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Abundant Nature and Poverty Trap: The Irony of Fishermen in Percut, North Sumatra

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Abstract

This article revolves around the experiences of impoverished small-scale fishermen in Percut Village, Indonesia, based on the two-year immersion and observations. The primary focus is on the socio-economic aspects of the village's abundant natural resources and their potential to improve overall well-being. By examining the relationship between these resources, valuable insights for developing policies, programs, and social safety nets to help break the poverty cycle will be determined. Despite the presence of plentiful natural resources and the implementation of various social safety nets, their impact on socioeconomic stability has been limited. The result showed that factors such as work ethic, mental attitudes, and the ability to optimize financial, natural, social, and human resources play crucial roles in determining well-being and sustainable livelihoods.

Keywords: Assistance, Fishermen, Poverty, Subsistence, Trap

1. Introduction

In this research, the irony faced by fishermen in Percut Village (*Desa Percut*), Deli Serdang Regency, 18 km from Medan City, the Capital of North Sumatra Province, Indonesia, during a two-year service from 2022 to 2023 was examined. Essentially and substantially, the research primarily focused on economic anthropology, intending to understand how the abundant natural resources in the area could be utilized to enhance the well-being of the local community. The initial assumption was that combining plentiful resources and a strong work ethic would enable fishermen to overcome poverty. During this period, assistance was provided to six small groups of fishermen, consisting of five to eight individuals each, by implementing fish farming in ponds. This approach was perceived as a promising alternative to uplift their well-being. The project was designed to be carried out in rotation over two years, with the profits generated in the first year serving as the capital for expanding the initiative to a larger group in the second year. It held high expectations of becoming a successful model for managing natural resources

and alleviating poverty among small-scale fishermen. However, the reality faced by the fishermen in these two years proved to be a dilemma, challenging the initial assumptions and goals of the project.

Despite implementing various socio-economic stimuli, including the revitalization of ponds, provision of fish seeds and feed, knowledge transfer through scholars and peer experiences, and social assistance, the fishermen in Percut continued to face persistent poverty. In addition, government initiatives aimed at community development, such as the Healthy Indonesia Card (*Kartu Indonesia Sehat* [KIS]), Smart Indonesia Card (*Kartu Indonesia Pintar* [KIP]), Family Hope Program (Program Keluarga Harapan [PKH]), School Operational Assistance (*Bantuan Operasional Sekolah* [BOS]), fuel subsidies (*Bahan Bakar Minyak* [BBM] Subsidy), and social assistance (*Bantuan Sosial* [Bansos]), had limited impact on improving their well-being. Based on previous experience, this research implemented empowerment programs in Lhokseumawe by providing aid packages to fishermen affected by the tsunami in 2004. These packages included fiberglass boats, fishing equipment, tools, and salt management provided through a non-governmental organization based in Germany.

However, two months later, inspections revealed that more than half of the aid recipients had sold off the assistance, suggesting a lack of long-term impact. Similar programs were also initiated in Payau Pasir, where a fish farming project in ponds was launched in 2010 as part of a fishermen empowerment program. Unfortunately, this assistance did not effectively improve the well-being of the fishermen. In Percut, other initiatives were undertaken, involving the cultivation of *Plotosus canius* and mangrove crabs (*Scylla*) in ponds from 2011 to 2012. These projects also failed to bring about the desired improvement in the economic situation of the fishermen. Rather than experiencing prosperity, the small-scale fishermen remained trapped in poverty, despite abundant natural resources. This paradox revealed that the challenges faced by these individuals extended beyond mere economic circumstances, encompassing structural and cultural factors contributing to their classification as poor.

Percut Village is a uniform region characterized by its lowland terrain, abundant aquatic biota, and population primarily consisting of Malay (and Javanese) fishermen. The natural features of the area make it suitable for fishing and the creation of ponds. The topography is characterized by low-lying land influenced by multiple rivers, both small and large, which profoundly impact the environment, biota, population, and society. The village experiences monthly flooding during high tides (spring tides) and becomes dry during low tides (neap tides) due to its proximity to the Malacca Strait. It spans an area of 126.3 km² and is bordered by Cinta Damai Village, Cinta Rakyat Village, Tanjung Rejo Village, and the Malacca Strait. With 19 hamlets and a population of 18,935, the village showcases mangroves, stilt houses, semi-permanent structures, limited sanitation facilities, waste disposal and brackish water. The scenery also includes muddy brown rivers for bathing, washing, and toileting.

Fishing constitutes the primary source of income for 85 % of the population, while the remaining 15% engage in occupations such as civil service, small-scale trading, driving, and owning workshops. Alongside sea fishing, a portion of the population engages in brackish water pond farming to cultivate various fish species such as gourami (*Osfrophonemus goramy*), carp (*Cyprinus carpio*), freshwater pomfret (*Colossoma macropomum*) and catfish (*Pangasius sp.*). The two most favoured species among the locals are the Nile (*Oreochromis niloticus*) and Mozambique tilapia (*Oreochromis mossambicus*). A small number of villagers depend on mud or mangrove crabs (*Scylla*) in mangrove-covered rivers. These ponds serve as farming grounds and provide daily or bulk fishing opportunities, with owners selling their catches as food and beverages.

In addition to the detailed research conducted in Percut Village, socio-economic comparisons involving five other locations, namely Pangkalan Brandan in Langkat, Payau Pasir, Marelan in Medan, Teluk Mengkudu in Serdang Bedagai, as well as Tanjung Tiram and Teluk Boga in Batubara, were also made. These locations were selected due to their similar characteristics to Percut Village. The research subjects were classified as traditional fishermen, including labourers and owners, who engaged in non-formal, subsistence, or native fishing practices (Morgan, 2013). These small-scale fishermen operated within the guidelines set by Government Regulation Number 50 of 2015, Hart and Reynolds (2004), and United Nations Conference on Trade and Development [UNCTAD] (2016), with their daily catch amounting to less than five gross tons (GPT). In terms of socio-economic status, they generally fell below the poverty line, as determined by the basic needs approach using indicators such as the

headcount index (HCI), poverty gap, and distributionally sensitive indices. Figure 1 shows a scene from Percut Village, depicting small-scale fishermen setting up nets in *Paluh*, a small river.



Figure 1: Traditional fishermen and simple fishing gear in a small river

Source: Research documentation, 2022

This research focuses on livelihoods comprising various capabilities and assets such as savings, resources, skills, and access. These elements are essential for sustaining a livelihood (Chambers & Conway, 1992). The region has abundant natural resources, including fish, animals, and plants found in ponds, rivers, and the sea. The poverty trap refers to a socio-economic condition that hinders development and leaves individuals and communities marginalized and trapped. In this context, poverty is defined as having income below the poverty line. This research specifically examines small-scale fishermen who engage in subsistence, native fishing practices in a non-formal setting. They can be either labourers or owners, operating individually or in groups, and their catch typically amounts to less than five GPT (Government Regulation Number 50 of 2015). Work ethic is an important aspect, encompassing the mindset and attitude of utilizing both external and internal potentials to improve and enhance the quality of life. Social well-being indicates economic stability and daily or monthly income and goes beyond fulfilling basic needs. Efforts have been made in Indonesia to empower small-scale fishermen and enhance their capabilities under local regulations. Additionally, international regulations such as the Code of Conduct for Responsible Fisheries, Blue Economy, and Ecosystem-based Fisheries Management (EBFM) highlight the responsibility towards supporting traditional fishermen.

This research adopted a well-being approach to shed light on the challenges faced by small-scale fishermen and explore the reasons behind their struggle to thrive. The significance lies in developing a poverty alleviation model specific to this group and reconsidering the format of social assistance provided. This research offers theoretical contributions to understanding well-being and practical implications for policy-making, program development, and socio-economic mechanisms that directly impact small-scale fishermen. A key finding is that not all socio-economic stimuli significantly impact achieving economic stability for small-scale fishermen. Instead, factors such as the mental-cognitive aspects, work ethic, and mentality of these individuals play crucial roles. Understanding these factors is vital for designing interventions and support systems that effectively address the specific needs of small-scale fishermen.

2. Method

This article is from a dedicated two-year project conducted from 2022 to 2023 in Percut Village. The project aimed to empower six groups of small-scale fishermen, each comprising five to eight members. The program went beyond providing economic support and focused on fostering positive cognitive and mental attitudes through the

Community Empowerment Agency of North Sumatra Province (*Badan Pemberdayaan Masyarakat Provinsi Sumatera Utara* [Bapemas Provsu]) and peer experiences. Despite the efforts of Non-Governmental Organizations (NGOs), Community Research and Service Institutions (*Lembaga Penelitian dan Pengabdian Masyarakat* [LPPM]) from universities and the government to introduce socio-economic stimuli, small-scale fishermen in the area still face challenges in achieving sustainable development. With the launch of socio-economic stimuli through NGOs, LPPM, and the government, small-scale fishermen in the area still face challenges in achieving sustainable development. Acquire comprehensive data and information, this research also included five other locations as comparative references within the same region.

However, to ensure the validity and objectivity of the information gathered, this research employed a comprehensive and ethical investigative approach (Greene & Hall, 2010). This qualitative research adopted a mixed-methods approach, drawing inspiration from the social research techniques proposed by Bryman (2012). The comprehensive methodology used a pragmatic framework (Creswell, 2014) and ethnographic techniques (Spradley, 2006) to capture the essence and substance of socio-economic factors and well-being based on the perspectives of the informants in their natural settings. Data collection techniques included participant observation, in-depth interviews, questionnaires, and focus group discussions (FGDs) (Denzin & Lincoln, 2005). The research utilized the Sustainable Livelihoods Index, which categorized scores into five groups, poor, less good, moderate, good and very good with scores of 1, 2, 3, 4, and 5, respectively. Each category was multiplied by specific weights assigned to different capital assets, such as financial (0.4), natural (0.1), social (0.3), and human resources (0.2) (Triyanti & Firdaus, 2016). The poverty level of the fishermen was assessed based on the framework provided by the Central Statistics Agency (Widodo, 2017). The collected data and information focused on various aspects, including daily activities, work ethics, motivation, income, and life attitudes, aligned with well-being indicators (Schutt, 2016).

This research involved 292 participants, including 42 members from the supported groups and 250 individuals from five different regions who were part of the non-supported groups. Participant observation and in-depth interviews were conducted with the members of the six supported groups based on ethnographic principles. Two focus group discussion (FGD) events were held, in 2022 and 2023, in Percut Village. These discussions involved 35 participants, including small-scale fishermen, representatives from LPPM, NGOs, and Bapemas. Besides the three techniques above, a questionnaire containing 22 questions with four answer options was distributed to 50 small-scale fishermen in five locations. The questionnaire covered various aspects, such as family data, daily activities, owned assets, income, education, received assistance, and debts. It aimed to capture general phenomena and trends using a Likert scale. All the collected data and information were treated as narrative text, presenting a series of events and chronology based on personal experiences. To analyze the data, verbatim transcription was performed for all the acquired information, followed by manual categorization and tabulation based on specific characteristics, narratives, and meanings. Subjectivity was minimized through qualitative and interpretive analysis, which involved comparing information between subjects.

3. Results

The six villages along the Malacca Strait have distinct characteristics despite sharing a common occupation as fishermen. These differences can be observed in their fishing practices and available resources. Percut and Payau Pasir can fish in the sea and rivers, enabling them to maintain brackish ponds and fishing areas. The villagers also engage in other activities, such as setting up nets in rivers or constructing Nipah roofs. Paya Pasir, in particular, has a small group of fishermen who also catch small clams (*Leuncang*) to feed ducks. However, both areas cannot generally produce salted fish or salt. Pangkalan Brandan and Teluk Mengkudu rely solely on fishing in the sea and lack the opportunity to manage ponds. Their ability to produce salted fish and salt is limited. In Teluk Mengkudu, fishermen catch fish and gather small clams as food for ducks, which are sold to the Chinese community. Tanjung Tiram and Teluk Boga are also limited to fishing in the sea. These two areas possess the capability to produce salted fish and salt. Clams are a popular commodity in these regions. Figure 2 shows the fisher livelihood index based on the SLA for the 292 participants.

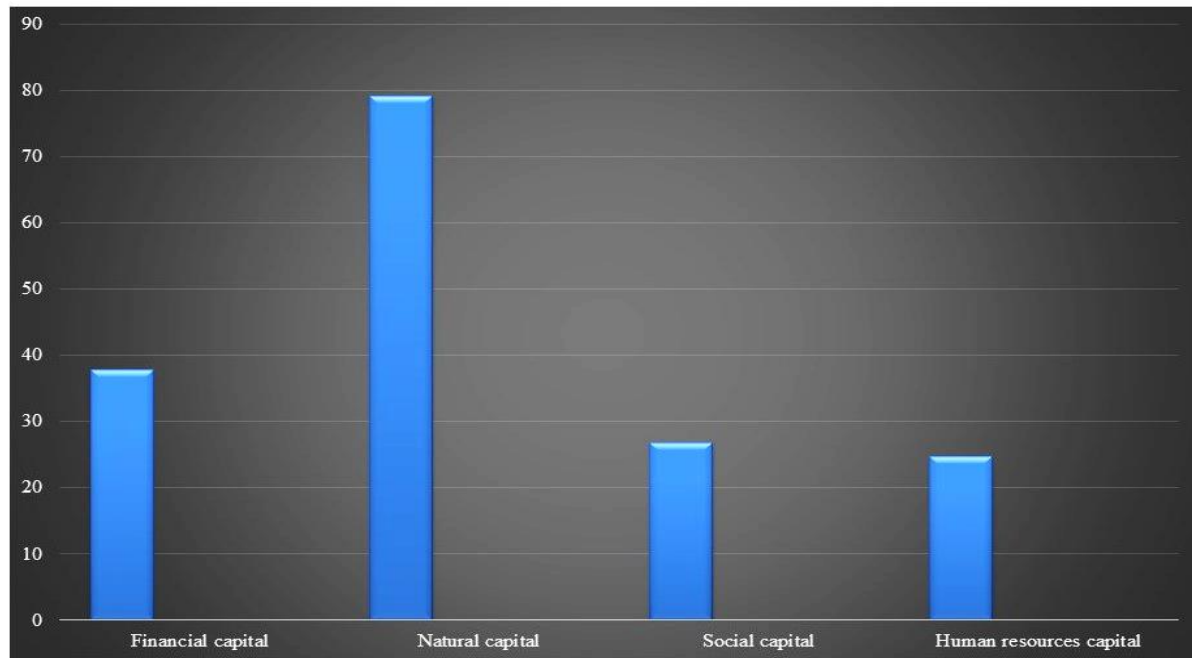


Figure 2: Fisher livelihood index based on the SLA.

Based on the sustainable livelihood approach, the 292 small-scale fishermen in this research were found to have a livelihood index of 42.15% and were categorized as less prosperous. This index was determined by analyzing various indicators. The financial capital indicator scored 37.72%, indicating a less prosperous category. The natural capital indicator scored 79.15%, reflecting a good category. In contrast, the social and human capital indicators scored 26.7%, and 24.72%, respectively, thereby falling into the poor category. These data confirm the irrelevance between abundant natural resources and overall well-being. Despite the presence of ample natural resources, the lack of human resources to effectively utilize and manage these resources, as well as insufficient financial support, contribute to inadequate prosperity levels. It is worth noting that abundant natural resources can still improve prosperity through various alternatives. These include leveraging human resources and social capital capabilities or combining human resources with support systems or financial resources. Comparing Percut Village with the other five locations, Pangkalan Brandan, Payau Pasir, Teluk Mengkudu, Tanjung Tiram, and Teluk Boga, led to the acquisition of the following data.

Table 1: Condition of Small-Scale Fishermen in Five Different Locations

Area	Fisher category			Means used		Average pond area (hectares)	Skill		Income per day (IDR)
	Full-time (%)	main part-time (%)	additional part-time (%)	Cultivators (%)	Owners (%)		Non-formal (%)	Training (%)	
Desa Percut	74	9	2	62	48	<0,5	88	12	<25.000-40.000
Pangkalan Brandan	47	2	1	41	9	-	78	22	<25.000-40.000
Payau Pasir	37	11	2	24	26	<0,5	72	28	<25.000-40.000
Teluk Mengkudu	45	3	2	38	12	-	81	19	<25.000-40.000
Tanjung Tiram	44	2	4	39	11	-	83	17	< 5.000-40.000
Teluk Boga	43	4	3	37	13	-	82	18	<25.000-40.000

Based on the information shown in Table 1, it is evident that most small-scale fishermen, accounting for more than two-thirds, have received non-formal knowledge related to their occupation. In terms of daily income, it ranges

between IDR 25,000 to IDR 40,000. This calculation is based on the accumulation of their total monthly earnings divided by 30 days. It is important to note that four locations, namely Pangkalan Brandan, Teluk Mengkudu, Tanjung Tiram, and Teluk Boga, do not have any ponds. The small-scale fishermen in these areas solely rely on fishing in the sea without any alternative sources of income.

A brief overview of the six foster groups in Percut Village during the two-year dedication can be characterized as follows, the majority, constituting 74 % of the groups, are full-time fishermen. Furthermore, 9% engage in fishing as their primary part-time occupation, while an additional 2% engage in this occupation as a secondary part-time activity. In terms of facilities used, 62% are labourers, and the remaining 48% are individual or group owners without legal entities. These owners render fishing services daily, both individually and collectively, and also sell food and snacks. The average size of the ponds used by the foster groups is less than half a hectare. These ponds are typically square or rectangular, with an average size of 50 m by 50 m. The primary focus of cultivation in these ponds is 3,000 to 5,000 fingerlings, particularly tilapia.

Interestingly, in Percut Village, a notable aspect of the foster groups is their skill acquisition. It is observed that 88% of the groups are non-formal fishermen who acquired their knowledge through traditional inheritance. The remaining 12% have received formal training. In terms of technology usage, the majority of the foster groups (79%) rely on simple equipment that offers limited navigation capabilities within their fishing territories. When considering the daily income levels, it was found that 61% of the groups earn less than IDR 25,000. The remaining 39% fluctuates between earning IDR 25,000 to IDR 50,000. During the harvest season, which occurs approximately three to four times a year based on fish development, fishing activities tend to generate higher income. The foster groups earn IDR 150,000 to IDR 250,000 per day for two consecutive weeks. The sales revenue, which depends on market prices, can reach IDR 2,500,000 to IDR 5,000,000 per harvest. It is important to note that the current pond systems, whether for fishing or cultivation, are not sustainable. This gap was addressed by creating diversified ponds for fishing and cultivation purposes. A more sustainable model can be implemented by transferring fish from one fishing pond to another as they start to diminish in numbers. This approach would positively impact the continuity of small-scale food and beverage sales.

The foster groups typically have families with an average of four to six children who have completed elementary to junior high school, excluding their parents. These children attend schools in the central district, and they travel a distance of approximately 1 to 3 km, either on foot or by cycling, public transportation, motorcycles, and even boats in some cases. These children have a relatively high dropout rate, with the majority completing only elementary and junior high school. This often leads to early marriages or employment as fishermen or factory workers. Surprisingly, none of the children from these foster groups have been able to obtain a bachelor's degree education. Regarding housing, there is a prevailing trend of raised or semi-permanent stage houses with cement or wooden floors and electricity connections. These raised houses are designed to anticipate rising tides and prevent flooding. Although, not all houses have access to toilets or clean water, and only a few have drilled wells (jet pumps) with a depth of 150 meters. It is common for households without toilets to dispose of waste in the rivers behind their houses for washing and bathing purposes.

The housing clusters are located on both sides of the Medan-Bagan Percut highway, while others are scattered among the ponds, with varying distances of 150 m to 300 m. The footpaths connecting the houses and ponds are made of soil and partially rocky sand. The village is equipped with various public facilities to cater to the needs of the residents. These include mosques, village halls, community health centres, electricity networks, and internet towers. The innumerable facilities provide essential services and connectivity to the community. In Bagan, located 4.5 km from Percut Village, there is a bustling Fish Auction Place that operates in the mornings and evenings. Several agents gather there to purchase the catch of the fishermen and sell it in Medan. Additionally, the area is home to several seafood restaurants that entertain customers with karaoke or live music. The Percut River, which runs through the village, serves as a means of transportation to the Malacca Strait. Simple boats with a capacity of 20 people are used for this purpose, covering a distance of 7.5 km. The riverbanks are lined with mangroves, providing habitats for various bird species and monkeys. Aside from monitoring lizards and other aquatic animals, garbage is a common issue, indicating poor sanitation in the area.

All informants, including the foster groups and others, receive government social assistance through programs such as PKH, KIS, and KIP. However, not all are enrolled in the National Social Security Agency (*Badan Penyelenggara Jaminan Sosial* [BPJS]) due to the monthly fees involved. Regrettably, there have been instances of corruption, nepotism, and collusion by village officials in distributing PKH assistance, which is received every three months. One of the foster group members, M. Rakibun, 68 years old, personally shared the following insights:

“Initially, I was not included as a PKH recipient, but I went to the village office and managed to get registered. It was clear that the village officials were prioritizing their families, despite this being against the regulations. The entire process, including opening bank accounts, was controlled by the village. Unfortunately, once the assistance was transferred to our accounts, they would deduct IDR 500,000 every three months. They would then take the money for themselves. In circumstances where we resisted, they would remove us from the recipient list.”

Fishermen in the area used simple boats, either rowed or equipped with basic engines, to carry out their fishing activities in the sea. These boats are outfitted with nets and other necessary fishing gear. Typically, these fishermen operate within their designated fishing territory, which spans approximately 5 km from the coast. Each boat is manned by one or two fishermen, with a maximum capacity of four. They embark on fishing expeditions in the morning, casting their nets and retrieving them in the evening, and this routine is continued on subsequent days. On average, these fishermen catch less than 10 kg of fish per day, which are sold at the Fish Auction Place (*Tempat Pelelangan Ikan* [TPI]) in Bagan Percut. Some opt to sell their catch directly to agents or middlemen. Interestingly, almost all fishermen, whether engaged in pond or sea fishing, are burdened with debts. Despite owning smartphones, coloured televisions, refrigerators, and bicycles, alongside a few of them possessing motorcycles, the majority of these assets are tied up in debts owed to middlemen or agents, typically involving instalment payments or usury. Specifically, not a single fisherman has managed to accumulate any savings.

Over the course of two years, a comprehensive initiative was undertaken to support the foster groups in their fish farming endeavours. This involved providing assistance packages consisting of seeds, feed, equipment, supplies, and pond repairs. Additionally, knowledge transfer in Tilapia cultivation was facilitated through collaboration with the Empowerment Agency of North Sumatra Province, the Department of Marine and Fisheries (*Dinas Kelautan dan Perikanan*), and experienced fishermen who acted as mentors. To ensure the success of the project, regular monitoring was conducted, with support teams visiting the location at least once a month. Despite the implementation of various cultivation programs, including pond cleaning, repairs, water monitoring, and feeding, six foster groups experienced crop failure in September 2022, just six months after the project commenced in April. Out of the 18,000 Tilapia fingerlings developed in the six ponds, only 1,500 kg were harvested, significantly less than the initially estimated yield of 4,000 to 6,000 kg. Informants pointed out several factors contributing to this outcome, including fish theft, particularly at night, excessively high salt levels during high tide, mismatched fingerlings for brackish water conditions, and embankment leakage. Unauthorized sales which occurred without informing the project organizers were also reported. Irrespective of this disappointment, the project persevered and was further enhanced in 2023. Stricter assistance measures were implemented for 10 groups, with the sole objective of developing a poverty alleviation model for the families of small-scale fishermen.

The development index and fisher livelihood index among small-scale fishermen in six locations exhibited few noticeable differences. For example, in Percut and Payau Pasir Villages, fishermen had alternative sources of income from rivers and the sea, in addition to the main ponds. The catch of fish, aquatic animals, and plants only provided for their basic needs. Despite owning motorcycles, refrigerators, rice cookers, colour televisions, smartphones, and other possessions, these fishermen showed no signs of improved well-being. The semi-permanent houses, while designed to withstand rust, presented extremely poor sanitation and environmental conditions. These houses were scattered and spaced apart among the ponds or mangroves connected by footpaths. The majority of the children of the fishermen had completed only primary and junior high school education, with rare progression to higher levels such as diplomas or bachelor's degrees. Upon dropping out of school, they often assisted their parents as store crews, construction workers, or factory labourers, sometimes leading to early marriages and even drug addiction.

A similar situation was observed in the other four locations, where small-scale fishermen had no alternative employment options apart from fishing, and they lacked ponds. Their sole income relied on catches from the sea.

Due to their limited equipment and technology, they were unable to venture into open waters and could only operate within their fishing territories. Many of them worked as labourers or crew members on larger fishing vessels, typically owned by Chinese entrepreneurs. Their income depended on the catches they made within 2-4 days or a week after deducting expenses for food and drinks. In these four locations, many small-scale fishermen, including children, worked on wooden structures called tidal traps (*Jermals*) or lift nets (*Anco* or *Tangkuls*) which were located 17 meters deep in the sea for fishing purposes. Each tidal trap or lift net typically employed 2-5 adult workers, 4-9 child labourers, and a foreman overseeing the operations. Alongside the issue of high school dropout rates, drug addiction was also prevalent in this community. Based on the described conditions and employing the basic needs approach, specifically considering the headcount index (HCI), poverty gap index, and distributionally sensitive index, it can be estimated that 292 fishermen are living below the poverty line.

4. Discussion

Small-scale fishermen face an ironic situation as they reside in an environment teeming with abundance, yet they remain trapped in poverty. Based on the aforementioned description, three fundamental factors influence their circumstances, namely, structural, cultural, and technical. These factors collectively contribute to the economic instability that undermines the well-being of the fishermen. Structurally, the issue arises from sporadic and ineffective government policies that lack continuity and fail to foster progress and welfare. Although social assistance in the form of goods or cash is provided, it often misses the intended recipients. In terms of the mental-cognitive aspect, poverty is a consequence of insufficient financial resources and is also influenced by the work ethic and mindset driven by progressive thinking. This progressive content encompasses thoughts and advancements in nature management, work mechanisms, income stability, and the benefits necessary for sustaining a livelihood.

Culturally, the work ethic and mentality of the fishermen do not align with notions of progress and well-being. Their primary focus revolves around meeting basic needs rather than striving for overall improvement. While thoughts of progress, such as job stability, income, health, and education, may occasionally arise, they often resign themselves to their circumstances. Fishermen tend to perceive themselves as helpless and weak, accepting their fate as ordinary individuals heavily reliant on assistance and concessions in various aspects such as taxes, electricity, healthcare fees, and education. This cultural perspective contributes to a cycle of borrowing from neighbours, agents, or middlemen. Consequently, many fishermen find themselves trapped in debt, unable to repay instalments and resort to pawning their productive assets such as boats, houses, land, and ponds. Aligning their work ethic and spirit with progress and well-being would enable them to effectively manage the abundant economic potential of their natural surroundings. Technically, the income and earnings of small-scale fishermen are highly dependent on several factors. These include the market value of their catches, operational costs, the availability of fish stocks in the sea and rivers, technological efficiency, and market prices. Operational costs encompass expenses related to fuel, supplies, logistics, seed and feed purchases, equipment, and other necessities. While these costs can be viewed as investments, their availability remains intermittent.

The irony faced by fishermen, caught between abundant natural resources and the poverty trap, exposes underlying root problems. This research highlights seven primary issues; (1) fishermen lack a work ethic and mindset that are in harmony with progress and well-being, (2) limited availability and the sustainability of fish, animals, and aquatic plants in water resources and ponds present significant challenges (3) problems such as water pollution, ecosystem damage, and the adverse effects of climate change further compound the situation, (4) fishermen face constraints in accessing sustainable livelihood options, including financial, natural, social, and human resources, (5) suboptimal management of water resources and ponds hampers efficiency and effectiveness, (6) the uneven distribution of profits between labourers and owners or workers and investors adds to the problem, and (7) fishermen experience challenges in accessing and benefiting from markets and products.

These seven core problems not only affect the progress and well-being of fishermen but also contribute to socio-economic instability. Consequently, aspects such as job security, sanitation, health and education, family dynamics, and social relations are impacted. The overall well-being of fishermen, encompassing social welfare, basic needs fulfilment, nutrition, health, education, housing, income, and protection from risks, remains unmet.

This socio-economic inadequacy has tangible implications for their physical and educational well-being, as well as spiritual dimensions. Despite seeking solace in their faith, fishermen primarily strive to alleviate their suffering. In other words, they have limited capacity to address problems, meet basic needs, or envision progress.

An anthropologist, Geertz (1983) proposed the concept of involution to describe the situation of Javanese farmers, and it applies to the plight of fishermen in North Sumatra. These fishermen, trapped in persistent poverty, slowly drag more individuals, including their families, labourers, and owners, into the same cycle of destitution, sinking deeper with time. A book presented by Lamry outlined three key assumptions about the marginalization of Malays in East Sumatra, namely, socio-historical, ecological, and mental-cultural factors (Lamry, 1996). Historically, the current predicament of Malay fishermen is a result of systematic effects from the past, where the policies of sultans, rulers, and entrepreneurs during the plantation era brought little benefit to the Malays, except for the loss of their land as a means of production. Ecologically, the coastal topography and geography offer limited resources, primarily fish, animals, and aquatic plants, leaving little room for alternative livelihood options. The constraints in natural resources and ecological vulnerability contribute to the poverty faced by Malay fishermen as well as their counterparts in different regions. Lastly, in terms of mental-cognitive attitudes, the unfounded stigma of laziness rather than recognizing their hard work and enjoyment of festivities is misleading and further perpetuates the cycle of poverty among fishermen.

Poverty and underdevelopment are not only influenced by external factors but also by internal ones, specifically the mental-cognitive attitudes that shape work ethics and values (Weber, 1958; Abdullah, 1982). While these attitudes can be passed down through generations, they are primarily developed through ongoing training and socialization. The process of instilling a culture of progress and well-being becomes a cultural mission that guides individuals and communities toward advancement and prosperity, irrespective of their occupations, as seen in the Mandailing and Minangkabau communities (Pelly, 2012). This cultural immersion fosters achievement motivation, a key factor in personal growth. Consequently, this process cultivates a Need for Achievement (N-Ach), representing a preference for optimal outcomes and reflecting the yearning of an individual for significant change, accomplishment, and competence (McClelland, 1961). Without achievement motivation or the Need for Achievement (N-Ach), all socioeconomic stimuli lose their significance.

The findings of this research challenge the notion that social well-being is solely influenced by organized activities, service systems, and policies aimed at meeting needs and improving living standards. While these external factors are important, they are insufficient without the presence of work ethics and mental-cognitive attitudes. In other words, the mere existence of organized activities, service systems, or policies without a foundation of work ethics does not contribute to well-being. Well-being and progress cannot be directly attributed to socioeconomic stimuli. Instead, the fundamental aspect that demands attention is self-transformation and the improvement of thinking patterns and mechanisms. When these internal factors are nurtured, any socio-economic stimuli implemented will undoubtedly contribute to well-being. Conversely, the lack of improvement in mental-cognitive attitudes perpetuates the cycle of poverty. This implies that aid packages, including equipment and cash assistance, do not foster progress and well-being.

Based on this understanding, it is necessary to reconsider empowerment programs or assistance for small-scale fishermen that prioritize socio-economic stimuli through aid packages and cash. The government, non-governmental organizations, social institutions, and other service programs should shift their focus from providing social safety nets and redirect their efforts towards enhancing mental-cognitive attitudes. To address this fundamental aspect, all stakeholders should implement sustainable programs that incorporate education, training, and socialization. These programs should encompass fisheries and maritime initiatives as well as the expertise of humanities and social science scholars. In the pursuit of sustainable livelihoods and well-being, existing programs should not solely emphasize the size or amount of assistance but rather emphasize how the provided assistance can be effectively utilized to enhance the welfare and foster progress. Consequently, the root problems faced by fishermen are not solely caused by external factors but, more importantly, by internal factors, specifically mental-cognitive attitudes. The capacity building of fishermen, both in terms of quantity and quality, heavily relies on the implementation of a systematic and sustainable empowerment program that can transform and improve these mental-cognitive attitudes.

Post-industrial society is facing a new situation, where new potential is important to strengthen prosperity and justice. At this point, the focus of attention is the development approach towards small fishermen, which in all respects reflect limitations, even amid natural abundance. Efforts to empower small fishermen, experience and this study prove that it is still long and full of challenges. The centralized and capitalist institutionalized model of economic development, a political approach and ignoring the culture of society complicates the mechanism. Only with harmony and strong commitment, the empowerment of small fishermen can be realized. A subsistence orientation and not agribusiness require strong attention and commitment from the government, economic actors, non-governmental organizations, research and service institutions. This aims to optimize all the potential of small fishermen, provide opportunities or develop local wisdom directed at agribusiness. The entry of small fishermen as actors of economic development encourages them as much as possible through assistance programs towards their independence. In addition to organizational development, network economics, and supporting factors. All of that, there is no other way but to improve cognitive mental attitude.

Finally, there is no single official method to lift small fishermen out of the poverty trap. All methods are highly dependent on the motivation to be more prosperous than the person concerned. Even if social assistance or other forms of safety nets are launched, their success is highly dependent on the fishermen's cognitive and mental attitude. All of that, the first way is to change the way of thinking in a more advanced direction. It requires longer service, not sporadic let alone short-term. It needs to be underlined, short-term and sporadic programs only keep small fishermen trapped in poverty, expecting help from anyone without being able to change themselves. That is the irony of small fishermen in North Sumatra, even though various social assistance has been rolled out, they are still poor. Ironically, they are poor amid an abundance of nature. Even though it has not been successful, our two years of experience assisting fishermen is an important lesson for anyone, that finding a way out of fishermen's poverty is not an easy thing. All of this requires synergy and collaboration between institutions, government, NGOs, professionals and universities to guide and educate the assisted fishermen towards a better standard of living.

5. Conclusion

In conclusion, social well-being is not solely determined by organized activities, service systems, and social institutions aimed at meeting needs or ensuring the sustainable fulfilment of social needs. It is essential to address the fundamental aspect of self-transformation, improving thinking patterns and work mechanisms. The plight of fishermen caught in the poverty trap is influenced by structural, cultural, and technical factors that contribute to socio-economic instability. Poverty and underdevelopment are not only caused by external factors but also internal factors, specifically the mental-cognitive attitudes ingrained in work ethics. These attitudes are developed through continuous education, training, and socialization. In conclusion, well-being and sustainable livelihoods are fostered by work ethics and mental-cognitive attitudes, enabling the optimal utilization of natural, financial, social, and human resources. Without a shift in mental-cognitive attitudes, social safety net programs hold little meaning. This research underscores the importance of exploring structural and technical aspects to achieve the maximum possible impact.

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