

# Contribution of Fisherwomen to Households Income (Case Study in the Pasir Jambak Fishing Area, Padang City)

Deltri Apriyeni<sup>1</sup>, Suhelmi Helia<sup>1</sup>, Yulina Eliza<sup>1</sup>, Edi Hasymi<sup>2</sup>, Didi Aryadi<sup>3</sup>

The role of women in the fishing industry is crucial to household income in the fishing communities of Padang City. Although physically weaker than men, women have significant potential to contribute to economic activities, with their contributions often going unnoticed. The income of fisherwomen can supplement the income of their husbands, making the involvement essential in mitigating financial difficulties. Furthermore, participation in household economic activities helps to protect families from poverty, especially when the husband's income is insufficient. Cooperation within households is key to meeting daily needs and managing expenses. Therefore, the aim of this study was to investigate the economic activities of fisherwomen, their contribution to household income and household poverty standards. To achieve this objective, descriptive with qualitative and quantitative methods were used. Primary and secondary data were collected through in-depth interviews, observations and documentation. Subsequently, the data was then presented in the form of statements by the interviewees, tables, pictures and graphs and analyzed qualitatively and quantitatively. The results showed that the fisherwomen were engaged in various economic activities and made a significant contribution to the household income. In general, most fisherwomen households were above the poverty line, but some were below. Based on these results, the study recommended community empowerment policies to address poverty-related challenges. It was also important to target households below or at risk of falling below the poverty line to improve financial stability. In summary, fisherwomen played significant roles in supporting household's income, improving family welfare, and reducing poverty. Governments were recommended to implement policies to address poverty through the empowerment of fisherwomen, particularly those from economically vulnerable households. Moreover, providing skills training for women in the fishing industry could help to diversify income sources and reduce reliance on marine resources. Community empowerment, especially for fisherwomen, should be an ongoing program.

## KEYWORDS

~ Fisherwomen  
~ Poverty line  
~ Fishing areas  
~ Fishermen's economy

<sup>1</sup> Sekolah Tinggi Ilmu Ekonomi KBP, Padang, Indonesia

<sup>2</sup> Universitas Andalas, Padang, Indonesia

<sup>3</sup> Universitas Taman Siswa, Padang, Indonesia

e-mail: [deltri.apri@gmail.com](mailto:deltri.apri@gmail.com)

doi: 10.7225/toms.v14.n01.022

Received: 6 Jul 2024 / Revised: 29 Oct 2024 / Accepted: 22 Dec 2024 / Published: 20 Apr 2025

This work is licensed under



## 1. INTRODUCTION

Pasir Jambak Region is a fishing area with natural advantages. The extensive coastline provides valuable marine resources that can support the local economy. The economic prosperity in this region is significantly influenced by the potential natural resources. According to (Apriyeni et al., 2019), the potential of natural resources offers agglomeration benefits that promote economic growth. The abundant natural wealth of the ocean serves as an inexhaustible source of livelihood for fishing communities. However, it is an irony of fate that despite the abundant resources, many fishing communities continue to struggle with economic hardship and insufficient welfare. This phenomenon persists even in times of modern economic progress. According to Anuradha et al., (2022); Palash et al., (2024); and Thomas et al., (2021), coastal people engaged in fishing remain trapped in poverty due to various factors, including limited education, lack of capital and technology, underdeveloped harvesting methods and reliance on middlemen for capital loans. Pooja et al., (2023) further emphasized that an increase in fish catches does not necessarily lead to an improvement in the economic welfare for fishermen. Furthermore, there are a number of challenges that exacerbate the struggles of fishing communities, including overfishing, illegal fishing, destructive fishing practices involving chemical substances and banned fishing gear, and the effects of climate change (Tanuja et al., 2022) ; (Kumar et al., 2022), (Fabinyi et al., 2022). Working as a fisherman is also associated with considerable risks (Anna et al., 2019). In addition, the practice of hegemony continues without resistance as fishermen become indebted to loan sharks (Marhadi & Sewa, 2023).

The involvement of fisherwomen in households income is a key strategy for alleviating poverty. Women play a dual role, managing households responsibilities while also contributing to the overall income (Solano et al., 2021). The presence of fisherwomen fosters economic synergy within families, as husbands engage in fishing while wives participate in selling the catch, making fishing nets, and processing dried fish. According to (Tanuja et al., 2022), women contribute at multiple stages of the fishing industry, including pre-production, production, and post-production activities. Moreover, Macusi et al., (2023), explained that women's involvement in fisheries resource management improved sustainability. (Priscila et al., 2022) argued that women leadership in the fishing industry played a crucial role in economic recovery. Despite these contributions, women in fishing communities often hold low social status (Deb et al., 2014), remaining underrepresented, passive, or excluded from decision-making processes related to marine resource management (Waqairatu-waqainabete et al., 2013).

Women who serve as de facto heads of households are responsible for providing for and supporting the families. However, challenges such as lack of formal education, poor access to information, and discriminatory gender-based cultural norms threaten the sustainability of livelihoods (Oloko et al., 2022). Gender inequality further restricts participation in entrepreneurship, as fisherwomen are often constrained by societal norms and customs. These factors hinder the development of women in the fisheries sector (Uduji et al., 2020). Therefore, an in-depth understanding of the role of gender in reducing poverty and improving the welfare of coastal communities is essential (Stacey et al., 2019).

In Sri Lanka, women play a dominant role in decision-making in the fisheries sector, particularly in the investment of resources, decisions on fish processing and marketing, and exercising autonomy in managing household income. Women are also actively involved in both formal and informal financial activities often receiving priority access to financial resources. Those engaged in small-scale fisheries have a strong entrepreneurial capacity and a clear vision to develop businesses, becoming self-sufficient business owners (Basnayake et al., 2018). A study in Kerala, India, explained the role of fisherwomen transcending fishing. Women contribute significantly to coastal resource management, fostering collaborative marine governance and sustainability initiatives (Baker-Médard et al., 2023).

A study conducted in the Brazilian Amazon showed that fisherwomen organized collectively in the fishing industry to secure financial rewards. The direct income earned led to positive outcomes, including increased autonomy, gender power balance, as well as childcare and family health (Freitas et al., 2020). In KwaZulu-Natal, South Africa, fisherwomen play crucial roles in both productive and reproductive activities related to natural resource management and community-based initiatives. Despite their significant contributions, women continue to face barriers to economic empowerment, including limited asset ownership, financial inequality, restricted access to financial services, cultural taboos, and illiteracy (Cele, 2020). The growing network of Madagascar's fisherwomen leaders provides valuable insights into marine conservation interventions, promoting collaborative, interdependent relationships between human communities and environmental systems. Gender-inclusive networks have facilitated the creation of new governance structures and institutional reforms, ensuring that women's voices are heard in marine conservation and resource management. Women are increasingly recognized for their agency, leadership, and contributions to sustainable fisheries governance (Baker-Médard et al., 2023).

Vitukawalu et al., (2020); and Oloko et al., (2021) showed that women are actively involved in fish processing and sales, as these activities provide a stable and attractive source of income corresponding to their physical capabilities. According to Thomas et al., (2021), fish sales contribute significantly to households income. Similarly, Fahad & Manzoor, (2024) emphasized that women play a crucial role in supporting households income by fulfilling both primary and secondary needs. Strengthening women's capacity to engage in productive economic activities is essential (Galappaththi et al., 2022).

Government policies should be designed to support and empower fisherwomen (Afriana et al., 2024). Souza, (2020); Palash et al., (2024) recommended the implementation of gender-sensitive, -inclusive, and -transformative policies and programs. Fisherwomen play a crucial role in improving the households economy, social environment, community education, and economic awareness. Participation in economic activities fosters independence (Solano et al., 2021) and improves households well-being (Oloko et al., 2021). Anuradha et al., (2022) recommend the development of appropriate programs and viable business opportunities.

Women consider fisheries as primary occupation and play a crucial role in the sector (Alati et al., 2023). Although fishermen typically earn a higher incomes, women have a greater influence in households decision-making (Lekshmi et al., 2022). Barsoum, (2021) has identified the challenges women face when fish catches decline. Although men often find alternative employment, women are left to manage economic instability and navigate transitions at households, market, and community levels. Despite their significant contributions, the role of women in the fisheries sector remains under-recognized and often overlooked (Ameyaw et al., 2020) ; (Solano et al., 2021). Fikri, (2023) emphasized the importance of skills training for women, particularly in dry fish processing. Similarly, Zainudin et al., (2019) emphasized the crucial role of fisherwomen in strengthening the households economy.

Several studies have examined the role of fisherwomen as husband's companions in supporting the households income. In the Pasir Jambak Fishing Area, Padang City, fisherwomen engaged in small-scale businesses exhibit unique economic activities. Unlike counterparts in Kashmir, who actively participate in fishing (Fahad & Manzoor, 2024) ; (Singh et al., 2018), (Bachu et al., 2024) ; (Thomas et al., 2021), fisherwomen in this region primarily focus on the coastal-based households economy. Although fisherwomen in other parts of the world contribute to various social, political, cultural, environmental, and religious aspects (Singh et al., 2018); (Njogu et al., 2024), those currently investigated are more involved in sustaining households economy. Collective organization among fisherwomen in the Pasir Jambak Fishing Area remains underdeveloped unlike other regions where fisherwomen are organized in well-structured groups (Stacey et al., 2019). Various constraints limit the involvement, as the primary focus is on improving the economy and managing households affairs. Urgent financial needs, low income, and vulnerability to poverty are the key challenges faced (Singh et al., 2018); (Stacey et al., 2019) This phenomenon contrasts with broader economic progress, as fisherwomen continue to struggle for survival and financial stability. A significant amount of time is dedicated to households responsibilities and small-scale economic activities, leaving no opportunity for participation in larger economic organizations or social initiatives.

This study was essential in assessing whether economic progress had a positive impact on fisher households, alleviating poverty. Furthermore, it examined the income levels of fisherwomen earn and economic activities to evaluate contribution to family welfare. The role of women in supplementing households income cannot be overlooked. A key question addressed in this study is whether the economic contributions of fisherwomen effectively support and improve households well-being. The results were expected to serve as a basis for policies on economic empowerment and community welfare, particularly for fisherwomen. Government programs are recommended to target poverty reduction, especially for fishing households below the poverty line or vulnerable to economic instability. Susilowati & Mafruhah, (2023) emphasized that fisherwomen tended to have a high level of trust in the government, facilitating empowerment efforts. However, Kwok et al., (2019) argued that unequal power dynamics often limited active participation in fisheries management.

## **2. RESEARCH METHODS**

### **2.1. Time and Location**

This study was conducted from January to February 2024 at the Pasir Jambak fisheries production center, Padang City. Furthermore, a descriptive with qualitative and quantitative methods were used. This study comprised both primary and secondary data, with primary data collected through in-depth interviews using a questionnaire administered to the respondents. Observations were conducted to examine the economic activities of the fisherwomen and their family life. The interviews provided insights into the economic activities carried out by fisherwomen, their income, their contribution to the overall households income, and the poverty conditions faced by fishing households. The respondents were fisherwomen (wives of fishermen) directly involved in family economic activities, particularly the processing of fish caught at sea, assembling fishing gear such as nets, and selling the catch.

The fishermen used as the basis for sampling were those engaged in small-scale fishing, either as independent or as traditional fishers operating in coastal waters. Based on data, Koto Tengah District had the highest number of fishing households in Padang City, with a total of 623 households. This study selected a sample of 62 households, representing 10% of the total population in line with the study objective. The sample was drawn from a representative of the population, focusing on fisherwomen engaged in economic activities that contributed to households income, such as processing fish, making nets, and selling fresh fish. Sampling was conducted randomly in line with the study objectives.

## 2.2. Research Data Variables and Analysis

### 2.2.1. Household Income

Household income was measured using the household expenditure method, providing a more accurate and easily measurable indicators of households income. Respondents were generally more open in disclosing household expenses, including basic needs, electricity, water, education costs, social expenses, and other expenditures. Households income comprised all earnings from various sources, including wages, trade profits, rental income, interest or returns on invested capital, gifts or bonuses, and any additional income received by the households, including contributions from working family members. The income earned by fisherwomen represented a portion of the total households income. Total household income is calculated as follows:

$$\text{Total Household Income} = \text{Income of Women Fishermen} + \text{Other income}$$

The contribution of fisherwomen to household income was determined using the following formula:

$$\text{Contribution of Fisherwomen} = \frac{\text{Income of Fisherwomen}}{\text{Total Households Income}} \times 100 \%$$

The level of contribution was categorized based on the following measurement scale:

Contribution of Fisherwomen's to households income	Percentage
Very low	<19 %
Low	20-39%
Currently	40-59%
High	60-79%
Very high	>80%

Table 1. Percentage Contribution of Fisherwomen to Households Income

This classification serves as a reference for analyzing the role of fisherwomen in household income. A higher contribution percentage indicates a greater economic involvement of fisherwomen in supporting their households. The level of women's participation in households income ranged from <19% to >80%, categorized from very low to very high.

### 2.2.2. Households Poverty

The poverty line for fishing households was determined by comparing household's monthly income with the poverty threshold set by BPS (Central Statistics Agency). BPS defines poverty based on the basic needs strategy, considering a household to be poor when it struggles to meet fundamental living necessities. For Padang City, BPS has set the poverty line at IDR 698,720.00 per capita per month. To determine the households' poverty status, this amount is multiplied by the number of members living in the same household and financially supported by the head of the family.

Padang City Poverty Line 2023 Rupiah/Capita/Month	Poor Category
< IDR. 698 720.00.	Below the poverty line (poor)
= IDR. 698,720.00.	Poverty line limit
> IDR. 698 720.00.	Above the poverty line

Table 2. Poverty Line of Padang City in 2023. (Source: BPS Padang, 2023)

Table 2 presents the poverty classification used in this study, following BPS's 2023 poverty threshold for Padang City. A household is classified as below the poverty line when its total income is insufficient to cover the basic needs of each family members (i.e., <IDR 698,720,000), and vice versa. The poverty measurement was based on the daily cost of basic needs per individual. The total basic needs for one month were calculated by multiplying the per capita poverty threshold by the number of dependents in the household and by 30 days.

### 2.3. Data analysis

The data were analyzed using both qualitative and quantitative methods. The qualitative analysis was chosen because it effectively and comprehensively captures the economic activities of the fisherwomen. The conditions of fisherwomen at the study location were clearly outlined in the results section. The descriptive explanations, presented in narrative form, accurately reflected the real-world phenomena observed in the field. The stages of qualitative analysis included data reduction, presentation, and verification, leading to conclusions about the observed phenomena.

The quantitative analysis, on the other hand, focused on the calculation of total household income, fisherwomen's income, contribution to total households income and poverty level of fisherwomen households. The quantitative data obtained were subsequently processed and presented in tables and graphs for clarity. These calculation were interpreted and narrated descriptively to improve understanding and draw conclusions about the study location. The combination of qualitative and quantitative analyses provided a comprehensive picture of the lives of fisherwomen, with both complementing each other. Although qualitative descriptions helped describe the economic activities, precise quantitative calculations were essential an accurate assessment of economic conditions, ensuring that the results transcended mere descriptions or narratives.

## 3. RESULTS

### 3.1. Economic Activities of Fisherwomen

Fisherwomen engaged in various economic activities to support their husbands in earning a living, reduce workload, and contribute to improving households income. The economic activities carried out by fisherwomen in the Pasir Jambak Fishing Area are presented as follows:

No	Economic Activities of Fisherwomen	Number of people)	Percentage (%)
1	Dried fish processor	12	19.35
2	Net maker	13	20.96
3	Fresh fish seller	26	41.94
4	Dried fish seller	11	17.75
Total		62	100

Table 3. Activities of Fisherwomen in Households Economic Activities. (Source: Primary Data, 2024)

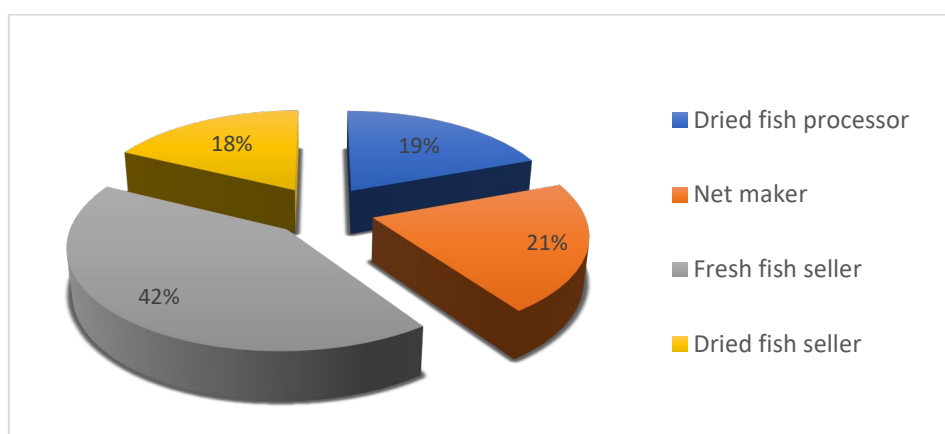


Figure 1. Economic Activities of Fisherwomen

Table 3 and Figure 1 show that fisherwomen in Pasir Jambak, Padang City, participated in dried fish processing (19%), net making (21%), fresh fish trading (42%), and dried fish trading (18%). Among these, the most common activity was selling fresh fish, as it provided the highest potential profit. Fishermen's catch was sold directly to consumers to maximize earnings, as selling to middlemen produced lower returns. However, fresh fish prices fluctuated significantly depending on freshness. The longer the time between catching and selling, the lower the price due to declining fish quality. Price differences ranged between IDR 1,000 – to IDR 3,000 per kilogram. Despite involving fewer fisherwomen, dried fish processing, trading, and net making still played a crucial role in sustaining households income.





Figure 2: Activities of Fisherwomen in Pasir Jambak Fishing Area (Source: Primary Data, 2024)

Figure 2 shows the economic activities of fisherwomen that contribute to the households income. The picture shows fisherwomen processing fresh fish into dried fish by sun-drying as a natural preservation method. Those engaged in fresh fish sales took advantage of the coastal location to sell directly on the beach. This photograph captures a glimpse of the daily lives of the fisherwomen.

Among the economic activities, fresh fish trading was the most common, involving more women than dried fish processing, dried fish sales, or net-making. Selling fresh fish offered flexibility, as it generated income quickly. Unlike other economic activities, fresh fish sales required minimal time investment—within just a few hours, the fish could be sold. The high local demand for fresh fish, a staple food, further supported this trade. Compared to beef and chicken, fish remained an affordable protein source, making it a preferred choice among consumers. However, fisherwomen's economic activities were not solely dictated by profit potential, as personal skills, interests, and comfort also influenced choices.

### 3.2. Contribution of Fisherwomen to Households Income

Fisherwomen are resilient, independent, and reliable contributors to households income. As partners to their husbands in earning a living, the women continuously develop skills to navigate economic challenges, particularly in households vulnerable to poverty. By recognizing market opportunities and adapting to economic changes, fisherwomen show entrepreneurial capabilities. Although operating on a small scale, their businesses often play a crucial role in sustaining households income. The income contributions are presented as follows:

No	Economic Activities of Fisherwomen	Total Income of Fisherwomen (IDR/Month)	Other Income Amount (IDR/Month)	Total Households Income (IDR/Month)	Fisherwomen's Income Contribution (%)
1	Dried fish processor	1,765,000	1,850,000	3,615,000	48.82
2	Net maker	850,000	2,500,000	3,350,000	25.37
3	Fresh fish seller	3,150,000	1,100,000	4,250,000	74.11
4	Dried fish seller	2,650,000	1,250,000	3,900,000	68.00

Table 4. Contribution of Fisherwomen to Households Economic Activities (Source: Primary Data, 2024)

Table 4 presents the economic activities of fisherwomen in the Pasir Jambak fishing area of Padang City, detailing households income from various sources. The data reflected the specific contribution of income generated by fisherwomen, calculated based on the model used in this study. The results showed that while income contributions varied across different economic activities, fisherwomen played a significant role in strengthening households income.

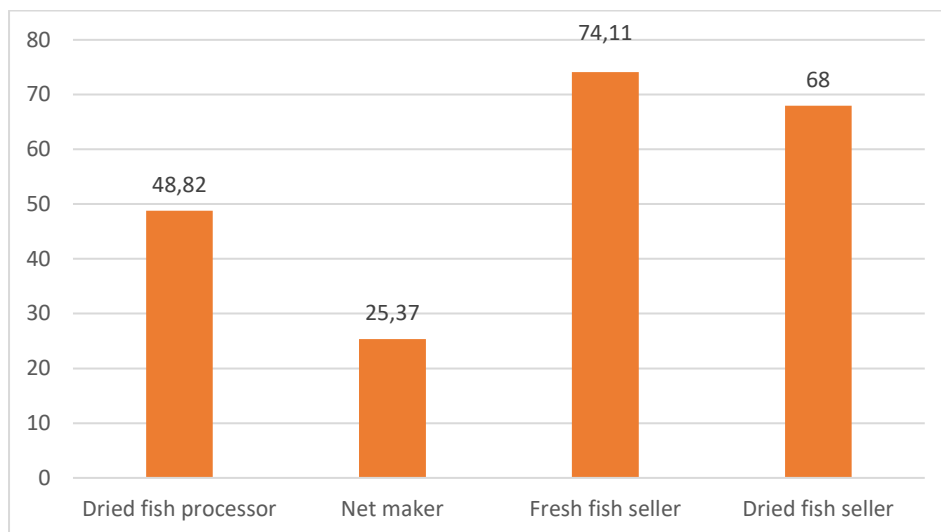


Figure 3. Contribution of Fisherwomen to Households Income (Source: Primary Data, 2024)

The results show that fisherwomen contributed between 25.37% and 74.11% the total households income. Fresh fish traders made the highest contribution at 74.11%, while fishing net makers had the lowest contribution at 25.37%. Categorized by income contribution, fresh fish and dried fish traders fell into the high category (60-79%), dried fish processors were in the medium category (40-59%), and fishing net makers were in the low category (20-39%). Despite the variation in contributions, fisherwomen played a crucial role in supporting households income, making their economic involvement essential.

Based on analysis, fresh fish sales generated the highest income and contributed the most to households income. The trading skills of the fisherwomen significantly improved earnings. Similarly, women selling dried fish earned more compared to those involved in dried fish processing or net-making. The economic activities of fisherwomen were inseparable from their skill set. With strong communication skills and the ability to convince consumers of the quality of the products, the sellers could attract buyers who preferred to purchase fresh fish directly from the coast. In Padang City, consumers prefer shopping directly on the coast where fishermen dock boats, as the fish are fresher and tastier. In additional, buying in bulk directly from the source is cheaper than purchasing from traditional markets. This activity takes place along the coastal areas of Padang City.

The income contribution of fisherwomen involved in dried fish processing was higher compared to that of net makers. Processing dried fish requires perseverance, patience, and multiple steps, namely, cleaning, salting, boiling, sun-drying in open areas. Since drying depends on sunlight, the process takes a long time, and in humid or rainy seasons, the quality of the dried fish declines, reducing consumers demand. Meanwhile, net-making provided the lowest income contribution among the economic activities, as it was typically done during free time after households responsibilities. Most of the nets produced were used for personal fishing to save on the cost of purchasing new nets. Some fisherwomen received wages for net-making, but the earnings were significantly lower than those engaged in fresh and dried fish trading.

### 3.3. The Poverty of Fisherwomen Households

The issue of poverty in fishing households has been a recurring theme in previous studies on the lives of fishermen. Poverty is not only prevalent prevalent in the Pasir Jambak Fishing Area but is also a national and global concern. Scientific journals have extensively documented fishermen's economic struggles in developing countries, emphasizing the high risks, uncertainties, and limitations faced across various aspects of life. As economic progress advances across all sectors, it is essential that fishermen—especially fisherwomen—have equal opportunities to grow, develop, and break free from the cycle of poverty. The following table presents data on the households income of fisherwomen and the poverty threshold used as a standard measure:

NO	Economic Activities of Fisherwomen	Total Household Income (IDR/Month)	Average Number of Family Members (people)	Total Income/IDR/ person/month	Poverty Line Measurement Standard (IDR. 698,720.00. IDR/capita/month)
1	Dried fish processor	3,615,000	5	723,000	> 698, 720.00
2	Net maker	3,350,000	6	558,333	< 698, 720.00
3	Fresh fish seller	4,250,000	6	708,333	> 698, 720.00
4	Dried fish seller	3,900,000	5	780,000	> 698, 720.00
	Average Amount	3,778,750	5.5	692,416	< 698, 720.00

Table 5. Household Income and Standard Poverty Measures. (Source: Primary Data, 2024)

The table shows that fisherwomen households remained vulnerable to poverty. Among the various economic activities those involved in net-making faced the greatest financial challenges. Fishing nets, crafted by the fisherwomen, were used by the husbands for fishing at sea. Skilled fisherwomen also accepted net-making orders from other fishermen, earning approximately IDR 1,500,000 per net. However, the production process took about a month, making it a low-income activity compared to others. Despite these challenges, the fisherwomen continued to contribute to the households economy. By making fishing nets, the women helped to reduce the cost of purchasing fishing gear, providing an indirect financial benefit to households.

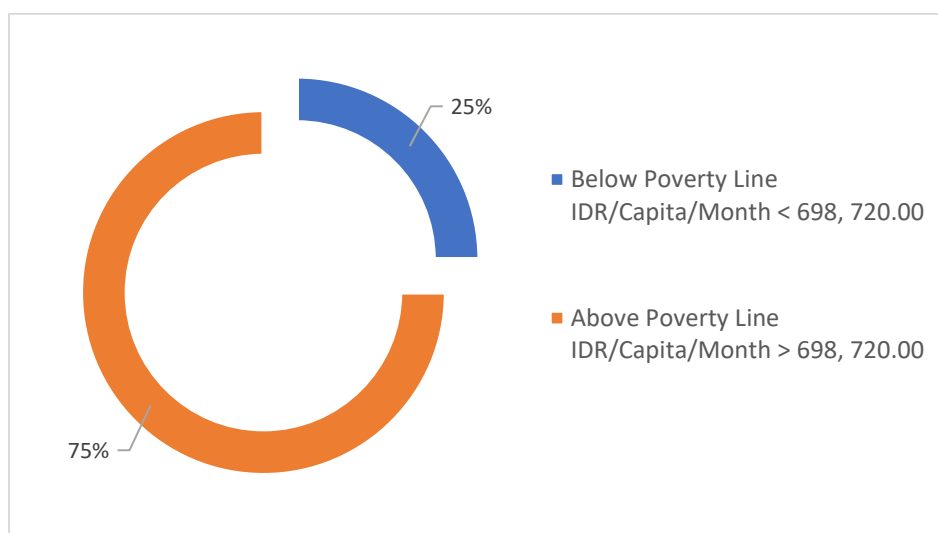


Figure 4. Percentage of Poverty of Fisherwomen. Source: Primary Data, 2024

Livelihoods in the Pasir Jambak Fishing Area, Padang City, remained vulnerable to poverty. The study found that 25% of respondents were below the poverty line, emphasizing the economic challenges faced by fisherwomen's households. These households specifically struggled to meet basic living expenses, earning less than IDR 698,720 per capita per month, with the remaining 75% of respondents being above the poverty line. Although the majority of fisherwomen's households surpassed the poverty threshold set by BPS, income barely exceeded the minimum requirement. The poverty measurement considered only basic needs, meaning that when fish sales decline, fisherwomen face significant challenges in meeting their daily food needs. This economic instability increases the risk of falling back into poverty.





Figure 5: Fishermen's Activities in the Pasir Jambak Fishing Area (Source: Primary Data, 2024)

Figure 5 shows the Batang Anai estuary, where fishing boats are anchored, along with a row of fishing boats along Pasir Jambak Beach. It also shows fishermen engaged in net repairs after fishing at sea. Along the shoreline, fisherwomen sell fresh and dried fish directly to consumers or fish traders, who subsequently resell. During the day, fishermen repair damaged nets in preparation for future fishing trips.

## 4. DISCUSSION

### 4.1. Economic Activities of Fisherwomen

Fisherwomen in the Pasir Jambak Capture Fisheries Area, Padang City, engage in various economic activities, including dried fish processing, fishing net making, fresh fish trading, and dried fish trading. These activities are carried out both at home and along the coast, where fisherwomen set up small huts to sell fresh and dried fish. Fresh fish sales occur in the morning and evening, depending on when the fishing boats return from the sea. Selling fresh and dried fish and fish processing by fisherwomen are in high demand as they do not require special and complicated skills. Effective communication and the ability to attract buyers are key assets in trading. These results were supported by Vitukawalu et al., (2020); and Oloko et al., (2021), where fish trading suit women's interests and provided an essential source of income. The earnings help sustain the households economy, especially during periods when fishing yields decrease due to poor weather conditions (e.g., stormy seasons) or when it is not the fish harvest season. Consequently, households income drops significantly, often forcing fishermen to take on debt to cover daily expenses, leading to economic instability. Given these challenges, women play a dominant role in managing households finances to ensure basic needs are met.

The results were supported by previous studies. For instance, in India, (Singh et al., 2018) found that fisherwomen contributed to entrepreneurial in post-harvest fisheries. As nuclear families emerge and living costs rise, women are increasingly engaging in small businesses and trade to supplement households' income and improve standard of living. Similarly, in the Philippines, fisherwomen actively participate in economic activities to support households (Macusi et al., 2023). In the Amazon region, fisherwomen contribute significantly to households income, creating a model of financial involvement that can be adopted globally (Freitas et al., 2020). However, different results were found in Sri Lanka (Basnayake et al., 2018), where women had limited involvement in retail fish sales. In contrast, in the Pasir Jambak Fishing Area, fisherwomen were heavily engaged in small-scale fish trading, emphasizing regional variations in women's economic participation in fisheries.

In the Pasir Jambak Fishing Area, women process the fishermen's catch into dried fish, a popular product among local consumers. Dried fish is a delicious dish and a valuable source of protein for the community. In the Global South, dried fish processing plays a crucial role in trade and consumption. Dried fish products remain a key component of production, trade, diets, and cuisines worldwide, particularly in the Global South. The sector employs millions of people, with women making up the majority of the fish-drying workforce in many locations (Belton et al., 2022); (Apriyeni, Nesti, et al., 2024). The economic activities of fisherwomen in the Pasir Jambak Fishing Area reflect similar patterns observed in other fisheries in the Global South. However, at the study location, the businesses operated by fisherwomen are much smaller in scale, typically limited to household-level production. The labor force consists primarily of family members, with only a small number of additional workers hired for assistance. This differed significantly from the larger-scale dried fish production described in Belton et al., (2022), where labor-intensive fish drying operations employed a greater number of workers across various locations in the Global South.

## 4.2. Contribution of Fisherwomen to Households Income

Based on analysis, the contribution of fisherwomen to households income was categorized as high, ranging from 25% to 74%. The roles in supporting households income significantly impacted family resilience and welfare. These results were supported by Basnayake et al., (2018). Studies in the Brazilian Amazon found that women contributed 77% or more to households income through fisheries, exceeding the contribution found in the current study by about 2% (Freitas et al., 2020). Similar studies on small-scale fisherwomen emphasized the significant economic contributions at the households level. Thomas et al., (2021) also found that fisherwomen play a crucial role in economic activities and enjoyed a degree of financial autonomy. Similarly, an investigation conducted in the Alappad region of Kerala, India, by Matovu et al., (2024) showed women's contributions transcended income generation to fulfilling both the primary and secondary households needs. For coastal women, marine fishing provides multiple socio-economic benefits, including employment, food security, and income.

Strengthening women's capacity to engage in productive economic activities and governance is essential. Marine-based industries should extend to other coastal economic activities, fostering collaborative governance and sustainable marine management. Baker-Médard et al., (2023) emphasized that women in Madagascar played a significant role in marine-based management and production. Ensuring women's involvement in marine governance can improve the well-being of coastal communities and protect livelihoods dependent on healthy marine ecosystems. In low-income countries, Gonzalez Parrao et al., (2021) found that aquaculture was often promoted as an economic activity with high potential benefits for the poorest households.

## 4.3. The Poverty of Fisherwomen Households

The issue of poverty among fishermen's households remains unresolved. The study showed 25% of households are still below the poverty line based on the indicators used, while 75% were above. However, many of those above the threshold remain economically vulnerable and at risk of falling back into poverty. This means fishermen's households are not entirely free from financial hardship. The poverty line is measured solely by the ability to meet basic individual needs, which does not reflect a truly prosperous or stable standard of living. Achieving a decent and prosperous life requires not only covering basic necessities but also fulfilling secondary needs without financial strain. However, the rising and unstable prices of essential goods, such as rice, chilies, eggs, meat, chicken, tomatoes, red onions, and other kitchen staples, place a heavy burden on the fisherwomen. The high cost of food significantly impacts household budgets, often making it difficult for families to meet their daily needs. In many cases, income fluctuations prevent households from keeping up with rising living costs.

In addition to the economic challenges, fisherwomen face unpredictable natural conditions. Climate change and environmental degradation have led to declining fish populations and reduced catches. Marine pollution further disrupts fishery resources, while unfavorable weather conditions often prevent fishermen from going out to sea. These factors increase the risk of damaged fishing gear and poor catches, sometimes leaving fishermen with little to no income. The results were supported by Cele, (2020), where fisherwomen in Africa continued to face limitations and remained trapped in poverty. Similarly, an investigation on the Hilsa fishing community on the Shugondha River, Bangladesh, found that 57% of fisherwomen's household experienced social and economic poverty (Hossain, 2024).

Various factors contribute to the persistent poverty among fisherwomen worldwide. According to Tobarasi and Tomalili, (2019); Pooja et al., (2023), an increase in fishermen's catches does not necessarily lead to an improvement in overall welfare. Kumar et al., (2022) identified overfishing, illegal and destructive fishing practices, and climate change as factors exacerbating this problem. In addition, many fishermen remain trapped in cycles of debt due to reliance on loan sharks (Marhadi & Sewa, 2023). To improve economic conditions, Apriyeni & Wati, (2022) proposed increasing fishing fleets and access to advanced fishing gear. However, limited capital remains a significant barrier preventing fishermen from optimizing catches. Martins et al., (2021) emphasized the need for public policies and targeted assessments to address the unique challenges faced by women in the fisheries sector.

Government intervention is essential in breaking the cycle of poverty among fisherwomen. The challenges faced by small-scale fisherwomen are similar in many developing countries. Cele, (2020) stated that a lack of government support, education, access to resources, and decision-making power limited women's potential and involvement in post-harvest fishing activities. For example, in Bangladesh, 52% of fisherwomen are illiterate, making it even more difficult to achieve financial stability (Hossain, 2024). Apriyeni et al., (2024) emphasized the importance of capital assistance, infrastructure improvements, and upgraded fishing equipment to help small-scale fisheries to operate more efficiently and improve fisherwomen's livelihoods.

According to Thony et al., (2022), there are three main strategies for empowering fisherwomen, namely improving modern work skills and technical abilities, expanding knowledge and business insights, and fostering strong professional relationships within the industry. The primary focus of fisherwomen's empowerment efforts should be on skills training and capacity-building programs. In addition, leveraging traditional community practices, such as cooperative work ethics, can accelerate economic development. The government should also integrate local wisdom into policy initiatives to ensure effective implementation of programs aimed at improving women's human resources. A comprehensive and transformative strategy to small-scale fisheries development is necessary to unlock the full potential of fisherwomen. Gender-responsive policy interventions that directly address the specific challenges faced by women in the fisheries sector are crucial for achieving long-term economic stability (Afriana et al., 2024).

## **5. CONCLUSION AND RECOMMENDATIONS**

In conclusion, this study shows that fisherwomen play an important role in various households economic activities, including the processing dried fish, making fishing nets, and selling both fresh and dried fish. The results were in line with previous studies on women's economic contributions in coastal fishing communities worldwide. In the Pasir Jambak fishing area, fisherwomen were primarily involved in post-harvest activities, as the actual fish-catching process was carried out by men. This differed from other regions where women directly participated in fishing at sea.

The contribution of fisherwomen to households income ranged between 25% and 75% of total earnings. However, income levels varied depending on the type of economic activity performed and the skills required. The highest income contributions came from selling both fresh and dried fish, the processing of fish products and net-making. Among these activities, net-making generated the lowest income since it was typically a part-time job, done during free time after completing households responsibilities.

Despite the economic contribution, many fisherwomen households remain vulnerable to poverty, with some falling below the poverty line. Households relying on net-making as their primary economic activity were particularly at risk. The results showed that many fisherwomen craft nets that are later used by their husbands for fishing. However, completing a single net could take up to a month or longer, making it a slow and inconsistent source of income. When receiving payment for net-making services, fisherwomen earned more compared to other small-scale economic activities mentioned.

This study emphasized the importance of policy formulation aimed at empowering households income by optimizing the skills of fisherwomen. Providing skills training programs for women could significantly improve the ability to support households, especially during unfavorable fishing seasons or poor weather conditions. With alternative skills in business or other types of work, the women could become less dependent on fishing income, making households more financially stable. Furthermore, acquiring new skills served as a diversified source of income that is no longer reliant on marine resources. In the case of dried fish processing, utilizing modern and efficient drying technology was highly recommended. Traditional drying methods of relying on sunlight, were time-consuming and limited productivity during the rainy season or in humid conditions. Therefore, providing modern fish-drying tools and other processing equipment was essential to improve production efficiency and ensuring a stable income. Stakeholders should take the initiative to support impoverished fisherwomen by providing necessary resources to improve livelihoods.

This study had limitations and did not comprehensively address all the challenges faced by fisherwomen, where the primary focus was on economic conditions. Therefore, a holistic strategy for examining multiple aspects of lives was needed to provide effective, long-term solutions. Future investigations were also expected to focus on topics like the role of women in households decision-making, women's bargaining power in family economies, gender disparities in economic activities, the social roles of fisherwomen in communities, and women's leadership in the fisheries sector.

## **CONFLICT OF INTEREST**

The authors declare no conflict of interest.

## REFERENCE

- Afriana, W., Damanhuri, D.S., Taryono, & Amanah, S. (2024). 'Does local wisdom affect the increasing human capital of fisherwomen?', *Kurdish Studies*, 12(2), 1964–1976. Available at: <https://kurdishstudies.net/menu-script/index.php/KS/article/view/2204>
- Alati, V.M., Osuka, K., Otwoma, L.M., Tuda, P., & Nordlund, L.M. (2023). 'Gender analysis in fisheries: The case of the shelled mollusc fisheries in Kenya', *Marine Policy*, 158, 105863. Available at: <https://doi.org/10.1016/j.marpol.2023.105863>
- Ameyaw, A.B., Breckwoldt, A., Reuter, H., & Aheto, D.W. (2020). 'From fish to cash: Analyzing the role of women in fisheries in the western region of Ghana', *Marine Policy*, 113(January), 103790. Available at: <https://doi.org/10.1016/j.marpol.2019.103790>
- Anna, Z., Yusuf, A.A., Alisjahbana, A.S., Ghina, A.A., & Rahma. (2019). 'Are fishermen happier? Evidence from a large-scale subjective well-being survey in a lower-middle-income country', *Marine Policy*, 106, 103559. Available at: <https://doi.org/10.1016/j.marpol.2019.103559>
- Anuradha, C., Devi, U., Mohan, K., & Upendra. (2022). 'Women empowerment through sustainable development strategies - A study of fisherwomen in the State of Andhra Pradesh, India', *NeuroQuantology*, 20(10), 10403–10418. Available at: <https://doi.org/10.14704/nq.2022.20.10.NQ551011>
- Anuradha, C.H., Uma, D.M., Krishna, M.V., & Upendra, B. (2022). 'Women empowerment through sustainable development strategies. A study of fisherwomen in the State of Andhra Pradesh, India', *NeuroQuantology*, 20(10), 10403–10418. Available at: <https://doi.org/10.14704/nq.2022.20.10.NQ551011>
- Apriyeni, D., & Wati, W. (2022). 'The role of cold storage in the development of the Minapolitan capture fisheries area in Pasir Jambak, Padang City', *KKP Bulletin*, 8(1), 59–72. Available at: <http://ejournal-balitbang.kkp.go.id/index.php/mra/article/view/10918/0>
- Apriyeni, D., Heryanto, & Helia, S. (2024). 'Productivity analysis in the development of competitive capture fisheries production center areas in West Sumatra', *Journal of Maritime Research*, XXI(II), 250–259. Available at: <https://www.jmr.unican.es/index.php/jmr/article/view/880>
- Apriyeni, D., Nesti, L., & Heryanto, H. (2024). 'Analysis of facilities and infrastructure, supporting facilities in the Air Bangis West Pasaman Fisheries Area', *XXI(lII)*, 143–149. Available at: <https://www.jmr.unican.es/index.php/jmr/article/view/923>
- Apriyeni, D., Sjafrizal, S., Jafrinur, J., & Noer, M. (2019). 'The effect of agglomeration on profits and price efficiency in laying chicken farming enterprises in Payakumbuh production central area of Lima Puluh Kota Regency, West Sumatra, Indonesia', *Journal of Agricultural Economics*, 23(2), 58–65. Available at: <https://www.ajol.info/index.php/jae/article/view/185101>
- Bachu, U., Lilly Grace Eunice, B., & Author, C. (2024). 'A study on fisherwomen co-operative societies in Visakhapatnam District of Andhra Pradesh, India', *Journal of Surveys in Fisheries Sciences*, 11(4), 55–62. Available at: <http://sifisheressciences.com/index.php/journal/article/view/2764>
- Baker-Médard, M., Rakotondrazafy, V., Randriamihaja, M.H., Ratsimbazafy, P., & Juarez-Serna, I. (2023). 'Gender equity and collaborative care in Madagascar's locally managed marine areas: Reflections on the launch of a fisherwomen's network', *Ecology and Society*, 28(2). Available at: <https://doi.org/10.5751/ES-13959-280226>
- Barsoum, G. (2021). 'From fisher wives to fish vendors: Gendered livelihood transitions in a fishing village in Egypt', *Journal of Rural Studies*, 88, 117–125. Available at: <https://doi.org/10.1016/j.jrurstud.2021.10.012>
- Basnayake, B., Weddagala, T., & Silva, A. De. (2018). 'The feminist approach to value chain membership: The case of small-scale fishing value chains in Sri Lanka', *Conference Proceedings*, 1-13. Available at: [https://ir.library.oregonstate.edu/concern/conference\\_proceedings\\_or\\_journals/w66349058](https://ir.library.oregonstate.edu/concern/conference_proceedings_or_journals/w66349058)
- Belton, B., Johnson, D.S., Thrift, E., Olsen, J., Hossain, M.A.R., & Thilsted, S.H. (2022). 'Dried fish at the intersection of food science, economy, and culture: A global survey', *Fish and Fisheries*, 23(4), 941–962. Available at: <https://doi.org/10.1111/faf.12664>
- BPS Padang. (2023). 'Poverty line by regency/city in West Sumatra Province (Rupiah), 2021-2023'. Available at: <https://padangkota.bps.go.id/indicator/23/676/1/garis-kemiskinan-menrut-kabupaten-kota-di-provinsi-sumatera-barat.html>
- Cele, N. (2020). 'Are you a fisher or mussel collector?: Examining gendered identity markers in the small-scale fishing industry: Case studies from KwaZulu-Natal, South Africa', *Agenda*, 34(1), 141–150. Available at: <https://doi.org/10.1080/10130950.2020.1721195>
- Deb, A.K., Haque, C.E., & Thompson, S. (2014). "Man can't give birth, woman can't fish": Gender dynamics in the small-scale fisheries of Bangladesh', *Gender, Place & Culture: A Journal of Feminist Geography*, 37–41. Available at: <https://doi.org/10.1080/0966369X.2013.855626>
- Fabinyi, M., Belton, B., Dressler, W.H., Knudsen, M., Adhuri, D.S., Abdul Aziz, A., Akber, M.A., Kittitornkool, J., Kongkaew, C., Marschke, M., Pido, M., Stacey, N., Steenbergen, D.J., & Vandergeest, P. (2022). 'Coastal transitions: Small-scale fisheries, livelihoods, and maritime zone developments in Southeast Asia', *Journal of Rural Studies*, 91(March), 184–194. Available at: <https://doi.org/10.1016/j.jrurstud.2022.02.006>
- Fahad, S., & Manzoor, B. (2024). 'Exploring cultural perspectives on reproductive health among fisherwomen in Jammu and Kashmir: The role of social work practices', *Indian Journal of Social Work Education and Practice (IJSWEP)*, 1(2). Available at: [https://www.researchgate.net/publication/384660820\\_Exploring\\_Cultural\\_Perspectives\\_on\\_Reproductive\\_Health\\_among\\_Fisherwomen\\_in\\_Jammu\\_and\\_Kashmir\\_The\\_Role\\_of\\_Social\\_Work\\_Practices](https://www.researchgate.net/publication/384660820_Exploring_Cultural_Perspectives_on_Reproductive_Health_among_Fisherwomen_in_Jammu_and_Kashmir_The_Role_of_Social_Work_Practices)



- Freitas, C.T., Espírito-Santo, H.M.V., Campos-Silva, J.V., Peres, C.A., & Lopes, P.F.M. (2020). 'Resource co-management as a step towards gender equity in fisheries', *Ecological Economics*, 176(May), 106709. Available at: <https://doi.org/10.1016/j.ecolecon.2020.106709>
- Galappaththi, M., Armitage, D., & Collins, A.M. (2022). 'Women's experiences in influencing and shaping small-scale fisheries governance', *Fish and Fisheries*, 23(5), 1099–1120. Available at: <https://doi.org/10.1111/faf.12672>
- Gonzalez Parrao, C., Moratti, M., Shisler, S., Snilstveit, B., & Eyers, J. (2021). 'PROTOCOL: Aquaculture for improving productivity, income, nutrition and women's empowerment in low- and middle-income countries: A systematic review and meta-analysis', *Campbell Systematic Reviews*, 17(3), 1–38. Available at: <https://doi.org/10.1002/cl2.1188>
- Hossain, A.B.M.A. (2024). 'Empowering Hilsa heroines: Unveiling gender, socioeconomic dynamics, and environmental influence in Bangladesh's Hilsa fisherwomen community', *Sustainable Aquatic Research*, 3(2), 91–106. Available at: <https://doi.org/10.5281/zenodo.13326578>
- Kumar, K., Islam, J., Mohan, S., Alam, M., Kumar, S., & Rahman, A. (2022). 'Geography and sustainability livelihood status of small-scale fishermen and determinants of their income: Insights from north-eastern floodplains of Bangladesh', *Geography and Sustainability*, 3(3), 204–213. Available at: <https://doi.org/10.1016/j.geosus.2022.06.002>
- Kwok, Y.K.E., Kc, K.B., Silver, J.J., & Fraser, E. (2019). 'Perceptions of gender dynamics in small-scale fisheries and conservation areas in the Pursat province of Tonle Sap Lake, Cambodia', *Asia Pacific Viewpoint*. Available at: <https://doi.org/10.1111/apv.12225>
- Lekshmi, P.S.S., Kalidoss Radhakrishnan, R., Narayanakumar, V.P.V., Parappurathu, S., Salim, S.S., Johnson, B., & Pattnaik, P. (2022). 'Gender and small-scale fisheries: Contribution to livelihood and local economies', *Marine Policy*, 136, 104913. Available at: <https://doi.org/10.1016/j.marpol.2021.104913>
- Macusi, E.D., Maynawang, I.S., Katikiro, R.E., Suyo, J.G., & Macusi, E.S. (2023). 'Women lead small-scale fisheries to sustainability in Surigao del Sur, Philippines', *Marine Policy*, 155, 105768. Available at: <https://doi.org/10.1016/j.marpol.2023.105768>
- Marhadi, A., & Sewa, R. (2023). 'Hegemony and the impact of poverty on Bajo fishermen society', *Journal of Namibian Studies*, 34, 5408–5424. Available at: <https://namibian-studies.com/index.php/JNS/article/view/2407>
- Marlia, S., Fikri, M., Ramziati, & Herinawati. (2023). 'Strengthening the role of women (wives) of fishermen through corporate social responsibility (CSR) programs to improve the fishermen's economy on the coast of North Aceh, Indonesia', *Revista de Gestão Social e Ambiental*, 17(6), 1–8. Available at: <https://rgsa.openaccesspublications.org/rgsa/article/view/3606>
- Martins, de A.M., Xavier, L.Y., Grilli, N. de M., de Oliveira, C.C., de Andrade, D.A., Barreto, G.C., Hellebrandt, L., Galvão, M.C., da Silva, S.T., Mont'alverne, T.C.F., & Gonçalves, L.R. (2021). 'Gender and small-scale fisheries in Brazil: Insights for a sustainable development agenda', *Ocean and Coastal Research*, 69, 1–19. Available at: <https://doi.org/10.1590/2675-2824069.21033mmda>
- Matovu, B., Lukumbagire, I., Mwabvu, B., Manianga, A., Alkoyak-Yildiz, M., S., N., Jabbi, B. & Etta, L. A. (2024). 'Co-designing transformative ocean sustainability narratives to address complex human-environmental challenges facing coastal fisherwomen: An evidence-based study'. *Environmental Challenges*, 15 (February), 100923. Available at: <https://doi.org/10.1016/j.envc.2024.100923>
- Njogu, L., Adam, R. & Farnworth, C.R. (2024). 'Assessing women's empowerment, participation, and engagement in aquaculture in Bangladesh'. *Aquaculture International*, 32 (5), 6303–6331. Available at: <https://doi.org/10.1007/s10499-024-01467-7>
- Oloko, A., Fakoya, K. & Harper, S. (2021). 'Taboos as cultural challenges encountered by women fisherfolk in some coastal fishing communities in Nigeria'. *Women in Fisheries Information Bulletin*, March, 48–49. Available at: <https://rare.org/wp-content/uploads/2021/03/WIF33.pdf>
- Oloko, A., Fakoya, K., Ferse, S. & Breckwoldt, A. (2022). 'The challenges and prospects of women fisherfolk in Makoko, Lagos State, Nigeria'. *Coastal Management*, 50 (2), 124–141. Available at: <https://doi.org/10.1080/08920753.2022.2022969>
- Palash, S., Haque, A.B.M.M. & Rahman, W. (2024). 'Heliyon economic well-being induced women's empowerment: Evidence from coastal fishing communities of Bangladesh'. *Heliyon*, 10 (7), e28743. Available at: <https://doi.org/10.1016/j.heliyon.2024.e28743>
- Pooja, P., Narwadkar, P., Sanjay, P., Aher, J., Kumar, P.S., Sabale, G., Ansari, A., Devi, K.A. & R, S.R. (2023). 'Socio-economic conditions of the fishermen community'. *Journal of Surveys in Fisheries Sciences*, 10 (1), 3454–3457. Available at: <https://doi.org/10.53555/sfs.v10i1.1513>
- Priscila, F., Silva, M. R. O., Silva, B. & Barbosa, J. C. (2022). 'Empowering fisherwomen leaders helped reduce the effects of the COVID-19 pandemic on fishing communities: Insights from Brazil'. *Marine Policy*, 135 (March 2021), 104842. Available at: <https://doi.org/10.1016/j.marpol.2021.104842>
- Singh, S., Sharma, A. & Ghorai, T. (2018). 'Fisherwomen empowerment: Shedding light on the invisible gender women a mirror for rural development and government policies', 20–25. Available at: <https://enaca.org/?id=1013>
- Solano, N., Lopez-Ercilla, I., Fernandez-Rivera Melo, F.J. & Torre, J. (2021). 'Unveiling women's roles and inclusion in Mexican small-scale fisheries (SSF)'. *Frontiers in Marine Science*, 7 (January), 1–14. Available at: <https://doi.org/10.3389/fmars.2020.617965>
- Souza, S. D. (2020). 'Unmasking the silent role fisherwomen play in the small-scale fisheries local value chain in India' (Issue December). Available at: <https://thesis.eur.nl/pub/55967/>
- Stacey, N., Stacey, N. & Gibson, E. (2019). 'Enhancing coastal livelihoods in Indonesia: An evaluation of recent initiatives on gender, women, and sustainable livelihoods in small-scale fisheries'. *Maritime Studies*, 359–371. Available at: <https://doi.org/https://doi.org/10.1007/s40152-019-00142-5>

- Susilowati, I. & Mafruhah, I. (2023). 'Women's empowerment to alleviate poverty in coastal zones: A case study of fisherwomen in Pacitan, Indonesia'. *International Journal of Ethics and Systems*, 39 (1), 165–179. Available at: <https://ideas.repec.org/a/eme/ijoesp/ijoes-12-2021-0237.html>
- Tanuja, S., Charles Jeeva, J. & Rout, E. (2022). 'Rural women entrepreneurship through value addition of fish: A case study'. *Fishery Technology*, 59 (January), 64–67. Available at: [https://www.researchgate.net/publication/358606621\\_Rural\\_Women\\_Entrepreneurship\\_through\\_Value\\_Addition\\_of\\_Fish\\_A\\_Case\\_Study](https://www.researchgate.net/publication/358606621_Rural_Women_Entrepreneurship_through_Value_Addition_of_Fish_A_Case_Study)
- Thomas, A., Mangubhai, S., Fox, M., Meo, S., Miller, K., Naisisilili, W., Veitayaki, J. & Waqairatu, S. (2021). 'Why they must be included: Significant contribution of Fijian women fishers to food security and livelihoods'. *Ocean and Coastal Management*, 205, 105571. Available at: <https://doi.org/10.1016/j.ocecoaman.2021.105571>
- Thony, A.K.A., Romdhon, M.M. & ... (2022). 'The empowerment strategy of fishermen household women: Study at Bengkulu City'. *Journal of Positive School Psychology*, 6 (8), 506–519. Available at: <https://journalppw.com/index.php/jpsp/article/view/9757>
- Uduji, J.I., Okolo-Obasi, E.N. & Simplice A. Asongu. (2020). 'Women's participation in the offshore and inshore fisheries entrepreneurship: The role of CSR in Nigeria's oil coastal communities'. In *Journal of Enterprising Communities: People and Places in the Global Economy* (WP/20/012). Available at: [https://mpira.ub.uni-muenchen.de/103141/1/MPRA\\_paper\\_103141.pdf](https://mpira.ub.uni-muenchen.de/103141/1/MPRA_paper_103141.pdf)
- Vitukawalu, B., Mangubhai, S., Naleba, M., Nand, Y., Ieli, P. & Berdejo-Espinola, V. (2020). 'Addressing barriers and constraints to gender equality and social inclusion of women seafood sellers in municipal markets in Fiji small-scale fisheries'. March. Available at: [https://www.academia.edu/89659115/Addressing\\_barriers\\_and\\_constraints\\_to\\_gender\\_equality\\_and\\_social\\_inclusion\\_of\\_women\\_seafood\\_sellers\\_in\\_municipal\\_markets\\_in\\_Fiji?uc-sb-sw=34135203](https://www.academia.edu/89659115/Addressing_barriers_and_constraints_to_gender_equality_and_social_inclusion_of_women_seafood_sellers_in_municipal_markets_in_Fiji?uc-sb-sw=34135203)
- Waqairatu-Waqainabete, S., Meo, S., Waqainabete-Tuisese, S. & Kennedy, B. (2013). 'Fijian women's involvement in coastal fisheries: A socioeconomic study of fisherwomen from Matuku, Moala and Totoya islands (Lau Seascape)'. *SPC • Women in Fisheries Information Bulletin* #29, 4–10. Available at: <https://api.semanticscholar.org/CorpusID:231941271>
- Zainudin, M.L., Zein, A., Idris Hanafi, M. & Luqman, W.A.N. (2019). 'Socio-economic profile comparison of fishermen community in Kuala Marang and Seberang Takir, Terengganu, Malaysia'. *Journal of Sustainability Science and Management*, 14 (6), 130–142. Available at: <https://jssm.umt.edu.my/wp-content/uploads/2020/05/13.14.6pdf.pdf>