

Mapping Local Potential of Coastal Communities to Support Sustainable Empowerment

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ABSTRACT

Coastal communities are very close to natural wealth in the form of ample marine resources. In reality, coastal communities are positioned as groups that are socially, economically, and ecologically vulnerable. This vulnerability is motivated by the non-participatory empowerment of fishermen. This research aims to map the local potential of the fishing community in Pulo Sarok Village, Singkil District, Aceh Singkil Regency. This research is supported by qualitative methods to explore local communities' dynamics and map their resources. Data collection techniques used observation, in-depth interviews, and FGD (focus group discussion). Determining informants used the snowball sampling technique. Data were analyzed using the concept of local community empowerment initiated by Jim Ife and Frank Tesoriero. The findings from this research show that fishing communities consist of human resources that rely on local knowledge and local culture to utilize and preserve natural resources. The fishing community also has the skills to establish synergy with the village government to accommodate all

their needs. The local community-based empowerment model is very suitable for fishermen who need traditional markets to distribute their catch. Fishermen must be positioned as the main actors in empowerment who best understand their problems and needs. Further research is highly recommended to analyze external parties who can facilitate fishing communities in implementing empowerment to achieve prosperity.

1. INTRODUCTION

Natural resources in a particular region can be a source of income for a country and can meet the needs of other countries for a relatively long time. (Boudreau et al., 2023). Natural resources in this context play an important role in international trade and have been a source of wealth for those who manage them for many years (Ganapati & Wong, 2023). The wealth of marine products is evidence of natural resources that can be enjoyed by local communities and as products to meet global needs (Taylor et al., 2021). The natural wealth available in coastal areas is a great opportunity to improve the welfare of coastal communities (Fudge et al., 2023).

In reality, fishing communities are considered socially and economically vulnerable groups based on their inability to manage natural resources (Pinto et al., 2023). The lives of coastal communities are synonymous with the unresolved problem of poverty (Cahaya, 2015). The problems faced by coastal communities are increasingly complex amidst extreme climate change, which makes it difficult for them to strengthen coastal resource management systems (Lazzari et al., 2021). Small-scale fishing groups are the most vulnerable socially, economically, and ecologically. This group generally has a high level of dependence on marine resources to meet their household needs (Selvaraj et al., 2022).

One of the factors causing poverty in coastal areas is the failure of empowerment, which has not been able to increase community independence. Research in Southeastern Tanzania states that empowerment has not been able to increase the capacity of coastal communities in natural resource management. The results of previous studies emphasize the failure to build a participatory nuance of empowerment. The facilitator was unable to position the community as the main actor in empowerment.

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They fail to work collaboratively in implementing programs to achieve common goals and are too dependent on financial assistance from external parties (Kweka et al., 2022).

The results of studies in Indonesia state that fishing communities are a vulnerable group that needs to be empowered. This previous study described several groups of fishermen in various regions of Indonesia who were trapped in limited economic resources. The problems of fishermen groups become more complex when they do not have a bargaining position to fight for their welfare. The poverty experienced by small-scale fishing groups is also caused by the inability to access markets, which makes it difficult for them to earn decent profits. Empowering fishermen needs to be done because coastal areas have abundant natural potential, but fishing communities are still trapped in adversity (Cahaya, 2015).

Aceh is one of the provinces that has a chronic poverty rate (Purwono et al., 2021). Aceh Singkil Regency is the poorest district in Aceh Province almost every year. Data recorded at the Aceh Province Central Statistics Agency shows that the poverty rate for Aceh Singkil Regency 2018-2021 is still above 20% (BPS, 2023). Several villages in the coastal areas of Aceh Singkil Regency are still classified as areas with quite high poverty rates (Mitra, 2021). Pulo Sarok Village has a fishermen's group, which should be the center of empowerment in accordance with the Village's Sustainable Development Goals (SDGs). Apart from overcoming poverty, empowerment needs to be carried out to support the acceleration of national development at the village level (Iskandar, 2020).

This research aims to map the local potential of fishing communities, which can be used as a force for empowerment. This is very important to do as an effort to increase the capacity and independence of fishermen so they can improve their standard of living. The results of local potential mapping from this research are used as consideration to formulate an empowerment model according to the needs of fishermen. The benefit of this research is that it is a contribution to the academic field, which conveys that fishing communities are not just a vulnerable group. Still, they are parties who have a variety of local knowledge and culture. Carrying out this research is a form of concern for coastal communities that are facing challenges to improve welfare.

2. METHODS

This research uses a descriptive qualitative method that relies on observation, in-depth interviews, and FGD (focus group discussion) as techniques for collecting data and information related to local fishing communities. This qualitative method is very useful for exploring the dynamics of fishing communities (Richardson & Kloess, 2022). The subjects or informants of this research are fishermen who are members of the local community of Pulo Sarok Village, Singkil District, Aceh Singkil Regency. The method used in this research is aimed at collecting specific things related to the social and cultural conditions of the local fishing community.

The technique for determining informants is snowball sampling because researchers do not yet recognize the social setting, so they really depend on leaders or community figures who can be considered better to understand the social conditions of Pulo Sarok Village. (Mukhtar, 2013). Based on this description, it can be determined that the informants for this research are the heads of fishing communities and village heads who will then appoint further informants such as fishermen who are considered to have a lot of understanding of maritime activities. In addition, fishermen who are used as research informants must understand the dynamics of their community. Hence, they are able to recognize important things that can be used as strengths to carry out empowerment.

Conceptually, local community-based empowerment is supported by several important aspects, namely local knowledge, local culture, and local resources (Ife & Tesoriero, 2016). This research describes the existence of local fishing communities in which there is knowledge, culture, and resources used in their daily lives. The information obtained in this research will be grouped based on the three important aspects mentioned in the concept of local community-based empowerment. To ensure the validity of the information obtained, it is necessary to triangulate sources from other fishermen and local communities.

The data presentation in this research is based on reduction results that have been mapped based on local knowledge, local culture, and local resources of the fishing community. Findings related to these three important aspects will be confirmed and discussed theoretically with local community-based empowerment conceptualized by Jim Ife and Frank Tesoriero. The findings in this research are also linked to several previous study results that are relevant to local community empowerment schemes. The results of the analysis of these three important aspects are used as material for consideration to determine an empowerment model that suits the needs of fishermen who are members of the local community.

3. RESULTS AND DISCUSSIONS

Local Knowledge and Local Culture

The fishermen in Pulo Sarok basically have a local community led by a chairman. They call the community leader the local term, namely *panglima laut*. The process of selecting a *panglima laut* involves all fishermen by prioritizing consensus deliberation. The existence of a *panglima laut* is not only recognized according to custom but is also recognized administratively by the Aceh Provincial Government (KKP, 2020). The existence of these local communities illustrates the ability of coastal communities to maintain cultural heritage, which the local government then supports.

The local communities found in this research are very much in line with previous studies, which stated that local communities are not only a medium for gathering together several people but also contain intellectual property and traditional knowledge that is useful for everyday life. Human resources in local communities experience a learning process to build understanding, knowledge, and abilities (Meyer & Naicker, 2023). Local communities have their way of forming perceptions of their environment that can help them maintain their identity and livelihoods (Yanou et al., 2023; Zvobgo et al., 2023).

The ability of coastal communities to maintain local culture is not only seen from the existence of local communities but also from the ability to maintain a process that prioritizes deliberation to find agreement. Even though the selection of the *panglima laut* is through a consensus deliberation process, the selected candidate must meet the criteria agreed upon by the community and the government. The criteria that a *panglima laut* must have include being responsible, being able to act as a liaison between fishermen and the government, being able to resolve customary disputes, being able to ensure the division of work among members, and being able to maintain the commitment of local communities not to use methods or equipment that violate the law.

Based on the job description of the *panglima laut*, it indicates that fishermen who are members of local communities have a clear division of duties. This condition is an illustration that coastal communities have local knowledge in the form of organizational skills that they apply in their daily lives. The local culture and knowledge possessed by fishermen is potential that can be utilized to implement empowerment programs. This condition is in accordance with the empowerment conceptualized by Jim Ife and Frank Tesoriero. Theoretically, local communities are considered to be the ones who best understand the dynamics of their lives (Ife & Tesoriero, 2006, 2016).

The description above is proof that coastal communities are not passive and uninformed, but they are local resources who understand the social environment with all its culture. Their local knowledge and culture were successfully applied in determining the mechanism for selecting *panglima laut*. The results of this research also illustrate that the Pulo Sarok fishermen understand the organizational system they implement by giving trust to a leader they choose.

Local knowledge is a valuable asset that can be used in the empowerment process (Bélisle et al., 2018; Björkvik et al., 2021; Đukić & Volić, 2017; Kelly, 2018). The process of selecting a *panglima laut* is an important part that shows the ability of the local Pulo Sarok community to play an active role in the decision-making mechanism. Other local knowledge is also reflected through the efforts of the *panglima laut* in accommodating the opinions of members who express the various problems they face. In this context, the *panglima laut* will solve problems according to his abilities. If the problem faced is too big, the *panglima laut* will consult with the village head (*keuchik*) to find the right solution.

Theoretically, it is stated that indigenous peoples must have their ways of solving the problems they face. A local knowledge-based approach is very important to find common ground between indigenous communities and the government (Mason et al., 2022). In indigenous community development schemes, it is very necessary to prioritize local knowledge to respect their rights (Sharapova et al., 2022). Community development practices that involve local knowledge can open up opportunities for participation from the community itself (Nieto-Romero et al., 2023). This research has described the openness of fishermen groups in establishing relationships with village governments to discuss the problems they are facing.

Fishermen's activities rely heavily on the knowledge and insight they have. The *panglima laut* stated that the water area that fishermen can access is four miles from the coastline of Pulo Sarok. All fishermen who are members of the local community really know their cruising area and always try to comply with water boundaries. The efforts they make are very useful in avoiding problems with fishermen from outside the area. If problems arise related to violations of fishermen's cruising areas, the *panglima laut* is the party most responsible for resolving these problems.

If analyzed conceptually, the organizational capacity of local communities can support the realization of unity that is guided by customary law. Local communities can be categorized as a means of developing local knowledge, which is generally in line with local culture (Koopman, 2023). In addition, the existence of local communities is very in line with the role of community-based organizations as a medium

for exchanging information and solution ideas (Regnier-Davies et al., 2022). The role of local communities in this research is very relevant to community-based organizations as a source of innovation and collaboration that prioritizes traditional methods (Walters, 2021).

The existence of local communities that prioritize customary law basically has a very important role in assisting the government, especially in the fisheries and maritime sectors. The existence of customary law is very much in line with the government's vision of upholding maritime supervision, environmental protection, and joint management of natural resources. Problems that arise in the fisheries and marine sector are not only related to geographical aspects and natural resources but also to social aspects involving relations between fishing communities on the coast of Aceh.

The role of fishermen in facilitating the implementation of village government is very much in line with the concept of positive community participation. Local governments will not be able to carry out their duties without the participation of local communities, so a common perspective between the two is urgently needed (Handayani et al., 2023). Local communities in this research have demonstrated efforts that prioritize integration between local communities and local government to achieve common goals without ignoring local wisdom (Henriksen et al., 2023). The community often uses the values and norms contained in local wisdom to solve their problems (Bayu et al., 2015; Murhaini & Achmadi, 2021; Vitasurya, 2016).

The success of the Pulo Sarok fishermen in maintaining local wisdom is reflected in their social dynamics. One example is an agreement regarding water boundaries, which prioritizes customary law. If they face a problem that is related to customary law, they will take the solution according to the customary law that they comply with. This phenomenon shows that local wisdom has merged into people's lives in the form of local knowledge and local culture. The customary dispute resolution described by the *panglima laut* proves that the local wisdom adopted by fishermen is very useful as a solution to overcome the social problems they face.

Apart from accommodating problems or disputes related to other local communities, the *panglima laut* also has the task of determining rules of conduct for his members and trying to minimize problems between his members. These regulations generally contain rules for fishermen, such as the use of permitted equipment and prioritizing safety. To enforce these regulations, the *panglima laut* must always ensure that his members do not use fishing equipment that the government prohibits. The duties of the *panglima laut* really help the government's efforts to supervise fishermen's activities, which prioritize environmental sustainability in coastal and marine areas.

Another local culture preserved by Pulo Sarok fishermen is respecting certain days, such as Fridays, Islamic holidays, and the Prophet's birthday. Coastal communities consider these days to be sacred, so they are prohibited from going to sea. This phenomenon is influenced by the religious values held by coastal communities, the majority of whom are Muslim. Apart from these days, coastal communities also consider Indonesia's Independence Day as a sacred day. Thus, this national holiday also becomes a day when fishing is prohibited. Coastal communities not only respect Islamic holidays but also respect Indonesia's Independence Day in accordance with government regulations that designate Independence Day as a national holiday.

The fishermen group is supported by the Pulo Sarok Village Government, which can develop a financial system independently. They call it the Village Financial System (*Sikudes*), which also contains the allocation of village funds to improve the welfare of fishermen. Village government independence describes local knowledge that is used to implement local government concepts that are in line with the development agenda through empowerment that takes into account the needs of local communities (Halla et al., 2022; Konte & Vincent, 2021; Salman Khan & Syrett, 2022).

Keuchik explained that the village government had limitations in its efforts to increase the empowerment of fishermen. This limitation is influenced by the amount of village funds, which are only sufficient to help fishermen's needs on a small scale, such as fishing gear assistance and *Bantuan Langsung Tunai* (unconditional cash transfer). The fishermen really felt the benefit of this assistance. Still, the fishing equipment assistance provided by the village government only lasted an average of three months and had to be renewed. The empowerment scheme designed by the village government has taken into account the needs of local communities, but its implementation has had obstacles caused by limited village funds.

Local Resources

Jim Ife, in his theory, explains that local indigenous communities do not only rely on their knowledge and culture but also depend heavily on the natural resources available in their environment. Local potential in this discussion is not only intellectual aspects and local human knowledge, but natural resources owned by certain regions can also be categorized as valuable local potential. (Abay et al., 2023).

Local communities have the right to utilize natural resources, but on the other hand, they are also obliged to maintain the availability of these natural resources for sustainable use (Mustalahti et al., 2020).

Natural resources in the Pulo Sarok area are very abundant and provide land for fishermen to earn a living. Maritime activities carried out by local communities can be interpreted as a form of their dependence on the availability of natural resources. The *panglima laut* and *keuchik* explained that the natural riches in their area could be identified through the types of fishermen who not only looked for fish but also looked for shrimp, lobster, crab, and shellfish. Fishermen are very free to enjoy their natural wealth, from coastal areas estuaries to the open sea.

If analyzed critically, the dependence of coastal communities on available natural resources is a very positive thing. In Jim Ife and Frank Tesoriero's framework of thinking, it is stated that local communities are better off depending on their natural resources than on external natural resources. The fishermen's dependence on their natural resources will educate and form the mentality of an independent local community (Ife & Tesoriero, 2016). Humans will interact with natural resources, which will then form an awareness that these resources are very beneficial for their survival (Amone-Mabuto et al., 2023; Erkkilä-Välimäki et al., 2022).

In utilizing marine resources, the fishermen explained that they were a group of fishermen who, until now, used traditional equipment. The use of traditional equipment is an effort made by fishermen to preserve the environment amidst climate change. Forms of protection for marine resources and the environment are also contained in the customary rules that fishermen obey. In customary regulations, it is emphasized that fishermen are absolutely not permitted to use fishing gear that can damage the environment. This is proof that the fishing community in this area really appreciates the natural resources available.

The theory of local community empowerment explains that local resources consist of human resources and natural resources. The ability of human resources to manage natural resources is the main factor that can ensure sustainability. Natural resources will be very beneficial if they are managed by human resources who know the culture and are concerned about sustainability (Ife & Tesoriero, 2016). Natural resources are not only goods used to meet needs but also important assets that must be saved for the next generation. Therefore, human resources must also be responsible for good natural resource management (Blank & Li, 2021; Mustalahti & Agrawal, 2020).

The use of natural resources by the fishing community in this research is very much in line with what is conceptualized in the theory of local community empowerment. Fishermen can be positioned as human resources who have local knowledge and local culture in managing natural resources well. The village government also recognizes that fishermen in the area are very responsible and always try to put aside exploitative ways of using natural resources. They are very aware that nature has provided what they need, so there is no reason for them to destroy the environment. The interaction between fishermen and natural resources has succeeded in forming a character that prioritizes environmental conservation.

The explanation above is proof that the findings in this research are very relevant to the theoretical framework, which states that quality human resources are very capable of protecting natural resources as valuable assets. (Ife & Tesoriero, 2016). The fishermen in this research fully meet the requirements as parties who are ready to implement local community-based community development programs. Local knowledge, local culture, and independence in respecting natural resources are indicators that they are worthy of achieving self-sufficiency and becoming an example for the wider community.

The environment has provided insight into fishermen so that they have a high desire to continue to preserve marine wealth. This is very much in line with the concept of local human resources as subjects who have a high understanding of their environment (Mardero et al., 2023). Fishermen learn to understand natural resources independently without the help of any party. Even though local communities are small-scale groups, they are able to have a big influence on the sustainability of natural resources (Yeleele et al., 2022). The participation of local communities in conserving natural resources using traditional insights can become new knowledge for the wider community (Gartaula et al., 2020).

Local Community-Based Empowerment Model

The local potential mapping described in the previous section is very useful for determining the appropriate empowerment model for fishermen who are members of local communities. The appropriate empowerment model for these fishermen is empowerment with a local community-based scheme that prioritizes sustainability. The sustainability model prioritizes the participation of empowered parties in the empowerment process, starting from planning, implementation, and evaluation (Abdillah & Prayogo, 2020; Huang, 2020; Olsson et al., 2014). Fishermen must be positioned as subjects of empowerment who are given authority in formulating problems, implementing programs, and evaluating.

The initial step that needs to be taken before determining the program is to build synergy between the local community, village government, and the Aceh Singkil Regency Maritime and Fisheries Service (DKP). In this context, it is necessary to map the roles of each party. Local communities are the subjects of empowerment who best understand the needs needed to solve the complexities they face. The village government is the institution closest to the local community. It is more familiar with the local knowledge and culture of fishermen, so it is hoped that it will be able to act as a liaison between the local community and the district government. DKP Aceh Singkil Regency is the institution with the most authority in formulating policies to support the empowerment of fishermen.

Mapping that prioritizes participation is a driving factor to facilitate sustainable rural development based on local knowledge. The involvement of local communities in this context is helpful in gaining an understanding of their needs (Fernando & Ledezma, 2023). The involvement of local communities, society, and local government in managing rural areas can determine the focus of prioritized problems (Rosado-González et al., 2023). A local community-based approach is the right step to explore various aspects that support empowerment, such as social, economic, and environmental aspects (Hussain et al., 2023).

The empowerment model that suits the conditions of the fishermen in this research is bottom-up empowerment. The application of this empowerment model is very appropriate to the capabilities of human resources who can rely on local knowledge and culture in everyday life. External parties such as the village government and DKP can provide support to local communities in implementing empowerment. Support from external parties must be able to place fishermen in planning, implementation, decision-making, and evaluation. This effort is very much in line with the concept of empowerment, which seeks to increase the independence of local communities and minimize dependence on external parties (Raj et al., 2022; Telwala, 2023).

Sustainable bottom-up empowerment must be able to provide answers to the problems and needs of local communities. The fishermen revealed that the current problem is the inability to distribute the catch, so they are very dependent on the role of intermediaries. This results in fishermen being unable to determine selling prices and unable to maximize profits. They really want the existence of traditional markets, which they consider very strategic for marketing their catch. The fishermen think that Pulo Sarok is very close to the port and the government center of Aceh Singkil Regency, so the existence of this traditional market will be able to attract the wider community.

The fishing community at this research location has been able to identify the problems they face. This needs to be followed up with program planning to realize participatory empowerment (Mengo et al., 2023). The benefit of local community participation in empowerment is increasing the local community's sense of ownership of the program that will be implemented in empowerment (Pineda et al., 2023). The involvement of local communities in empowerment is the right opportunity to develop capacity in the sustainable development agenda (Barrios et al., 2020). Local community knowledge and capabilities are key to planning sustainable empowerment programs (Hiwasaki et al., 2014).

Village governments with DKP are obliged to position themselves as facilitators who are able to accommodate the aspirations of local communities. In this context, the village government and DKP can facilitate local communities by providing training such as managing catches in the form of durable packaging. Catch management training must prioritize ideas, knowledge, and traditional methods mastered by the Pulo Sarok coastal community. To distribute products produced by coastal communities, the village government and DKP must synergize with the district government to hold bazaars on certain days.

If the Pulo Sarok coastal community is able to increase productivity, then it can be followed up by planning the development of traditional markets. Apart from marketing fresh catches, the existence of traditional markets is expected to be an effective place to market packaged products from fishermen. Several previous studies stated that the synergy that must be built is very much in line with the news in the empowerment model, which prioritizes innovation and sustainability. Such an empowerment model must begin with collaboration between local communities, local governments, and regional governments in order to improve the local economy (Gutiérrez & Glückler, 2022; Tang, 2021; Warren & Steenbergen, 2021).

The existence of traditional markets theoretically makes it possible to increase economic activity. Traditional markets as transaction centers will have a positive impact on increasing local community income (Putra & Rudito, 2015). Traditional markets needed by fishing communities have the opportunity to provide new job opportunities for local communities. Apart from that, the market can also be used as a means to improve the skills and innovation of coastal communities in the trade sector. Coastal communities can utilize traditional markets as a medium to improve their natural resource management capabilities (Hammarlund et al., 2021). The findings in this research are very much in line with previous

studies, which stated that access to markets is the main need of fishing communities. Access to markets is an important aspect needed to develop a community's economy. Fishermen's groups and cooperatives must be able to create marketing opportunities for their catch (Cordeiro, 2019; Fabinyi et al., 2022).

A sustainable empowerment model must pay attention to the role of local communities in the process of determining innovation based on the social values they guide. This needs to be done so that innovations created by local communities are in accordance with applicable social needs and values so that they have a big chance of becoming sustainable innovations. The empowerment model, which prioritizes the strengths of local communities, is very much in line with previous research, which explains that empowerment must rely on the knowledge, skills, and culture of local communities.

This research has explained the strengths of local communities, such as organizational abilities, leadership, knowledge, culture, initiative, and dreams of innovation. In addition, the local government is also willing to provide support and facilitate the needs of local communities. To achieve the ideal empowerment model, the local community, local government, and Aceh Singkil Regency government must work together to develop a strategy to start developing empowerment through several programs. In this context, the district government can also involve support from other external parties, such as universities, non-governmental organizations, and industry, to improve the welfare and independence of fishermen who are members of the local community.

This local community-based empowerment model is a concrete step to overcoming fishermen's problems caused by the inability to market their catch. The implementation of empowerment that relies on local potential is very much in line with the Village's Sustainable Development Goals (SDGs), which have the main goal of dealing with poverty through community empowerment. The Village SDGs also emphasize empowerment programs that can improve people's standard of living without poverty in any form (Iskandar, 2020). The local potential-based empowerment model is highly integrated with the Village SDGs, which has the opportunity to accelerate the national development agenda at the village level.

4. CONCLUSIONS AND RECOMMENDATIONS

The results of this research have presented the fishing community as parties who know culture and customs as provisions to continue their lives. This shows that fishermen groups are not a vulnerable group, but they have cultural wealth that can be used to utilize marine resources while maintaining their sustainability. The local fishing community in this research is a human resource that has local knowledge and local culture, which can basically be used as a locality-based empowerment force. They have the skills to apply customs to maintain the sustainability of natural resources in their region.

The empowerment model offered in this research is based on the ability of fishermen to recognize their problems and needs. They really want traditional markets as a means to market their catches so that they can get adequate profits. The village government and regional government must respond to their wishes to facilitate planning for the establishment of traditional markets. Empowerment based on the needs of fishermen has enormous opportunities for sustainability. A local community-based empowerment model really needs to be implemented to create solutions that are relevant to the situation of the fishermen in Pulo Sarok Village.

The results of this research need to be continued with research that can explore and analyze the synergy between the fishing community and the village government. These two parties can complement each other in the process of developing local community-based empowerment strategies. Collaboration between the two is also useful for strengthening participation and a clear division of tasks in determining programs according to fishermen's needs. The important role of the village government is as a facilitator and liaison between the fishing community and external parties who support the smooth empowerment of fishermen. Several parties who can support empowerment include DKP, the Aceh Singkil Regency Government, universities, to industry. The participation of external parties is highly expected to accompany fishermen in creating traditional markets that are in line with the national development agenda at the village level.

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