# Original Research Article
# Understanding Poverty Among Fishing Communities: A Critical Review


## Abstract

Poverty among fishing communities is a complex and multifaceted problem, which is influenced by various social, economic, and environmental factors. This study aims to provide a critical review of poverty conditions in fishing communities, focusing on the causative factors, impacts, and potential solutions. Through a multidisciplinary approach, this study examines relevant literature and empirical data from various sources. This research uses qualitative methods, including literature analysis, and in-depth interviews with fishermen and related stakeholders. The data were analyzed using a descriptive approach to understand the dynamics of poverty and effective interventions. The results of the study show that poverty among fishermen is caused by a combination of factors such as lack of access to modern technology, climate change, and less supportive policies. In addition, the study found that empowerment programs involving the active participation of fishers and local capacity building can significantly improve their well-being. This research is expected to be the basis for policymakers and other stakeholders in formulating more effective strategies to alleviate poverty among fishermen.



**Keywords:**Fishermen poverty; climate change; fisheries policy; Community empowerment




## 1. Introduction

Poverty among fishing communities is a complex and urgent issue, especially in an archipelagic country like Indonesia. Although Indonesia is known as a maritime country with abundant marine wealth, a striking irony occurs when many fishermen live below the poverty line (Roberts et al., 2022; Narotama, 2022). This condition reflects the imbalance between the great potential of natural resources and the welfare of coastal communities who should be at the forefront of utilizing the wealth of the sea. Instead of enjoying the abundance of seafood, fishermen are often trapped in a cycle of poverty caused by a variety of factors, including low selling prices of fish, limited access to technology and markets, and a lack of infrastructure support and basic facilities. This situation is a paradox that is concerning, considering the strategic role of the fisheries sector in the national economy and food security.

Fishing communities often face various challenges that affect their welfare, ranging from economic, social, to environmental aspects (Lynch et al., 2016; Allison et al., 2012; Rimmer et al., 2021). Economic factors include low fishermen's income, which is often not proportional to the operational costs of going to sea. Fluctuating fish selling prices and reliance on middlemen also worsened their economic conditions, creating financial instability that made long-term planning difficult (Mainelli& Harris, 2011; McGoodwin, 1995; Pomeroy et al., 2020). Fish price fluctuations are often caused by factors that are beyond the control of fishermen, such as changes in market demand, extreme weather, and trade policies. Meanwhile, the reliance on middlemen who often offer low prices and unfair terms puts fishermen in a situation where they have to sell their catch at a price that does not

reflect the true value. As a result, fishermen's incomes become erratic, hampering their ability to invest in better equipment, their children's education, and improving overall family well-being. This also reduces incentives to maintain the sustainability of marine resources, as fishermen are forced to overexploit catches to meet their daily economic needs. In addition, the lack of access to capital, technology, and markets makes it difficult for fishermen to increase productivity and income.

Socially, low education and lack of skills outside the fisheries sector limit opportunities for fishermen to diversify their sources of income, resulting in a high dependence on fish catches as the only source of livelihood (Suharno et al., 2016; Cinner et al,, 2009; Allison& Ellis, 2001; Mills et al., 2011). Low levels of education among fishermen are often caused by limited access to quality educational facilities and economic needs that force children to work from an early age. As a result, many fishermen do not have sufficient skills to work in other sectors, such as industry, services, or trade. This narrows their job options, so that when catches decline or fish prices plummet, they have no reliable alternative to support their families. This condition also hampers social and economic mobility, making it difficult for the younger generation of fishing communities to get out of the long-standing cycle of poverty. Without effective interventions, such as skills training programs and improved access to education, fishers will continue to be trapped in vulnerable and uncertain situations. Health issues are also a concern, considering the large number of fishermen who work without adequate protection from marine hazards. The conditions of unsuitable housing and the lack of public facilities in coastal areas add to the burden of their lives.

Environmentally speaking, climate change and degradation of marine ecosystems due to overfishing and marine pollution are further exacerbating the situation. The decline in fish catches has a direct impact on fishermen's incomes, lowering their daily income and affecting the quality of life of families who depend on marine products (Lein& Setiawina, 2018; Rabo et al., 2014; McClanahan et al., 2015). This situation is exacerbated by the destruction of coral reefs and mangroves, which are important habitats for various species of fish and other marine life. Damaged coral reefs due to unsustainable fishing activities, climate change, and marine pollution reduce fish populations and disrupt the balance of marine ecosystems. Mangroves degraded by illegal logging and coastal development are eliminating breeding grounds and shelters for young fish (Hutchison et al., 2014; Hamilton et al., 2017; Sulaiman et al., 2023). As a result, the potential for marine resources that can be used sustainably is decreasing, making efforts to restore fish stocks more difficult and time-consuming. This decline not only affects the economic well-being of fishermen, but also threatens the sustainability of the marine ecosystem that is the backbone of their livelihoods. These problems show that poverty among fishing communities is not just an economic problem, but also a structural problem that requires a holistic and sustainable approach.

This study critically explains the problem of poverty in the fishing community. The study is important because it highlights the socio-economic inequities faced by fishing communities and aims to find solutions that can improve their well-being.

## 2. Research Methods

This study used a qualitative method to deeply understand poverty in the fishing community (Barclay et al., 2017). The qualitative method was chosen because it can capture

the nuances and complexities of fishermen's experiences and perceptions that are often unreachable by quantitative methods. This study used a case study design to explore the phenomenon of poverty in the fishing community. The case studies allowed researchers to understand the specific contexts and dynamics that affect poverty in some selected fishing communities. The research sample consisted of several fishing communities in the coastal areas of Indonesia that were selected purposively. The criteria for selecting the sample included: the diversity of socio-economic conditions of the fishing community, the level of exposure to climate change, and access to empowerment programs and government policies.

Data collection was carried out through in-depth interviews, participatory observations, and literature studies. Interviews were conducted with fishermen, community leaders, and other stakeholders. Use semi-structured interview guidelines to allow flexibility in the exploration of relevant topics. Interview topics include economic conditions, access to resources, the impact of climate change, experiences with government policies, and perceptions of empowerment programs. Meanwhile, through participatory observation, researchers live and participate in the daily lives of fishing communities to understand the real conditions they face. Observations were made on fishing activities, catch processing, and other community activities. As for the literature study, the researcher does so by collecting and analyzing related documents such as government reports, fisheries policies, and empowerment programs. This document provided additional context and supports data obtained from interviews and observations.

The researcher then analyzed the data thematically to identify patterns, key themes, and relationships between themes (Clarke & Braun, 2017; Terry et al., 2017). The researcher triangulation the data to ensure the validity of the findings. With this qualitative method, the research is expected to provide a deep and comprehensive understanding of poverty among fishing communities and the factors that affect it.

## 3. The Problem of Fishermen's Poverty

Fisherman poverty is a complex problem that is influenced by various interrelated factors (Béné, 2003; Coulthard et al., 2011; Wardojo, 2019). Fishermen's earnings are heavily influenced by the seasons, weather, and sea conditions, leading to significant fluctuations in income. Seasons affect the availability and abundance of fish in the sea. For example, some types of fish migrate or breed at certain times of the year, which affects the catch. A productive fishing season is usually followed by a famine season, where catches drop dramatically. This causes significant revenue fluctuations throughout the year. In some areas, there are certain seasons where high-value types of fish are more widely available. During this period, fishermen's income can increase, but this is also followed by a period where the type of fish is difficult to find, so that income decreases. This uneven income often affects fishermen's ability to manage their finances effectively. When incomes are high, there is a tendency to spend more, but when incomes decrease, fishermen often experience financial difficulties.

Bad weather such as storms, strong winds, and high waves pose a significant safety risk to fishermen. As a result, fishermen often choose not to go to sea during these weather conditions. The high frequency of severe weather can reduce the overall number of days at sea in a year, which has a direct impact on catch volume. When the weather is bad, where undulating sea conditions can disrupt fish migration patterns, it makes it more difficult to

find and catch fish. Weather uncertainty also makes it difficult for fishermen to plan fishing activities, which can disrupt their economic stability. Climate change has increased the frequency and intensity of extreme weather. For example, more frequent and stronger storms not only jeopardize fishermen's safety but also damage fishery infrastructure such as boats and equipment, adding to the economic burden.

Significant fluctuations in income make financial planning very difficult for fishermen. Unpredictable income hinders their ability to create monthly budgets, plan for the future, or make savings. These difficulties also lead to an inability to plan for long-term investments or fund education and other important needs for families. Income instability can lead to an inability to meet basic needs such as food, shelter, and health. This can affect the quality of life of fishing families as a whole. At times of declining income, families often have to cut back on expenses, which can result in sacrifices on essential needs and family well-being. To overcome the lack of income, fishermen often rely on loans from financial institutions or loan sharks. These loans often come with high interest, which increases their financial burden. This dependence on loans creates a cycle of debt that is difficult to break, where unstable income leads to difficulties in repaying loans, which in turn worsens financial conditions.

Accumulated debt can result in difficulties in accessing additional loans in the future and can affect fishermen's credit scores, hindering their ability to invest in better equipment or improve infrastructure. Reliance on loans can also reduce fishermen's capacity to invest in technological improvements or updates, ultimately negatively impacting their productivity and catch.

## 4. Efforts to Overcome the Problem of Fishermen's Poverty

Some fishermen develop adaptation strategies such as income diversification by switching to other jobs during famine or inclement weather seasons (Deb& Haque, 2016; Susilo et al., 2021; Badjeck et al., 2010). Switching from wild fishing to fish farming in ponds or cages, allows fishermen to control production and reduce dependence on natural catches. By having multiple sources of income, fishermen can reduce the impact of fluctuations in fish catches and adverse weather conditions. Diversification can open up opportunities to enter new markets and expand social and economic networks. Diversification can provide a more stable and predictable income stream, making it easier to plan finances and manage households.

Providing skills training and education for fishermen is a key step in helping them start and manage additional ventures successfully. This training not only enhances their ability to diversify their income but also strengthens their capacity to face economic and environmental challenges. The development of microcredit programs and grant assistance, as well as savings and loan cooperatives, is an important strategy to support fishermen in starting and managing new businesses, as well as overcoming the capital limitations they often face. Assisting fishermen who do not have collateral or credit history to obtain the necessary capital for investment in equipment, raw materials, or additional ventures. The grant is to help fishermen who may not be able to afford to pay off loans by providing capital without debt burden, as well as supporting projects that have the potential to improve the welfare of the community.

Education on financial management and budget planning is a crucial aspect in helping fishermen better manage their income. These training programs can provide the skills and knowledge necessary to improve the personal and family financial health of fishermen. Good financial management helps fishermen to manage unstable income by setting aside a portion of income for periods when the catch is insufficient. With budget

planning, fishermen can set spending limits and ensure that they don't spend more than they have. Training on financial management teaches fishermen how to set aside money for savings and investments that can improve their long-term well-being. Training helps fishermen understand how their income and expenses affect their overall financial condition. Teach fishermen how to plan and monitor their budgets to ensure that they live within their financial means.

## 5. Conclusion

Poverty among fishing communities is a complex and multidimensional issue, influenced by various structural, economic, and social factors. Through a critical review, we can draw some important conclusions regarding the causes, impacts, and strategies that can be used to address poverty in fishing communities. Fishermen often face limitations in access to important resources, such as financial capital, education, and technology. These limitations hinder their ability to increase production capacity and diversify their businesses. High dependence on unstable fish catches and affected by climate change and overfishing make fishermen's incomes often uncertain. Limitations in infrastructure, such as storage facilities, transportation access, and markets, limit fishers' ability to access a wider market and manage their catches more efficiently. Lack of access to education and skills training hinders the development of fishers' capacity to effectively manage their businesses and adapt to changing market and environmental conditions.

Developing income diversification strategies, such as switching to seasonal work, fish farming, or handicrafts, can reduce reliance on fish catches and improve financial stability. Providing training on financial management, budget planning, and technical skills can strengthen the capacity of fishermen to better manage their income and improve their entrepreneurial capabilities. Providing access to microcredit with flexible terms and grant assistance with no re-obligation can help fishermen start or develop additional businesses, as well as overcome capital constraints. Investments in infrastructure, such as storage, transportation, and market facilities, can improve the efficiency of fishers' businesses and their access to a wider market.

## 6. Limitation and Study Forwards

Studies that overgeneralize without taking into account local variations may not be relevant for all fishing communities. Local factors such as geographical conditions, types of fish crayed, and local culture affect poverty dynamics. Conduct case study research in different fishing communities with different conditions to understand the specific factors that affect them. This approach can provide deeper and more relevant insights for each community.

## References

Allison, E. H., & Ellis, F. (2001). The livelihoods approach and management of small-scale fisheries. Marine policy, 25(5), 377-388.

Allison, E. H., Ratner, B. D., Åsgård, B., Willmann, R., Pomeroy, R., & Kurien, J. (2012). Rights□based fisheries governance: from fishing rights to human rights. Fish and Fisheries, 13(1), 14-29.

Badjeck, M. C., Allison, E. H., Halls, A. S., & Dulvy, N. K. (2010). Impacts of climate variability and change on fishery-based livelihoods. Marine policy, 34(3), 375-383.
Barclay, K., Voyer, M., Mazur, N., Payne, A. M., Mauli, S., Kinch, J., ... & Smith, G. (2017). The importance of qualitative social research for effective fisheries management. Fisheries research, 186, 426-438.
Béné, C. (2003). When fishery rhymes with poverty: a first step beyond the old paradigm on poverty in small-scale fisheries. World development, 31(6), 949-975.
Cinner, J. E., Daw, T., & McClanahan, T. R. (2009). Socioeconomic factors that affect artisanal fishers' readiness to exit a declining fishery. Conservation Biology, 23(1), 124-130.
Clarke, V., & Braun, V. (2017). Thematic analysis. The journal of positive psychology, 12(3), 297-298.
Coulthard, S., Johnson, D., & McGregor, J. A. (2011). Poverty, sustainability and human wellbeing: a social wellbeing approach to the global fisheries crisis. Global Environmental Change, 21(2), 453-463.
Deb, A. K., & Haque, C. E. (2016). Livelihood diversification as a climate change coping strategy adopted by small-scale fishers of Bangladesh. Climate Change Adaptation, Resilience and Hazards, 345-368.
Hamilton, R. J., Almany, G. R., Brown, C. J., Pita, J., Peterson, N. A., & Choat, J. H. (2017). Logging degrades nursery habitat for an iconic coral reef fish. Biological Conservation, 210, 273-280.
Hutchison, J., Spalding, M., & Zu Ermgassen, P. (2014). The role of mangroves in fisheries enhancement. The Nature Conservancy and Wetlands International, 54, 434.
Lein, A. A., & Setiawina, N. D. (2018). Factors affecting the fishermen household income and welfare. International research journal of management, IT and social sciences, 5(4), 80-90.
Lynch, A. J., Cooke, S. J., Deines, A. M., Bower, S. D., Bunnell, D. B., Cowx, I. G., ... & Beard Jr, T. D. (2016). The social, economic, and environmental importance of inland fish and fisheries. Environmental reviews, 24(2), 115-121.
Mainelli, M., & Harris, I. (2011). The price of fish: A new approach to wicked economics and better decisions. Hachette UK.
McClanahan, T., Allison, E. H., & Cinner, J. E. (2015). Managing fisheries for human and food security. Fish and Fisheries, 16(1), 78-103.
McGoodwin, J. (1995). Crisis in the world's fisheries: people, problems, and policies. Stanford University Press.
Mills, D. J., Westlund, L., de Graaf, G., Kura, Y., Willman, R., & Kelleher, K. (2011). Under-reported and undervalued: small-scale fisheries in the developing world. Small-scale fisheries management: Frameworks and approaches for the developing world, 1.
Narotama, M. R. (2022). Small islands in a large archipelago state: Examining small islands' peripherality and governance relations in Riau Islands Province, Indonesia (Doctoral dissertation, University of Birmingham).
Pomeroy, R., Arango, C., Lomboy, C. G., & Box, S. (2020). Financial inclusion to build economic resilience in small-scale fisheries. Marine policy, 118, 103982.
Rabo, P. D., Zarmai, D. U., Jwanya, B. A., & Dikwahal, S. H. (2014). The role of fisheries resources in national development: a review. International Letters of Natural Sciences, 13(1).
Rimmer, M. A., Larson, S., Lapong, I., Purnomo, A. H., Pong-Masak, P. R., Swanepoel, L., & Paul, N. A. (2021). Seaweed aquaculture in Indonesia contributes to social and economic aspects of livelihoods and community wellbeing. Sustainability, 13(19), 10946.

Roberts, N., Mengge, B., Utina, M. R., Muhatar, F., Icwardanhi, A., Zulkifli, R. M., & Humphries, A. (2022). Patron-client relationships shape value chains in an Indonesian island-based fisheries system. Marine Policy, 143, 105142.
Suharno, S., Anwar, N., & Saraswati, E. (2018). Do fishers need to diversify their source of income? A special reference in vulnerable fishers of Cilacap Waters, Indonesia.
Sulaiman, U., Wilkins, D. E., Rahmawati, R., Subair, S., Bakri, W., Suban, A., ... & Obie, M. (2023). Contribution of Local Wisdom of the Bajo Tribe to Preserve Indonesia's Mangrove Forests.
Susilo, E., Purwanti, P., Fattah, M., Qurrata, V. A., & Narmaditya, B. S. (2021). Adaptive coping strategies towards seasonal change impacts: Indonesian small-scale fisherman household. Heliyon, 7(4).
Terry, G., Hayfield, N., Clarke, V., & Braun, V. (2017). Thematic analysis. The SAGE handbook of qualitative research in psychology, 2(17-37), 25.
Wardojo, W. W. (2019). Poverty and Women Status among the Fishers Community in Contemporary Era. Journal of Maritime Studies and National Integration, 3(1).