

**EVALUATING THE ROLES OF WOMEN IN THE ARTISANAL FISHERIES SECTOR
OF SIERRA LEONE:
A CASE STUDY OF TOMBO, GODERICH, SHENGE, KATTA, KONAKRIDEE AND
YELIBOYA FISHING COMMUNITIES**

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ABSTRACT

This study evaluated women's roles in six major coastal communities in Sierra Leone. The study focuses on the importance of women's access to fish and cost, involvement in community decision-making, romantic interest, and unwanted sexual harassment to promote equality and empowerment. In Sierra Leone, cultural taboos and norms have affected and limited women in the fishing sector. This has resulted in massive competition between fish mummies and middle-aged processors. Forty-eight percent of processors find romantic interest attractive, and 36% are very attracted to fishermen using this as a manipulating method to accumulate money or catch from their fishermen. However, women cannot participate in decision-making because of their low level of education, which affects their daily activities and livelihoods. The study also examines women's contributions to family and fishery activities, including fishing, fish processing and trading, and financial management. It outlines the fundamental difficulties and barriers experienced by young women, which prohibit them from receiving equal treatment and participation in their communities. The study further discusses women's vital need for financial aid and capacity building in the areas of processing and preservation. It also highlights the need for infrastructure development in fishing communities, such as construction of a good road network, fish-processing centres, preservation facilities, and improved smoke ovens.

Keywords: Women, fisheries, equality, empowerment, participation, sexual harassment, barriers, livelihoods, Sierra Leone.

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LIST OF ACRONYMS

AFCOD:	Artisanal Fishery and Community Development
CMAs:	Community Management Associations
EEZ:	Exclusive Economic Zone
FOBs:	Forward Operational Base
GDP:	Gross Domestic Production
GMoU:	General Memorandum of Understanding
HP:	Horsepower
IMBO:	Institute of Marine Biology and Oceanography
ISFM:	Institutional Support to Fisheries Management
IUU:	Illegal Unreported and Unregulated Fishing
MFMR:	Ministry of Fisheries and Marine Resources
NEPAD:	New Partnership for Africa Development
SDGs:	Sustainable Development Goals
UNDP:	United Nations Development Programmes
UNOPs:	United Nations Office for Project Service
WARFP:	West Africa Regional Fisheries Program
ISFM	Institutional Support to Fisheries Management
SLAFU	Sierra Leone Artisanal Fishermen's Union
AU-IBAR	African Union
WADAF	West Africa Development for Artisanal
AWFISHNET-SL	African Women Fish Processors and Traders Network Sierra Leone

1 INTRODUCTION

Sierra Leone is located in West Africa with a population of about 7.1 million people, being bordered by the Atlantic Ocean in the west and southwest, with the Republic of Guinea in the north and northeast (sharing both land and maritime borders) and the Republic of Liberia in the south and southeast. It has an area of 72,000 km² with a coastline of 560 km and an EEZ of 200 nm, of which 21,700 km² is the continental shelf. The climate is tropical, characterised by alternating rainy and dry seasons with generally hot and humid conditions throughout the year.



Figure 1. Map of Sierra Leone showing the district headquarter towns and major rivers.

In Sierra Leone, it is generally a taboo for women to fish in the open sea, thereby creating a barrier to their involvement in such activities. Fishing by women is mainly performed in inland waters using scoop nets and traps, and the fish captured from these operations serve as an important source of protein for most rural farm families (Thorpe et al., 2008). As in most other countries in West Africa, women's participation in large-scale fishing operations is limited to postharvest activities, such as hauling beach seines along Lumley, Levuma, and other beaches. Gleaning and "cabbng" (the picking up of discarded fish on the wharf at the major landing sites) are also in evidence, although the latter is very much a livelihood strategy of the ultra-poor. An unpublished report of a National Frame Survey conducted by the Ministry of Marine Resources sponsored by the World Bank in 2014 suggests that women account for approximately 75 percent of postharvest workers, while a more recent (World Bank Survey, 2010) report suggests that 85.5 percent of fish processors are women which shows that women's engagement in fishing activities has increased over the years.

1.1 The Fishery Sector in Sierra Leone

Fisheries and especially the artisanal fisheries in Sierra Leone are considered important sectors for socio-economic development because of their potential to connect directly or indirectly with the first two Sustainable Development Goals (SDGs 1 and 2) – eradicating extreme poverty and hunger—and SDG 5 promoting gender equality and empowerment of women. According to a recent New Partnership for Africa’s Development (NEPAD) assessment, the sector has the potential to contribute to future economic recovery, confirming that the country’s fish resources have an estimated capitalised economic value of USD 735 million, and could potentially contribute to increasing GDP by 12 per cent above the current estimated level (Guinea, 2018). In Sierra Leone, both marine and freshwater environments generate different types of fish species with substantial monetary value that have been mainly exploited via fishing, with aquaculture farms (though very small) becoming a popular source. Annual catch stands at around 200,000 tonnes and it coming mainly from marine artisanal fisheries, consisting of small-scale, inshore and low technology operations (estimated as 120,000 tonnes and valued at \$25 million per year), whereas contributions from inland fisheries and aquaculture is relatively small (Neiland, Cunningham, Arbuckle, & Baio, 2016). A 2018 report by the Food and Agricultural Organization (FAO, 2018) estimated the inland freshwater fishery production to be 2, 100 tons per year.

1.2 The socio-economic role of fisheries in Sierra Leone

The artisanal fishery is dominated by men, while women dominate the post-harvest sector, although there are some female financiers of fishing operations and boat owners. Generally, fish stocks have been declining in Sierra Leone waters due to open access to fishing grounds, with no effective management system in place. This creates a situation in which there is overcapacity of the fishing fleet, overfishing, use of illegal fishing methods, and catching of juvenile fish. This not only results in reduced catches, which are the primary source of revenue for women, but also in a loss of social cohesiveness, livelihood systems, and other job prospects, further exacerbating the gender gap. Fish habitats are under threat due to limited economic options for alternative livelihoods in coastal areas, high population growth, and ever-increasing demand for resources (MFMR, 2020).

There are approximately 45,000 artisanal fishermen and over 12,000 fishing canoes in the sector, ranging from Kru canoes, Standard 1 to 10 (1-to-10-man planked boats), and Ghana planked boats with 8-40 HP outboard engines. The sector is labour-intensive, with mostly traditional methods of fishing craft and gear, such as gillnets, cast nets, beach seines, purse seines, ring nets, traps, hooks and lines, and manual collection. Artisanal fisheries account for approximately 80% of the total marine fish landings sold in the local markets. The catch of artisanal fisheries mainly consists of small pelagic species (*sardinella* and *ethmalosa*) and some midwater pelagic species (MFMR-SL, 2019).

Marine artisanal fishery involves fishermen residing along the entire coastline of the country. It is a significant source of employment and livelihood in Sierra Leone. The Sierra Leonean population mainly depends on fish for animal protein, and the bulk of this fish originates from the artisanal sector. The contribution of small-scale fisheries to food supply and nutrition is extremely important, with a greater part of the catch being consumed nationally or traded within the region and internationally. The role of women has evolved from the traditional activities of buying and selling to financing and outright ownership of boats (Bennet et al., 2004). Their specific financial role in the artisanal sector is different from that of the industrial fishing sector in that they finance the production process by giving fishermen loans and credit. Women's role in financing and crediting fishermen to facilitate fish production in the artisanal sector is becoming a key role that the sector can hardly survive without them. The main reason they play this role is to ensure that they have first access to fish sales/purchases (Thorpe et al., 2014).

1.3 Objective and scope of study

The general objective of this study is to evaluate the role of women and find ways to maximise their participation, empowerment, and recognition in the sector.

The specific objectives of this study are as follows:

- To analyse the contribution of the fisheries sector to the socio-economic well-being of Sierra Leone's population with reference to women.
- To identify and document the specific and potential roles of women in the sector with a view to identifying gender empowerment and equality opportunities in the sector.
- To identify challenges and opportunities for improving women's engagement in the sector, such as fish processing, trade, fish monger (mammies) participation, financing, and boat ownership.
- Identify issues of gender-based violence, sexual harassment, and how women in fishing communities are impacted.

1.4 Rationale

A case study of Sierra Leone's small-scale fisheries provides insights into the gendered labour that exists within the sector and households which shows how gendered social norms further impact income and access to resources. This study was conducted in 2014 to connect the relationship between gender roles and the fisheries sector with the threat of climate change. It has been argued that women invest more in social and economic activities such as fish processing and family work to enable them to reconcile both activities more effectively (Thorpe et al., 2014).

Another baseline study on value chain analysis and the role of women in the Sierra Leone fisheries sector was conducted by Ranita Koroma, sponsored by the MFMR. The research focused on

mapping the fish market and the related activities that are required to bring the fish from the primary product through the various phases of production, marketing, delivery, and final sale to consumers. The study identified strategies that focus on activities that would enable the fisheries sector to attain a sustainable competitive advantage (Koroma, 2017).

However, neither of these studies provides in-depth analyses of the roles of women in small-scale fisheries, especially in areas of decision-making, awareness of community stakeholders (men) in women's involvement in coastal community management activities/engagements, and solutions to the challenges women face. In addition, a policy guide on how to address these issues has not yet been developed.

1.5 Research hypothesis

- i. Women play a significant role in the fish value chain in Sierra Leone.
- ii. Women are marginalised in the artisanal fisheries sector in Sierra Leone and only play a supportive role to their husbands.

1.6 Research questions

- i. In which section of the fish value chain do women play the most active role in Sierra Leone?
- ii. What benefits do women realise in occupational engagement or business ventures?
- iii. How do women access fish resources, and at what costs?
- iv. How does romantic interest impact women's roles in the artisanal fisheries sector?

1.7 Limitations of the study

The allocated time for this research, in particular the data collection and analyses, is limited which necessitates the researcher to limit the scope and scale of the data collection and analysis. Language barriers are another challenge, as the majority of fisher women/processors cannot speak the general local dialect, Creole (Krio), commonly referred to as *Pidgin English*, requiring the service of an interpreter to interview those who cannot speak Krio.

2 LITERATURE REVIEW

Gender inequality and discrimination pose serious threats to the global small-scale fishing sector's social, economic, and environmental viability, which is crucial for attaining inclusive development. The lack of a gender-aware approach in fisheries research is frequently justified by the assumption that the sector is controlled by men. Even though millions of women work in small scale fishing, their labour is often disregarded and undervalued (Koralagama, Gupta, & Pouw, 2017).

2.1 The role of women in world fisheries

The contribution of women in global fish production cannot be overemphasised, and this has been enhanced by increased opportunities for women brought about by globalisation, as agreed upon by experts. An increase in the proportion of women in the labour force has been observed in every region of the world, with an estimated 20% of entrepreneurs being women in transition countries (Kwong, 2005). In fishing, women constitute 46% of the labour force involved in small-scale fisheries-related operations involving both pre- and post-harvest activities, as recorded in nine major fish-producing countries. This is attributed to the rapidly declining fish population as well as the rising global demand for fish. There are limited or no statistics available in developing countries that capture the magnitude and type of roles women play in contributing to men's pursuit of fisheries as a source of income (being called fishermen, with unclear identities for women). However, there has been an increased understanding in recent times of how women's support complements and subsidises men's fishing efforts in various ways (Weeratunge & Snyder, 2010).

2.2 The role of women in West African Fisheries

In general, the rules and norms of the community influence methods to increase the engagement of West African women in small-scale fisheries in terms of social and economic life. The type and influence of modern education, as well as the restrictions imposed by legal and economic considerations, have a strong impact on the standing of women. The West African Economic Group includes sixteen countries. Thirteen of these are maritime nations in the Atlantic Ocean. Their combined shoreline is 64,000 km long and the continental shelf is 30,500 km. According to the United Nations Convention on the Law of the Sea (UNCLOS), artisanal fishing maritime zones span 3–12 miles. The maritime countries in West Africa are Benin, Burkina Faso, Cape Verde, The Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, and Togo. The three landlocked Countries are Burkina Faso, Mali, and Niger (William, 2001). To provide better insight into the role of women in the fisheries sector in West Africa, research in four West African maritime countries will be discussed in Gambia, Ghana, Senegal, and Nigeria.

2.3 Role of women in Nigerian fisheries

The potential role of women in fisheries management was captured in a study undertaken by Uduji and Okolo-obasi (2020) conducted in the Niger Delta region of Nigeria. They were able to identify that even though women play key roles in fisheries activities, they are usually excluded in the decision-making process due to the cultural beliefs existing in the communities. This study examines the impact of a new Corporate Social Responsibility (CSR) model implemented by oil companies to engage women in small-scale fisheries. It clearly shows, from the 800 fisherwomen who took part in the study, a pattern of exclusion from fisheries management decision-making as evidence of their non-participation in a General Memorandum of Understanding (GMOU) in place for small-scale fisheries projects, even though they are key actors in the success of the program because of cultural norms. It is concluded that the GMOU intervention should prioritise giving women key roles in fisheries management and conservation in the region.

2.4 Role of women in Senegalese fisheries

In Senegal, men go out fishing, while women receive the catch as it gets on shore, controlling a large chunk of the post-harvest section of the fish value chain (Belhabib et al., 2013). Most of the literature on women in Senegalese fisheries concentrates on post-harvest operations, where women account for approximately 90 percent of seafood processors (almost 36,000) (Deme, 2012). The introduction of fish processing units for fresh and frozen or fishmeal products owned by the Chinese and Koreans at two major landing sites in Senegal in 2011 and 2014 has created huge challenges for artisanal fish processors in accessing fish (Caopa and Rejoprao, 2016). The improvement and establishment of fish distribution and market centres in the Guet Ndar fishing community aims to eliminate intermediaries in the fish trade, which affects female fish traders who deal with large quantities of fish. These women complement men's earnings and contribute to their households' living conditions, as well as the well-being of others (Arber & Irene, 2018).

2.5 Role of women in Ghanaian fisheries

The role of women in Ghanaian fisheries is inextricably linked to the distribution and sale of fish, as evidenced by fish processors in western Ghana's coastal fishing communities. Fish is a highly valued resource, as it provides employment to both men and women in fishing communities, thereby providing wealth to the community. Entrepreneurial skills are imperative in this industry. Therefore, fishermen and women differ in their economic statuses. Fish is primarily transported to markets by two groups of women: 'fish wives' and 'fish mummies', both of whom are also fish processors. These two groups are distinguished by their level of operation and influence. Fishwives can be classified as fish retailers, whereas fish mummies are large-scale fish processors and traders. A fishwife could be a fisherman's wife or a female relative who receives his portion of the catch.

These two groups of women act as conduits between fishermen and consumers (Ameyaw et al. 2020).

2.6 Role of women in Gambian fisheries

Research conducted in 2014 showed that women in small-scale fisheries in Gambia are primarily involved in oyster harvesting and processing, fish processing, and commercialisation. Small-scale/artisanal fisheries provide fish to local consumers, as well as shrimp, cephalopods, and high-value species to processing plants. This sector, once solely for subsistence, is now focusing on commercial species owing to rising market demand. Even though the majority of fishermen are still pursuing fish to meet local market needs, a substantial number are increasingly pursuing high-value species, including soles, snappers, and cephalopods. These high-value species are processed for export or to meet demand in the domestic tourism market (Ragus, 2014).

A local organisation called the TRY Women Oyster Organisation, made up of local oyster harvesters and producers, oversees the activity of oyster fishermen in the Tanbi wetland complex, with 15 oyster associations as members. The mission is to provide members with a voice and ensure that they are fairly represented in government agreements to ensure better livelihoods and environmental protection. The organisation has a membership of 490 middle-aged women, most of whom are widowed and uneducated breadwinners for their families, and 10 males. During the harvesting season, women were disproportionately affected by indebtedness and economic challenges, as well as a tough and hazardous working environment. During the traditional closed season, TRY also promotes improved processing, quality, and hygiene, as well as initiatives to build supplemental livelihoods for women harvesters and their families.

2.7 Responsibility for the family and community in Sierra Leone.

Worldwide, women tend to be responsible for the care and nurture of families in which Sierra Leone is not exempted. In addition, within the fisheries sector, some fishermen often stay away fishing for a period of time, while women run households. The role of women can vary, ranging from maintaining social networks within the fishing community to providing financial support to their husbands during the rainy season when the catches are low due to turbulent weather at sea. Women are able to generate income outside of fishing activities during these low catch periods through agriculture or design and sell handicraft products from locally available materials as another source of income generation (especially in rural areas). In both urban and rural areas, it is also common for women to run mini-shops or restaurants, either individually or as part of groups, petty trading, or work as domestic workers.

Unfortunately, these very important and significant contributions made by women to sustaining fisheries activity in an off-peak period are hardly recognised and often undervalued (Tetteh, 2007).

This is usually the case, as fishing activities are generally associated with those that occur in the fishing boat (i.e. capture of fish) and not activities that complement these processes for which women are mostly involved. Women are mostly engaged in processing, marketing, and distribution. Additionally, women take care of the home (cooking and childcare) and, in some cases, can be the breadwinners when the men are out at sea, with all of these not considered significant, possibly because monetary values are not associated with such practices, as they are traditionally considered jobs for women. Another very important role played by these women is to take care of the old, sick, and others within the family that lacks capacity, all of which are not considered jobs to be paid for but are part of the duties of the women (Overa, 1992).

2.8 Women in fisheries management

The recent collapse of fisheries and fishing activities is a result of illegal practices such as overfishing and related harmful practices, as well as non-fishing activities such as farming, forestry and construction of dams, deforestation, and irrigation systems, which leads to degradation of the aquatic environment, making it unsuitable for fish to survive and breed (Rand et al., 2002). Coastal countries in Asia, Africa, and America share governance systems through rights-based management, and co-management practices are replacing open-access fisheries and the centralised governance of aquatic resources. The new management regimes redefine resource access, encourage fishers to shift to non-destructive practices, and institute measures to guard coastal waters from poachers and illegal fishermen. They also present new challenges to female users of fisheries resources. Women are organised as interest groups to effect change which can become key players in more effective fisheries management. This is important because women's livelihoods are most affected and marginalised when aquatic resources are degraded and depleted. When coral reefs and mangrove areas are destroyed, female fishers who use simple gear are relegated to shell gathering or seek alternative sources of income. Women can band together to ensure control over the scarce resources that provide sustainable livelihoods for their families. Some management measures currently utilised include involving women in joint leasing and preservation of mangrove forests, collective protective custody over critical areas, restricting harvests through closed seasons, banning destructive fishing methods, and introducing sound conservation strategies. More women than men are at the forefront of many of these strategies (Tetteh 2001).

2.9 Women in fisheries in Sierra Leone

The Sierra Leone Artisanal Fishermen Union (SLAFU), in collaboration with the Ministry of Fisheries and Marine Resources (MFMR) started its full implementation in 2010 by organising women in groups of 10 across the major coastal communities of Sierra Leone. The objective of this network of women is to contribute to the organisational, professional, and entrepreneurial capacity building of women in fishing activities and the promotion of cooperation among women. It also aims to contribute to the maximisation of female participation in the social and economic

development of the fishery for its sustainable development and the socio-economic development of the female fisher folk at the local community level. Women make use of the opportunity to develop their capacity, especially for leadership and advocacy. Since this development, women in fisheries have been giving their fullest participation in working together to pursue the intended purpose of the organisation. Training programs on fish handling and preservation, processing, and hygiene have been conducted by the Ministry and West Africa Association for the Development of Artisanal Fisheries (WADAF) to help build their capacity and develop their socioeconomic well-being. Since these women were not yet strong enough to stand independently due to a lack of infrastructural development that could have aided them in implementing the knowledge being delivered to them by the above institutions, their efforts were derailed by the unprecedented hit of the deadly virus (Ebola) in 2014 which destabilised and disintegrated the existing groups. Although most of the groups disintegrated, some bigger fishing communities, such as Tombo, Goderich, and Shenge, still had community executives that operated with the concept of Women in Fisheries until 2021. At that time, the African Union Inter-African Bureau for Animal Resources (AU-IBAR), an organisation of the Africa Union, established the Sierra Leone Chapter of Women in Fisheries which brought women from all four regions of the country (the Western areas Rural and Urban, Northern and Southern regions) to form the national executive body that comprises 100 percent women with a detailed constitution that was modified by all participatory countries in the African continent, according to their country context, since what is applicable in one country might not be so in another country.



Figure 2. Sierra Leone Chapter of African Women Fish Processors and Traders Network (AWFISHNET-SL).

The African Women Fish Processors and Traders Network (AWFISHNET-SL) provides a platform that strengthens the role of women in fisheries, ensuring that they make meaningful contributions to the SDGs and the agenda of ending hunger in Africa and halving poverty by the year 2025, in line with national, regional, and global instruments, policies, and/or strategies. The

objective of the organisation is to ensure sustainable and equitable development, food security, poverty eradication, and safeguarding the environment by enhancing the potential and capabilities of members involved in fish production, processing, trade, and aquaculture in Sierra Leone. In turn, members use the platform for consultation and strengthen institutional coordination at all levels, that is, national, regional, and global. Currently, the newly elected executive is on a tour across the country to organise the women at the community, chiefdoms, districts, and regional levels to modify the constitution and to start full operations.

An unpublished report was produced by a national frame survey conducted in MFMR (2020) and stated that stereotypical gender roles in Sierra Leone expect women to fulfil reproductive, household management, food provisioning, and nursing tasks, which hinders their ability to engage in sea fishing activities. Hence, gendered social norms, not direct regulatory prohibition, frustrate Sierra Leone women's access to fisheries resources. This confirms that women have been under-recognised and limited either by their husbands in restricting them from being in full control of their family business, business partners by not giving full commitment to any of their agreements, or their co-fish mammies either by increasing the fish price at the landing sites or by frustrating them in accessing their desired catch per day. Over the years, women have been the main pillar of the Sierra Leone fisheries sector in both artisanal and industrial sectors. Their duties are to make fish available for the market and table for home consumption.

Another source of information which field officers report comes from traditional superstitions are stories that fishermen limit women from going to sea either to secure them from sea accidents (rough weather conditions), traditional norms (encountering a marine spirit), or by taking over their business, as men are so sensitive about women being strong people who can perform all duties if necessary.

Coastal women finance most fishermen in the process to ensure that they can purchase fish on their own, thereby facilitating fish production in the artisanal sector (Koroma, 2017). This result is in line with (Ameyaw, Breckworldt, Reuter, & Aherto, 2020) whose research stated that locally, fish mammies were considered as wealthy women because they owned processing tools such as trays, pans, and smoke ovens, and they also funded fishermen's fishing trips. Some of these women are also part of the established CMAs, and SLAFU occupied limited executive positions, specifically in treasurer or financial secretary positions. Occupying these titles or positions clearly defines an indication that they will be financiers in all activities that require funding because the association or union might obtain small savings. However, it is this 'stay at the back' involvement in community activities which compelled them to focus on the establishment and engagement with their daily fish processing activities of the women in the fisheries group which, according to the findings, liberated them from their marginalised state.

3 METHODOLOGY

To evaluate the role played by women who are fully engaged in fishing activities in the study area, a research survey was carried out by fisheries outstation officers and assistants, enumerators, and CMAs' executive members. This research was conducted through data collection and analysis.

3.1 Description of the study areas

This study was conducted at six major landing sites/fishing communities in five coastal districts that are among the key artisanal fishing communities in Sierra Leone. Two of these communities are Goderich and Tombo which are situated in the Western Area Coastal District; Konakridee and Yeliboya in the North, and Shenge and Katta in the Moyamba District.

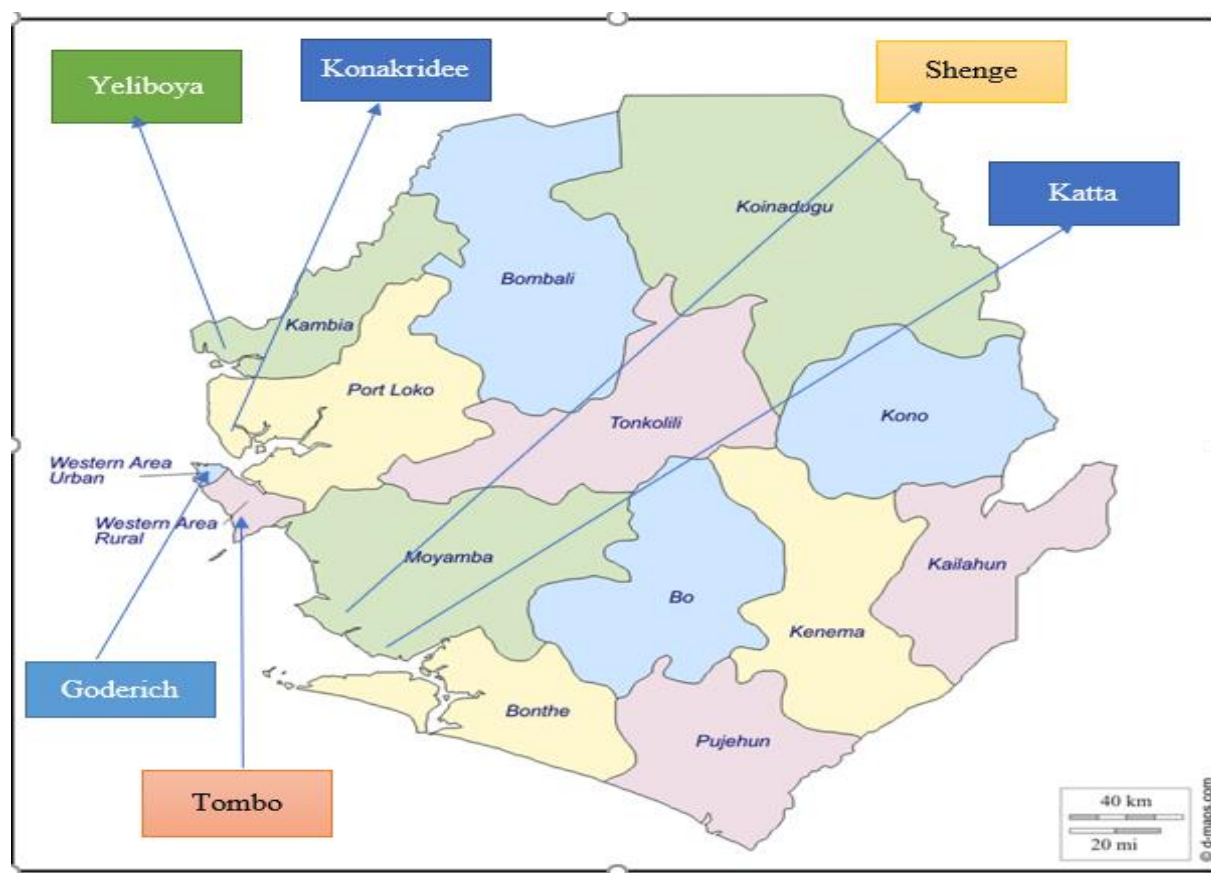


Figure 3. Map showing research landing sites.

The Goderich Community is the second largest artisanal fishing community situated in the Western Area Rural District outside the capital city of Freetown, with a population of approximately 14,000 according to the 2015 population census. It is an old settlement (village) for fisher folks which has been rapidly expanded by other settlers in the process of urbanisation. Three settlements namely, Goderich, Funkia, and Adonkia combined to become the enlarged Goderich town with three fish landing sites (“Shalla water”, “Gondo water” and “River water”). Fisher folks

are settled alongside these landing sites. A large percentage of the shelters along the landing sites are built with old zinc and moulded bricks, while the houses in the township are built with concrete bricks and other modern materials. There is a large market and extended market table for accommodating a variety of foodstuffs. Fresh and preserved fish (dried) are sold at an alternate market.

The Tombo Community is a very large fishing community located along the west coast of Sierra Leone. It is a major hub for the trade, processing, and transportation of fish. Tombo is predominantly dominated by Muslims, who are known for their deeply religious Islamic faith. The population of this community is over 40,000 and consists of a radio transmitter and a hospital that serves the town and its surrounding villages (SL Statistics, 2015). The town was founded by the Sherbro people in the early sixteenth century, years before the colonial era, and later dominated by the Temne and Limba ethnic groups that moved from Freetown to Tombo as traders and fishermen (Wikipedia, 2021).

The Konakridee Fishing Community is located in the Port Loko District in the Northern Part of Sierra Leone. This community is accessible by land and sea using ferries, vehicles, and transport boats. Fishing is the major occupation of men and women with alternative livelihoods such as petty trading and second-hand clothing. The town chief is a man who oversees the affairs of the people while fishing activities are under the control of the fishermen themselves, headed by an elected local councillor. There is a poor road network from the airport to Konakridee, no piped water or electricity, and poor sanitary facilities, clearly indicating the low socioeconomic status of the people. There are three primary schools, one secondary school, and a health centre. The community has been provided with solar light and support from the UNDP/UNOPS, through their community project support “barefoot women with solar light granitisation”. The Ministry of Fisheries and Marine Resources provided the community with water and sanitation facilities through a project supported by the Iceland Ministry of Foreign Affairs and implemented by MFMR in collaboration with UNICEF and the Community Action for the Welfare of Children (CAWEC). Access to fish resources is open in the same way as it is in the other fishing villages surveyed, and the same restrictions apply to women’s activities, with only males being permitted to go to sea (Sandi, 2017).

The Yeliboya Community, a small fishing island in the Northern Province of Sierra Leone in Samu Chiefdom (Kambia District), accessible only by boat, is a thriving fishing community with a modest population of about 5,000 people (FAO Regional Office for Africa, 2019). It is located at an elevation of 20 m above sea level. Women and children make up most of the population, processing fish and playing around. The men, on the other hand, can be seen on the beach mending their nets or in boats fishing. The Yeliboya fishing community is one of the most renowned fish landing sites in the country, after the Goderich and Tombo coastal communities. It is a centre for seasonal migrant fishermen from other countries and other coastal fishing communities within the country. Over 100 boats fish in the waters of this community. However, the island is not suitable

for agricultural purposes because the soil is completely sandy. There are two functional primary schools and a hospital. A Forward Operational Naval Base (FOBs) was also established with assigned personnel working collaboratively with the Fisheries Outstation Officer, Sierra Leone Police, and Community Management Associations (CMAs) in Community Sea patrols to eradicate IUU fishing, smuggling, piracy, crime rate, and civil conflicts on the island and environs. However, the island is prone to disasters which have become a threat to the community, including sea level rise, fire outbreaks, erosion during the rainy season, heavy storms, and lack of pure water. The fish trade and processing of fish caught by artisanal fishermen is mainly dominated by women, and fish preservation methods include smoking and icing (Thoronka, 2021).

The Shenge Community is a fishing community situated in the Moyamba District along the southern part of Sierra Leone. Shenge is the seat of the Kagboro Chiefdom which is classified as the third level of administration. The thick coastal rainforest has hindered the construction of an effective road system, so that the community can only be easily accessed by boat. The community consists of small fishing boats, mostly Kru canoes, and standard 3 to 5 (three to five crew members), but there are a vast number of fishing boats in the surrounding villages. The boats that are used as a means of transportation among the coastal towns, especially for transporting fish and other produce at Tombo, are known as *pampas*. The Shenge, Katta, and Tombo coastal communities share the same MPAs, known as Yawri Bay. The population of Shenge is diverse, with no single ethnic group forming the majority. They work predominantly as fishermen and the town is one of the largest fish producers in the country (Wikipedia 2021).

The Katta Community is a fishing community situated at an altitude of approximately 3m gently sloping towards the coastline of the Yawri-Bay MPA in the Kagboro Chiefdom in Moyamba District Southern part of Sierra Leone. The distance between Shenge and Katta is approximately 2,000 km. Katta is closely supervised socially and economically by Shenge (Chiefdom headquarter town). It has a population of approximately 2,400. This is predominantly a fishing community with 90% of its population involved in fishing, fish processing and fish mammals overseeing fish sales at the landing sites and participating in community decision making. Women that make up a greater proportion of fish processing and marketing face numerous challenges, including lack of infrastructure such as medical services, schools, toilets, good roads, microcredit, and fish processing facilities, such as raised platforms and improved smoke ovens. The easiest access is by transportation boats called Pampas. The people in this community can only access good medical and educational facilities in Shenge.

3.2 Data Collection

Data collection for this project was done using structured questionnaires and targeted 150 respondents who were artisanal fishers at the six study landing sites in Sierra Leone. Questionnaires were administered to fish processors, women in fisheries, CMAs, traders, fish

mammies and fishermen's wives. A pre-test of field survey work was first conducted by the researcher through WhatsApp calls to the fisheries officers, fisheries assistants, and enumerators assigned to the study areas to confirm the suitability of their field experience, particularly their gender-related activities. A final survey questionnaire was sent to the five fisheries outstations to collect data within the six study areas. In total, 25 women were interviewed in each of the study communities in the artisanal landing sites, homes, fish smoke ovens, and marketplaces. Resources-users were directly involved in fishing activities because they had better knowledge of the challenges or issues connected to their daily fishing engagement.

3.3 Data Analysis

Descriptive statistics were used to analyse the results of the 150 questionnaires that were collected. To evaluate the roles of women in the artisanal fisheries sector, questions were typed in Google form software (manual input) per study area and later typed responses were received from the field officers. The analysed responses were transported to an Excel spreadsheet for further correction or editing. These responses on the Excel sheet were also translated into pivot tables that were broken down into the codes used in the analysis (plotting of graphs and tables).

4 RESULTS

This chapter presents the key results of the questionnaire administered at the six landing sites. A detailed explanatory analysis of this study is shown in the graphs and tables below.

4.1 Demographic results analysis

What section of the fish value chain do women play the most active role in?

In most communities, many women are married, except for Goderich, where the largest proportion are single women. Goderich is considered to be part of the country's capital city, and women are engaged in fish sales on a daily basis. Half of the fishermen in the community are migrant fishermen who are not emotionally attached to women. In the northern province, (Konakridee and Yeliboya) constitutes 60-76% of married women at the ages of 31-40 years, 8-20% are single, 4% are separated, 8% are widowed, and 4 and 8% are divorced. Whilst Shenge and Katta also constitute of 30-35% of women at the ages of 41-50 years and 51 and above are mostly widows who are part of the traditional community society. The Tombo respondents interviewed were married (48%), widowed, single (32%), and divorced (12%) (Figures 4 and 5).

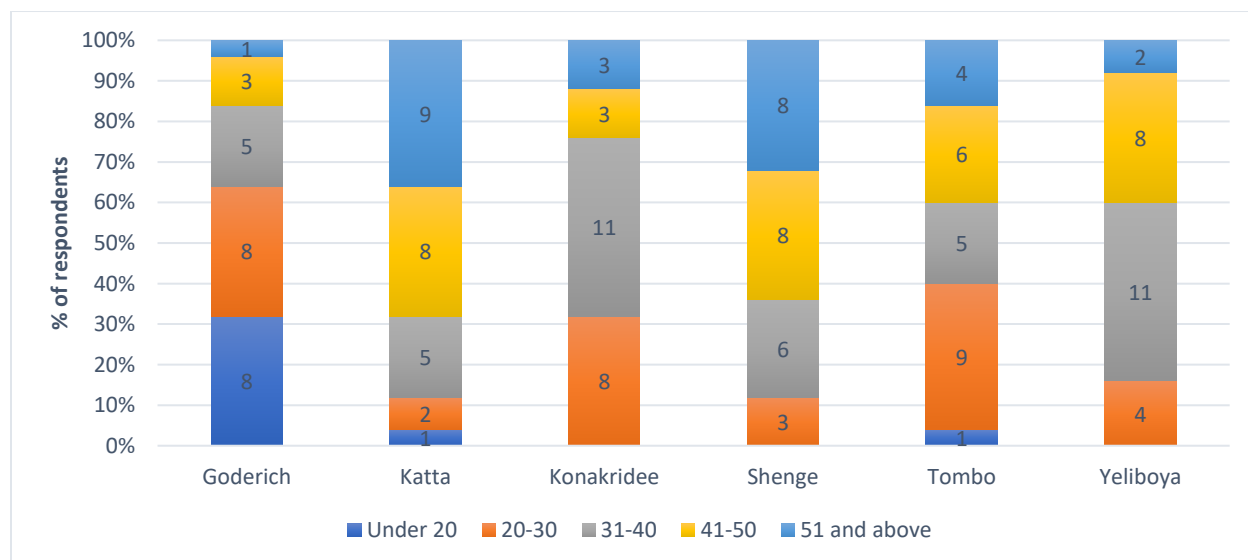


Figure 4: Age of Respondents.

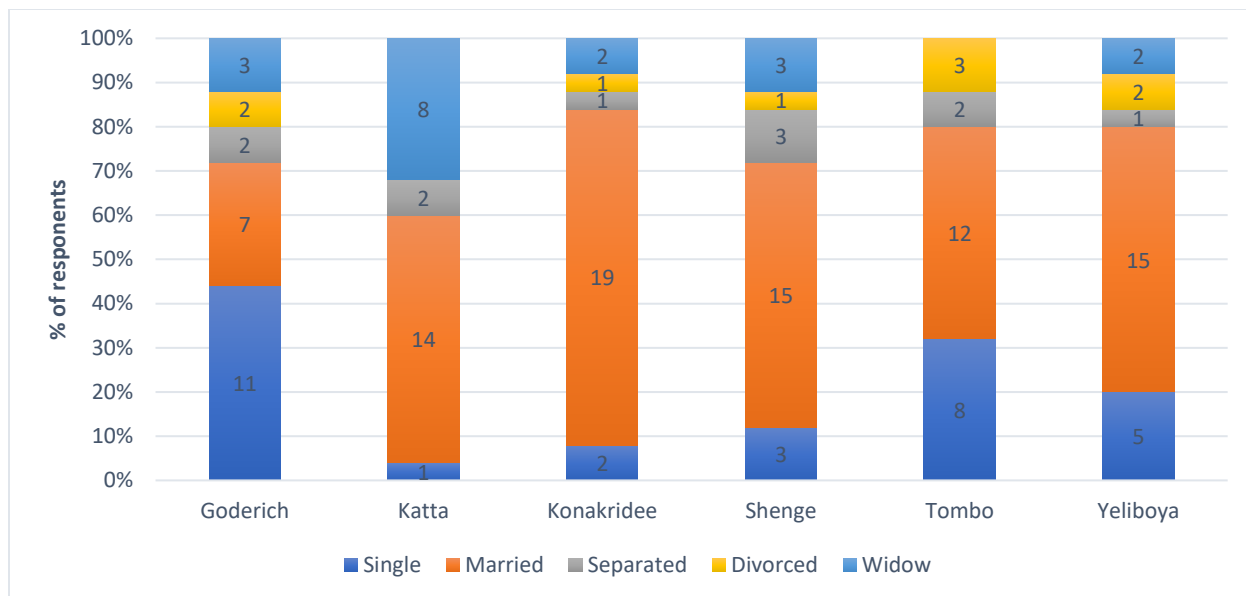


Figure 5: Marital status of respondents.

4.2 Community household population size

As previously stated about Goderich which has an influx of different incoming and outgoing people, 36% of single women fall in the category of one (1) child and 44% falls around 2-5 children with individuals of about 5-10 with the highest percentage of 72%. However, Tombo 40% and Shenge 48% fall under the category of 2-5 children with the same range of 44% each (5 to 10) individuals, respectively (Figures 6 and 7).

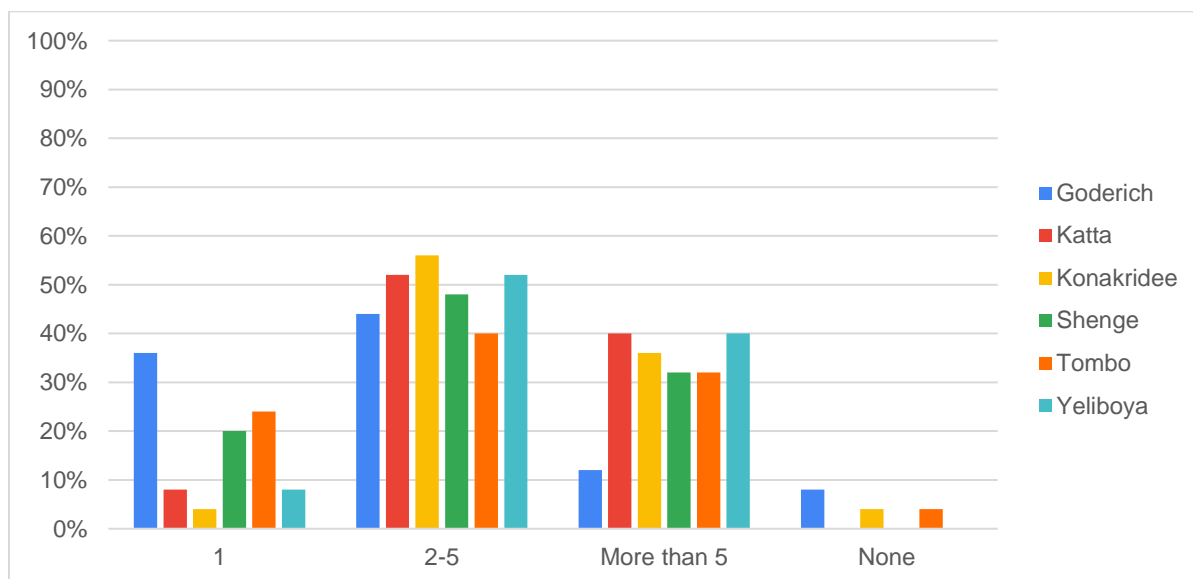


Figure 6: Number of children per household (categories) in each fishing community.

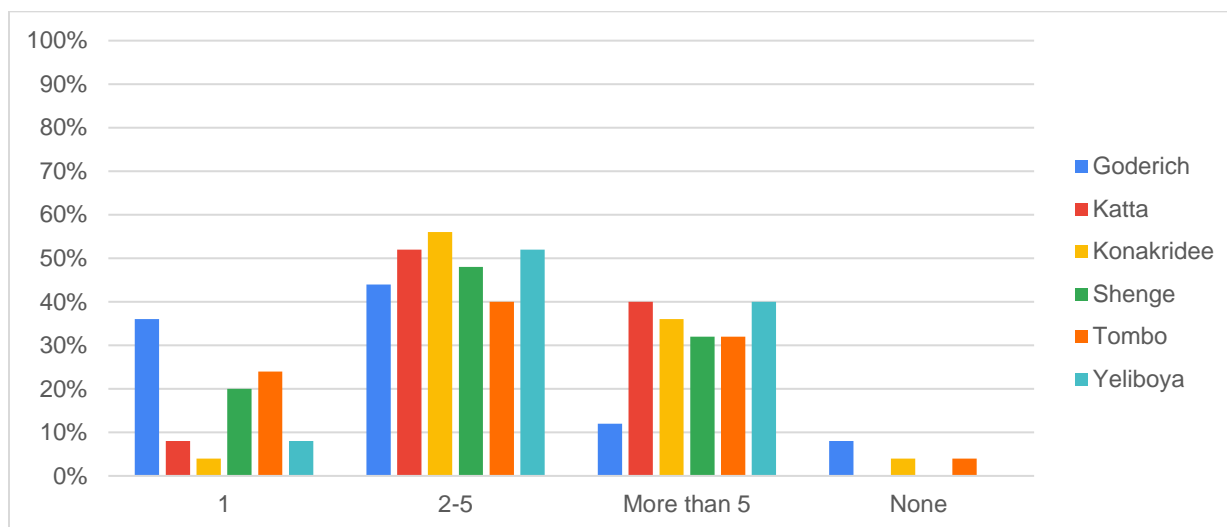


Figure 7: Household population size (categories) in each fishing community.

4.3 Family household responsibility (Bread winner)

Figure 8 shows that 52% of fisherwomen in the study areas are full-time breadwinners, while 48% partly support their partners/husbands in managing their domestic affairs. The highest proportion of full-time breadwinners were in Goderich (98%) and Yeliboya (76%). Shenge (76%) is the chiefdom headquarters for the Katta (72%) fishing community in the southern part of Sierra Leone, wherein most women are married and are partly taking care of their household in support of their husbands. There are some family responsibility similarities between Tombo and Konakridee which show in the percentage results that 52% are partly taking care of their family members' livelihood and 48% are full-time.

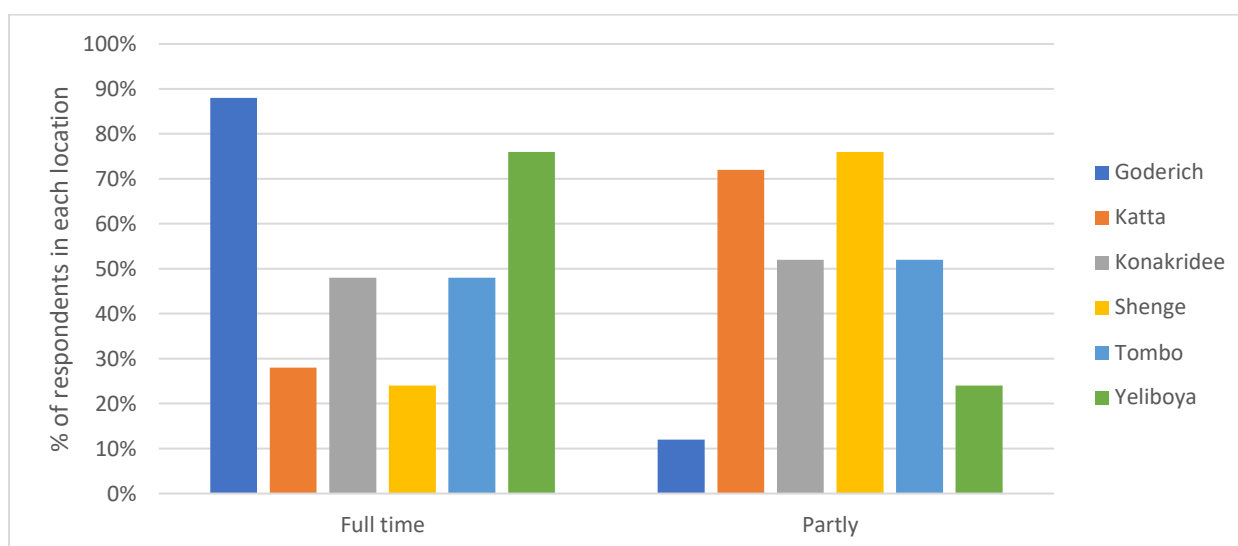


Figure 8. Family livelihood responsibility (Are you the bread winner of your family?)

Data combined for all the landing sites represent a clear indication that most women who are engaged in the fish value chain are illiterate (average 57%), followed by those with a primary education of 19%, secondary education of 14%, Islamic education of 7%, vocational training of 25%, and tertiary education of 0.6 %.

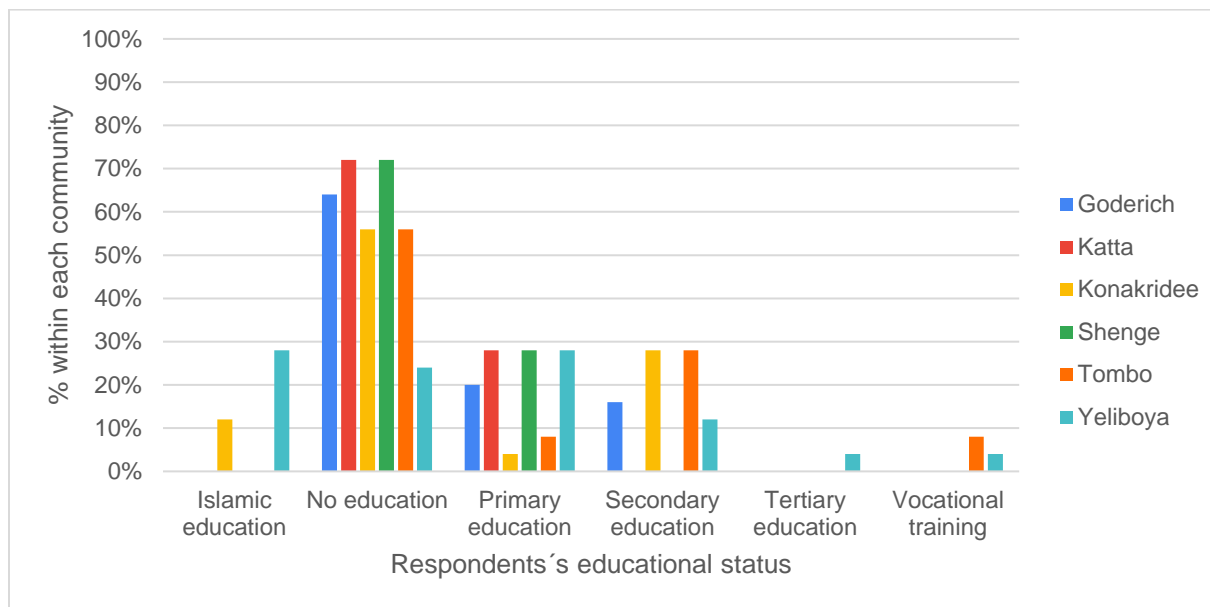


Figure 9: Educational status categories among small-scale fisher women in survey.

Artisanal fisheries women in the frequency figure below (Figure 10) represent their daily fishing activities engagement, showing that 1/4th of respondents is engaged in processing and selling their fish products. Goderich had the highest number of respondents engaging in catching and processing, followed by Tombo, Katta, Shenge, and Konakriddie.

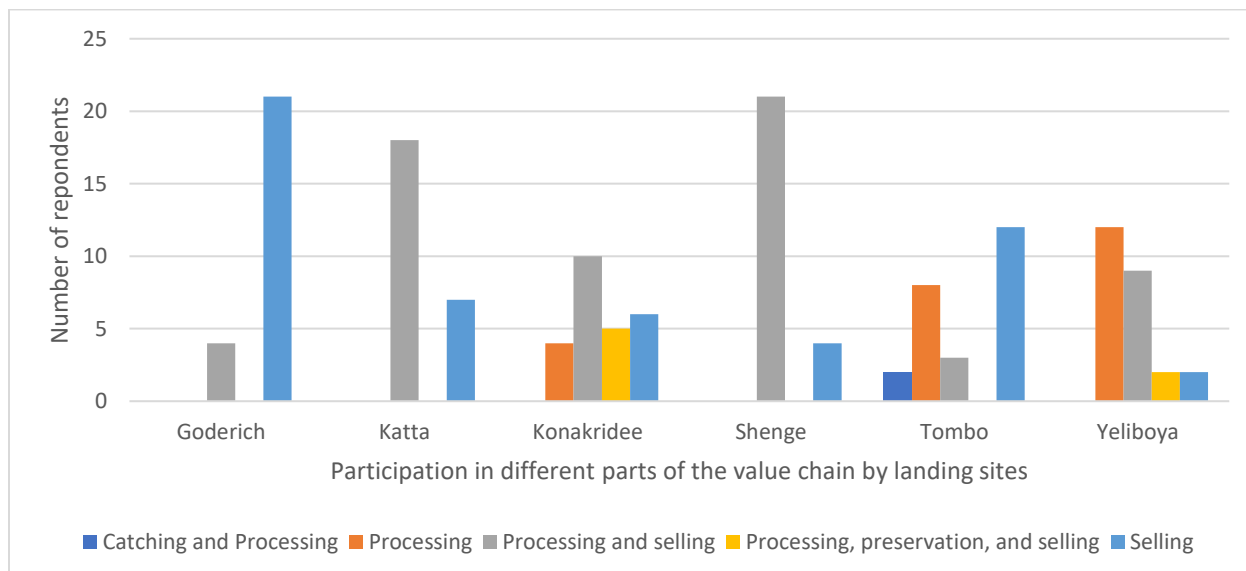


Figure 10: Activities women engaged in the landing sites (What types of activity (ies) in the fish value chain do you carry out?)

Table 1 shows the total length of service of women in small-scale fisheries which is between 3 and 5 years (29%), where Yeliboya obtained the highest at 52%, followed by Shenge at 36%, Katta at 28%, Goderich and Tombo at 20% each, Konakridee at 16% and above 5 years at 52%, and 1-3 years at 16%; the rest is clearly defined in the table below.

Table 1. Length of service (categories) of women in small-scale fishery (How long have you been working in this sector?).

How long have you been working in this sector?	Goderich	Katta	Konakridee	Shenge	Tombo	Yeliboya	Landing sites
Less than 1 year	16%	0%	4%	0%	0%	0%	3%
1-3 years	44%	8%	12%	8%	20%	4%	16%
3-5 years	20%	28%	16%	36%	20%	52%	29%

4.4 Fisherwomen's participation in community decision-making

In relation to women's community decision-making participation, the graph below (Figure 11) shows how involved they were. A total of 78% (NO) in all landing sites clearly shows that most women have been marginalized or limited in participating in community decisions and involvement in other important actions/matters wherein Shenge obtained 88%, Goderich at 84%, Katta at 80%, Yeliboya at 76%, Konakridee at 72% and the least among the rest is Tombo at 56%. However, the rate at which women are involved in decision making in their fishing communities shows responses of YES sum up to 24% in which Tombo represent 44%, Konakridee at 28%, Yeliboya at 24%, Katta at 20%, Goderich at 16% and Shenge at 12% respectively.

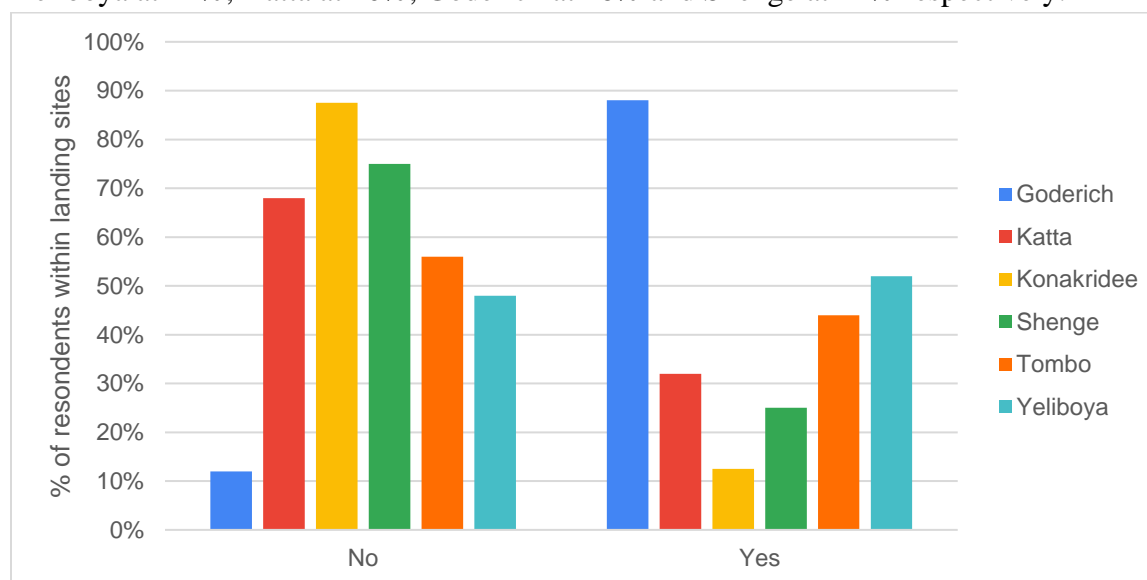


Figure 11: Fisherwomen's community decision making participation (Are you part of any community stakeholders' committees?)

Respondents were interviewed on whether they were part of community stakeholders' committees in decision-making, and the results show that fisherwomen from Katta obtained the highest response of being involved in the setting up of decision-making committees (further deliberations will be made in the discussion paragraph below). Figure 12 defines the respondents' freedom of speech in male-dominated community activities. In this research, a total of 63% is evident that women are sometimes allowed to speak their mind in male-dominated activities, 30% always, and 7% never.

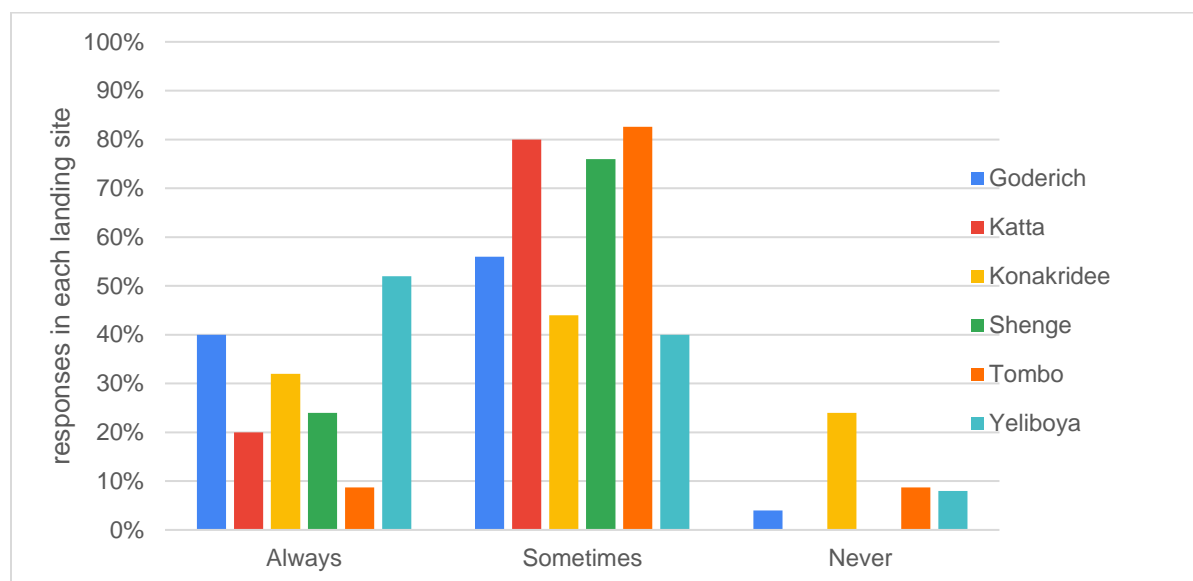


Figure 12. Respondent freedom of speech in male dominated activities (Are you allowed to speak your mind in the community, even if it is in male dominated activities?)

As it is evident in most research articles on the roles women play in household decision making, this study reveals how women play important roles in domestic affairs management which shows in the table below a total of 71% of fish processors/ mammies are participating in household decision making and 27% of responses represent women who sometimes have access to household decision making and the remainder can be seen in table 2 below.

Table 2: Fish processors access to household decision making (Do you have a say in decisions made within your household)?

Responses from fish women	Goderich	Katta	Konakridee	Shenge	Tombo	Yeliboya	All landing sites
Always	68%	84%	72%	80%	32%	88%	71%
Sometimes	32%	16%	24%	20%	64%	4%	27%
Never	0%	0%	4%	0%	4%	8%	3%

4.5 Women’s access to fish and costs

Figures below (13 and 14) define women’s access to fish, costs, and quality. Women in the Southern province (Shenge and Katta) buy and process bonga (Ethmalosa fimbriata) species at the sum of 76% and 88%, similar to Tombo (52%) and Goderich (60%). Similarly, in the Northern province, Konakridee (60%) fish women preferred more midwater pelagic species commonly called 'Good Fish' than all study areas and Yeliboya (56%) fish processors preferred Herrings. There is a lower percentage (8%) of good fish for Goderich.

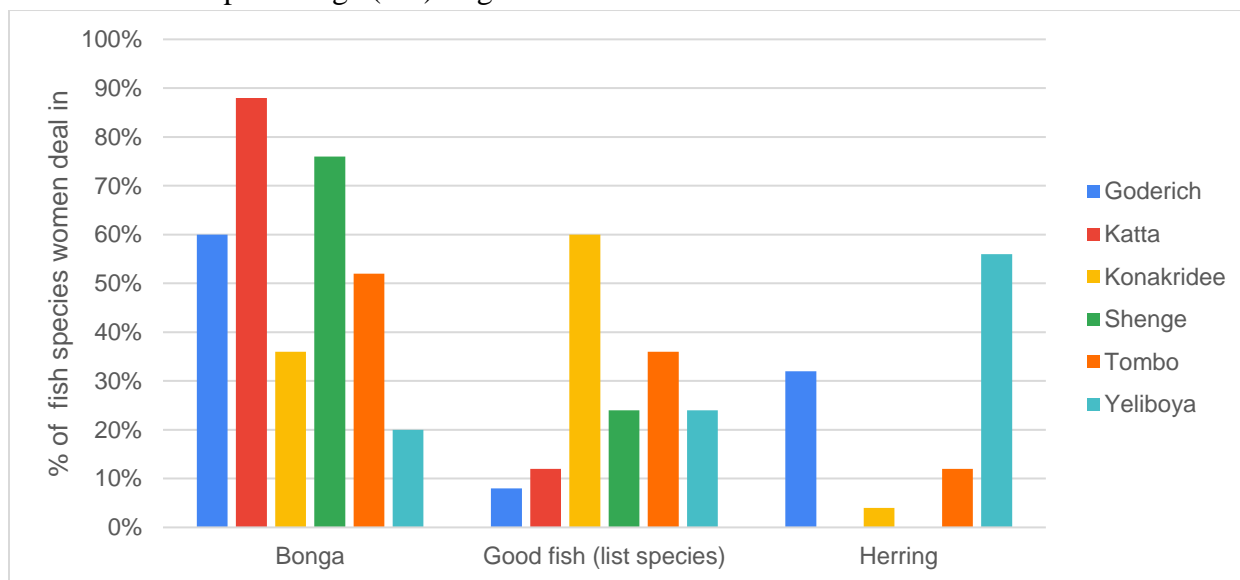


Figure 13. Fish species in womens’ business activities (Which fish species do you deal in?).

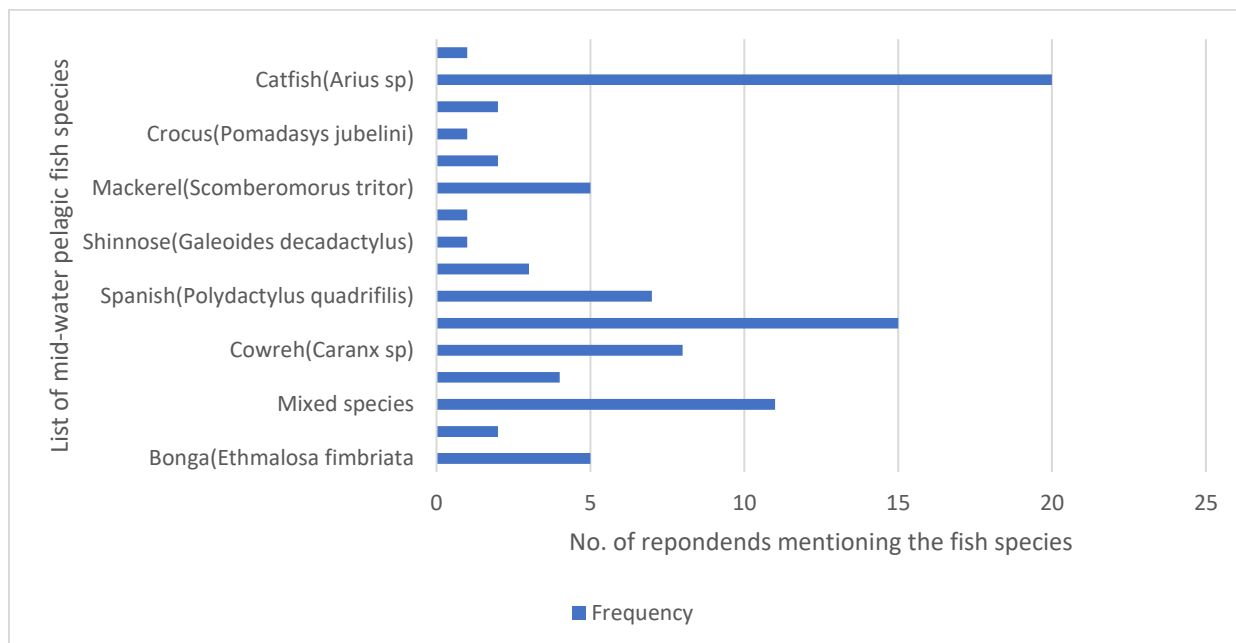


Figure 14. List of mid-water pelagic fish species women in the survey mostly targeted.

The graph below (figure 15) shows fisherwomen's and fishermen's customer relationships, wherein the total percentage of processors buying from anyone is 72%, while specific individuals carry 28%. Tombo (96%) and Goderich (92%) fish processors carried the highest percentage, followed by Yeliboya (76%). Shenge and Katta obtained the same percentage of 56%.

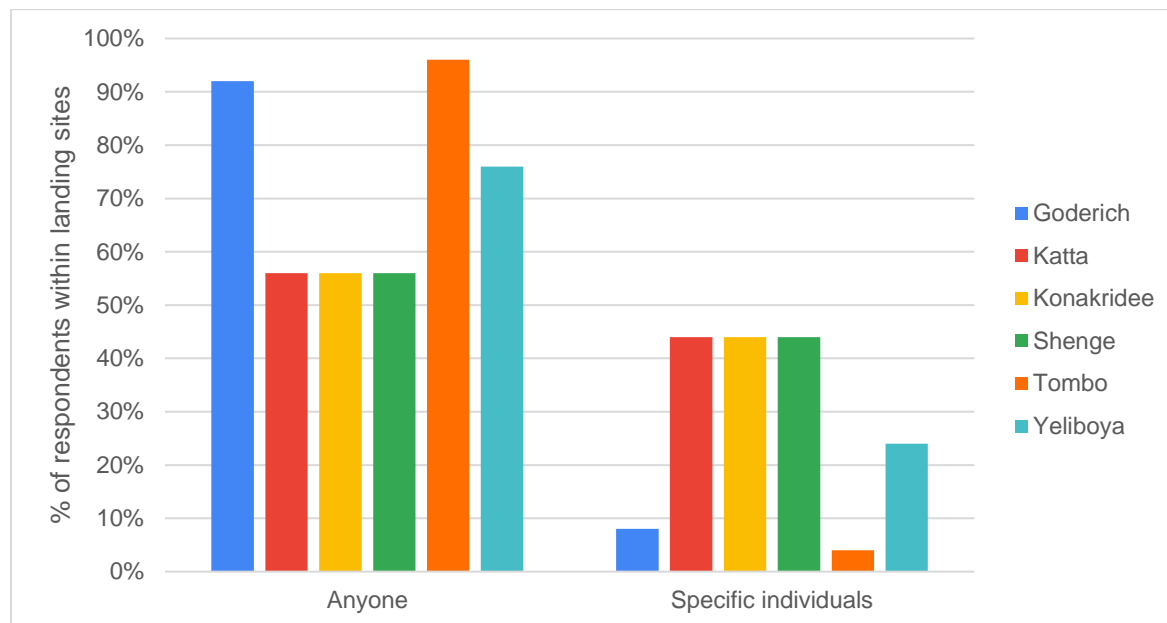


Figure 15. Fish processors and fishermen's fish trade relationship (Whom do you buy from?)

There is a clear interaction between processors and from whom they purchase their catch. When asked how the person is connected to them in accessing fish, the responses reflected that the method of accessing fish varied from one landing site to another, in which an in-depth interpretation could be seen in the discussion.

The length of service (business relationship) between fish processors/ mammies does not determine the reliability in dealing fish with specific individuals. This clearly shows from the respondents that 100% (3 years) of Tombo fish women do not have permanent customers in purchasing fish, followed by Goderich at 50% each (5 and 6 years), 27% at Katta where there is 12 years connection with landing site customers, 45% at Shenge (12 years), 9% each for Konakridee at 12 and 16 years of customer relationship, 33% (3 and 5 years) at Yeliboya, and 17% each (2 and 4 years), respectively.

Table 3 describes the reliability of the relationship between fish women and business partners (generally fishermen) that exists between the two parties. Tombo, Goderich, and Shenge represent a strong binding relationship with fishermen who are dealing in the fish trade which shows a percentage of 100% each (very reliable), with 83% at Yeliboya, 82% at Katta, and 73% at Konakridee also showing a very reliable relationship.

Table 3: Reliability in dealing in fish trade (How reliable is this individual in selling you fish?)

Fish Customer's reliability	Goderich	Katta	Konakridee	Shenge	Tombo	Yeliboya	Grand Total
Reliable	0%	18%	27%	0%	0%	17%	14%
Very reliable	100%	82%	73%	100%	100%	83%	86%

Figure 16 shows a representation of the sources of finance for fisherwomen in the study areas. Fish mammies have various sources of funding. According to the graph, 96% at Goderich and 64% at Tombo, 72% at Shenge, 80% at Yeliboya, 68% at Katta and 48% at Konakridee raise their own initial business startup capital. On the other hand, some fisher women obtain their source of funding from money creditors, which constitutes 52% in Konakridee, 36% in Tombo, 32% in Katta, 28% in Shenge, 20% in Yeliboya, and the least among them is Goderich at 4%. Most of the respondents interviewed did not borrow money from their customers when starting their businesses. Konakridee, with the highest percentages of 52%, 36% of Tombo, 32% at Katta, 28% at Shenge, and 20% of fish mammies at Yeliboya borrow money from their fish buyers' customers.

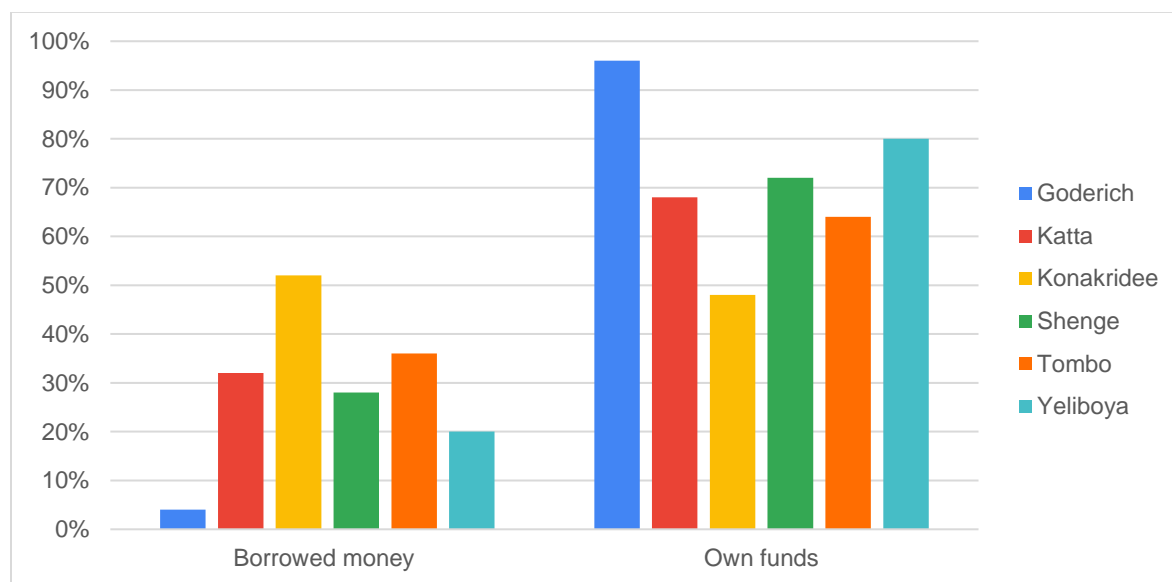


Figure 16. A graph showing the source of finance in buying fish.

Table 4 presents the question of how fish prices in the research areas are being determined, and 58 out of the 150 respondents confirmed that fish price is determined by the availability of catches, 40 responses by the quality of fish, 39 by the size of the catch, negotiations (7), fuel price (4), and others at two responses.

Table 4: Landing sites fish price determination (How is the price determined?)

	Goderich	Katta	Konakridee	Shenge	Tombo	Yeliboya	Total for landing site
Availability of fish	24	10	1	2	21	0	58
Catch size	1	12	3	21	2	0	39
Quality of fish	0	0	15	0	0	25	40
Negotiations	0	0	5	0	2	0	7
Fuel price	0	2	0	2	0	0	4
Other	0	1	1	0	0	0	2
Total	25	25	25	25	25	25	150

4.6 Effect of seasonal variations and fish abundance

Most island communities in Sierra Leone are heavily reliant on fisheries for income, food, and employment, and they have little capacity to respond to adverse climatic variations. This description provides a clear picture that respondents in these communities are knowledgeable about how seasonal variations affect their businesses. Figure 18 shows when the respondents were asked if they were affected in accessing fish and prices of fish and the responses are, a total of five fishing communities from the six accounted for 88% (YES) and 12% were from Goderich (NO). Fifty percent of the respondent group had vast experience of the months in which fish catches are abundant, that is, in June, followed by May (38%), January (36%), July (29%), and February (24%).

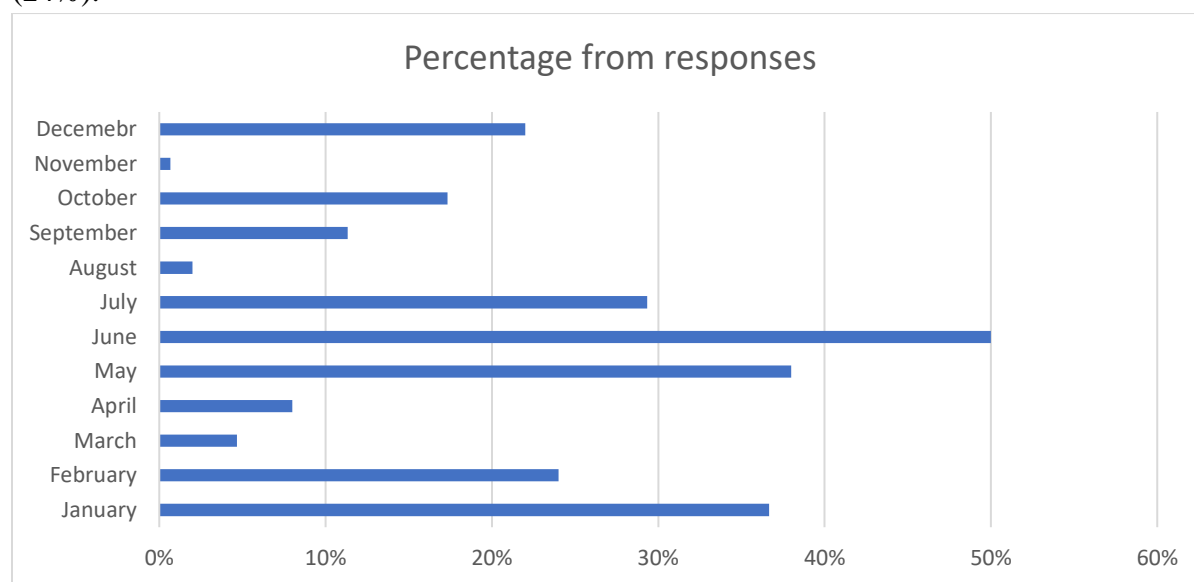


Figure 17. Periodic graph of fish abundance (If yes, in which month is fish most abundant?)

Women sell their processed fish at various market sales outlets, as shown in Figure 19. More than 50 respondents from these research areas market their fish products in the Tombo fishing community, and most are women from Shenge and Katta, whose means of transportation are only by sea. Sea and land transportation are the means of moving from one fishing community to another. Fish are transported from fishing communities to non-fishing communities using lightweight trucks and cars (communities with good roads). However, the only way to get from the islands (Yeliboya) to the mainland is by boat. The only communities that have easy access to the capital city and district towns are Goderich and Tombo, because of the infrastructural development (good road system) that has been constructed there.

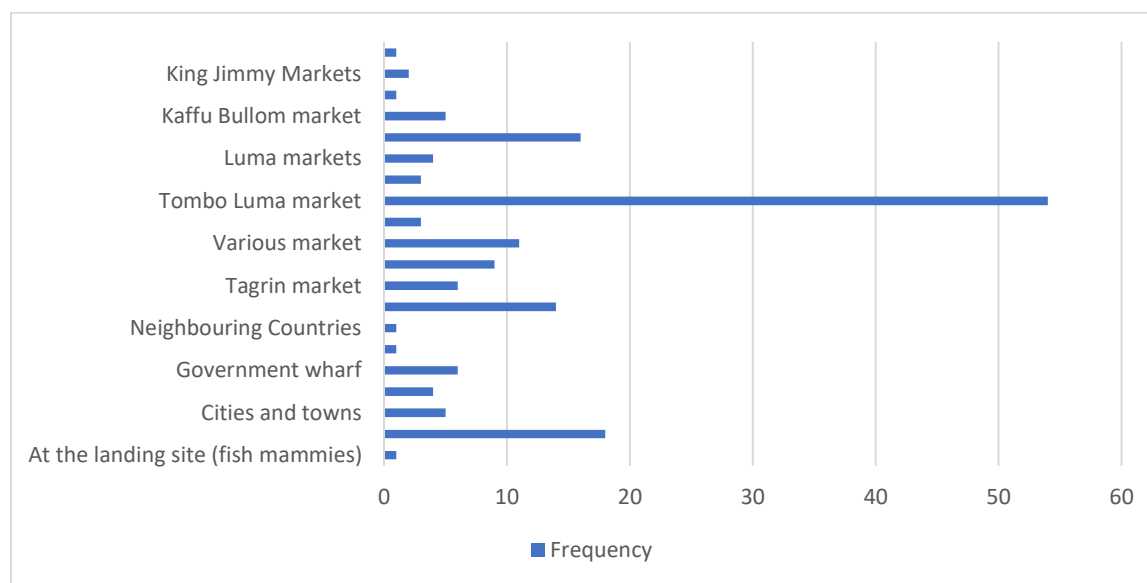


Figure 18. Fish market outlets/centres (Where do you sell your products?)

Fish traders in Sierra Leone market their products with different fish buyers, as shown in figure 20, depending on the location of the market centres. About 92% of the respondents in Goderich sold their fish to various buyers. This could be either at the landing sites (fish mammies), within the community market (Funkia market), or the city market centres, while Konakridee (60%), Katta (52%), Shenge (44%), and Yeliboya (40 %) also sell their fish to various buyers. Tombo and Katta fish traders are more attracted to provincial fish buyers at a total percentage of 25% whilst Yeliboya processors are well connected with fish traders from neighboring countries at 36%.

4.7 What benefits do women gain from occupational engagement and business ventures?

Figures 21 and 22 show the sources of finance for all six study areas. Fish processors/ mammies have various sources of fish trading funding. There is an indication in graph 23 and 24 that, fish women in the communities of Goderich (92%), Konakridee (84%), Shenge (76%), Katta (68%) disperse (NEVER) borrow money from their fish trader customers whilst Tombo (60%), Yeliboya (71%), and some percentage of 32% in Katta community sometimes borrowed money from their

business customers. As in the case of Tombo, fish processors acquire funding from women in fisheries groups, cooperative societies, social clubs, relatives, and friends. This also applies to other communities as well. Yeliboya, with the highest percentage, sometimes borrowed money from their fish business counterparts coming from neighbouring countries or district headquarters, town fish traders, or the aforementioned often help them purchase fish.

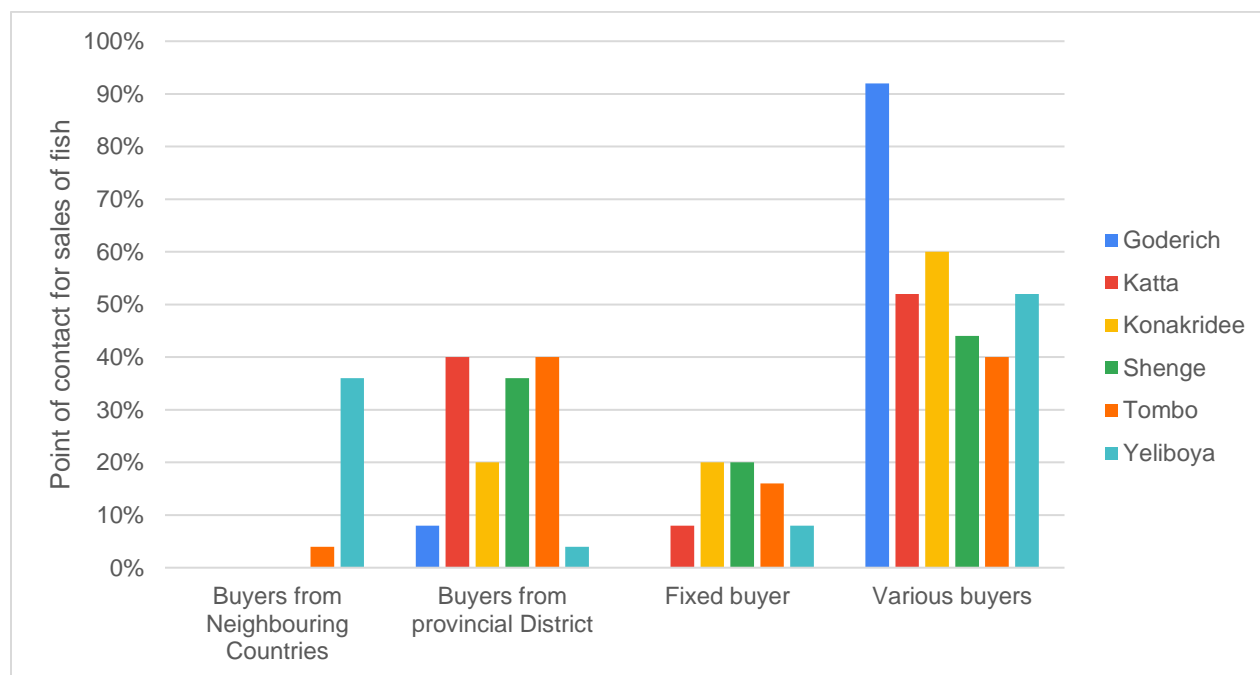


Figure 19. Respondent fish sale outlet customers relationship (To whom do you sell?).

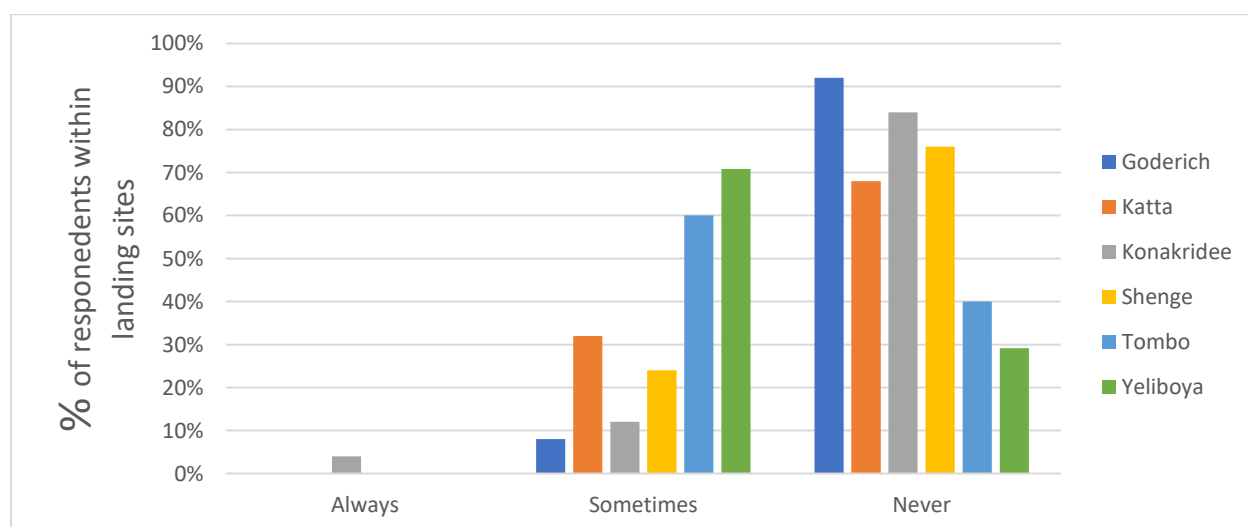


Figure 20. Respondent source of finance (Do you borrow money from your buyer for business activities?).

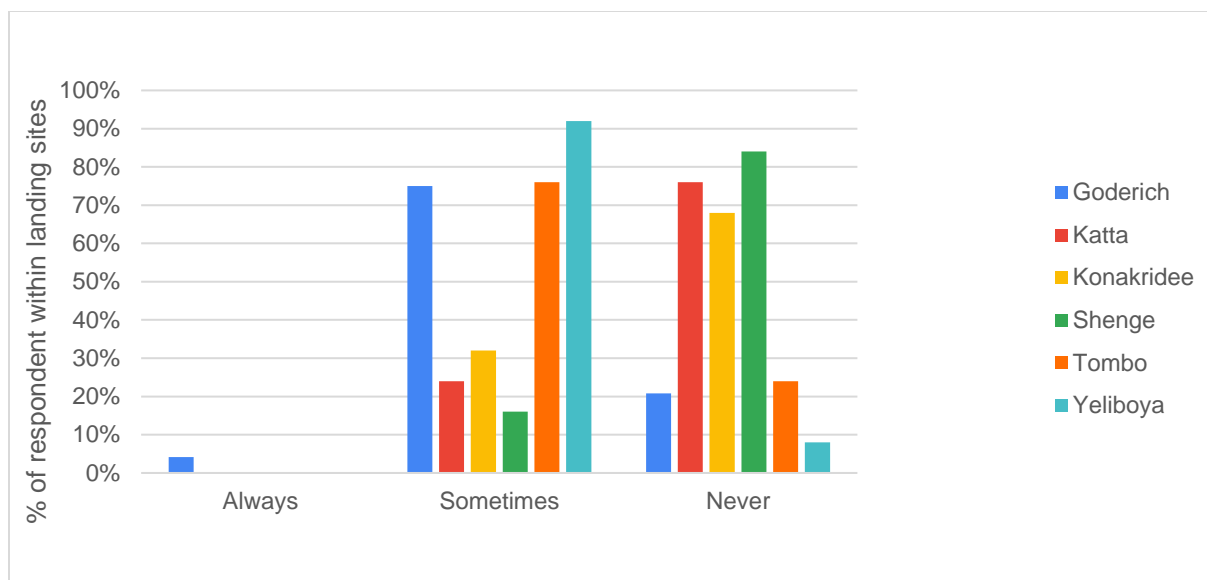


Figure 21: Respondent source of funding from buyer to fish seller (Does your buyer offer money in advance to maintain business relationships?)

The figures below explain that 74% of the responses show that fisherwomen earn some economic benefits (profits) and 26% earn a good profit. Unfortunately, most respondents profess their grief towards their small profit earnings which they said is connected to illegal fishing methods, overcapacity of fishing fleets, engagement by fishermen, and the establishment of Korean processing facilities in the artisanal fishing sector (figure 23).

Figure 24 shows the percentage of household income generated by the respondents. Fishing communities under the category of 30-50% of fish trade household income benefits are Tombo (63%), Goderich (50%), Konakridee (48%), Yeliboya (36%), and Shenge carried the least among the groups at 29%. Furthermore, responses from 50-70% of fish processors earning profit which enables them to contribute to their domestic affairs, are Katta at 56%, Yeliboya at 52%, and Shenge at 40%, while those with 10-20% obtained a total percentage of 6%, of which Goderich earns daily at 33%.

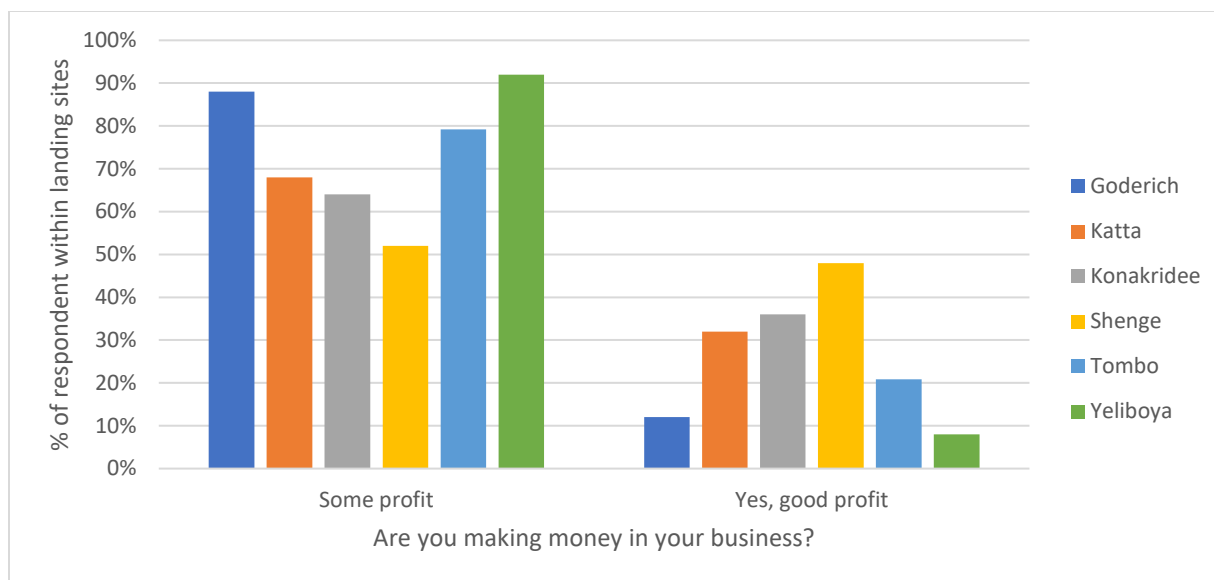


Figure 22: Respondent profit acquisition from fish trading (Are you profiting from your business?).

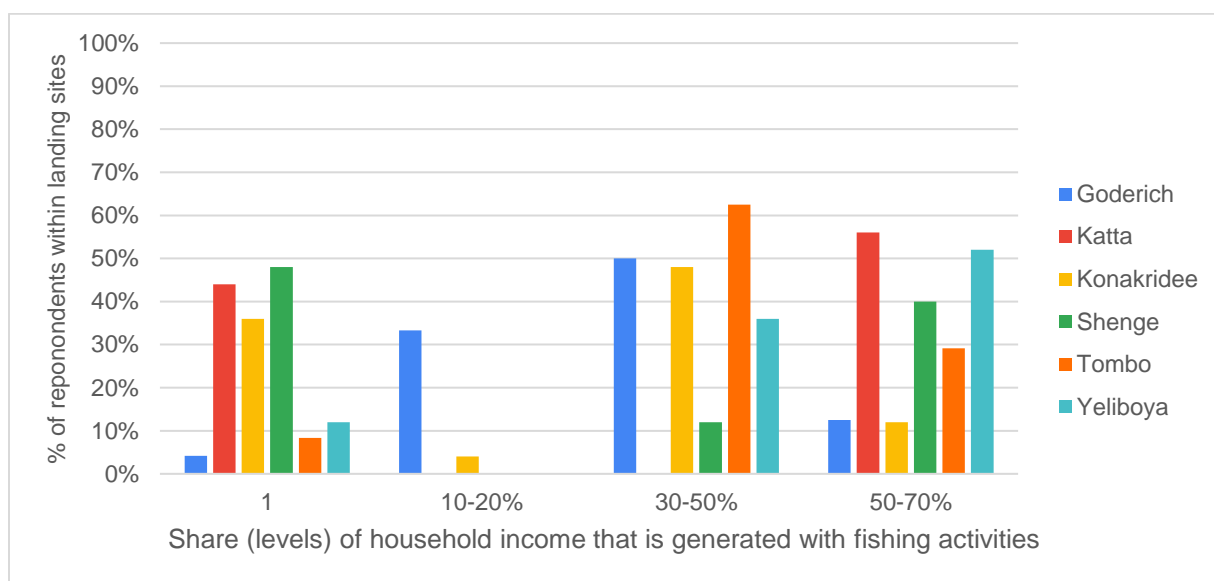


Figure 23: Percentage of household income generation from fishing activities (What percentage does fishing contribute to household income?).

4.8 Respondents’ alternative activities

According to the responses received in these communities from interviewees when asked if they were engaging in other trade aside from the fishing business, some gave positive and negative feedback. The negative feedback of No obtained a total percentage of 59% from women who only engaged in fishing activities, and Yes from 41% of respondents with alternative activities more than fishing.

4.9 Suggestions on sources of fish business improvement (How do you think your business could be improved?)

In this research result, respondents were asked to outline ways of improving the business, and up to 135 respondents (90%) requested that a micro-credit facility would be the best option to aid business improvement or development, while 46 respondents (31%) mentioned capacity building on fish processing, preservation, and business management, 30 respondents (20%) spoke of construction of improved smoke ovens, and 17 (11%), the construction of preservation facilities 10 respondents (7%) a good road network, good water facility, and good fishing practice, respectively.

4.10 Impact of romantic interest in women's role in the artisanal fisheries sector

This analysis represents romantic interest/advances from fishermen/boat owners to fisherwomen which has been a common occurrence in some fishing communities in Sierra Leone. In figure 25, the total percentage of those who gave a full response of YES when asked if they could give a remark on whether fishers in their community express romantic interest with female fish traders is, 97% of which Goderich, Tombo, and Yeliboya obtained 100% each, Shenge and Katta at 96%, and Konakridee at 92%. The total percentage of respondents who said No was approximately 3%. Responses from the figure below outline the magnitude of sexual harassment existing between the two parties which clearly defines the percentages that each community obtained: 48% for common responses, 36% for very common, 14% for neither common nor uncommon, and 2% for uncommon responses which shows that they are not aware of such practice. Figure 26 shows the women's answers when asked to speak out about their attitude to such advances and a total percentage of 48% occurs to be attracted (Goderich at 68%, Tombo at 56%, Konakridee at 48%, Katta at 50%, Shenge at 48% and Yeliboya at 20%), 36% of very attracted (Yeliboya at 80%, Goderich at 32%, Tombo and Konakridee at 44% each, Katta at 4% and Shenge at 8%), 14% of shy away (Konakridee at 4%, Katta at 42% and Shenge at 40%) and 2% of reject outrightly.

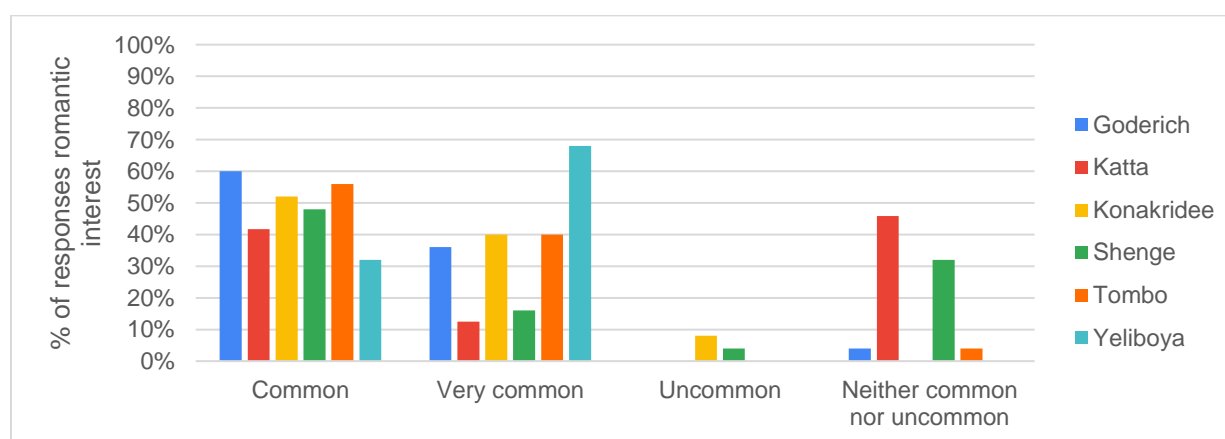


Figure 24: Fisherwomen's response on the magnitude of romantic interest in their fishing communities (How widespread are such activities?).

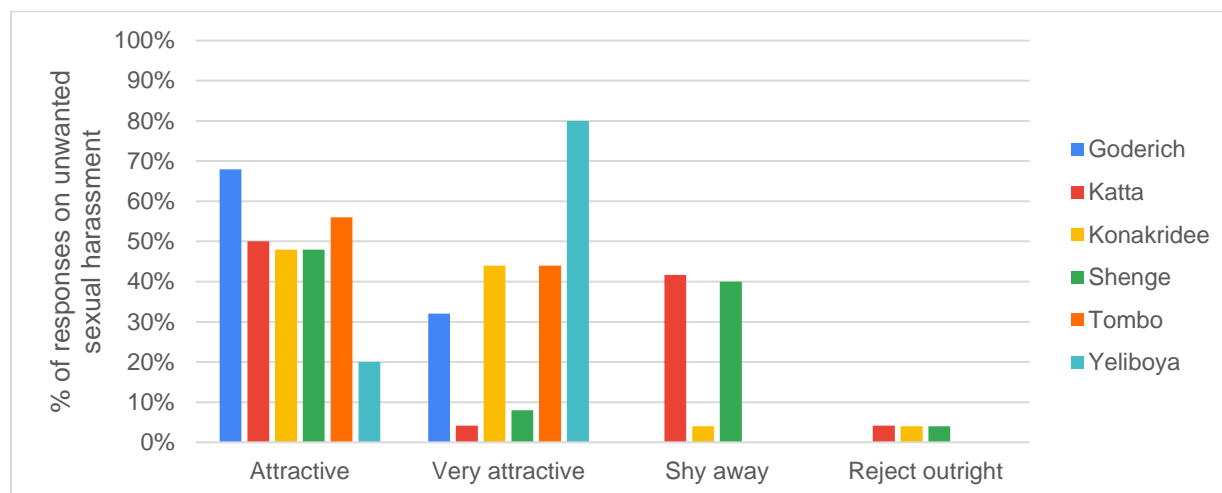


Figure 25: Shows female attitude towards romantic advances from fishermen (What can you say about female's attitude to such advances?)

4.11 Respondents with partners owning fishing crafts and gears (Does your partner have fishing crafts and gears e.g., vessels, net, machine?)

The research question above describes respondents' partners' fishing gear assets. Only few women own a small percentage of fishing gears in these study areas, and these are likely to be the fish mummies. The whole sample surveyed stated that 25% of women owned fishing gears and this is likely to be in communities of Shenge (48%), Katta (44%), and Goderich at 40% whilst 75% of respondents that do not own fishing canoes are Yeliboya at 92%, Tombo at 96%, Goderich at 60%, Katta at 56%, and Shenge at 52%. This implies that most respondents purchased fish on their own or borrowed money.

5 DISCUSSION

5.1 What section of the fish value chain do women play the most active role in?

This research is based on the hypothesis that women's roles and contributions to the artisanal fisheries sector in Sierra Leone are not recognised at many landing sites, and this requires more action to remedy this deficit of acknowledgement. Therefore, this study addresses socio-economic inequity and identifies activities that might be undertaken to help correct this situation. As a result, this study aims to provide a general perspective on women's involvement in local fishing businesses and the diverse roles they play in their communities. This work is in conformity with (Zhoa, Tyzack, Anderson, & Onoakpovike, 2012), and (Ameyaw, Breckworldt, Reuter, & Aherto, 2020).

Section 4 of this paper presents a series of information captured from the respondents in their locality and not all have the same view, and this is due to the geographical location, different traditional/cultural/social backgrounds, etc. The field questions were derived from the previously mentioned research questions, which are discussed below.

In connection with the age of fisherwomen in this sector, women aged 51 years and above engaged in either purchasing, or if they owned a fishing boat, handing over the catch to their daughters (age 20 to 31) to process and travel to big towns for trading. The majority of these women are widows or separated from their husbands, and these are mostly found in the southern coastal communities (Shenge and Katta fishing communities), who are also traditional rulers that fully engage in community decision-making, society activities, and counselling young married couples. Ages under 20 to 31 years are actively engaged in fish value chain activities, and these women are single mothers. Some of these respondents resided in the Goderich fish landing sites which are almost part of the capital city of Freetown. This community is surrounded by a different set of people engaged in various activities, such as military barracks, foreign migrant fishermen of Ghanaian and Senegalese, politicians, hotels, and restaurants. This has influenced many girls to drop out of school and caused a lot of fish mummies to lose control of their daughters and these are the most active women in fishing business rather than the aged women who are more in the high rate of full-time breadwinners than all research areas. Yeliboya, Konakridee, and Tombo fall under the age of 31–41 years. In the case of Yeliboya and Konakridee, women of these ages are hosts to migrant fishermen from Guinea and in country coastal communities. This is because most of these women's husbands are often involved in farming activities in other villages or travelling to Guinea seeking greener pastures, leaving their wives to take full responsibility for their household members. Most women in Tombo at this age are in full control of their business and are partly breadwinners, supported by husbands, fiancés, or relatives. However, this research agrees with (Osibona, 2001) who also stated that active women in fishing activities fall under the age of 20 to

34 years. According to the responses from the research areas, Konakriddie has the highest percentage of children (2-5) which is 58% with 44% of five to ten household individuals, while Katta and Yeliboya constitute more than 50% (five or more) children with five to ten household individuals.

The level of education in the marine artisanal fishing communities in Sierra Leone is quite disheartening, meaning that 57% of women who engage in the fish value chain in this sector are illiterate. This confirms the findings of Maravanyika, Mills, Asare, and Ameyaw (2016) that the education levels of women in Anlo Beach in the Western Region of Ghana are lower than those of men. However, an unpublished baseline study in a Value Chain Analysis report sponsored by the NEPAD/World Bank project through MFMR-SL in 2017 also revealed that education for fish women could be attributed to ethnicity, religion, and family commitments (principally large numbers of children). In general, older women are less likely to have received formal education at school, and this will be the case especially amongst Muslim families (the Islamic education).

Most women in the artisanal fisheries sector are the sole managers in their households which are limited to reproducing many children, unlike in the 1940s, 50s, or 60s. This is because of the high cost of education and meeting children's livelihood expectations. These women are highly dependent and focused on supporting their children's education rather than their husbands. Those in Yeliboya, Katta, Konakriddie, and Shange's children in Secondary School and Tertiary level reside in either the capital city or district headquarters pursuing their education, while the children of those in Tombo and Goderich who stay in western rural areas close to the city have various educational opportunities.

The fish value chain consists of various activities such as processing, catching, preservation, mending gear, and selling. Among the listed activities, processing and selling of fish is mostly the dominant fishing activity with which artisanal fisheries women are engaged and thus confirm (Ameyaw, Breckwolddt, Reuter, & Aheto, 2020), who also stated that the vast majority of women are engaged in fish processing and trade as their main source of livelihood. However, results obtained from respondents projected that Goderich, among others, is predominately occupied by fishing activities where women are more engaged in fish processing, catching, and selling their smoked or fresh fish, and this has been a source of income to fully support their families. A vast number of fish mummies in Goderich community preserved their fish product for hotels and restaurant operators, social programs, and people residing in the capital city easily with access or targeted quality fish daily for home and business consumption. Unlike women in the Tombo fishing community, who engage in dry or fresh smoking, icing, and salting fish for neighbouring countries, provincial, or city marketing. There are also incoming fish buyers that buy fish directly from boat owners, fishermen, fish mummies or fish processors. Fortunately, Tombo has been a host for fish and other food product market centres for Shenge, Katta, and other fishing communities that are challenged with bad road networks.

Notwithstanding, research from Ghana described the difference between a fishwife who could be a fish retailer since she deals with a small-scale business, while fish mammy deals with large-scale fish processing (Ameyaw, Breckwoldt, Reuter, & Aheto, 2020). The study further says that a fishwife could either be the wife or a female relative of the fisherman to whom he delivers his share of fish. These two groups of women serve as the link between fishermen and consumers, and there are some similarities in most landing sites where this research was conducted. Katta and Shenge coastal communities' fishermen's wives are in full control of their husbands, relatives, and customers' catches. Konakridee and Yeliboya customer's relationship with fishermen and husbands is relatively different from other landing sites. The fish mammies are dealing with migrant fishermen from Guinea and other coastal communities' fishermen as has been stated above. Unlike Tombo, fish mammies/ processors do not maintain a fixed customer, nor do they manage their husbands' businesses, while Goderich which has the lowest percentage of marital status, is available to all fishermen for fish accessibility, just as Tombo does not have permanent customers to buy fish. The mode of transportation of fish women to large towns to trade their processed fish mainly depends on the geographical location of the community, and Katta and Yeliboya are no exception. This has caused fish traders in these two communities to realise a low income/profit from their businesses. When interviewed, if they are making profit in their businesses, some respondents from these landing sites asserted that they realize some profit in the fishing business, the answers obtained were Katta at 68%, Yeliboya at 92%, Konakridee (64%), Tombo (79%), Goderich at 88%, and Shenge at 52%, and a total of 26% of responses with good profit is evident in all landing sites whereas Yeliboya and Goderich obtained the lowest percentages at 8% and 12% respectively.

5.2 What benefits do women realise in these occupational engagement or business ventures?

About two-thirds of the respondents in Goderich and Tombo raise their own initial business capital, while other study areas sometimes acquire funds from money borrowers, such as women's groups, community organisations, social clubs, relatives, friends, customers, and micro-credit facilities. When asked if they borrowed money from whom they sold their fish, 65% of respondents insisted that they did not borrow money from their fish buyers.

As stated earlier in my previous discussions, women are more involved in processing, selling, food processing to provide family nutrients, and preservation, and their input is almost non-existent. This is in conformity with the work of (Brown, 2022) who reported that in every fishing community in Sierra Leone, men, women, and children have clearly defined activities/roles to perform, wherein the actual fishing operation is performed by men.

In contrast to the Philippines, where women have traditionally collected invertebrates which can be found in coral reefs, mangroves and seagrass from the bottom of the waterways, they typically

use their hands to gather things like octopuses, squid, prawns, sea urchins and sea cucumbers, whilst in Sierra Leone, besides the role of being a housewife, women are now becoming involved in diverse fishing activities ranging from processor/trader to boat owners and even fishing along the beaches (beach seine) or sea rocks.

Among the listed alternative activities, what fish women engage most with, besides their daily fishing activities, is petty trading, which is very common in all fishing communities. Only 41% of processors in this survey engage in other activities such as selling of palm oil, Garri, soap making, and farming, and 59% of respondents are solely dependent on fishing activities.

Women's ownership of fishing gear and boats in the artisanal fishing sector is still growing at a low rate, considering the number of fish women seen in the six study areas and the percentage engaged in postharvest activities. A total of 25% of the sample surveyed owned fishing boats and gear exclusively, and 75% did not own fishing gear. Women who own gear and boats are mostly evident in Shenge (48%), Katta (44%), and Goodrich (40%) fishing communities.

Nevertheless, the artisanal fisheries in Sierra Leone are characterised by diverse fishing gear and crafts and are a major activity in all coastal districts which are dominated by men backed up by women. In this study, 41% of women's partners had fishing crafts and gear, and 59% did not own fishing crafts and gear.

5.3 How do women access fish resources and at what costs?

It is evident that artisanal fishing women contribute immensely to the Sierra Leone fishery sector. When asked how their businesses could be improved, respondents from three study areas (Tombo, Konakriddie, and Shenge) mentioned that fishermen should adhere to the rules and regulations of legal fishing practices. This has been another major challenge caused by the fishermen in their businesses, and most fishermen who do not have alternative businesses have suffered the most. There is a similar case with research conducted in the Delta state in Nigeria which stated that the traditional sources of livelihood of people in that community are no longer viable and have significantly declined owing to environmental degradation (Uduji & Okolo-obasi, 2020). A total of 138 women mentioned that governments or NGOs should focus on areas of access to micro-credit facilities, and they claim that this will ease their financial constraints. There are other important areas which they also outline, such as the construction of good roads, improved smoke ovens, good water facilities, preservation facilities, and capacity building for fish processing, preservation, and financial/business management. These findings reflect (Osibona, 2001) whose research stated that it is necessary to pay attention to project design that ensures that women remain involved and benefit from new technologies. There is also a need to improve road transportation to enhance mobility, and fishing communities should be provided with a social infrastructure.

In Sierra Leone, the economic activities undertaken by women have contributed immensely to the upkeep of numerous families and households (Olapade & Sesay, 2018).

This study also defined women's preference for fish species. According to the results analysed above, questions were asked to state the average number of dozens, cost of fish, and list fish species preference, and the responses revealed that women's scale of preference of fish is tagged into their earning, quality/value, quantity/availability of fish or lobbying/connection power, and thus familiar to (Ameyaw, Breckwoldt, Reuter, & Aheto, 2020), who revealed that women's access to fresh fish depends on kinship ties and the most dependable is marriage and is sustained by entrepreneurial skills. The highest cost for 'Good fish' purchase by women of the above-mentioned study areas is about Le 1,500,000 per dozen except that of Cousta fish (*Sphyraena sp.*) and Spanish (*Polydactylous quadrifilis*) where the cost ranges between Le, 400,000 to 700,000 per species whilst for Bonga at Le 5,000 to 15,000 per dozen and 40,000 to 70,000 per bowl depending on the size, quality, and quantity of the catch. Herring is at the cost of Le 2,500–5,000 per dozen, and 35,000–70,000 per bowl, depending on its size. Fish women from Goderich that sell fresh fish do not buy in large quantities because of a lack of preservation facilities and constraints of electricity to power the available freezers at the landing sites, and the same for fish sellers from neighbouring communities around Tombo.

The rainy season in Sierra Leone limits fishers' engagement in fishing activities due to bad weather, heavy storms, sea level rise, and erosion. Therefore, the daily catch during this season has low economic value and negative effects on food security and livelihoods in these coastal communities. This season causes high frustration in the daily activities of fish processors, which compels them to utilise their savings for managing their domestic affairs. This study discovered a wide range of price fluctuations occurring during the rainy season, depending on the availability of catch and the size rate of the fish species which could lead to high demand and cost.

It is well known all over the world that fish women support fishermen (husbands, family members, admirers, and customers) economically (by loan or utilising their savings), socially, and emotionally. According to this survey, this can be mostly observed in July, August, and September (rainy season). September is utilised for mending nets and the maintenance of machinery and fishing boats, while August is unwillingly a resting month due to heavy rains and storms.

Meanwhile, the reliability of the fisheries business between fishermen and women is sometimes dependent on the husband-wife strong relationship and social and economic ties; when respondents were asked how reliable the individuals/fishermen/boat owners are in selling them fish, 86% of respondents stated that their business counterparts are very reliable and 14% somewhat reliable. However, the strong relationship that used to exist between the two main actors in the fish value chain is no longer evident in this study. When interviewed about whether they always lend money to boat owners, responses revealed that 49% of women are shying away from funding their fishing

activities and 45% have had a source of financial support and method of refund or pay back which could either be in cash or catch.

5.4 How does romantic interest impact women's roles in the artisanal fisheries sector?

A FAO report revealed that cultural taboos and norms affect women in the fishery industry worldwide. In many developed and developing countries, fisherwomen are not permitted or encouraged to go out fishing because it is believed they can bring setbacks during their fishing activities (Monfort, 2015). This has caused huge competition between middle aged processors, fish mummies and young girls in buying or accessing fish from either boat owners or fishermen in general. Meanwhile, the occurrence of romantic advances from fishermen to fisherwomen differ from one community to another and this is similar to (Gunther, 2019) who stated that in many areas in Malawi, “fish-for-sex” is commonplace, although the way it occurs often differs. According to the findings of this study, 48% of the respondents in the study areas answered that romantic interest/advances were common, 36% responded that they were very common, and 14% were neither common nor uncommon. One-third of the women in the survey revealed that they use advances in romantic interest as an easy way to access fish from boat owners or fishermen. The accessed catch could be used for trading, household consumption, or taking control of the landed catch to sell to other fish processors and this scenario is related with fish mummies (51 years and above) and middle-aged women (31-41 years) whilst young women (20- 30 years) either within the communities or coming from towns and the city are also attracted to these men either for money, catch or the expectation of a long lasting relationship that could lead to marriage. Sixty-eight percent of women in Yeliboya show that romantic interest is very attractive because they manage their household affairs and expenses. There are responses from this survey that also demonstrate women's attitude in experiencing unwanted attention (harassment) from any fishermen or boat owners, and it reveals that the women in Goderich (60%), Katta and Tombo (56%), Konakridee (44%), Shenge (36%) and Yeliboya (24%) are sometimes experiencing unwanted sexual harassment from fishermen or boat owners and it shows respondents in Goderich (60%), Katta and Tombo (56%), Konakridee (44%), Shenge (36%) and Yeliboya (24%) are sometimes experiencing unwanted sexual harassment from these men and most of the respective women are already in some type of relationship. However, there are processors whose responses are that they have never experienced sexual harassment from fishermen.

Romantic interest in some fishing communities could be a major challenge which, in some cases, depending on the magnitude of the matter, could cause fights between the women which could sometimes lead to damage or death. When interviewed, if there are any responses from community stakeholders in such situations, their response is the prompt intervention of community stakeholders such as police, traditional leaders, harbour masters, and master fishermen, and the correct action is to request the involvement of the Sierra Leone Navy and immediate action either by levying fines with money, or the security officer should apprehend defaulters for further justice or settlement.

Finally, it is worth mentioning the work of (Gunther, 2019) who states that sometimes women use sex as a direct payment, as a bonus, or a 'fine' for failing to repay a loan, which agrees with this study that when fishermen lent fish to processors who failed to repay, they easily requested sex as payment. In this way, fishermen and boat owners take advantage of women's vulnerability when they are scared, especially when their families are at risk of going hungry. This manifests in the form of bargaining for sexual favours.

6 CONCLUSION

Women who work in the fisheries industry have complementary livelihoods because their income derived from fishing is complemented by other forms of self-employment, such as managing a small business and sharing resources and income within the household (Thorpe, 2014). The roles of women in the artisanal fisheries sector, families, and their communities are undeniably important. In view of this, the government of Sierra Leone, through the Ministry of Fisheries and Marine Resources, community organizations/associations, and other important MDAs/agencies, must tackle the issue of women being marginalised in community decision-making due to a continuous increase in awareness among fishermen. Another relevant area that affects women and needs urgent intervention is infrastructural facilities, such as processing, preservation, good road networks, and medical and good water facilities. Almost 90% of fisherwomen are desperately in need of the above-stated facilities.

It would be beneficial for fisherwomen if MFMR had close cooperation with the Ministry of Gender Affairs and the Ministry of Health and Sanitation to alleviate the problem of sex for fish which, among other things, contributes to the spread of vulnerable diseases in major coastal communities.

Furthermore, it is important for MFMR to collaborate with the Ministry of Education and other partners in introducing adult education centres and technical institutes for school-dropout girls. More interventions from governments and national and international NGOs have benefited women in capacity building in both developed and developing coastal countries. This is one of the key issues that the women in this study area emphasise as important: to be fully equipped with training connected to fish value chain activities, and more specifically, business/financial management. Training of this kind may help them increase their profit margins and, in turn, reduce the poverty rate.

In conclusion, women in artisanal fisheries have already established groups/social clubs and benefit from the initiatives of these groups, such as raising business capital. According to their responses, the survey in this project dealing with alternative trading was more focused on availability or access to micro credit loans which, according to their recommendation, will be of great advantage to the growth and sustainability of their businesses and families as well.

7 RECOMMENDATIONS

The artisanal fishery is dominated by men, while women dominate the post-harvest sector, although there are some female financiers of fishing operations and boat owners. Generally, fish stocks have been declining in Sierra Leonean waters due to open access to fishing grounds, with no effective management system in place. This is caused by the overcapacity of the fishing fleet, overfishing, use of illegal fishing nets, and catching of juvenile fish. This not only results in a loss of access to high catch production rates, which is the primary source of revenue for women, but also in the loss of social cohesiveness, livelihood systems, and other job prospects, further intensifying the gender gap.

In view of the above statement, a number of recommended actions are put forward below to be considered when developing action strategies for the national programmes for women's roles in the artisanal fisheries sector:

The government of Sierra Leone through the Ministry of Fisheries (policymakers) and political leaders must attain/support a sustainable fisheries management system and the enforcement of the legal tools and policies being developed in the research areas (Northern, Southern, and Western coastal communities) in eradicating the logging/deforestation of mangroves, and mitigation of disaster-prone coastal communities, to ensure that fish supply is available which will maintain the activities of fisherwomen.

However, fish mammies in some coastal communities have gained vast knowledge of fishing activities/methods, post-harvest losses, and other relevant activities occurring in their communities which policy makers and donors can focus on utilising by training upcoming fish processors and other relevant actors in the fish value chain. Over the years, women have been the pillar of the fishing business arena, but little effort has been made by the government to ensure their full participation in community matters in decision-making, climate change mitigation, and adaptation process-related activities in all coastal communities.

Finally, the government (MFMR, Local Government Ministry, and Ministry of Gender Affairs) should include favourable women's roles and mainstream roles in all projects, programmes, policies, and strategies. Training should be provided on processing standards and best practices, paving the way for exporting fishery products to the EU market. Providing training in advocacy techniques and community home management would also be applicable.

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10 APPENDIX

GRO-FISHERIES TRAINING PROGRAMME PROJECT WRITING QUESTIONNAIRES

RESEARCH TOPIC: Evaluating the Role of Women in the Artisanal Sector of Sierra Leone

ANNEX 1: STRUCTURED QUESTIONNAIRE

Name of landing site.....DistrictDate.....

Questionnaire no....

Name of researcher: Kadiatu Seaport Kamara

Introduction:

The researcher is conducting a study to evaluate the roles of women in fisheries and how to maximise their participation, empowerment, and recognition in the artisanal sector in Sierra Leone. The research is part of the final project in the GRÓ Fisheries Training Programme under the auspices of UNESCO.

The purpose of this questionnaire is to identify and document the specific and potential roles of women in the sector to identify gender empowerment and equality opportunities in the sector. This study also aims to identify challenges and opportunities for improving women's engagement in the sector related to issues such as fish processing, trade, fish monger (mammies) participation, financing, and boat owners. The interviews will be anonymous, and no answers can be traced to any participant. The interview will take around 20 minutes to complete. Your participation/contribution is highly appreciated but will be entirely voluntary.

DEMOGRAPHIC DATA/ SOCIO ECONOMIC CHARACTERISTICS

1. What is your age?

- <20
- 20-30
- 31-40
- 41- 50
- 51 and above

2. Marital status?

- Single
- Married
- Divorced
- Separated
- Widow

3. How many children live with you?

- None
- 1
- 2-5
- More than 5

4. Are you the bread winner of your family?

- Full Time
- Partly

5. If not full-time bread winner, who else is responsible?

(1) (2) (3)

6. How many individuals live in your house?.....

7. What is your educational status?

- No education
- Primary education
- Secondary education
- Vocational training
- Islamic education
- Tertiary education.

OCCUPATION

8. Which types of activity (ies) in the fish value chain do you carry out?

- Catching
- Processing
- Preservation
- Mending gear
- Selling fish
- Others

9. How long have you been working in this sector?

- Less than 1yr.
- 1-3yrs
- 3-5yrs
- 5 yrs. and longer.

COMMODITY ACQUISITION

10. How many dozens of fish do you buy daily on average?
11. Which fish species do you deal in?
- Bonga
 - Herring
 - Good fish (list species)
12. How much do you pay per dozen of fish? State in Leones.....
13. Who do you buy from?
- Anyone
 - Specific individuals
14. If you buy from specific individuals, please answer questions 15, 16, and 17
15. How is that person/those persons connected to you?.....
16. For how long have you traded with these individuals?
Number of years.....
17. How reliable is this individual in selling you fish?
- Very reliable
 - Reliable
 - Neither reliable nor unreliable
 - Unreliable.
 - Very unreliable
18. How is the price determined for the fish you buy (get details)?.....
.....
19. How do you pay for the fish so received?
- Own funds
 - Borrowed money (if so from whom?)
 - Other (get details)
20. Are there seasonal variations in fish supply?
- Yes
 - No

21. If yes, in which months is fish most abundant? -

22. Do these seasonal variations affect your access to fish and prices of fish?

- Yes
- No

23. If yes how?.....

COMMODITY DISPOSAL

24. Where do you sell your products.....?

25. To whom do you sell?

- Fixed buyer
- various buyers
- buyers from provincial District
- Buyers from Neighbouring Countries

26. Do you borrow money from your buyer for business activities?

- Always
- Sometimes
- Never

27. Does your buyer offer money in advance to maintain business relationships?

- Always
- Sometimes
- Never

28. Are you profiting from your business?

- Yes, good profit
- Some profit
- No profit

29. What percentage does fishing contribute to household income?

- 10-20%
- 30-50%
- 50-70%
- 100%

30. In addition to fishing, do you have other sources of income?

- Yes
- No

If yes, what?.....

31. How do you think your business could be improved?

.....
.....
.....

RELATIONSHIPS AND ACCESS TO FINANCIAL SERVICES/CREDITS

32. Do you lend money to boat owners?

- Always
- Sometimes
- Never

If always or sometimes, how much per year?.....

On which conditions?

.....

33. How do they normally pay back?

- Cash
- Fish
- Other method

34. Do boat owners also credit you with their catch allowing you to pay after sale?

- Always
- Sometimes
- Never

35. Any other relationship with operators that enhances your business such as getting priority for catch from in-laws, friends, relatives, admirers etc.....

36. Are you a member of any group in relation to your business? (Provide type and activities)

.....

37. Could you remark on whether or not fishers in your community have romantic interesting in female fish traders?
38. How widespread are such activities?
- Very common
 - Common
 - Neither common nor uncommon
 - Uncommon
 - Very uncommon
39. What can you say about female's attitude to such advances?
- Very attracted
 - Attracted
 - Shy away
 - Reject outright
40. Have you experienced unwanted attention (harassment) from any fisherman or boat owner?
- Often
 - Sometimes
 - Never
41. Are there any responses from community stakeholders in such situations?
.....
.....

COMMUNITY INVOLVEMENT IN DECISION MAKING

42. Are you part of any community stakeholder committees?
- Yes
 - No
43. If yes, which one?.....
44. Are you involved in any decision-making committee in this community?
- Yes
 - No

45. Are you allowed to speak your mind in the community, even if it is in male dominated activities?

- Always
- Sometimes
- Never

46. Do you have a say in decisions made within your household?

- Always
- Sometimes
- Never

FISHING CRAFT AND GEARS OWNERSHIP

47. Do you own fishing gears e.g., vessel, nets, machine etc?

- Yes
- No

48. Does your partner have fishing crafts and gears e.g., vessel, net, machine etc?

- Yes
- No