Revitalization of Fisherman and Rural Economy For Acceleration of Poverty Reduction In The Digital Era: Roots of Problems and Solutions

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ABSTRACT
The results of this normative research article are the contents of the inaugural speech by Professor Dr. Dra. Andi Cahaya, M.Sc., who discussed "repositioning" or revitalizing the fishermen and rural economies to accelerate poverty reduction in the digital era. The revitalization of the fishermen's economy as the focus of the blue revolution program locus is a zine-qua-non promoted by the current government to accompany the successful green revolution program. Fishermen poverty is a multi-dimensional problem that requires a comprehensive solution. The type of normative research or literature study is used to collect data, information, and knowledge about the focus of the research locus to be analyzed descriptively. The results of the study found that the causes of poverty are not the same in all regions, even if the size or scale varies depending on local conditions so poverty alleviation strategies cannot be generalized to all regions or all sectors. The poverty experienced by rural fishermen cannot be equated with the measure of poverty in urban communities. Therefore, fishermen and rural poverty alleviation programs require a revitalization strategy through increasing skills and mastery of information and communication technology (ICT) for actors to be able to improve the quality of their business. In addition, simultaneous cultural and structural revitalization is needed to provide a way to alleviate fishermen and rural poverty in the context of achieving the Millennium Development Goals (MDGs) proclaimed by the Indonesian government.

Keywords: Revitalization or repositioning; fishing economy; poverty reduction; digital era.

INTRODUCTION

Indonesia has a successful history of maintaining economic growth during the three decades of the development process (1966-1996), economic growth is at an average level of 7 percent per year, with a reduction in poverty from around 40 percent in 1976 to 17 percent in 1996 (M Arsyad et al., 2020). Based on these achievements, the World Bank has given Indonesia the nickname "High Performing Economies" for the past decade. Indonesia shows good consistency in reducing the poverty rate from 14.1 percent in 2009 to 9.8 percent in 2020, despite the economic growth rate that has not yet reached the target and fluctuates in the range of 5 percent (Arsyad et al., 2020; BPS, 2020). However, what needs to be looked at more deeply is the fact that rural communities, especially fishermen, have a typology of exit-entry poverty. So, there are fishing households out of poverty, but at the same time, there are other households that enter (return) poverty.

The interesting thing is that the poor fishing families are still able to survive because they don't seem to feel the limited conditions they experience, even their daily behavior continues, and
lives life as usual (Wekke & Cahaya, 2015). Feeling poor (Ginting & Siregar, 2020). Feeling not poor is what leads to the concepts of structural poverty and cultural poverty. Fisherman poverty is a multi-dimensional problem so to solve it a comprehensive solution is needed, and not a partial solution (BPS, 2020; Fatima, 2020). These facts show how complex the handling of rural poverty is (Djafar et al., 2019). In many discourses that poverty is a long-term issue of socio-economic development in many countries (M Arsyad et al., 2020), poverty is a complex phenomenon of development (Akib, 2009; Cahaya et al., 2019; Cremin & Nakabugo, 2012; Hussain et al., 2014; Simatupang & Akib, 2011).

Several studies and social research related to the problem of fishermen's poverty include Anriani et al., (2019) regarding the role of women fishermen in structurally functional households looking at the roles and functions of husbands and wives in fishermen's households. Other related research conducted by Cahaya (2015) and Wekke & Cahaya (2015) found that the root causes of fishermen becoming poor was the inability to manage resources and time, as well as access to education that was not utilized.

Based on the background of these problems, the repositioning or revitalization of the fishermen's economy as a focus on the locus of the blue revolution program is a zine-qua-non that is being promoted by the current government to accompany the green revolution program that has been successfully implemented. Fishermen poverty is a multi-dimensional problem that requires a comprehensive solution. To fulfill these expectations, the type of normative research (Efendi et al., 2018; Soekanto, 2007) or literature study is used to collect data, information, and knowledge about the focus on the research locus to be analyzed descriptively.

**Poverty and Rural Problems**

The causes of poverty are not the same in all regions, even the size or scale can be different depending on local conditions (Hong, 2013; Steiner, 2006; Wang et al., 2018) so the poverty alleviation formula cannot be generalized to all regions or all sectors. The poverty experienced by fishermen cannot be equated with the size of labor poverty in urban areas (Rhoumah, 2016). Fishermen's poverty alleviation program requires a special strategy that can answer the reality that is happening today. Simultaneous cultural and structural analysis is needed to provide a way out to alleviate fisherman's poverty and achieve the Millennium Development Goals (MDGs) proclaimed by the Indonesian government.

The modernization of fisheries in the context of the "blue revolution" that has been going on so far has undeniably resulted in many changes in the socio-economic life of fishermen. However, not all levels of the fishing community can enjoy the blessings of the modernization of fisheries, related to the availability of existing economic capital.

For poor fishing households to be able to survive, they continue to exploit fishery resources that have been overfished, even in a destructive way. This is as stated by Wekke & Cahaya (2015) that poverty in coastal areas triggers destructive fishing which then disrupts the food chain. In this situation, the poor are agents and victims of environmental damage (Ahmed et al., 2013). For this reason, it is necessary to increase fishermen's household income to ensure sustainable fisheries development.

The various programs that were born, of course, do not contradict the government's efforts to alleviate poverty, because of that, a synergistic policy umbrella is needed to solve the various
problems that are now ensnaring the fishermen's lives. In the umbrella policy, mainly related to the opportunities and obstacles faced, it is important to include the views of the main supporters of the fisheries sector, namely traditional fishermen, both male and female (Fahrun et al., 2021), because after all a sense of belonging and commitment to the reduction strategy Poverty cannot be guaranteed if fishermen are not at all part of the formulation of the development strategy.

The government must improve the quality of education for fishing communities to reduce fishermen's poverty. In this case, the context is fishermen as the head of the household and fishermen as a set of families. Illiterate fishermen can at least read or pass in package A (equivalent to junior secondary education) or package B (equivalent to upper secondary education). Children of fishermen are expected to be able to complete secondary education so that in the future access to maritime technology development and economic improvement will be easier.

The lifestyle of fishermen also needs to be changed, related to their mindset and habits. Consumptive lifestyles must be changed so that fishermen do not suffer from a slump in their economy during the famine. In addition, get used to saving so as not to get entangled in loan sharks. Building diversification of special occupations needs to be prepared to face the famine, such as processing fish into food. It is also necessary to improve the quality of fishing equipment and marketing facilities (Nugroho & Pawestri, 2020). It is also necessary to support the completeness of boat technology and fishing gear so that the capabilities of Indonesian fishermen can be commensurate with fishermen of other nations. Likewise, fish processing and sales facilities, so that the selling price of fish can be increased.

The government issued a social policy that contained programs in favor of fishermen. Government policies related to poverty alleviation must be bottom-up to the characteristics and needs of fishing communities. Policies that are born based on the participation or involvement of the fishing community no longer make fishermen the object of the program, but rather the subject.

**Revitalizing the Digital Economy as a Solution to Reducing Fishermen's Poverty**

Revitalization efforts that are believed to be important in helping fishermen and rural poverty alleviation are improving skills and access to information and digitalization infrastructure for actors or subjects. Word Bank studies in various countries, including Indonesia, show that access to fishing communities to information greatly helps accelerate poverty reduction in rural areas and rural economic development in a broad sense (Arsyad, 2021). The Word Bank also indicates that differences in the welfare of farmers in rural areas are highly dependent on access to information (CRIEC-Word Bank, 2012; Arsyad, 2021). Narayan's (2000) report entitled Poverty is Powersness and Voicelessness clearly states that information is the "cut-off" power of the poor. Therefore, in poverty alleviation efforts in Indonesia, quality human resources who master information technology are urgently needed to increase economic opportunities and sustainable living in line with advances in digital technology. Technological advances in efforts to eradicate poverty are very important. This is based on the use of digital technology in various aspects of life, as recommended by the United Nations (UN) and it is member countries that seek to optimize the use of technology in achieving the Sustainable Development Goals (SDGs).

In recent years, economic development in Indonesia has succeeded in reducing unemployment, poverty, and social inequality, especially in rural areas. However, the government is still trying to increase development in the suburbs. This is stated in the Government's Nawacita, which among other things aims to develop regions in Indonesia, especially in the periphery,
improve the quality of life of the community, increase productivity and competitiveness locally, nationally, and internationally, as well as accelerate the development of the domestic economy.

In this era of digital technology, participation from various parties including the community and government through the digital economy is needed to help alleviate poverty and inequality in villages. The development of human capital is important to help Indonesia solve the problem of poverty. The government will continue to empower the community because Indonesia has great potential to develop rapidly. Therefore, support from all levels of society and the millennial generation is needed to be able to actively participate in the digital economy.

Information and Communication Technology (ICT) in the digital era emphasizes the use of fixed telephones, cell phones, and the use of the internet because they are seen as two-way communication technologies. ICT is an indicator in determining economic growth (Solow, 2010). The World Economic Forum (2012), reports that ICT plays a role in reducing poverty, increasing productivity, and promoting economic growth. The assumption is that countries with fast ICT growth tend to have fast economic growth (Chavula, 2013; Donou-Adonsou et al., 2016).

In the current digital era, inter-regional inequality in Indonesia in terms of digital poverty will greatly affect regional inequality, both economically, the quality of human resources, and the use of natural resources (Mulyasari et al., 2019). The report on the use of the internet in Indonesia in 2020, shows that most of the internet is used for social media. The millennial generation, commonly called generation Y and generation Z dominates the use of social media (29.05 percent) because most of them come from young people with an age range of 25-34 years (Saputra, 2019), as shown in Figure 1.

<table>
<thead>
<tr>
<th>Access Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Media/Social Network</td>
<td>29.04%</td>
</tr>
<tr>
<td>Entertainment</td>
<td>23.06%</td>
</tr>
<tr>
<td>Getting Information/News</td>
<td>22.81%</td>
</tr>
<tr>
<td>Getting Information for Process…</td>
<td>8.83%</td>
</tr>
<tr>
<td>Get Information About …</td>
<td>4.06%</td>
</tr>
<tr>
<td>Purchase of Goods/Services</td>
<td>3.89%</td>
</tr>
<tr>
<td>Sending/Receiving E-mail</td>
<td>3.70%</td>
</tr>
<tr>
<td>Sales Financial Facility</td>
<td>2.01%</td>
</tr>
<tr>
<td>Goods/Services</td>
<td>1.35%</td>
</tr>
<tr>
<td>Other</td>
<td>1.22%</td>
</tr>
</tbody>
</table>

Figure 1
Percentage of the population accessing the internet by access destination in 2020 (Sakti, 2022)
In 2020, almost all provinces show a low digital poverty index, except for Papua, West Papua, North Maluku, Maluku, and East Nusa Tenggara. This shows that the average development of internet users from year to year is increasing, but the level of ICT development between regions in Indonesia is still very unequal, the role of technology in development has changed along with policy changes (Fuady, 2018). The high level of inequality in ICT development is likened by David Hill to the gap between those who have internet access and "Enter not" (Fuady, 2018). In 2020, almost all provinces in Indonesia have decreased digital poverty rates. The highest rate of decline in the digital poverty index was achieved by the provinces of East Nusa Tenggara and Aceh from the moderate category in 2019 to low in 2020 (Figure 2).

Figure 2. Map of Indonesia's Digital Poverty Index in 2020 (Sakti, 2022)

Internet users in Indonesia have increased from 2017-2019. Internet users in 2017 were 57.33 percent, in 2018 it was 66.22 percent and in 2019 it was 73.75 percent (BPS, 2020). Although it has increased from year to year, internet users in several provinces are still relatively low because there are still individuals or households who live with little or no access to technology.

Today, many countries are studying the role of technology in overcoming poverty. Based on a study by the Pathways Commission for Prosperity on Technology and Inclusive Development, the quality of data and government policies determine how much benefit the development of the digital economy will bring to the welfare of society. If there are deficiencies in both components, the role of technology to reduce poverty will not be maximized. The Minister of Finance of the Republic of Indonesia, Sri Mulyani Indrawati, said the technological revolution offered various opportunities to improve people's welfare, and "Now is the time to ensure that this new way is truly inclusive."

The trick is to address technological exclusivity and digital inequality. Moreover, several studies state that there are still three billion people in the world who are not connected to the internet (offline) in 2023. Therefore, the public must be educated so that they can maximize the role of technology for productivity and competitiveness, the Government must also provide the infrastructure.
Discussion

Poverty is a social problem that is faced and is characterized by backwardness and backwardness, as well as low productivity which in turn has a low impact on income received. Poverty is caused by laziness, a consumptive lifestyle, and surrender to circumstances. In addition, poverty is caused because access to capital, information, and technology is only controlled by some people (Abdullah & Patil, 2013; Ahmed et al., 2013). Therefore, the empowerment of fishing communities must pay attention to structural, natural, and cultural aspects. Naturally, fishing communities must be empowered through environmental improvements, technology, and structuring of the surrounding environment, while structurally fishing communities must use modern equipment, group formation, and work and cultural relationships in fishermen's lives are improved through increasing education, getting used to saving and reducing consumptive lifestyles.

According to Kusnadi (2003), the factors that cause the majority of fishermen in Indonesia to still suffer from poverty are grouped into three: (a) technical factors, (b) cultural factors, and (c) structural factors. Technical factors involve the level of income of fishermen compared to the level of expenditure or consumption, availability of fish stocks, utilization of technology, and supporting factors such as the availability of fuel and equipment. Cultural factors also affect the work ethic of fishermen, for example, a wasteful lifestyle, ineffective use of time, quickly satisfied with the results achieved today, having no savings, and still believing in persistence and abstinence in the process of fishing.

Structural factors are currently the dominant cause of fishermen's poverty, namely policies and programs that are not conducive to supporting efforts to alleviate fishermen from poverty. Traditional fishermen do not have the capital to develop their businesses because of the lack of capital, while the government has not helped much in terms of providing capital. The availability of fishing supplies, fuel oil, rice, and other fishing gear is still very difficult to obtain by fishermen. These three factors cause fishermen to remain synonymous with poverty because the roots of poverty are still entwined and firmly entrenched in the lives of fishing communities in this archipelago.

Integrated handling of fishermen's poverty is very much needed, the aim is to eliminate the sectoral ego of each stakeholder. The integration is as follows: first, the integration of the sector in responsibilities and policies. Decisions for handling fishermen's poverty must be taken through a coordination process within the government and what needs to be emphasized is that fishermen's poverty will not be able to be handled only by the marine and fisheries sector, starting from the center to the regions. Second, the integration of expertise and knowledge to formulate various policies, strategies, and programs must be supported by various disciplines of knowledge and expertise, the goal is that the plans prepared are truly by the demands of the needs of the fishing community. Third, the integration of problems and problem solving is very necessary to find out the real root of the problem, so that the policies made are comprehensive, and not partial. Fourth, location integration (locus), makes it easier to provide assistance, counseling, and services (cross-sector), so that the program can be carried out effectively and efficiently.

To realize this integration, a planning process is needed that must be by the following elements: first, the formulation of clear targets, in the form of the expected final results from the activities made, the responsible institutions, and the objects of the activities.
Second, identifying the existing situation, by considering internal (strengths and weaknesses) and external (opportunities and threats) factors, the aim is to find out the actual condition of the object to be handled. Furthermore, it will be easier to formulate various strategies that support the handling of fishermen's poverty.

Third, the determination of goals must be specific (objects, activities, time-limited, and measurable), so that fishermen's poverty alleviation is clear who the targets are and the types of activities to be carried out, and then how long it will take to achieve the goals can be determined.

Fourth, analyzing the situation, the implementation of activities must be adjusted between the provisions that have been set with the reality on the ground, and if unexpected problems occur, it is necessary to immediately make new strategies and actions to close the gaps of difference.

Fifth, mentoring, monitoring, and evaluation, assistance must be carried out from the beginning of the activity, until after the activity, so that it will become an evaluation material, whether the activity has been carried out by the stated objectives.

All of these elements will be fulfilled if they are supported by: first, the preparation of a program that must start from problem identification, the goal is to collect actual data and facts, so that the root of the problem (issues, causes, impacts, locations, etc.) can be identified. Second, in program management, the management process (formulation, implementation of plans, monitoring, and evaluation) must be clear, not only focused on administrative processes. Third, real action to solve every problem. Furthermore, through this concept, various poverty alleviation strategies can be formulated, such as: expanding job opportunities, empowering community institutions, increasing institutional capacity, human resources, social protection, and structuring global partnerships.

Based on the poverty review, the dominant fishing community is structural poverty with the following therapies:

- Low productivity can be revitalized through technology development and fishery business diversification to increase production and labor productivity;
- Small economies of scale, revitalized by collaborating through fishing groups or cooperatives facilitated by the government;
- Limited fisheries infrastructure, revitalized by building basic physical and economic infrastructure such as roads, irrigation, markets, rural industries, and others;
- Fishery products produced in form, primary products, and low economic value, are revitalized by developing fish processing industries and post-harvest activities to increase product added value;
- Limited knowledge and skills of fishermen, revitalized by coaching and training for productive activities that can foster the entrepreneurial spirit of fishermen;
- Access to capital, markets, information, and technology is limited due to poverty, revitalized by providing capital, technology transfer, and product market development, for example in the form of partnerships, assisting fishermen, and others.

**Revitalizing Fishermen and Rural Economy**

One of the main causes for the emergence of poverty faced by fishermen is the limitation of fishing technology. With limited technology, the dependence on the season becomes very high and the fishing area is also limited. As a result, the catches of fishermen are also limited. In addition, the condition of fishery resources that are public property results in competition for
resources, so traditional fishermen loses in the competition. This condition causes fishermen's income to be low, especially for fishermen's labor groups because they rely on their business on profit sharing obtained from the skipper. With a profit-sharing system that tends to be unequal, the income gap between fishing workers and their owners is also unavoidable.

Based on these conditions, it is necessary to revitalize the fishermen's economy to accelerate poverty reduction in the digital era. The strategic role of the fisheries sector in the blue revolution, especially fishermen as the main actors to reduce poverty, especially in rural areas, is highly expected as a form of the revitalization of the local economy in Indonesia. The implication is that fisheries in rural areas will develop and have strategic value because they are based on a reliable fisheries sector. Therefore, it needs to be accompanied by efforts to revitalize the fishermen's economy in the following forms:

- Increased investment in education, especially fisheries education, based on local competencies;
- Reducing fishermen's dependence on middlemen, so that fishermen and fish traders are in a balanced position. Therefore, the existence of an institution that can replace the role that has been carried out by middlemen is very necessary;
- To increase the income of fisherman workers, it is necessary to improve the profit-sharing system. A supporting set of rules is needed to better ensure the realization of justice in the profit-sharing system;
- Determination of fishermen as the subject of each development program, meaning that they need to be invited together to participate in formulating the problems they face and looking for alternative solutions because they are the ones who know better and feel the problems they are facing;
- Strive to reduce the negative impact of decentralization on fisheries development by improving fisheries infrastructure in rural areas;
- Increased accessibility to social facilities for fishermen, because will indirectly help accelerate poverty reduction for fishermen in rural areas. Furthermore, the Government needs to add units of social facilities, especially education and health, which are closer to fishermen in remote villages; and
- Promote and increase the number of millennial fishermen with information accessibility capabilities and global digitalization of fisheries to rural areas (digitally literate fishermen), as one of the solutions to encourage fishery economic activities. This has a multiplier impact on revitalization efforts or - according to the title of the author's scientific oration - repositioning the fishermen's economy in the digital era to accelerate fisheries and rural development in Indonesia.

Along with these revitalization efforts, the major proposition that is understood is that developing fishing communities not only means increasing their income but also helping to increase the self-esteem of fishermen. This effort is important because as stated by (Ahmed et al., 2013) that overcoming poverty and underdevelopment is not only related to life support issues but also issues of self-esteem and freedom. All of this is intended so that the poor can be judged more human (to be more human) in their life and are considered vital in their world of work.
CONCLUSIONS

The revitalization of the fishermen’s economy as the focus of the blue revolution program locus is a zine-qua-non promoted by the current government to accompany the successful green revolution program. Fishermen poverty is a multi-dimensional problem that requires a comprehensive solution. The causes of poverty are not the same in all regions, even the size or scale varies depending on local conditions so poverty alleviation strategies cannot be generalized to all regions or all sectors. The poverty experienced by rural fishermen cannot be equated with the measure of poverty in urban communities. Therefore, fishermen and rural poverty alleviation programs require a revitalization strategy through increasing skills and mastery of information and communication technology (ICT) for actors to be able to improve the quality of their business. In addition, simultaneous cultural and structural revitalization is needed to provide a way to alleviate fishermen and rural poverty in the context of achieving the Millennium Development Goals (MDGs) proclaimed by the Indonesian government.

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