total toll road to be built is 17 kilometers long with 60 meters wide that will cross several areas such as Kenjeran-Bulak-Mulyorejo-Sukolilo-Rungkut-Gunung Anyar, but until now there has been no meeting point between the community and the government.
- b) The Bulak Fish Center in Kenjeran is an area that is expected to become a new icon in Surabaya in marketing fishery products in the Kenjeran and Bulak areas, but in the existing condition the Bulak Fish Center is actually empty of buyers and sellers due to its expensive rental prices, and the lack of visitors thereby reducing the seller's profit.
- c) Tidak adanya Tempat Pembuangan Sementara di kawasan permukiman nelayan Kenjeran, g) The absence of a Temporary Disposal Site in the Kenjeran fishermen settlement, the community throws away all the rubbish in the sea and makes the sea dirty with rubbish. and irregular transportation of rubbish so that people choose to dispose of rubbish at sea, because their perception of rubbish thrown into the sea will disappear along with the ocean currents, so they do not have to laboriously eliminate rubbish when it actually makes the sea full of rubbish.
- d) Kenjeran coastal settlements are dense, slum settlements and have relatively narrow roads. Besides the influence of flooding due to rising sea levels will often occur in the rainy season.
- e) The absence of a fishing harbor so that fishermen park their boats on the seashores closest to their homes and make the boats seem messy. There are still some houses of residents, especially on the beach that do not have a septic tank, therefore human waste and house waste is channeled all into the sea.
- f) Not yet optimal in terms of the management of catch fisheries or aquaculture Catch fisheries are a mainstay of business, especially for people in the eastern coastal city of Surabaya. However, in the effort to catch fish, the fishermen experience problems, namely the community is very constrained by marketing their catch fish. Usually the catch is only marketed within the fishermen 's own environment, and many also sell their fish to traders. The fishermen on the east coast of Surabaya wanted a place for fish processing, because the smoke in the Bulak Fish Center was lacking, they only processed the fish by sunning in front of the house along the Kenjeran settlement. (RZWP Surabaya City, 2012-2032).

In advancing Kenjeran Coastal Fishermen, Surabaya City Government has implemented an interesting development program and facilities, but there are also problems that occur around Kenjeran Coastal Fishermen. The development process and the role of the Surabaya City Government should be balanced and sustainable in an optimal and good way. In the process, not only project orientation, but more important is to play the role of strengthening the institutional community of the Kenjeran Coastal Fishermen through capacity building.

IV. Conclusion

The new era in dealing with industry 4.0 is how to strengthen and readiness and the availability of adequate facilities such as the internet. For the world of fishermen, it is a new thing to realize because it is a sector that can be relied on to improve the welfare of fishermen and contribute to the economic progress of the government. However, what happened in the Kenjeran Coastal Fishermen of Surabaya, East Java, was not yet maximal in terms of strengthening and continuing.

The results show: (1) Institutional strengthening of the Kenjeran Coastal Fishermen community in Surabaya, East Java has not been optimal to be an institutional program for fishermen. The existence of fishermen groups, communities, organizations and community institutions received less attention. Therefore the level of mastery, education, experience, and atmosphere of the fishermen from each other is different, that it impacts on the quality of the capacity building of the Coastal Fishermen of Kenjeran, Surabaya, East Java. (2) The institutional organization of the Kenjeran Coastal Fishermen community in Surabaya, East Java has not implemented a good organizational system, namely in strengthening the organizational structure to carry out what has been decided. In the division of work units including duties, functions and responsibilities within the organization have not been created properly. This is due to the weak leadership and organizational culture of the Coastal Fishermen of Kenjeran, Surabaya City, East Java. (3) The role of the Surabaya City Government is very strategic in advancing Kenjeran Coastal Fishermen in Surabaya, East Java. The real program is the development of tourism and infrastructure around the Kenjeran Coastal Fishermen. The development should be balanced and sustainable in an optimal and good manner, not merely project oriented, but more importantly is to provide assistance and institutional strengthening through capacity building around the Kenjeran Coastal Fishermen of Surabaya City, East Java

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