# Survey on Small-Scale Trade in Artisanal Fisheries in Ghana:

# Assessing Gender Dimensions in Fish Marketing and Trade for Inclusive Development

**Final version**

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## Table of Contents

## List of Figures

## List of Tables

## Acknowledgements

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## Abbreviations

| | |
|---|---|
| **AMA** | Accra Metropolitan Assembly |
| **CSIR** | Council for Scientific and Industrial Research |
| **CBFMCs** | Community-Based Fisheries Management Committees |
| **EPA** | Environmental Protection Agency |
| **EU** | European Union |
| **FAO** | Food and Agriculture Organization of the United Nations |
| **FC** | Fisheries Commission |
| **FMC** | Fisheries Management Committees |
| **FRI** | Food Research Institute |
| **GSS** | Ghana Statistical Service |
| **IUU** | Illegal, Unreported, and Unregulated |
| **KII** | Key Informant Interviews |
| **MoFAD** | Ministry of Fisheries and Aquaculture Development |
| **PHC** | Population and Housing Census |
| **USA** | United States of America |
| **VMS** | Vessel Monitoring System |

## Executive Summary

The value of Ghana's fish and fish products export was about USD 254 billion in 2022. The role of artisanal fisheries sector cannot be discounted as it forms the backbone of the fishing industry in Ghana, contributing significantly to food security, employment, and poverty alleviation. The fisheries sector in Ghana employs over three million people along the value chain, with the artisanal fisheries sector accounting for about 2 million of this population. Within the sector, women are responsible for many fish-related activities along the value chain, particularly fish processing and marketing. Despite this, many women fish traders cannot take full advantage of markets and trade opportunities, especially in the formal sector, as they often lack technical capacities in the distribution, preservation, and safe food handling practices. The gender dimension in fish trade and marketing in Ghana is thus a critical aspect of the country's fisheries sector.

This study was carried out among small-scale fish traders employed in the artisanal fisheries sector in Ghana to collect and analyze gender and socio-economic dimensions of fish marketing and trade. By employing a mixed methods research design, we spoke to more than 1500 traders in Ghana's artisanal fisheries sector and interviewed 16 key informants from key institutions within the fisheries value chain. The surveys were conducted in community markets in Adabraka, Anyaa, Ashaiman, Kaneshie, Madina, Makola, Mamobi, Nima,Tema, Prampram and Kpone in the Greater Accra region, Akosombo and Kpong in the Eastern region and Dzemeni and Kpeve in the Volta region. The key informants included service providers (trainers, extension services providers, market managers, cooperatives); research, regulators, and development organizations involved in the fisheries sector including officials from the Fisheries Commission, Ministry of Fisheries and Aquaculture Development, the Council for Scientific and Industrial Research, Ministry of Food and Agriculture and the National Fishers, Processors and Traders Association.

The study finds that fish processing, trade and marketing are important activities particularly among women in the small-scale artisanal fisheries sector. The percentage of self-employed individuals (93.93%) within the artisanal fish trade and marketing sector was high, indicating a significant level of entrepreneurship and independent business ownership within the industry. The experience levels of fish traders were also relatively high, which points to the wealth of expertise and knowledge within the value chain but also indicates that the sector does not attract or offer opportunities for the youth. The livelihood strategy of households involved in the artisanal

fisheries sector showed a well-diversified outlook as traders and their household members were engaged in a host of other productive activities, both within and outside of the fisheries value chain. Perhaps not surprising, men traders were more engaged in fishing and fish farming compared to women traders, while women were more involved in fish processing and marketing activities. There was no significant relationship between limited engagement in productive activities and women engaged in rural or urban markets, although 80.62% of women in urban areas are engaged in productive activities compared to 19.38% in rural areas.

The main fish species and products sold by the surveyed respondents included fresh and processed salmon or chub mackerels (Scomber japonicus), tuna (Genus thunnus), blolovi (Chrysihthys), fresh and smoked herrings (Clupeidae), and fresh, salted and smoked tilapia (Oreochromis). Fresh fish sale in the artisanal fisheries sector is from cultured and marine sources (e.g., tilapia and catfish from cultured sources and grouper fish, cassava fish, tuna, silverfish, red fish, doctor fish, octopus, butter fish, red snapper, eel, and squid from marine sources). Smoked, fried, dried, fermented and or salted fish are mostly from inland sources. The source of fish and fish products for traders was mostly wholesalers (65%), fisher folks (35%), own production (4%) and other fish traders (4%).

In terms of revenue, small-scale artisanal fish traders enjoyed increased revenue in high seasons (an average of GHS 6,500.00) than in the lean season (an average of GHS 5,000.00). The study finds that the majority of fish traders in the artisanal sector (65%) were not affiliated with any business association or stakeholder organization. This suggests that a significant portion of traders operate independently without formal organizational support, which could lead to challenges in accessing resources, price and market information, and also limit collective advocacy and pull among policy makers. The key business challenges outlined by traders include poor representation in national decision-making processes, which was ranked as moderately to extremely important among 84.52% of traders. Almost 64% of small-scale artisanal fish traders find discrimination and harassment to be moderately to extremely important, which indicates the need to foster an inclusive and equitable environment within the industry. This finding also shows that efforts to combat discrimination and harassment are essential for creating a healthy and productive market and work environment along Ghana's artisanal fisheries value chain. With 90.11% of traders indicating financial issues as very or extremely important, this challenge stands out as a top concern in the

sector. It was thus not surprising that financial assistance emerged as a highly ranked theme among traders (95.25%) in terms of key areas for policy support.

On gender equality and empowerment, approximately 51.09% of the traders acknowledge that women traders encounter additional challenges due to their gender. This points to a recognition of gender disparities and potential barriers that women traders may encounter in carrying out fish-related activities. The study found that women have an additional burden of combining domestic responsibilities, childcare and trade activities. Female traders who are nursing mothers face additional challenges related to issues of mobility because they have limited time to move around to get stock and sell their fish and fish products. Moreover, limited access to financial services and credit emerges as a predominant concern, with 58.21% of women traders identifying this as a critical issue. This both indicates the significant economic challenges faced by women in trade as well as project how important addressing financial exclusion can be in the bid to empower women fish traders.

The study makes the following recommendations. There is the need to develop policies for the post-harvest sector particularly fish trade and marketing to boost fish trade and marketing in Ghana. It is thus recommended that collaboration is strengthened among all stakeholders in the small-scale artisanal fisheries sector. More could be done by the Ministry of Fisheries and Aquaculture Development and the Fisheries Commission to facilitate and oversee such collaborative efforts among different stakeholders in the sector. In doing so, the capacities of processors and traders should be strengthened, the necessary strategies put in place for the safety of traders. Sanitation issues should also be looked at to ensure the safety of fish in the markets and along the value chain.

The development of policies on market and price information and trade facilitation would help bridge the inconsistencies with pricing, which is a big challenge to most traders through its effects on revenues and profits. It would be especially helpful where traders can be given support that positions them to consistently price their fish according to weights, species, and source of the fish, e.g., either from inland or marine fisheries. The development of technologies to improve fish trade and marketing is crucial, with a focus on capacity building and improving fish handling, weighing, and packaging.

Capacity building is essential for improving financial capabilities, such as purchasing more, owning tangible resources, investing in knowledge and income, and managing income and expenditure. Market linkages are vital for fostering fish trade, both domestically and internationally. Finally, more efforts should be made to support the work of extension officers, regulators, and researchers by strengthening collaborations among all stakeholders and creating more avenues for research that leads to gender-targeted interventions within the artisanal fisheries value chain.

## 1.0 Introduction

In Ghana, the fisheries sector represents a high-impact opportunity for women and men. Over three million people are employed in Ghana's fisheries value chain (Agyemang, 2023), of which about 2 million are artisanal fishers (Townhill et al., 2023). Fish and fish products are the country's most important non-traditional export commodities, accounting for over 50 percent of revenue from non-traditional export: in 2022, the value of export of fish and fish products was about USD 254 billion (Agyemang, 2023, citing data from the Ministry of Fisheries and Aquaculture Development). Women are responsible for many fish-related activities along the value chain, particularly fish processing and marketing, such as in trade of low-cost smoked and dried fish in urban and rural markets (Overa *et al*., 2022). However, many women fish traders cannot take full advantage of markets and trade opportunities, especially in the formal sector, since often they are lacking technical capacities in the distribution, preservation, and safe food handling practices. Women moreover have reduced access to credit, storage facilities, fish supply, market information, support services - all factors affecting incomes and food safety and quality (Overa *et al*, 2022). Overall, women's contribution to fish trade remains under-accounted in official statistics and policies, and gender evidence in small-scale fisheries is still scanty and scattered.

A survey was carried out among small-scale fish traders employed in the artisanal fisheries sector in Ghana with the goal to collect and analyse gender and socio-economic dimensions of fish marketing and trade. The main objective of the study was therefore to generate gender evidence in marketing and trade in artisanal fisheries in Ghana by conducting a survey among small-scale fish traders, in support of the formulation and implementation of gender-responsive evidence-based policies and programmes for more inclusive and sustainable development of the fisheries sector.

### *Specific Survey objectives*

The specific objectives of the survey included to:

1) Collect socio-demographic data on small-scale fish traders and their role along the fish value chain.

2) Analyse gender dimensions and socioeconomic patterns and dynamics in fish marketing and trade activities.

3) Assess the role played by gender and social factors on economic outcomes.

4) Identify key challenges of fish traders and explore potential areas for policy support in relation to market access.

***Research questions and hypotheses***

- Research question: Are gender-based constraints and gaps associated with economic outcomes such as revenue from fish sales? If yes, which constraints are more significant? Gender-based constraints and gaps (e.g., lack of time, limited mobility, and access to credit, family responsibilities and household duties) are expected to be negatively associated with economic and trade outputs.
- Research question: Does membership in cooperatives and networks correlate with market participation? Membership in cooperatives/stakeholder groups and social and business networks are expected to be positively correlated with income and market participation.
- Research question: What factors may be related to export market participation/non-participation? Is trade participation rate gender-balanced? Market access and trade participation are expected to be positively correlated with factors such as marketing of high-quality fish products, financial and operational capacities, knowledge of/compliance with trade regulations and standards. Trade participation rate is expected to be lower among women than men.
- Research question: Do improved fish processing and preservation equipment and facilities correlate with economic and trade outputs? Is there any gender gap in access to improved technologies and facilities? Access to improved fish processing techniques and preservation methods is expected to be positively related to economic outputs such as fish quantity traded and revenue. Access to improved technologies is expected not to be balanced between genders.

## 2.0 Literature Review

Artisanal fisheries play a crucial role in the socio-economic fabric of Ghana, providing livelihoods for a significant portion of the population and contributing to both local and national economies. This section reviews the literature to understand the nature of small-scale trade and the dynamics, challenges, and opportunities for individuals engaged in the sector.

### *2.1 Small-scale trade in artisanal fisheries in Ghana*

Artisanal fisheries form the backbone of the fish industry in Ghana, contributing to food security, employment, and poverty alleviation. The artisanal fisheries sector in Ghana employs significant people and supports the livelihoods of many coastal communities. The sector is multi-tiered and characterized by a complex network of actors involved in various stages of the value chain. Fishers, processors, traders (wholesalers, retailers), consumers, and supporting service providers collectively form a dynamic ecosystem in the fish sector. A study by Yawson (2018) delves into this intricate web highlighting the multi-layered nature of this trade, emphasizing the critical roles of intermediaries, such as wholesalers and middlemen, in linking fishers to wider markets. This intermediary layer significantly impacts pricing, market access, and the distribution of fish products. Furthermore, the study emphasizes that the interactions between these actors are not only transactional but also influenced by social, cultural, and economic factors, reflecting the complexity of the trade network.

Similarly, Boateng et al. (2020) highlight the significance of the small-scale fish sector in Ghana's economy, particularly in coastal communities, where artisanal fisheries are the primary source of livelihood for a substantial portion of the population. However, issues like limited market access, post-harvest losses, and regulatory complexities emerge as recurrent themes. Nunoo and Asiedu (2017) highlight the prevalence of post-harvest losses, attributed to inadequate handling and preservation techniques, underscoring the need for improved practices. Additionally, Boateng et al. (2020) emphasize the necessity for clearer and more streamlined regulations to ensure compliance and sustainable resource management. Strengthening market linkages through the establishment of fisher cooperatives and promoting value-added processing emerges as a promising strategy to improve the structure of the artisanal fishery sector (FAO, 2016). These interventions empower small-scale traders, reducing their reliance on middlemen and enhancing their bargaining power. Capacity building and training programmes targeting areas such as post-harvest handling and business management are also identified as critical interventions (Yawson, 2018). Moreover, the adoption of appropriate technologies for storage and processing holds the potential for reducing post-harvest losses and increasing overall efficiency in the artisanal fish sector (Quagrainie et al., 2019). These technologies can include advanced refrigeration systems, automated sorting and grading scales/machines that can help traders make informed decisions

about storage, measurements, and distribution, ultimately leading to higher profits and a more sustainable food system in Ghana.

### *2.2 Gender and socioeconomic patterns of fish trade and marketing*

The gender dimension in fish trade and marketing in Ghana is a critical aspect of the country's fisheries sector. A study by Abban and Ntiamoa-Baidu (2018) highlights that women play a substantial role in various stages of the fish value chain, from processing to retailing. Their involvement is often crucial for household livelihoods and food security. Gender roles are influenced by socio-cultural norms, and understanding these dynamics is essential for designing policies and interventions that promote gender equity and economic empowerment (Darko and Cobbina, 2016). This can include initiatives that encourage equal access to education and employment opportunities, as well as efforts to challenge stereotypes and promote inclusive attitudes towards gender roles in the fish sector. Artisanal fish traders with extensive experience and skill sets are effective in risk management, handling fluctuations in fish stocks, weather, and market uncertainties (Asare, 2019). Their long-term participation in the trade fosters trust, customer loyalty, and increased market access (Amoah, 2021).

Women are typically prominent in fish processing activities in Ghana. According to Awumbila et al. (2019), traditionally, women are often responsible for tasks like cleaning, smoking, drying, and salting of fish. These processing activities not only add value to the fish but also contribute significantly to the income of many women in coastal communities. Ntiamoa-Baidu (2018) argues that when women are empowered in these cultural roles, it can lead to increased household income, improved food security, and enhanced decision-making power within households. Additionally, women's participation in the sector contributes to broader community development and poverty reduction efforts. Their traditional roles in managing small-scale fish markets and retail outlets play a critical role in supplying fish to remote and underserved communities (Tsikata, 2015). This involvement provides women with a source of income, and their activities are central to ensuring fish reaches local markets and households. Nonetheless, processing technologies and access to markets for women involved in fish processing are limited. Studies reveal gender disparities in access to key resources for fish trade and marketing. Ameyaw and Osei (2020) highlight that women often face challenges in accessing credit, capital, and technology, which limits their ability to engage in higher-value segments of the fish trade. Additionally, the ownership of fishing gear

and boats is predominantly male dominated, further influencing the division of labour within the sector. In the retail sector, women are frequently the primary actors. Yet, constraints such as inadequate market infrastructure and fluctuating fish supply chains impact the economic stability of women engaged in the retail of fish. Hence, Awumbila et al. (2019) advocate for targeted interventions that address gender-specific constraints, such as providing training, access to credit, and technology.

### *2.3 Policies and regulatory frameworks for developing the fishery sector*

Ghana's fishery sector has a rich history, with artisanal and industrial fisheries coexisting. However, the sector is plagued with challenges related to overfishing, illegal fishing practices, and inadequate management, leading to declining fish stocks in recent years (Asiedu et al., 2019; Amoako-Tuffour, 2016). Therefore, policies and regulatory frameworks have become essential tools for shaping and developing the fishery sector in the country. They include measures to promote sustainable fishing practices, protect marine ecosystems, enforce fishing seasons, prevent overfishing, and ensure the long-term viability of fish stocks. Adu and Amoah (2018) underscore the pivotal role of policies in creating an enabling environment for sustainable fisheries management and socio-economic development. Ghana's fisheries policies and regulations are primarily guided by the Fisheries Act of 2002 (Act 625) and the Fisheries Regulations of 2010 (LI 1968). These legislative frameworks provide the legal foundation for the management and governance of the fishery sector, covering aspects such as licensing, enforcement, conservation, and the establishment of co-management committees (Mills et al., 2015; Sekyere et al., 2017).

The co-management approach is a key component of Ghana's fisheries policy, aiming to involve local communities and stakeholders in decision-making processes. The establishment of Community-Based Fisheries Management Committees (CBFMCs) and Fisheries Management Committees (FMCs) was intended to decentralize decision-making and promote sustainable fishing practices (Sowu et al., 2018). Similarly, combating illegal, unreported and unregulated (IUU) fishing has been a major priority for Ghana. The introduction of the Vessel Monitoring System (VMS) and the Fisheries Monitoring Center is to enhance monitoring and control efforts. Additionally, the issuance of the Fisheries Regulations of 2010 has set penalties for IUU fishing activities (Bannerman et al., 2018; Ofori-Danson et al., 2019). The sector is also regulated by traditional norms and customary practices. In some coastal communities, there are traditional

periods of the year when fishing is prohibited or restricted. These bans, known as "closed seasons," are implemented to protect fish stocks during their breeding and spawning periods, ensuring sustainable harvests in the long term (Nunoo et al., 2019).

Despite the existence of policies and regulatory frameworks, several challenges persist. A study by Awusabo-Asare and Ntow (2019) highlights challenges in the implementation of fish policies and regulations. Gaps in enforcement capacity and the need for improved monitoring and surveillance mechanisms are noted as crucial areas for improvement. Compliance with fisheries regulations and enforcement of policies remains a persistent challenge in Ghana's fishery sector. Frimpong and Ofori-Danson (2018) identify issues related to weak enforcement capacity, corruption, and insufficient penalties for non-compliance. Meanwhile, limited resources and capacity constraints have hindered the effective enforcement of fishing regulations, leading to widespread non-compliance (Sekyere et al., 2017). Additionally, incoherent efforts among government agencies, including the Ministry of Fisheries and Aquaculture Development (MoFAD), the Environmental Protection Agency (EPA), and the Fisheries Commission (FC), have led to a lack of coordinated action (Sowu et al., 2018). These deficiencies in the regulatory frameworks hamper efforts to combat IUU fishing in the country.

### *2.4 Challenges of fish trade and marketing*

Fish trade and marketing play a crucial role in ensuring the distribution of fish products from the production source to the end consumers. However, this sector is not without its challenges. The dynamic nature of fish markets, along with the perishable nature of fish, poses significant hurdles for traders (Quagrainie et al., 2019). Additionally, regulatory complexities and fluctuating market demands further compound the difficulties faced by those engaged in fish trading and marketing. Nunoo and Asiedu (2017) emphasize that improper handling and storage practices lead to substantial losses in fish quality and quantity. These losses not only affect the economic viability of the traders but also contribute to food security concerns. Access to markets and appropriate infrastructure is another significant challenge for fish traders. Diko and Bosompem (2018) underscore the importance of reliable market access for traders to reach a broader consumer base. However, in many cases, especially in remote or underserved areas, inadequate transportation and storage facilities hinder efficient trade. Regulatory frameworks and compliance with fisheries laws and standards have been daunting for fish traders. There are difficulties in navigating legal

requirements, obtaining necessary permits, and ensuring compliance with sanitation and hygiene standards (Awusabo-Asare and Ntow, 2019).

In some cases, ambiguous or inconsistent regulations can lead to confusion and difficulties for traders. Moreover, the fish market is subject to fluctuations in supply and demand, often resulting in price volatility. This poses challenges for traders in terms of pricing strategies and profit margins. Fish traders are confronted with the difficulties of constantly adapting to changing market conditions, which can be particularly challenging for small-scale traders with limited resources (Lam et al., 2016). These traders often face constraints in terms of accessing market information, transportation, and storage facilities. Additionally, they struggle to compete with larger traders who have greater bargaining power and economies of scale. As a result, small-scale fish traders must find innovative ways to overcome these challenges and stay competitive in the market.

Ghana's fishery sector is crucial for the country's economy and food security. While existing policies and regulatory frameworks provide a foundation for sustainable management, challenges such as weak enforcement, gender inequality, and limited stakeholder participation persist. Rooted in centuries-old practices and governed by a mixture of policies, the sector sustains the livelihoods of coastal communities. The resilience and adaptability of artisanal fishermen and women are emblematic of their commitment to both the sustainable management of resources and the preservation of fish stock. However, it is imperative to recognize the evolving challenges facing this sector. Pressing issues such as overfishing, and market fluctuations necessitate a delicate balance between tradition and innovation. Collaborative efforts between local communities, government agencies, and international partners are crucial in implementing effective regulatory frameworks that safeguard the viability of small-scale trade while ensuring the long-term health of Ghana's marine ecosystems.

## 3.0 Methodology

The study employed a mixed methods design, comprising quantitative surveys and qualitative key informant interviews (KIIs) to explore the gender and socio-economic dimensions of fish marketing and trade. The reference population for this study were women and men fish traders employed in the artisanal fisheries sector in Ghana.

### *3.1 Survey Strategy and Sampling Design*

The survey instruments were a semi-structured and open-ended (checklist) questionnaire composed of sections on the following: 1) Respondent profile; 2) Marketing and sales; 3) Business challenges; 4) Policy support; 5) Gender equality and empowerment.

To draw valid conclusions, we selected a sample that was representative of fish traders in artisanry fishing in three regions of Ghana namely Eastern, Greater Accra and Volta regions (Figure 1). A four multi-stage sampling approach was used to recruit survey participants. Firstly, three regions were purposively selected based on the prevalence of artisanry fisheries activities, both inland and coastal/marine sectors of the fisheries sector. The regions were also selected to reflect areas of interest to the FAO for this project. In the second stage, 13 districts/municipalities were purposively selected, based similarly on the prevalence of inland and coastal/marine artisanal fisheries activities. In the third sampling stage, 15 community markets were purposively selected across the 13 districts/municipalities (Figure 1).

The selection of the data collection sites was guided by the objectives of the study and also anecdotal knowledge of communities that are important fish trading markets. The selected community markets were in Adabraka, Anyaa, Ashaiman, Kaneshie, Madina, Makola, Mamobi, Nima and Tema in the Greater Accra region representing urban markets. Community markets in Akosombo and Kpong in the Eastern region, Prampram and Kpone in the Greater Accra region and Dzemeni and Kpeve in the Volta region represented the rural markets. All these were the main fish markets where the data was collected.

The fourth stage involved the actual selection of fish traders. The team could not access any official national database on fish traders so the total number of traders in the study areas of interest was not known, but the team anticipated collecting data from about 2000 fish traders. The team could not also access community or district specific statistics on either number of people involved in the

fisheries or artisanal fisheries sector. We could only access regional level data on the total number of people engaged in the agricultural, forestry and fisheries sector which had been disaggregated into urban and rural locations (Ghana 2021 Population and Housing Census). In addition to this, the team also accessed data on the total number of people employed in the urban and rural fisheries but at the national level (2017-18 Census of Agriculture, Ghana Statistical Service report from 2020). These statistics were thus used as proxies to estimate the sample for the 15 study community markets (see Table 0).

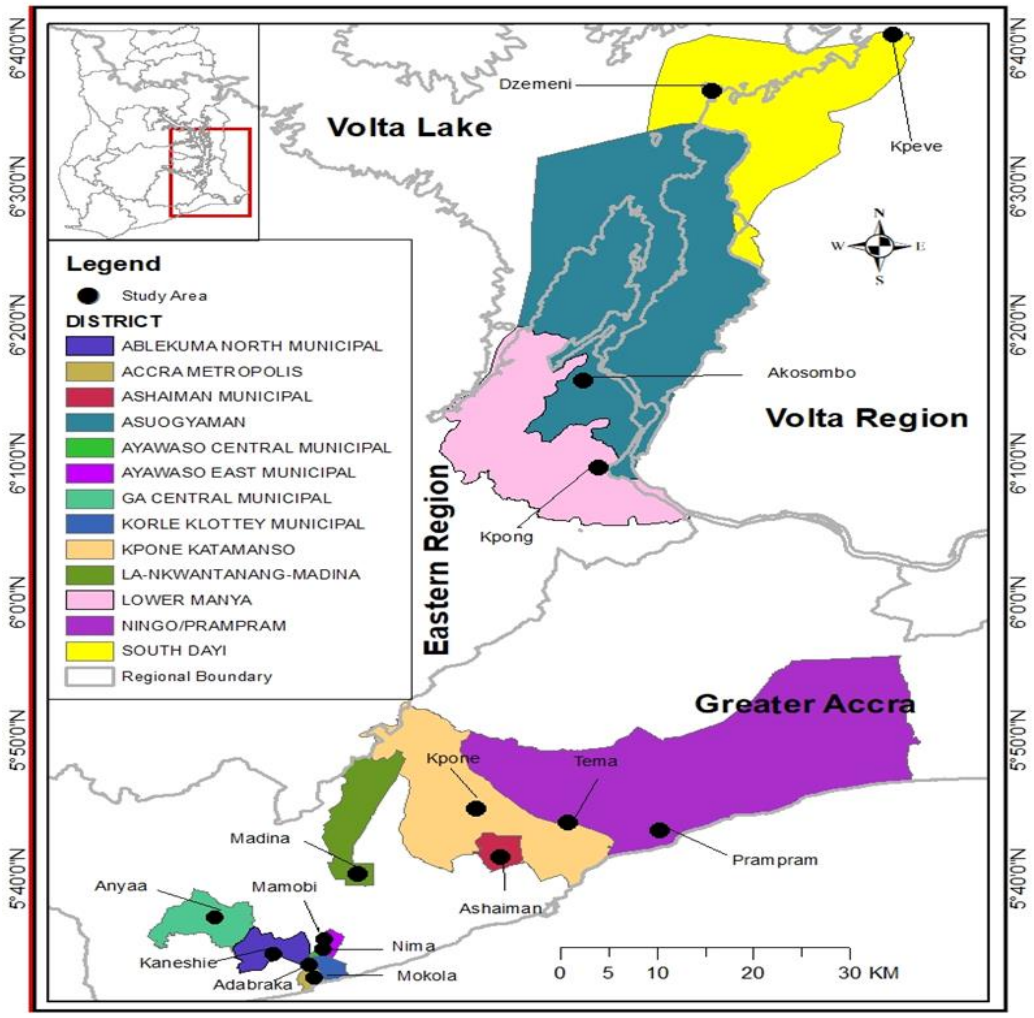


**Figure 1: Location map of the study communities**

To estimate a representative sample, the team extracted the population of people engaged in the agricultural, forestry and fisheries sectors from the 2021 Population and Housing Census (PHC). Following this, the team estimated the population in fisheries using the proportion of the population in the fisheries sector against those in the entire agriculture, forestry and fisheries sectors (in the 2017-18 Census of Agriculture - GSS 2020). We then computed the final sample by calculating a proportion of the population in the fisheries sector that can be assigned to each community market (See Table 0) and multiplying this by the target sample of 2000 participants.

Finally, the snowball sampling technique was used to recruit participants via union leaders (mainly market queens, and leaders of fish traders in markets) and other participants. This sampling technique was employed to ensure a wider coverage. However, some respondents were purposively selected based on their ability to communicate and to provide the needed information.

Execution of the study required good planning because the key people we needed to engage required seeking permission for the interviews to be conducted in all the markets. Interviews in markets involving traders had been noted not to be straight forward. If the right procedures are not followed to contact and involve the gatekeepers, the right information might not be collected because traders in Ghana are unified.

The involvement of the leaders of the Associations (see Table A3.1 in the Appendix for a list of the associations) also opened the process for data collection and the collection of accurate information. To earn the trust of the leaders, we involved them in the selection of respondents. The team ensured that the leaders understood the purpose of the study and how important it was for them to collaborate.

The study team interviewed participants who are directly involved in fish processing, trade, and marketing of inland or coastal fisheries on a one-on-one basis, targeting both male and females but putting in additional efforts to involve male traders since fish trade is noted as a ‘female trade’. Although the target sample size was 2000 fish traders, the team ended up interviewing 1553 participants mainly due to time constraints.

## Table 0: Proportional sampling for the 15 markets considered for the survey

| Name of Community Market | Market Category | Region | Fish Market Category | Population in Agric, Forestry and Fisheries (2021 PHC) * | Prop. of pop. in Fisheries: (computed using data from 2017-18 Census of Agric) | Population in Fisheries (Estimated) | Final Sample Allocation | District (2021 PHC) |
|---|---|---|---|---|---|---|---|---|
| Adabraka | Urban | Greater Accra | River Fishing (Inland Fishing) | 38,270 | 0.01980 | 758 | 146 | Korle Klottey |
| Anyaa | Urban | Greater Accra | River Fishing (Inland Fishing) | 38,270 | 0.01980 | 758 | 146 | Ga Central |
| Ashaiman | Urban | Greater Accra | River Fishing (Inland Fishing) | 38,270 | 0.01980 | 758 | 146 | Ashaiman Municipal |
| Kaneshie | Urban | Greater Accra | River Fishing (Inland Fishing) | 38,270 | 0.01980 | 758 | 146 | Ablekuma North |
| Madina | Urban | Greater Accra | River Fishing (Inland Fishing) | 38,270 | 0.01980 | 758 | 146 | La Nkwantanang-Madina |
| Makola | Urban | Greater Accra | River Fishing (Inland Fishing) | 38,270 | 0.01980 | 758 | 146 | Accra Metropolitan Assembly (AMA |
| Mamobi | Urban | Greater Accra | River Fishing (Inland Fishing) | 38,270 | 0.01980 | 758 | 146 | Ayawaso East |
| Nima | Urban | Greater Accra | River Fishing (Inland Fishing) | 38,270 | 0.01980 | 758 | 146 | Ayawaso East |
| Tema | Urban | Greater Accra | Coastal Fishing (Marine Fishing) | 38,270 | 0.01980 | 758 | 146 | Tema Metropolitan |
| Prampram | Rural | Greater Accra | Coastal Fishing (Marine Fishing) | 35,039 | 0.01312 | 460 | 89 | Ningo-Prampram |
| Kpone | Rural | Greater Accra | Coastal Fishing (Marine Fishing) | 35,039 | 0.01312 | 460 | 89 | Kpone-Katamanso |
| Akosombo | Rural | Eastern Region | River Fishing (Inland Fishing) | 74,367 | 0.01312 | 976 | 188 | Asuogyaman |
| Kpong | Rural | Eastern Region | River Fishing (Inland Fishing) | 74,367 | 0.01312 | 976 | 188 | Lower Manya Krobo |
| Dzemeni | Rural | Volta Region | River Fishing (Inland Fishing) | 25,421 | 0.01312 | 334 | 64 | South Dayi |
| Kpeve | Rural | Volta Region | River Fishing (Inland Fishing) | 25,421 | 0.01312 | 334 | 64 | South Dayi |
| **Total** | | | | | | **10,359** | **2,000** | |

***Repeated figures in this column are regional level data as the team could not access community/district specific data (The same regional figure is thus used as a proxy).**

***Source:*** Based on data from Table 5.7 in 2021 PHC (General Report, Vol. 3E)

| Total in Fisheries | Total in Agriculture, Forestry and Fisheries |
|---|---|

| Urban Fisheries | Rural Fisheries | Urban Agric | Rural Agric |
|---|---|---|---|
| 17,942 | 41,606 | 905,998 | 3,171,290 |

***Source:*** Based on data from Table 3.14 in 2017-18 Ghana Census of Agriculture (GSS, 2020)

In addition to the surveys, a key informant interview (KII) approach was used to collect further information on fish trade and marketing in inland and coastal fisheries. The key informants included service providers (trainers, extension services providers, market managers, cooperatives); research, regulators, and development organizations involved in fisheries in the target areas and in the country. Market managers/traders in fish markets in Ningo (1), Sakumono beach road (1), Tema fishing harbour (1), Jamestown beach (1), Makola (1), Adabraka Market (1), Dzemeni (1), and Akosombo fish market (1) and officials from Fisheries Commission (4), Ministry of Fisheries and Aquaculture Development (1), CSIR (1), Ministry of Food and Agriculture (1) and National Fishers, Processors and Traders Association (1), participated in the KII. All together there were 16 participants.

### *3.2 Desk Review*

The study team reviewed secondary sources of data which included relevant reports, publications, fishery sector reviews, development plans, strategies, and policy frameworks. These sources contained relevant information on fish trade and marketing, gender issues in artisanal fish trade particularly on women's roles and constraints, and whether they have been addressed in interventions, and in local, regional, or national strategies, and policies.

### *3.3 Data Analysis*

Analysis of the data took the form of quantitative analysis through descriptive and inferential statistical analysis while qualitative analysis was done through content analysis. Data points were described and summarized to develop patterns to satisfy the conditions of the data for the descriptive statistical analysis. Frequencies and central tendencies were run to summarize and describe the data for a better understanding. Inferential statistical analysis, mostly chi-square analysis, were used to test for relationships and to compare data from the various groups of traders e.g., women and men fish traders. Words, content, and themes were systematically and objectively identified by looking at their existence and frequency to determine their relationships in the

qualitative data collected for the content analysis. Excerpts of explanations given in the open-ended questions in the surveys were also analysed and embedded into the results and discussion.

## 4.0 Results and discussion

### *4.1 Socio-demographic characteristics of fish traders*

In Table 1, the data highlights a notable gender imbalance in the fish trade and marketing context, with females being the dominant gender. It shows that out of the total sample, there are 1,468 females and 32 males, while 53 questionnaires were skipped. Further analysis (see Table A4.1 in Appendix) on the distribution of the males show they were mainly found in the markets in the Greater Accra Region, Adabraka (11), Makola (11), Nima (8), Kaneshie (1) and Madina (1). Females make up a substantial majority of the respondents, 97.87% of the total. This indicates that females are significantly more represented in the artisanal fisheries sector compared to males, who make up only 2.13%.

**Table 1: Sex distribution**

| **Sex** | **Freq.** | **Percent** |
|---|---|---|
| Female | 1,468 | 97.87 |
| Male | 32 | 2.13 |
| **Total** | **1,500** | **100** |

The data suggests a significant gender disparity within the context of fish trade and marketing. The high representation of females indicates that they play a dominant role in this industry. This could be in roles such as fish processors, marketers, and other related professions. This could be due to various factors such as cultural norms, historical involvement, or specific skill sets that women bring to this field. This finding is supported by excerpts from the key informant interviews. Stakeholders explained that some men are into fish trade and marketing but, practically, in the markets, women are the first to spot selling fish. There is a sort of division of labour. Men mostly sell fish when they go to capture fish, while women diversify into products such as inland and coastal fish, fresh, salted, dried, fried, smoked, fermented, fish powder and fish sausages. The few men that are into fish trade and marketing in the markets have a preference for trading their fish products in a more packaged way and/or engaging in fresh fish sale. This points to some evidence that men traders sell fish of greater value than women, which means that they have a better financial avenue than women.

In the literature, women's predominance in Ghana's fish trade has been attributed to a combination of cultural roles, resource accessibility, and skill specialization (Awumbila et al., 2019; Tsikata,

2015). In addition, traditional gender norms often position women in roles associated with fish processing, such as smoking and drying, providing them with a natural progression into trading activities. These factors show the gender pattern in fish trade; however, it is essential to recognize that gender roles can vary across the fish value chain. For instance, while women dominate at the stage of fish processing and trade [due to cultural norms and skill sets], they are often less represented in labour-intensive roles such as fish catch.

The results may also suggest that women make up a sizable portion of the workforce in the fish trade and marketing industry. Understanding the gender distribution is crucial, as marketing strategies can then be adopted to address the preferences, needs, and interests of female marketers in the industry, particularly since the majority of traders are female. Table 2 provides the results of the marital statuses of fish traders surveyed. The high percentage of married individuals (57.76%) suggests that family dynamics, household needs, and shared decision-making may play a role in this industry.

**Table 2: Marital status**

| **Marital status** | **Freq.** | **Percent** |
|---|---|---|
| Single | 352 | 23.05 |
| Married | 882 | 57.76 |
| Cohabitant | 23 | 1.51 |
| Separated | 55 | 3.6 |
| Divorced | 54 | 3.54 |
| Widowed | 161 | 10.54 |
| **Total** | **1,527** | **100** |

Meanwhile, the presence of singles, widowed, separated, cohabitant, and divorced individuals collectively accounting for 42.24%, reflects a varied mix of life experiences and personal circumstances. The results highlight potentially varying categories of fish traders without formalized family commitment who may require support. Products and marketing strategies should take into account these considerations.

Table 3 sheds light on the educational background of individuals engaged in the artisanal fisheries sector. It demonstrates that a significant portion of the workforce has only completed primary or middle school (42.81% and 11.07%, respectively), highlighting that fish trade and marketing provide employment opportunities for individuals with varying levels of formal education. It is also important to note that among the fish traders, about 22.93% had no formal education, while

0.73% had other forms of education. This is crucial for understanding the socio-economic dynamics and inclusivity of the sector, as it implies that even those with limited educational qualifications have access to livelihoods in the industry. Additionally, the presence of individuals with vocational training (2.25%) highlights that the sector has some skilled labor force with specialized knowledge that can be applied to various aspects of the industry, such as fish processing, handling, and marketing.

**Table 3: Educational level**

| **Education** | **Freq.** | **Percent** |
|---|---|---|
| None | 346 | 22.93 |
| Primary school | 646 | 42.81 |
| Secondary school | 298 | 19.75 |
| Tertiary education | 7 | 0.46 |
| Vocational | 34 | 2.25 |
| Middle school | 167 | 11.07 |
| Others | 11 | 0.73 |
| **Total** | **1,509** | **100** |

Moreover, the relatively low percentage of individuals with vocational education highlights the need for capacity-building and skill development programmes targeted at enhancing the technical and managerial capacities within the fish trade and marketing sector. Such efforts can contribute to enhanced knowledge and skills in areas like fish processing, marketing, and aquaculture, thereby increasing the sector's competitiveness and sustainability. This could lead to increased efficiency, innovation, and competitiveness in the industry. There are few traders with tertiary education (0.46%), suggesting that traders rely more on practical skills and experience gained through their work rather than through higher education. The trade relies heavily on traditional knowledge and practices that are passed down through generations and acquired through hands-on experience.

In terms of employment, Table 4 categorizes individuals in the fish trade and marketing industry based on their employment status. The high percentage of *"Self-employed"* individuals (93.93%) indicates a significant level of entrepreneurship and independent business ownership within the industry. It must be noted however that though these businesses are owned by individuals, household members are often involved in the daily operation and management of the trade, often spanning generations.

**Table 4: Employment status**

| Employment status | Freq. | Percent |
|---|---|---|
| Self-employed | 1,455 | 93.93 |
| Seasonal worker | 31 | 2 |
| Casual worker | 2 | 0.13 |
| Employee | 15 | 0.97 |
| Owner and/or manager of an enterprise | 36 | 2.32 |
| Others | 10 | 0.65 |
| **Total** | **1,549** | **100** |

This implies that a large portion of the workforce in this sector in Ghana are self-reliant and take on the responsibilities and risks associated with running their own businesses. This entrepreneurial spirit is fundamental for economic growth, as it fosters innovation, competition, and economic diversification. On the other hand, the relatively low percentages of individuals categorized as seasonal workers, casual workers, and employees (2%, 0.13%, and 0.97% respectively) suggest that traditional employment arrangements with regular salaries and benefits are less common in this industry. Instead, it leans heavily towards self-employment and small-scale enterprises. This finding highlights the importance of policies and support mechanisms that facilitate and strengthen the capacity of individuals to run their own businesses in the fish trade and marketing sector.

In terms of age, Table 5 illustrates that the mean age of the fish traders is around 43 years, suggesting that a considerable portion of the workforce engaged in fish trading is relatively mature. The sector employs individuals from a wide range of age groups, likely including a mix of experienced and seasoned professionals and younger participants, though their representation is quite negligible.

**Table 5: Age and gender of respondents**

| Gender Category | Number of Obs. | Median Age | Mean Age | Std. Deviation | Min. Age | Max. Age | 95% Conf. Interval (Mean) |
|---|---|---|---|---|---|---|---|
| Total Respondents | 1,487 | 42 | 42.641 | 11.058 | 17 | 90 | 42.092 |
| Female | 1,456 | 42 | 42.751 | 11.383 | 17 | 90 | 42.189 |
| Male | 31 | 40 | 39.806 | 7.409 | 25 | 55 | 37.853 |

This finding can be an indication of a stable and experienced labour force within the sector, despite the sector being unattractive to the younger population. It may also imply that individuals involved

in fish trade and marketing tend to stay in the industry over an extended period, potentially accumulating valuable knowledge and expertise. This stability can contribute to the overall resilience and sustainability of the fish trade and marketing sector in the country.

The relatively close mean age values between females (42.75) and males (39.81) and median age values (42 years for females and 40 years for males) suggest that, on average, both genders are actively engaged in fish trade, with no significant age-based disparity. The standard deviation for females (11.38) and males (7.41) indicates variability in the age distribution among the traders, suggesting diverse levels of involvement and participation in fish trade.

This level of age diversity could reflect the range of activities and roles that females of different ages perform within the artisanal fish trade value chain, spanning activities such as processing, distribution, or even management (see Table 7). The minimum and maximum age values for females (17 to 90) and males (25 to 55) reflect the diversity in the fish trade and marketing activities within each group. For females, the broader range suggests a wide spectrum of involvement, from those with relatively low participation to those highly active in the industry. This variability could be due to factors like geographic location, access to fishing resources, or varying levels of market engagement. On the other hand, the narrower range for males implies more uniform involvement within their group. The data also highlights a gender disparity in educational attainment, with a higher percentage of females having completed primary education compared to males. Within the female group, 43.55% have completed primary education followed by those with middle school education (11.36%), with only a few having completed tertiary education (0.49%).

**Table 6: Gender and education level of respondents**

| Gender | | Formal Education | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | None | Primary | Secondary | Tertiary | Vocational | Middle school | Others | Total |
| **Female** | Frequency | 327 | 621 | 265 | 7 | 33 | 162 | 11 | 1,426 |
| | Row % | 22.93 | 43.55 | 18.58 | 0.49 | 2.31 | 11.36 | 0.77 | 100 |
| **Male** | Frequency | 3 | 8 | 20 | 0 | 0 | 0 | 0 | 31 |
| | Row % | 9.68 | 25.81 | 64.52 | 0 | 0 | 0 | 0 | 100 |
| **Total** | Frequency | 330 | 629 | 285 | 7 | 33 | 162 | 11 | 1,457 |
| | Row % | 22.65 | 43.17 | 19.56 | 0.48 | 2.26 | 11.12 | 0.75 | 100 |

On the other hand, the majority of the males (64.52%) have attained a secondary education while about 26% completed primary education. Within both the male and female group of traders, those with no formal education, represented by the "none" category constituted 22.65%, suggesting that the fish trade sector provides economic opportunities for male and female individuals with varying levels of education, although it does for a greater proportion of females than males. It implies that the industry is inclusive and not solely reliant on individuals with formal educational qualifications, potentially contributing to the livelihoods of a more diverse group of people. Traders without formal education might have acquired skills and knowledge through hands-on experience in fish trade, signalling that formal education is not the sole determinant of success in the artisanal industry.

The minimal percentage for both genders in the vocational and *Tertiary* education categories indicates that individuals of both genders with these vocational and education levels are less represented in the artisanal fisheries sector. The observed gender differences in formal education levels could potentially be attributed to socio-economic factors, access to educational opportunities, and societal norms regarding education for women in Ghana. Addressing the gender disparity in educational attainment is crucial for fostering inclusivity and equal opportunities for all participants in the artisanal fisheries sector.

From Table 7, the main fish-related activities engaged by the communities include fish farming, fishing, processing, distribution, marketing and trade, among others. Female traders are typically engaged in fish trade and marketing (92.19%), processing (46.85%), distribution (18.49%) and other fish-related activities including cooking and selling. This highlights the traditional role of women in the artisanal fish sector. Their engagement and participation in fish farming and fishing is however relatively low (Table 7). While fishing is traditionally seen as a male-dominated activity, this data indicates some level of female involvement.

**Table 7: Gender and fish-related activities (Multiple response options)**

| Female | | | |
|---|---|---|---|
| **Fish-related activities** | **Frequency** | **Percent of responses** | **Percent of respondents** |
| Fish farming | 5 | 0.21 | 0.34 |
| Fishing | 52 | 2.19 | 3.56 |
| Processing | 684 | 28.86 | 46.85 |

| | | | |
|---|---|---|---|
| Distribution | 270 | 11.39 | 18.49 |
| Marketing and trade | 1346 | 56.79 | 92.19 |
| *Other (specify) | 13 | 0.55 | 0.89 |
| **Male** | | | |
| **Fish-related activities** | **Frequency** | **Percent of responses** | **Percent of respondents** |
| Fish farming | 2 | 2.38 | 6.25 |
| Fishing | 11 | 13.1 | 34.38 |
| Processing | 28 | 33.33 | 87.5 |
| Distribution | 23 | 27.38 | 71.88 |
| Marketing and trade | 20 | 23.81 | 62.5 |

**Others included selling drinks, and food*

Comparatively, a higher percentage of males are engaged in fish farming (6.25%) and fishing (34.38%). While still relatively low (due to the small number of males in the sample resulting from the low number of males involved in fish trade and marketing), it indicates a higher proportional participation compared to females. There is also a strong male presence in fish processing, distribution and trade activities. Although the results are not surprising, it confirms the gendered distribution of roles within the fish trade sector in Ghana, with females predominantly involved in processing, marketing, and trade, while males are more prominent in fish farming, fishing, and processing.

In Table 8, the overall average years of experience across all the respondents is approximately 16.15 years, with a standard deviation of about 11.04, indicating a relatively wide spread of experience levels. Among females, the average level of experience is slightly higher at 16.23 years, while for males, it is noticeably lower at 12.19 years. Using the median years of experience, females still had slightly higher levels of experience (15 years) compared to males (10 years). This suggests that, on average, females in the industry tend to have slightly more experience compared to their male counterparts. However, it's important to note that the small sample size for males (31 observations) may skew this comparison.

The relatively high average years of experience suggest that there is a wealth of knowledge and expertise within the industry, which can be a valuable resource for sustaining and growing the sector. Additionally, the experience levels indicate a workforce that could potentially bring a variety of perspectives and skills into the sector. Earlier studies point out that artisanal fish traders with extensive experience are adept at developing and implementing effective risk management

strategies (Asare et al., 2019). This includes dealing with fluctuations in fish stocks, unpredictable weather conditions, and market uncertainties. In addition to this, long-term engagement in fish trade allows individuals to establish trust, leading to customer loyalty and increased market access (Amoah et al., 2021). The difference in average years of experience between females and males may suggest varying levels of opportunity, access to resources, or participation rates in the industry.

**Table 8: Years of experience in the artisanal fisheries sector**

| Variable | Obs | Median | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|---|
| Years of experience (All) | 1,547 | 15 | 16.145 | 11.037 | 0.08 | 60 |
| Female | 1,463 | 15 | 16.231 | 11.076 | 0.08 | 60 |
| Male | 31 | 10 | 12.194 | 10.556 | 2 | 50 |

As illustrated in Figure 2, among the participants, 39.36% identify themselves as the head of the household while 54.80% indicate that their spouse is the head of household. Additionally, a smaller percentage (5.85%) identified a person rather than themselves or their spouse as the head of the household. The significant representation of spouses (54.80%) is not surprising, especially, within the context of Ghana where males are mostly the head of household. Given the sector under consideration is female dominated, the spouses of such traders (i.e., males) will more often than not be the heads of households.


**Figure 2: Household heads statistics**

From Table 9, it is observed that a lower percentage of females (38.68%) identify themselves as the household head, compared to males (77.42%) in the "Myself" category. In the "My spouse"

category, the majority of household heads are the spouses of the female traders (55.69%), as opposed to the spouses of male traders (16.13%). In the *"Other*" category, there is a more balanced distribution between female (5.63%) and male (6.45%) household heads. This suggests that women play a substantial role in decision-making within their households, particularly in matters related to the fish trade and marketing. Although not in the majority in terms of holding household head roles, the percentage of females identifying as household heads is appreciable enough for a society where males are usually the household heads. This highlights the significant involvement of females in this industry, and perhaps points to the role of financial independence in household decision making processes and leadership roles. This could have implications for policy and support initiatives, as recognizing the central role of women in households could lead to more effective interventions and programs tailored to their specific needs and challenges.

On the other hand, the higher percentage of male respondents (77.42%) identified themselves as the household head compared to those who identified their spouse (16.13%) as the head of household. This suggests a more traditional division of household roles where men are more often seen as the primary decision-makers. However, it's interesting to note that a small percentage (6.45%) of male respondents fall into the *"Other"* category, which could include scenarios where other family members or stakeholders have a significant say in household decisions related to fish trade. This highlights the diversity of household dynamics and the need for a nuanced approach in policy making. In addition, programmes aimed at supporting and promoting artisanal fish trade should take into account the active participation of women in decision-making processes.

**Table 9: Gender and household headship**

| | | Household Head | | | |
|---|---|---|---|---|---|
| **Gender** | | **Myself** | **My spouse** | ***Other** | **Total** |
| **Female** | frequency | 557 | 802 | 81 | 1,440 |
| | row % | 38.68 | 55.69 | 5.63 | 100 |
| **Male** | frequency | 24 | 5 | 2 | 31 |
| | row % | 77.42 | 16.13 | 6.45 | 100 |
| **Total** | frequency | 581 | 807 | 83 | 1,471 |
| | row % | 39.5 | 54.86 | 5.64 | 100 |

**Other includes brothers, sisters, aunties, etc*

The results suggest that there may be different dynamics at play in the "*Myself*" and "*My spouse*" categories, with an appreciable number of female traders identifying as household heads in the former category. This may imply that in some cases, women are taking on a more dominant role in household decision-making, potentially influencing their fish trade businesses and the purchasing patterns of fish and fish-related products. Additionally, the relatively low percentage of male household heads in the *"Myself"* category indicates that men may be less likely to take sole responsibility for household decisions related to fish trade. This could be due to various cultural or societal factors that influence gender roles and responsibilities. The results highlight the need to recognize and respect the diverse household structures and decision-making dynamics within the artisanal fish trade and marketing sector in Ghana. Empowering both male and female household heads, and acknowledging the influence of spouses and other stakeholders, is crucial for creating inclusive and effective policies and programmes for the artisanal fisheries sector.

Figure 3 illustrates the responses regarding whether any members of households are engaged in productive activities. Out of the total respondents, 57.61% answered *"Yes,"* indicating that the majority of the households have at least one member involved in some form of productive activity. The finding suggests an average level of economic engagement among the household population of artisanal fish traders.

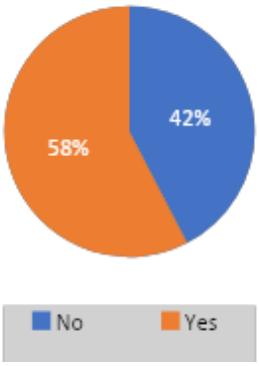


**Figure 3: Household involvement in productive activities**

Notably, however, 42.39% of the respondents indicated that members of their households were not engaged in any productive activities. This could be due to various reasons, such as unemployment, retirement, or possibly a higher number of dependents within those households. Understanding the circumstances of these households is important for policymakers, as it may

indicate areas where additional support or opportunities for economic engagement and income diversification are needed. The implications of this finding extend to both the individual household level and the broader economic context. For households with members engaged in productive activities, there may be a higher level of income and economic stability. This can contribute to improved overall well-being, access to resources, and potentially, better living conditions. On the other hand, households with less members engaged in productive activity may face economic challenges, which could lead to financial strain and limited opportunities for growth, due to over-reliance on a single/few household members. Thus, interventions such as job creation programmes or social assistance are crucial to support such households in the fish value chain. Additionally, businesses may consider this data when evaluating market opportunities and consumer behavior within the surveyed population.

Ghana's coastal location makes fishing, fish trade, tourism services, and agriculture essential economic activities. In Table 10, about 17.54% of the households are engaged in fish farming and fishing, suggesting a substantial reliance on aquaculture and aquatic resources for income and livelihoods. Household members are actively involved in fish processing, accounting for 32.22% of respondents, indicating a focus on value addition beyond catching and preparing fish for various markets. The fish industry's commercial aspect is further highlighted by about 36.34% of respondents who are involved in fish marketing, indicating household participation in the broader market and potential economic contribution. The existence of various other fish-related activities (14.05%) beyond the primary stages indicates a diversified livelihood approach among households in Ghana’s artisanal fisheries sector.

**Table 10: Household engagement in different types of productive activities (Multiple response option)**

| Productive activities | Frequency | Percent of responses | Percent of respondents |
|---|---|---|---|
| Fish farming/fishing | 251 | 12.41 | 17.54 |
| Fish processing | 461 | 22.8 | 32.22 |
| Fish marketing | 520 | 25.72 | 36.34 |
| Other fish-related activities | 201 | 9.94 | 14.05 |
| Agriculture | 26 | 1.29 | 1.82 |
| Manufacturing | 44 | 2.18 | 3.07 |
| Services | 519 | 25.67 | 36.27 |

This might include activities like equipment manufacturing, repair of boats/nets, drying of fish, packaging, and other niche activities, contributing to the overall economic livelihood of households in the communities. The low percentage (1.82%) of households engaged in agriculture implies that, in comparison to fisheries, agriculture may not be a primary economic driver of coastal communities. The modest (3.07%) manufacturing activities of households indicates a secondary role in their economic activities. While present, it is not be as dominant as fish-related activities, suggesting that the households rely more on natural resources than industrial production. Household members are also involved in services (36.27%), revealing the diverse economic landscape of these artisanal fisheries households in coastal Ghanaian communities. The results are not surprising because given tourist activities around coastal communities, households might be able to engage in a range of activities such as retail, transportation, or education, indicating a varied economic contribution.

Table 11 shows the results of a test of the relationship between limited engagement in productive activities and women engaged in rural or urban markets. Notably, 80.62% of women in urban areas are engaged in productive activities, contrasting with 19.38% in rural areas. This marked difference suggests a higher prevalence of economic participation among urban women. However, the overall engagement in productive activities is relatively low, with 18.05% of women participating in rural areas and 81.95% in urban areas. The Pearson chi-square test results ($X^2$ = 1.269, Pr = 0.260) indicate that the relationship between limited engagement in productive activities and the women's location (rural or urban) is not statistically significant.

**Table 11: Engagement in productive activities and women working in rural/ urban markets.**

| | **Engagement in Rural/Urban Markets** | | |
|---|---|---|---|
| **Engagement in productive activity** | **Rural** | **Urban** | **Total** |
| No | 119 | 495 | 614 |
| Row % | 19.38 | 80.62 | 100 |
| | | | |
| Yes | 144 | 699 | 843 |
| Row % | 17.08 | 82.92 | 100 |
| | | | |
| Total | 263 | 1194 | 1,457 |
| Row % | 18.05 | 81.95 | 100 |
| | | | |
| Pearson chi²(1) = 1.2696 Pr = 0.260 | | | |

While urban women show relatively higher participation in productive activities, the lack of statistical significance suggests that limited engagement is not significantly associated with the rural-urban divide. The findings challenge the assumption that rural women are more likely to have limited engagement in productive activities compared to urban women. It suggests that other factors, such as access to resources or socio-economic conditions, may play a more significant role in determining women's participation in productive activities.

### *4.2 Marketing and Sales*

This section presents the dynamics of sales and marketing of fish and fish products within the small-scale artisanal fisheries sector in Ghana. The main fish species and products sold by the surveyed respondents included fresh and processed salmon or chub mackerels (Scomber japonicus), tuna (Genus thunnus), blolovi (Chrysihthys), fresh and smoked herrings (Clupeidae), and fresh, salted and smoked tilapia (Oreochromis). Several other fish species and products were traded among the surveyed group and a complete list of all the species and products traded are shown in Table A4.2 in the Appendix. The analysis from the qualitative key informant interviews (KIIs) showed that these different fish species (which are also used for the variety of fish products sold by traders) are captured broadly from the wild (sea, lakes and major rivers) or from cultured sources. Fish supply from the wild is more than that from the cultured sources. According to stakeholders from the KIIs, fresh fish sale in the artisanal fisheries sector is from cultured and marine sources (e.g., tilapia and catfish from cultured sources and grouper fish, cassava fish, tuna, silverfish, red fish, doctor fish, octopus, butter fish, red snapper, eel, and squid from marine sources). In the lean season, supply is mainly from imported frozen fish for those who trade and market marine fish. Fish from the lakes and rivers is often sullied in the form of smoked, fried, dried, fermented and or salted. According to the stakeholders, some marine and cultured fish are also smoked, salted, fried or dried, but these are not as much as the quantities from the inland fisheries.

Still on the subject of fish source, but specific to traders, the results from the survey show that the traders mostly sourced their fish and fish products from wholesalers (65%), fisher folks (35%), own production (4%) and other fish traders (4%) (Table 12).

**Table 12: Sources of fish and fish products sold by respondents**

| Source of fish sold | Frequency | Percent of responses | Percent of respondents |
|---|---|---|---|
| Own production | 67 | 3.85 | 4.34 |
| Fisher folk | 544 | 31.26 | 35.26 |
| Wholesalers | 1004 | 57.7 | 65.07 |
| Retailers | 25 | 1.44 | 1.62 |
| Exporters | 23 | 1.32 | 1.49 |
| Traders | 67 | 3.85 | 4.34 |
| *Other (specify) | 10 | 0.57 | 0.65 |

**Other includes harbour, newtown, volta river, fish processors, etc*

In Figure 4, respondents' engagement or otherwise in international markets, in the form of selling their products abroad, is illustrated. The results show that a significant majority of respondents, 93.75% to be precise, do not sell their products abroad, while only 6.25% indicated that they do engage in international sales. This stark contrast suggests that the majority of businesses primarily operate within the domestic market. Although the level of participation in the international market is low, the key informant interviews corroborate the fact that fish traders sell their products abroad even if this is mostly informal and unmonitored within the value chain.

The interviews with key institutional stakeholders also showed that high valued species such as cephalopods, cuttlefish, octopus, and squid, grouper, tuna species are exported mostly as dried, fresh, and smoked fish products to EU countries and other neighbouring West African countries. Grouper fish, cassava fish, tuna, silverfish, red fish, doctor fish, octopus, butter fish, red snapper, eel, and squid are species of marine fish that are usually exported fresh. According to the key stakeholders, there is no documentation as to the number of people exporting fish to either the neighbouring countries or EU because it is difficult to track such activities in the value chain. This perhaps points to broader challenges with documentation and data on the activities of traders within the artisanal fisheries value chain.

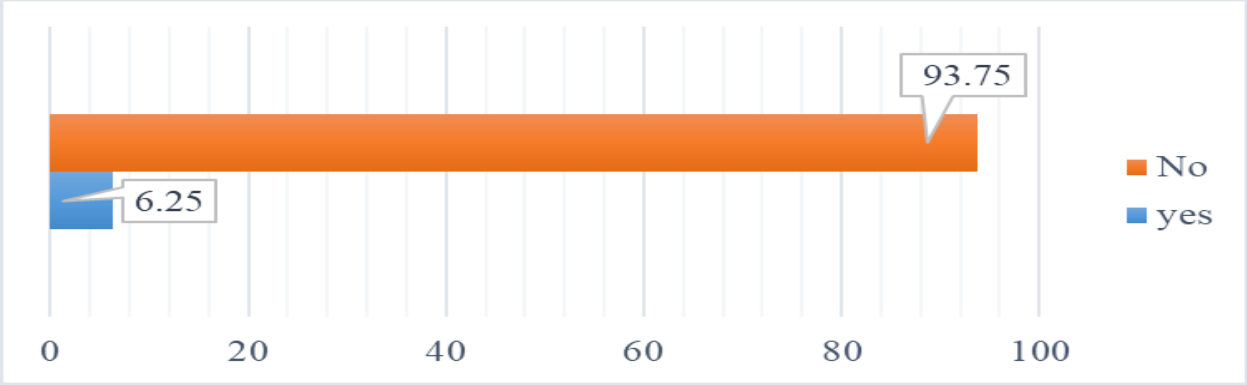


**Figure 4: Sale of fish products in international markets**

The primary obstacles key for non-engagement in export/international markets include financial constraints (67.42%), high export costs (41.64%) and difficulty complying with trade standards and regulations (27.34%) (Table 13). These figures underscore the formidable economic challenges individuals face in entering the export market. These key issues could be addressed by offering targeted financial support (i.e. grants, loans, subsidies etc) and cost reduction strategies that could enable aspiring exporters to overcome initial capital barriers. Educational support programmes can enhance awareness of trade standards and foster a more conducive environment for export participation.

**Table 13: Respondents reasons for non-engagement in export (Multiple response option)**

| Reason for non-engagement in export activities | Frequency | Percent of responses | Percent of respondents |
|---|---|---|---|
| Difficulty complying with trade standards and regulations | 386 | 12.60 | 27.34 |
| Export costs are too high | 588 | 19.20 | 41.64 |
| Financial constraints | 952 | 31.08 | 67.42 |
| I do not know I can export | 122 | 3.98 | 8.64 |
| I do not have the necessary technology or digital technology | 51 | 1.67 | 3.61 |
| I do not have any experience | 233 | 7.61 | 16.5 |
| I do not have time | 53 | 1.73 | 3.75 |
| Markets are too far from my place | 14 | 0.46 | 0.99 |
| My family does not agree | 24 | 0.78 | 1.7 |
| Production volume is not sufficient | 161 | 5.26 | 11.4 |
| Too complex bureaucracy | 179 | 5.84 | 12.68 |
| I am not interested | 292 | 9.53 | 20.68 |
| *Other (specify) | 8 | 0.26 | 0.57 |

**Other includes fear, old age, illiteracy, no experience and interest etc*

Other factors contributing to non-engagement in export to international markets include lack of knowledge, experience and interest, and complex bureaucratic hurdles. Additionally, the relatively lower percentages for factors such as lack of technology or digital skills, limited production volume, and family disagreement indicate that while these are concerns for some traders, they are not pervasive. There are several implications of these findings. For businesses that do not sell their products abroad, this may indicate a missed opportunity for growth and expansion. Selling products internationally can open up new markets, increase revenue streams, and diversify the customer base. By not exploring international markets, these businesses may be limiting their potential for expansion and revenue generation.

On the other hand, for businesses that do engage in international sales, this could signify a strategic approach to diversification and risk mitigation. Operating in multiple markets can spread risk, as economic or political conditions in one region may not have a severe impact on overall revenue. Additionally, it may indicate that these businesses have developed the necessary infrastructure and resources to navigate the complexities of international trade. However, it's important to note that the relatively low percentage of businesses involved in international sales suggests that there may be untapped potential for expansion in this area, and that more businesses could benefit from exploring global markets. In Table 14, the data underscores the multifaceted nature of requirements perceived by the respondents for engaging in international trade. Notably, compliance with food quality and safety standards (73.86%), knowledge of trade rules and procedures (81.83%), and the establishment of market linkages (86.76%) emerged as the most critical factors as perceived by the respondents.

**Table 14: Requirements needed to engage in international trade (multiple response option)**

| Requirements needed to trade internationally | Frequency | Percent of responses | Percent of respondents |
|---|---|---|---|
| Adequate technology | 924 | 9.98 | 64.75 |
| Capital | 608 | 6.57 | 42.61 |
| Compliance with food quality and safety standards | 1054 | 11.38 | 73.86 |
| Knowledge of trade rules and procedures | 1168 | 12.61 | 81.85 |
| High-quality products | 1078 | 11.64 | 75.54 |
| Marketing strategy or plan | 1073 | 11.59 | 75.19 |
| Market linkages | 1239 | 13.38 | 86.83 |
| Market information | 1181 | 12.76 | 82.76 |

| | | | |
|---|---|---|---|
| Supportive policy environment (export promotion initiatives subsidies, etc.) | 926 | 10 | 64.89 |
| *Other (Specify) | 8 | 0.09 | 0.56 |

**Other (respondents ticked others in the survey questions but provided no responses)*

These results highlight the importance of regulatory adherence, expertise in international trade processes, and well-established connections in foreign markets. Additionally, the prevalence of responses emphasizing the need for a supportive policy environment (64.89%) underscores the recognition of external factors, such as export promotion initiatives and subsidies, in facilitating international trade. The relatively lower percentages for other factors suggest that while aspects like adequate technology, capital, high-quality products, marketing strategies, and market information are recognized, they may not be perceived as the essential prerequisites for international trade among some of the respondents. Table 15 illustrates the first-ranked requirement among the respondents for engaging in international trade, offering insights into the priority focus areas for those seeking to enter or expand their presence in global markets. Capital emerges as the top priority, with 28.5% of respondents ranking it as their first requirement, emphasizing the critical role financial resources play in international trade endeavours.

**Table 15: Respondents first-ranked (priority) requirements for engaging in international trade**

| **Requirements needed to trade internationally** | **Freq.** | **Percent** |
|---|---|---|
| Adequate technology | 96 | 6.76 |
| Capital | 405 | 28.5 |
| Compliance with food quality and safety standards | 151 | 10.63 |
| Knowledge of trade rules and procedures | 111 | 7.81 |
| High-quality products | 185 | 13.02 |
| Marketing strategy or plan | 39 | 2.74 |
| Market linkages | 307 | 21.6 |
| Market information | 97 | 6.83 |
| Supportive policy environment (export promotion initiatives subsidies, etc.) | 30 | 2.11 |
| **Total** | **1,421** | **100** |

Market linkages (21.6%) and high-quality products (13.02%) follow closely, underlining the significance of establishing connections in foreign markets and delivering products of superior quality for international markets. Compliance with food quality and safety standards (10.63%) and knowledge of trade rules and procedures (7.81%) also feature prominently as priority

requirements, highlighting the importance of regulatory adherence and gaining understanding of the complexities of international trade. The relatively lower percentages for other factors, such as marketing strategy and a supportive policy environment, suggest that though critical, these elements may not be at the forefront for most artisanal fish traders when deciding on participation in international trade.

At the local level, the results indicate that the majority of the respondents (91.04%), do not market their products in markets located in other districts or regions (Figure 5). Conversely, only 8.96% of the participants reported engaging in cross-district or cross-regional marketing activities. Similar to the already discussed engagement in international markets, this disparity suggests that a large proportion of businesses primarily focus on their local markets, potentially missing out on opportunities for broader market reach and expansion provided by other districts/regions in Ghana. This reveals that businesses may be underutilizing their potential customer base (see Table 16). By not venturing into markets located in other districts or regions, they could be limiting their revenue potential and missing out on opportunities for growth. Expanding into new geographic areas can open up access to untapped customer segments and provide a buffer against economic fluctuations in a single locality. Additionally, it can lead to increased brand visibility and recognition on a larger scale.

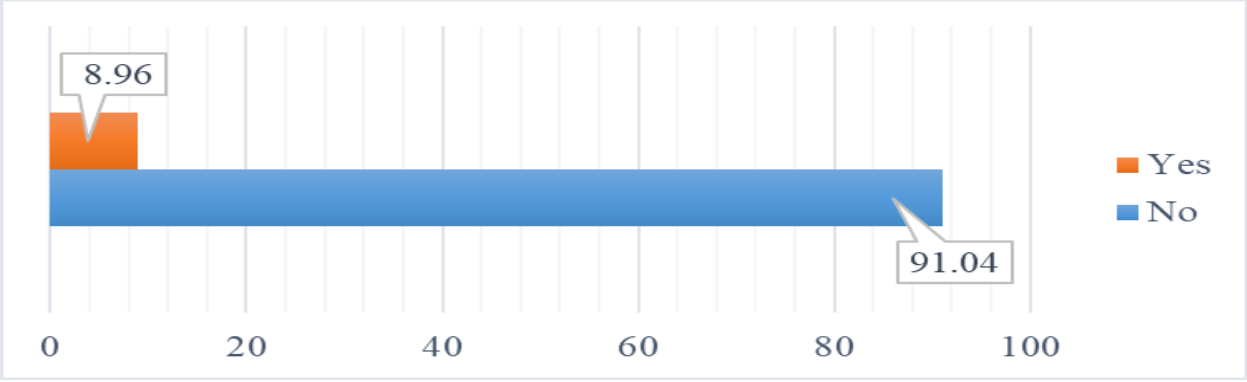


**Figure 5: Sale of fish products in markets located in other districts or regions**

Furthermore, for the businesses that engage in cross-district or cross-regional marketing, this may indicate a strategic approach to diversification and market penetration. These enterprises may have identified unique selling points or value propositions that resonate with a wider audience, allowing

them to successfully expand beyond their local boundaries. It could also signify that these businesses have invested in the necessary logistics and distribution networks to reach customers in different areas. However, it's essential to note that the relatively low percentage of businesses involved in cross-district or cross-regional marketing suggests that there may be an opportunity for more businesses to explore and benefit from expanding their market reach.

Currently, the majority of traders primarily serve end-users, with a significant percentage (95.38%) engaged in direct consumer transactions. This underscores a focus on a consumer-driven market strategy and a strong emphasis on meeting the needs and demands of individual consumers. Additionally, the presence of retailers (31.11%) and traders (10.83%) as significant customer bases suggests a diversified approach, where businesses are also involved in supplying products to intermediary players in the market. This diversified approach allows for reaching a wider range of customers and expanding market reach. While wholesalers, exporters, and other specified categories have lower customer base, their presence highlights that there is still some involvement in these segments, albeit to a lesser extent.

**Table 16: Respondents' customer base**

| Customer base | Frequency | Percent of responses | Percent of respondents |
|---|---|---|---|
| End-users | 1444 | 65.07 | 95.38 |
| Retailers | 471 | 21.23 | 31.11 |
| Traders | 164 | 7.39 | 10.83 |
| Wholesalers | 124 | 5.59 | 8.19 |
| Exporters | 15 | 0.68 | 0.99 |
| Other(specify) | 1 | 0.05 | 0.07 |

In Figure 6, the results reveal that a substantial majority of respondents, comprising 92.56% of the traders, did not sell their products to customers coming from other locations in the last 12 months. In contrast, only 7.44% of the participants reported engaging in the sale of their fish products in other districts/regions. This disparity suggests that a large proportion of businesses primarily focus on local markets or have limited interactions with customers from other districts/ regions. This finding holds implications for market diversity, potential revenue streams, and the exposure of products to a broader consumer base. Those engaged in fish trade may be missing out on opportunities for increased sales and revenue by not engaging with customers from other locations. By limiting their interactions to local markets, they may not be fully capitalizing on the potential

demand from traders who operate in different regions or have access to distinct customer segments. Expanding transactions to traders and customers from other areas could lead to higher sales volumes and potentially higher profitability for these businesses.

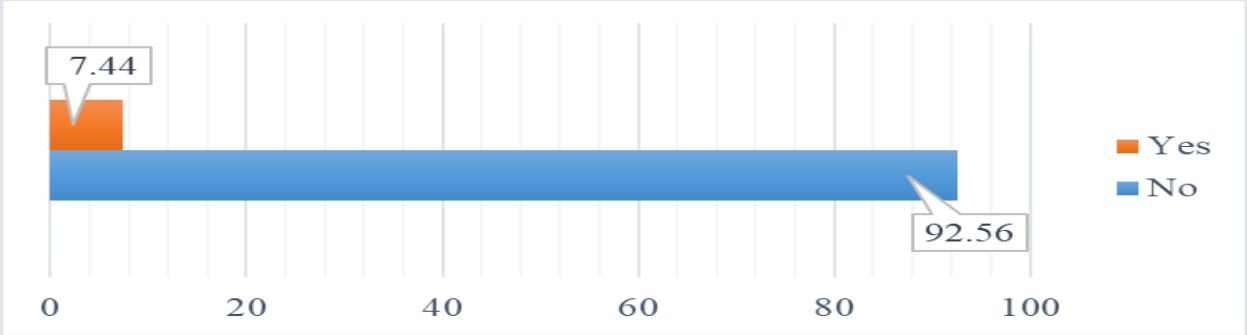


**Figure 6: Sale of fish products to traders and customers from other locations in the last 12 months**

Moreover, for businesses that engage with traders and customers from other locations, this finding may indicate a level of adaptability and willingness to tap into a wider network of buyers. For instance, the KIIs revealed that such enterprises such, may have identified specific products or services that hold appeal beyond their immediate vicinity, and as a result, have actively sought out opportunities to connect with traders from other regions. It's possible that they have established effective distribution channels and logistics to facilitate these transactions. However, the relatively low percentage of businesses involved in such interactions suggests that there may be an opportunity for more artisanal fish businesses to explore and benefit from engaging with traders from different locations. This could lead to increased market reach and potential for growth.

This is a key finding that was also reinforced by the key informants interviewed. According to key stakeholders, a strong collaboration and networking among stakeholders in the sector is vital for fish trade to thrive. For instance, they outlined that extension officers, regulators, and researchers undertake a lot of capacity development programmes for fish trade and marketing through focal point persons at the regional and district levels to ensure that the postharvest subsector of the fisheries sector thrives. Despite these capacity development efforts opening up trade avenues, there is the need for better networks, cooperatives, associations, and collaborations to act as facilitating

agents for a burgeoning fish trading and marketing sector in Ghana. Networking, cooperatives, associations, and collaborations are important in fish trade and marketing because they promote the standards of fish trade and marketing and open up the sector for healthy contacts and trade relationships. The stakeholders cited examples of some traders who do not travel from one market to the other but are able to sell their fish in far and near communities due to their ability to network. These networks are further strengthened with the formation of associations and cooperatives. Within the remits of associations and cooperatives, fish traders have the opportunity to access loans to expand their fish trading and marketing businesses.

In terms of revenue outlook, the results indicate that a majority of the respondents (54.07%) reported an increase in revenue in 2022 over that of 2021, while 45.93% stated that they did not experience revenue increases during this period (Figure 7). This suggests that a significant portion of the businesses surveyed saw positive financial increase over the specified time frame. The increase in revenue for over half of the respondents was attributed to various factors including rising inflation (higher prices for fish products), seasonality of increases in demand resulting in more sales, increased investment market and abundance of fish catch.

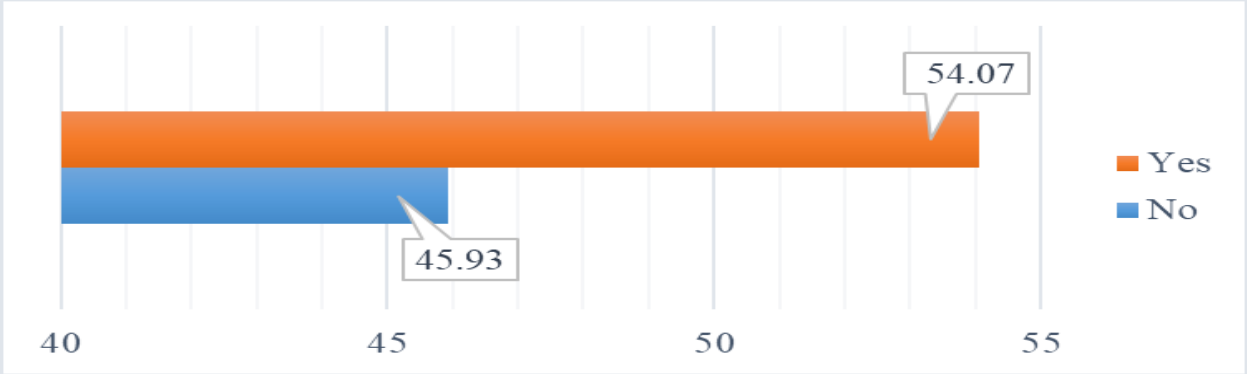


**Figure 7: Revenue outlook for sale of fish (increment in 2022 over 2021)**

The businesses that reported an increase in revenue in 2022 may have successfully capitalized on emerging market trends or effectively adapted to changing consumer demands. This positive financial trajectory could be indicative of strong business acumen, effective marketing strategies, or the introduction of innovative products or services. It may also signal that these businesses have established themselves in a competitive and sustainable position within the market they operate.

Conversely, for the fish businesses that did not experience revenue increase over the same period, there may be various factors at play. These include challenges such as increased inflation, low demand and sales, Covid-19 pandemic, increased competition, low fish catch, limited capital and high cost of transportation arising from increase in cost of fuel, etc. e. Understanding the reasons behind the lack of growth is crucial for these businesses, as it may inform necessary adjustments in strategies or operations to position themselves for improved performance in the future. Overall, the data highlights the importance of monitoring and analyzing revenue trends to make informed business decisions and ensure long-term sustainability.

The analysis of revenue decreases in 2022 over the base year of 2021 shows that the majority of the fish traders (71.34%) reported a decrease in revenue, while 28.66% stated that their revenue did not experience a decline during this period (Figure 8). Thus, a significant portion of the businesses surveyed faced financial challenges or setbacks in 2022.The respondents particularly indicated that revenue decreased over 2022 due to factors including low catch of fish resulting in low stock of fish during the season, increased prices and low demand for fish. In addition, they mentioned that Covid-19 restrictions impacted fish catch, people's purchasing power, and fish sales, resulting in reduced revenue margins. These shocks reduced consumer spending, lowered demand for certain fish products or services along the value chain, and increased production costs due to inflation or supply chain disruptions. Additionally, economic uncertainty amidst a global pandemic can lead to cautious spending behaviour among consumers and businesses alike, further affecting sales and revenue figures.

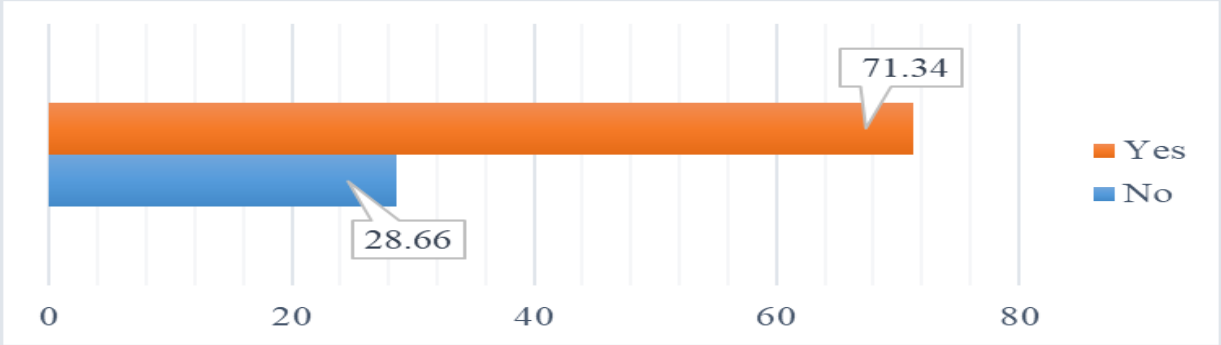


**Figure 8: Revenue outlook for fish sale (decrease in 2022 over 2021)**

In determining prices for the fish and fish products respondents sold, other traders served as the main source of price information (69.16%), followed by a reliance on price information from fisherfolks (Figure 9). The next source of price information for respondents is the category represented by 'other (specify)', which includes self-pricing/own pricing and getting information from respondents' spouses or partners. Also, from the KIIs, traders priced their fish according to the size and the amount at which it was bought from the fishers, but buyers often negotiated to buy. Sometimes traders are forced to sell fish at a giveaway price because storage or preservation was not handled properly. According to the key stakeholders, some artisanal fish traders lose out on making profits because of low judgements on how to price their fish. This is particularly so for women who have little or no price information. Accurate price information was therefore described as one of the factors that affect revenues and profits from the artisanal fisheries sector.

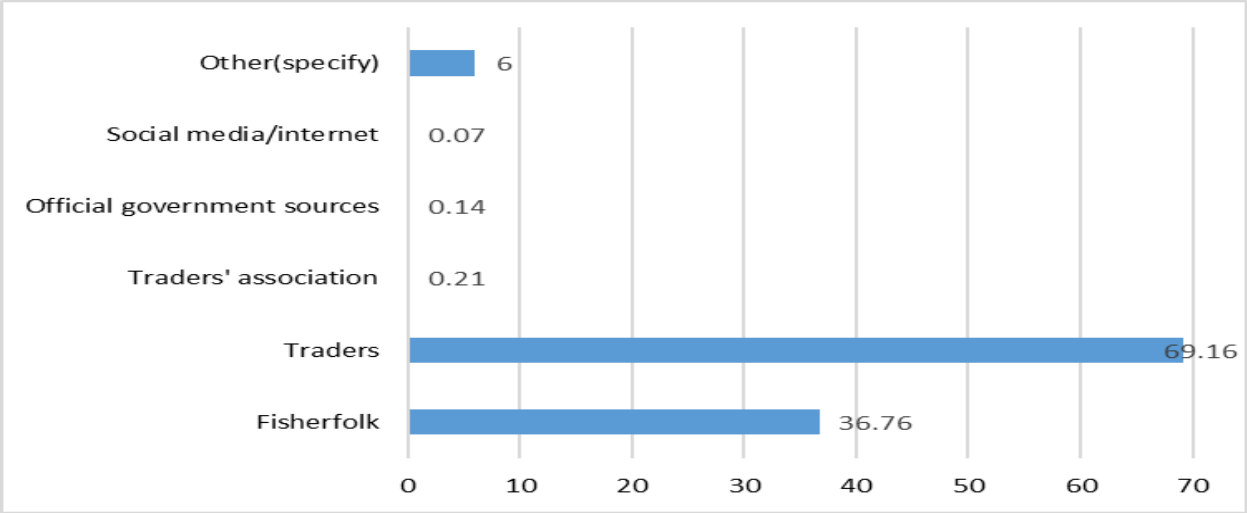


**Figure 9: Respondents' source of price information**

The average monthly revenue during the high season from fish sales for the businesses surveyed is depicted in Table 17. The results show an average monthly fish sale revenue (positional average using the median) of GHS 6,500.00 ($546.22, with $1 =11.9GHS, as at November 22, 2023). The minimum recorded monthly revenue is GHS 60.00 ($5.04), while the maximum reaches GHS 350,000 ($29, 411.76). This figure suggests a wide range of revenue levels within the sample, as evidenced by the standard deviation of GHS 21,139.79 ($1,776.45). These results indicate a diverse range of revenue performances within the high season, reflecting variations in business size, industry, and market conditions.

**Table 17: Average monthly revenue for high season (in GHS) from fish sales**

| Variable | Obs | Mean | Std. Dev. | Min | Max | Median |
|---|---|---|---|---|---|---|
| Average monthly revenue (high season) | 1,513 | 14120.76 | 21139.79 | 60.00 | 350000.00 | 6500.00 |

In the lean season, however, the average monthly revenue for fish traders shows an average monthly revenue (positional average) of GHS 5,000.00 ($420.17) (Table 18). Notably, the standard deviation of GHS 22,708.89 indicates a significant level of variability in revenue levels within the sampled traders. The minimum recorded monthly revenue is GHS 60.00 ($5.04), while the maximum reaches GHS 392,000 ($32,941.1765). These statistics highlight the diverse range of revenue performances among fish traders during the lean season, reflecting various influences such as industry type, geographical location, and market conditions.

**Table 18: Average monthly revenue for lean season (in GHS) from fish sales**

| Variable | Obs | Mean | Std. Dev. | Min | Max | Median |
|---|---|---|---|---|---|---|
| Avg monthly revenue (lean season) | 1,413 | 12,248.42 | 22,708.89 | 60.00 | 39,2000.00 | 5000.00 |

The relatively high standard deviation suggests significant variability in monthly revenues among the businesses surveyed. From the KIIs, it emerged that the revenue variability could be attributed to various factors, including differences in the industry sector, business models, geographical locations, and market dynamics. For instance, since the fish industry has seasonal fluctuations, traders may experience more pronounced swings in revenue during high seasons. Additionally, fish traders in urban areas may experience different revenue patterns compared to those in rural or less densely populated regions. The presence of a wide range of revenue levels underscores the importance of understanding the specific factors that contribute to success or challenges within different businesses. Factors such as effective marketing strategies, operational efficiency, product quality, and customer base all play varying roles in determining a trader's revenue performance.

Table 19 presents an overview of the overall annual income from fish sales for the fish traders surveyed. Based on 1,475 observations, the data indicates an overall annual average revenue (positional average) of GHS 30,000.00 ($2,521.01). This indicates that fish trade and marketing

can be a lucrative sector, and many individuals or businesses are successfully making a living within it. The standard deviation of GHS 109,069.5 ($9165.50) suggests a notable degree of variability in income levels among artisanal fish traders. This indicates that within the industry, there is a wide range of income outcomes. Some fish traders may be experiencing substantial success and revenue from their trading activities, while others may be facing more modest financial results or even struggling to generate significant income.

**Table 19: Overall annual income (in GHS) from fish sales**

| Variable | Obs | Mean | Std. Dev. | Min | Max | Median |
|---|---|---|---|---|---|---|
| Overall annual income | 1,475 | 73,010.03 | 109,069.5 | 600.00 | 964,800.00 | 30,000.00 |

The minimum recorded annual income is GHS 600.00 ($50.42), while the maximum reaches an impressive GHS 964,800 ($7,966.38) (Table 19). These statistics illustrate the wide spectrum of income levels among the fish traders, reflecting diverse factors such as industry, scale, and geographic location. It is important for businesses and stakeholders in the artisanal fish trade and marketing industry to be aware of this range of income levels, as it provides context for setting realistic expectations and identifying areas for potential growth or improvement.

In Table 20, the study provides a breakdown of the average monthly revenue for the high season, categorized by gender. For female participants, based on 1,433 observations, the average monthly revenue (using the median) is GHS 6,000.00 ($504.20), with a standard deviation of GHS 19,778.76 ($1,662.08). The minimum recorded monthly revenue is GHS 60 ($5.04), while the maximum reaches GHS 350,000. On the other hand, for male participants, based on 29 observations, the average monthly revenue is GHS 12,000.00 ($1,008.40), with a standard deviation of GHS 11,985.30 ($1,007.16). The minimum recorded monthly revenue for males is GHS 1,000.00 ($84.03) and the maximum is GHS 42,500.00 ($3,571.42). The data indicates that, on average, male participants in artisanal fish trade tend to have higher average monthly revenues during the high season compared to their female counterparts (double the female average in this case). The standard deviations for both genders are relatively high, indicating a notable degree of variability in monthly revenues. Based on the KIIs, this variability could be attributed to a range of factors such as individual business strategies, market conditions, and access to resources.

**Table 20: Average monthly revenue for the high season by gender (in GHS) from fish sales**

| Variable | Obs | Mean | Std. Dev. | Min | Max | Median |
|---|---|---|---|---|---|---|
| Female | 1,433 | 13,790.8 | 19,778.76 | 60.00 | 350,000.00 | 6,000.00 |
| Male | 29 | 15,837.93 | 11,985.3 | 1,000.00 | 42,500.00 | 12,000.00 |

The result suggests the need to provide opportunities and support both male and female participants in enhancing their revenue-generating potential in artisanal fish trade. For instance, targeted training and capacity-building programmes should be designed to equip individuals with business management skills, marketing strategies, and access to financial resources. Additionally, initiatives that focus on market access and linkages could help businesses expand their customer base and increase revenue streams. Overall, the data underscores the importance of gender-inclusive approaches in supporting the growth and sustainability of the artisanal fish trade sector in Ghana.

In Table 21, the average monthly revenue during the lean season was examined and categorized by gender. Among female participants, the result reveals that the average monthly revenue (using the median) is GHS 5,000.00 ($420.17), with a standard deviation of GHS 22,027.62 ($1,851.06). The lowest recorded monthly revenue is GHS 60.00, while the highest reaches a substantial GHS 392,000 ($32,941.17). For males, the average monthly revenue is GHS 6,000.00 ($504.20), with a standard deviation of GHS 9,767.74 ($820.81). The lowest recorded monthly revenue for males is 1,000.00 ($84.03) and the highest is GHS 42,500.00 ($3,571.42).

**Table 21: Average monthly revenue for the lean season by gender from fish sales**

| Variable | Obs | Mean | Std. Dev. | Min | Max | Median |
|---|---|---|---|---|---|---|
| Female | 1,342 | 12,039.95 | 22,027.62 | 60.00 | 392,000.00 | 5,000.00 |
| Male | 29 | 10,368.97 | 9,767.735 | 1,000.00 | 42,500.00 | 6,000.00 |

The result indicates that, on average, male participants tend to have slightly higher average monthly revenues during the lean season compared to their female counterparts. However, it's important to note that male engagement in the artisanal fish trade sector is observed to be considerably smaller (29 observations) compared to female participants (1,342 observations). The high standard deviations for both genders suggest a significant level of variability in monthly revenues.

The annual revenue categorized by gender is presented in Table 22. The results show that among the female participants, the average annual income (using the median) stands at GHS 30,000.00 ($2,521.01), with a standard deviation of GHS 108,663.4 ($9,131,37), indicating a significant degree of variation in annual income within this group. The recorded income spans from a minimum of GHS 600.00 (50.42) to a substantial maximum of GHS 964,800 ($81,075.63), highlighting the wide spectrum of earnings in the female cohort.

**Table 22: Overall annual revenue by gender from fish sales**

| Variable | Obs | Mean | Std. Dev. | Min | Max | Median |
|---|---|---|---|---|---|---|
| Female | 1,396 | 70,257.16 | 108,663.4 | 600.00 | 964,800.00 | 30,000.00 |
| Male | 29 | 85,068.97 | 53,251.38 | 5,000.00 | 200,000.00 | 75,000.00 |

For the male participants (based on 29 observations), the average overall annual revenue (using the positional average) from fish sales is higher at GHS 75,000.00 ($6,302.52). The standard deviation of GHS 53,251.38 ($4,475.41) also suggests variability in annual revenue levels among the male participants. The minimum recorded annual revenue for males is GHS 5,000 ($420.16) while the maximum is GHS 200,000 ($16,806.72). Interviews with experts and key informants revealed that the wide range of income levels within both groups underscores the complexity of factors influencing revenue generation, including industry sector, business strategies, prevailing market conditions, access to credit and storage facilities, etc. Some fish traders may have effectively diversified their product offerings or established strong customer relationships, contributing to higher revenue potential. Others may face challenges such as fluctuating market demand or limited access to capital, which can affect revenue levels. The result suggests the need for programmes and opportunities to support both male and female participants in enhancing their revenue-generating potential during the lean season. Thus, gender-inclusive approaches and targeted interventions are needed to foster a more equitable, thriving, and sustainable industry.

The results in Table 23 provide insights into the various means used for transporting fish products to the market in Ghana. The majority of respondents, accounting for 83.8%, rely on public transport for this purpose. This indicates a heavy dependence on established transportation systems for the movement of fish products, likely due to factors such as accessibility, efficiency, and cost-

effectiveness. It suggests a well-utilized and efficient infrastructure in place for fish traders, which is crucial for ensuring the timely and safe delivery of their products to market.

**Table 23: Means for transporting fish products to market (Multiple response option)**

| Means for transporting fish products to market | Frequency | Percent of responses | Percent of respondents |
|---|---|---|---|
| Motorcycle | 7 | 0.45 | 0.46 |
| Tricycle | 99 | 6.38 | 6.44 |
| Foot | 141 | 9.09 | 9.17 |
| Public transport | 1288 | 82.99 | 83.8 |
| Other (specify) | 17 | 1.1 | 1.11 |

Interestingly, tricycle and transporting by foot are also utilized, albeit to a lesser extent. Tricycles account for 6.44% of respondents, indicating a niche mode of transportation for fish products. Transporting fish by foot, reported by 9.17% of respondents, highlights the localized and potentially small-scale nature of some fish trade operations, where fishers may transport their catch by foot to nearby markets. This result reflects the diversity in transportation methods employed within the sector, which can be influenced by factors such as location, scale of operation, and available resources. The presence of alternative methods like tricycles, foot transportation, and other modes demonstrates the diverse approaches taken by fish traders to move their products. However, the low percentage of respondents (0.46%) using motorcycles for transportation is noteworthy, indicating that this mode of transport is less commonly utilized in the fish trade in Ghana. This may be attributed to factors such as cost, availability, and infrastructure limitations, which could be critical areas requiring urgent intervention.

From the KIIs, it emerged that traditional gender roles and cultural norms tend to shape women's preferences for certain transportation methods over others. In some communities, women may predominantly use head-loading or non-motorized means of transport due to cultural expectations around their involvement in domestic and small-scale economic activities. The use of head-loading, bicycles, or walking may align with traditional roles assigned to women, such as managing household tasks and small-scale trading. Additionally, socio-economic factors, including limited access to motorized transport and financial constraints, contribute to the prevalence of non-motorized means among women. It is crucial to consider these cultural and socio-economic factors when designing interventions or policies related to fish transportation,

ensuring they are culturally sensitive and address the specific needs and constraints faced by women in local markets in Ghana.

In addition, the study found that artisanal fish traders used multiple techniques in processing fish. In Table 24, it is evident that a diverse range of techniques are utilized, reflecting the varied approaches taken by fish traders to preserve and prepare their products for the market. Traditional smoking emerges as the most widely employed technique (78.36%) among respondents. This method is deeply ingrained in local practices and is likely favoured for its accessibility and cost-effectiveness. Understanding the prominence of traditional smoking sheds light on the cultural and economic significance of this processing technique within the industry.

**Table 24: Fish processing techniques (multiple response option)**

| Fish processing techniques | Freq. | Percent of responses | Percent of respondents |
|---|---|---|---|
| Boiling | 89 | 3.73 | 6.46 |
| Chilling/freezing | 207 | 8.68 | 15.03 |
| Drying | 343 | 14.38 | 24.91 |
| Improved smoking technologies | 30 | 1.26 | 2.18 |
| Salting | 367 | 15.38 | 26.65 |
| Traditional smoking | 1079 | 45.22 | 78.36 |
| Frying | 266 | 11.15 | 19.32 |
| I do not know | 4 | 0.17 | 0.29 |
| Other (Specify) | 1 | 0.04 | 0.07 |

Similarly, salting and drying are also widely employed, with 26.65% and 24.91% of respondents, respectively, indicating their use. These techniques are known for their effectiveness in preserving fish for extended periods, which is crucial for meeting market demands. The prominence of traditional salting, smoking, and drying techniques are crucial as they directly impact fish quality, shelf-life/spoilage, availability, and marketability of fish and fish products. Additionally, chilling/freezing and frying are employed by 15.03% and 19.32% of respondents, respectively (Table 24). These methods cater for market demands of fresh or cooked fish products, highlighting the importance of meeting diverse consumer preferences.

The results also signal areas for potential enhancement in fish processing technologies. For instance, improved smoking technologies are reported at a lower percentage (2.18%), suggesting an opportunity to introduce and promote more advanced and efficient smoking methods within the

industry. Similarly, the small percentage of respondents who indicated uncertainty about a specific processing technique (0.29%) indicates the need for policies, education, and training programmes to bolster the knowledge and skills of fish traders in this domain.

### *4.3 Business challenges*

This section presents the results on the hurdles faced by individuals engaged in the artisanal fish trade sector in Ghana. The section will delve into a range of issues affecting fish traders, including market access, regulatory compliance, financial constraints, and gender disparities in access to technologies. The artisanal fish trade and marketing sector in Ghana plays a pivotal role in the country's economy, providing livelihoods for numerous individuals and contributing significantly to local and national revenue. However, the sector and its value chain are not without their challenges (Table 25a), which can hinder the growth and prosperity of fish traders. In Table 25a, the challenges faced by artisanal small-small fish traders encompass a wide range of issues, from market access and infrastructure deficiencies to regulatory constraints and financial limitations. The challenge of compliance with trade regulations, quality, and safety standards is notably important, with 48.89% of the respondents considering it very or extremely important.

**Table 25(a): Business challenges linked to trade regulations/ standards and discrimination**

| Business Challenges | Freq. | Percent |
|---|---|---|
| Difficult compliance with trade regulations and quality and safety standards | | |
| Not important | 323 | 21.08 |
| Slightly important | 210 | 13.71 |
| Moderately important | 250 | 16.32 |
| Very important | 489 | 31.92 |
| Extremely important | 260 | 16.97 |
| Total | 1,532 | 100 |
| Discrimination/ and or harassment | | |
| Not important | 298 | 19.57 |
| Slightly important | 274 | 17.99 |
| Moderately important | 363 | 23.83 |
| Very important | 367 | 24.1 |
| Extremely important | 221 | 14.51 |
| Total | 1523 | 100 |

This highlights the critical need for streamlined and accessible regulations, along with the enforcement of quality and safety standards. Moreover, nearly 64% of the respondents find discrimination and harassment to be moderately to extremely important (Table 25a), underscoring the need to foster an inclusive and equitable environment within the industry. Efforts to combat discrimination and harassment are essential for creating a healthy and productive work atmosphere. With 90.11% of respondents indicating financial issues as very or extremely important, this challenge stands out as a top concern. It emphasizes the need for improved financial accessibility, and government support mechanisms. From the qualitative interviews with the key informants, it emerged that financing to buy the fish quantities that are required is a problem for traders since most financial agencies would want collateral before they finance the businesses of fish traders.

In addition, most of the respondents (78.41%) view high price fluctuation as very or extremely important, highlighting the volatility in pricing within the industry. For instance, the KIIs revealed that fish supply is low during the lean season leaving some traders with no financing to purchase fish stock. Those traders who purchase fish and fish products tend to sell at high prices because they bought the supplies at high prices and demand is high which is mostly to their advantage. However, only a few female fish traders benefit from this demand and supply pull, because they do not have the collateral or enough savings to source for credit. Meanwhile, 83.5% of the respondents consider the high cost of inputs a very or extremely crucial hindrance to maintaining competitiveness and profitability in the fish trade.

**Table 25(b): Business finance, pricing, inputs and illegal activities**

| **Business Challenges** | **Freq.** | **Percent** |
|---|---|---|
| Financial issues (e.g. limited access to credit, taxation, limited support from government etc.) | | |
| Not important | 17 | 1.11 |
| Slightly important | 70 | 4.56 |
| Moderately important | 65 | 4.23 |
| Very important | 499 | 32.49 |
| Extremely important | 885 | 57.62 |
| Total | 1536 | 100 |
| High price fluctuation | | |
| Not important | 19 | 1.33 |
| Slightly important | 56 | 3.92 |

| Business Challenges | Freq. | Percent |
|---|---|---|
| Moderately important | 233 | 16.33 |
| Very important | 420 | 29.43 |
| Extremely important | 699 | 48.98 |
| Total | 1427 | 100 |
| High cost of inputs | | |
| Not important | 17 | 1.11 |
| Slightly important | 45 | 2.95 |
| Moderately important | 190 | 12.44 |
| Very important | 419 | 27.44 |
| Extremely important | 856 | 56.06 |
| Total | 1527 | 100 |
| Illegal fishing activities | | |
| Not important | 232 | 15.26 |
| Slightly important | 171 | 11.25 |
| Moderately important | 354 | 23.29 |
| Very important | 323 | 21.25 |
| Extremely important | 440 | 28.95 |
| Total | 1520 | 100 |

Measures to stabilize prices and provide predictability can greatly benefit businesses, ensuring more stable revenue streams and profitability. The results in Table 25b further indicate that illegal fishing activities are considered a significant concern. On average, 50.2% of the respondents rated it as very or extremely important, highlighting the pressing need for robust measures to combat illegal fishing practices. This includes enforcing strict regulations and enhancing surveillance to protect the sustainability of fish stocks and the livelihoods of legitimate fishers. A striking 84.52% of the respondents view poor representation in national decision-making processes as moderately to extremely important. This underlines the need for greater advocacy and inclusion of the fish trade industry in policy formulation. Ensuring a strong voice in decision-making can lead to policies that better support and promote the growth of the sector.

**Table 25(c): Representation, information access and demand**

| Business Challenges | Freq. | Percent |
|---|---|---|
| Poor representation in national decision-making process | | |
| Not important | 94 | 6.2 |
| Slightly important | 171 | 11.28 |

| | | |
|---|---|---|
| Moderately important | 538 | 35.49 |
| Very important | 357 | 23.55 |
| Extremely important | 356 | 23.48 |
| Total | 1516 | 100 |
| Lack of market information (getting price information) | | |
| Not important | 209 | 13.78 |
| Slightly important | 219 | 14.44 |
| Moderately important | 355 | 23.4 |
| Very important | 355 | 23.4 |
| Extremely important | 379 | 24.98 |
| Total | 1517 | 100 |
| Low demand | | |
| Not important | 29 | 1.91 |
| Slightly important | 108 | 7.11 |
| Moderately important | 241 | 15.87 |
| Very important | 310 | 20.41 |
| Extremely important | 831 | 54.71 |
| Total | 1519 | 100 |

In addition, almost 70% of respondents find the lack of market information, particularly price information, to be moderately important, very important or extremely important. This underscores the necessity of establishing efficient information dissemination channels within the industry. Access to timely and accurate market data can empower stakeholders to make informed decisions, ultimately contributing to a better market. Again, the majority (75.12%) of the respondents consider low demand to be a pressing issue, highlighting a potential gap between supply and demand in the market. Addressing this challenge may involve market research, product diversification, and targeted marketing efforts to stimulate consumer interest and drive demand. Meanwhile, the high percentage (69.82%) of respondents rating poor technology and market facilities as very or extremely important emphasizes the critical need for infrastructure development. Improving facilities related to water, electricity, and storage can significantly enhance the efficiency and competitiveness of the artisanal fish trade sector.

The issue of poor technology was equally identified during the KIIs. It emerged that lack of technology development and transfer and improved market facilities within the artisanal fisheries sector makes trade and marketing activities more daunting and challenging for most traders. In addition, traders who usually travel to distant markets (particularly women) would transport loads

of fish to the markets and sell in batches. This means that fish would have to be stored to sell in batches. Where proper storage is not available, fish might deteriorate in quality and/or fragment because it would be moved from one place to the other frequently to either make way or ensure safety. Where markets are properly planned, issues of safety and storage which negatively impacts women than men could be reduced.

**Table 25(d): Technology, transportation, losses/waste and bureaucratic challenges**

| Business Challenges | Freq. | Percent |
|---|---|---|
| Poor technology, market facilities and infrastructures (water electricity storage etc.) | | |
| Not important | 104 | 6.79 |
| Slightly important | 122 | 7.97 |
| Moderately important | 236 | 15.41 |
| Very important | 623 | 40.69 |
| Extremely important | 446 | 29.13 |
| Total | 1531 | 100 |
| Transport or logistics issues (security and safety issues on roads and markets, market distance) | | |
| Not important | 86 | 5.61 |
| Slightly important | 97 | 6.32 |
| Moderately important | 161 | 10.5 |
| Very important | 594 | 38.72 |
| Extremely important | 596 | 38.85 |
| Total | 1534 | 100 |
| Loss and waste (e.g., spoilage) | | |
| Not important | 124 | 8.13 |
| Slightly important | 161 | 10.56 |
| Moderately important | 448 | 29.38 |
| Very important | 248 | 16.26 |
| Extremely important | 544 | 35.67 |
| Total | 1525 | 100 |
| Bureaucracy (too complicated, lengthy, costly | | |
| Not important | 395 | 26.35 |
| Slightly important | 260 | 17.34 |
| Moderately important | 474 | 31.62 |
| Very important | 234 | 15.61 |
| Extremely important | 136 | 9.07 |
| Total | 1499 | 100 |

The participants further noted that women traders are vulnerable and easy targets for criminals in markets. Key problems they mentioned include theft and rape due to long-hours of operation and

lack of electricity in the markets. The participants also mentioned that overcrowding, lack of firefighters, extinguishers, and flood events mostly become disastrous when they occur in the markets.

Additionally, infrastructure in the markets cannot cater for everyone because they are either not easily accessible, available or they are in a state of disrepair. Thus, social amenities like, toilets, bathrooms, restrooms, hostel, water, and electricity are often not available in markets, and if at all they are, they are woefully inadequate. The key informants also argued that fish traders travel far to access these markets and might take a day or two to sell off their ware thus these basic amenities are necessities for their upkeep until they depart from the market. A classic example of a standard fish market in Ghana, identified in the KIIs, is the Akosombo fish market which is well-structured with some modern compliments to control contamination, create comfort and storage space for traders.

Transport and logistics issues also emerged as a top concern, with 77.57% of respondents indicating they are very or extremely important (Table 25d). From the KIIs, the participants also revealed that inadequate logistics and transport facilities posed a barrier to trade and marketing activities. Without mobile properties like vehicles, tricycles, and motorcycles, they are often unable to easily transport their fish and fish products to the market. This highlights the need for investments in transportation infrastructure and addressing security challenges. Improving the accessibility and safety of roads and markets is essential for the smooth flow of goods and maintaining the integrity of the artisanal fish supply chain.

In addition, the fish traders consider loss and waste to be of utmost importance, with 81.91% rating it as moderately to extremely important, demonstrating the need for efficient post-harvest handling practices including transportation, improved storage and preservation methods to minimize spoilage and maximize economic returns. For instance, interviews with experts (KIIs) confirmed that most fish traders are facing challenges related to losses and waste due to post-harvest handling. A common practice among fish traders is to pad storage baskets with papers, but the key stakeholders interviewed articulated that this technique does not always yield the required outcome of preventing fish from fragmenting during transportation and storage. This impacts negatively on the price at which traders sell and the quality of the fish itself, thus value and quality are compromised because of poor handling, packaging, and transporting. Where roads are bad, fish

tend to fragment when transported from one marketplace to the other. This is the case for most communities that are into inland fisheries particularly.

Furthermore, the traders perceive bureaucratic challenges as crucial, with 73.64% indicating it is slightly to extremely important (Table 25d). Thus, streamlining administrative processes and reducing red tape can lead to greater operational efficiency and cost-effectiveness, ultimately benefiting businesses within the artisanal fish trade sector. Table 26 provides insights into the key financial challenges faced by respondents in their activities, highlighting the top challenges outlined by the respondents. As shown, access to credit is a predominant concern, with 72.43% of respondents identifying it as a top financial challenge, underscoring the critical role of financial support in sustaining and expanding their business endeavours. For instance, the KIIs revealed that in some cultural settings, it is extremely difficult for a woman to acquire landed property, which most financial agencies require as collateral to loan out monies to informal sector workers in case of missed payment or non-payment. In fact, when it comes to ownership of landed property, married women in the artisanal fish trade sector were particularly identified as not standing a good chance of acquiring one.

**Table 26: Financial challenges faced by respondents in their activity (based on top challenges selected)**

| Top financial challenges faced | Frequency | Percent of responses | Percent of respondents |
|---|---|---|---|
| None | 22 | 0.53 | 1.43 |
| Access to subsidies | 950 | 22.84 | 61.93 |
| Access to credit | 1111 | 26.71 | 72.43 |
| Budget management | 82 | 1.97 | 5.35 |
| Debt repayment | 366 | 8.8 | 23.86 |
| Lack or inconsistent cash flow | 483 | 11.61 | 31.49 |
| Keeping records | 181 | 4.35 | 11.8 |
| Taxation | 507 | 12.19 | 33.05 |
| Unexpected expenses | 438 | 10.53 | 28.55 |
| Other (specify) | 20 | 0.48 | 1.3 |

Additionally, access to subsidies (61.93%) and lack of consistent cash flow (31.49%) are considered as critical challenges, emphasizing the importance of external financial assistance and stable income streams to artisanal fish traders. The results also reveal notable concerns regarding debt repayment (23.86%) and taxation (33.05%), pointing to the complex financial landscape these

entrepreneurs navigate. Unexpected expenses (28.55%) and challenges related to budget management and record-keeping further highlight the multifaceted financial hurdles faced by the respondents. There is the need for targeted interventions addressing credit accessibility, subsidies, and financial literacy to enhance the financial resilience of individuals involved in artisanal fish-related business activities. From Table 27, the majority of the respondents (72.13%) reported no access to external finance during the last two years, indicating a prevalent challenge in securing financial support for their activities. Conversely, 27.87% reported having accessed external finance, suggesting that a minority portion of respondents has been able to tap into financial resources beyond their own means.

**Table 27: Access to external source of finance in last 2 years**

| Access to external finance (last 2 years) | Freq. | Percent |
|---|---|---|
| No | 1,074 | 72.13 |
| Yes | 415 | 27.87 |
| **Total** | **1,489** | **100** |

These constraints show potential barriers to business expansion, investment, or addressing other financial challenges. These constraints may hinder their ability to grow their businesses, invest in new ventures, or overcome financial difficulties. There is a need to address these barriers and provide adequate support to help these entrepreneurs thrive and contribute to economic growth. Table 28 offers insights into the diverse formal and informal avenues traders explored for financial support. Notably, microfinance institutions emerge as the most prominent funding source, with 58.1% of respondents relying on them.

**Table 28: Sources of external finance respondents resorted to in last 2 years (multiple response option)**

| Sources of External Finance | Frequency | Percent of responses | Percent of respondents |
|---|---|---|---|
| Commercial banks | 34 | 8.02 | 8.74 |
| Informal networks (family, money lenders, etc.) | 137 | 32.31 | 35.22 |
| Microfinance institutions | 226 | 53.3 | 58.1 |
| Stakeholder organization/Association | 24 | 5.66 | 6.17 |
| Other (specify) | 3 | 0.71 | 0.77 |

This underscores the importance of microfinance in providing accessible financial services to individuals engaged in various activities in the fisheries sector. Informal networks, including

family and money lenders, constitute another important source, with 35.22% of respondents opting for this traditional form of financial assistance. Commercial banks, though less frequently utilized (8.74%), still represent a formal financial channel that some respondents have tapped into. The involvement of stakeholder organizations or associations (6.17%) indicates collaborative efforts within specific communities or sectors which can help to address the unique financial needs and challenges faced by individuals engaged in fish-related businesses.

### *4.4 Policy Support*

The challenges that confront artisanal fish traders are diverse and require policy support for effective solutions. The majority of fish traders, 98.82%, do not receive government support, while only a small minority, 1.18%, reported receiving such assistance (Table 29). These suggest a gap in the distribution of government support among the surveyed population.

**Table 29: Reception of Government support over the last 2 years**

| Reception of Government support | Frequency | Percent |
|---|---|---|
| No | 1,512 | 98.82 |
| Yes | 18 | 1.18 |
| **Total** | **1,530** | **100** |

The high percentage of individuals not receiving government aid may indicate potential challenges or limitations in the availability, accessibility and/or reach of support programmes within the artisanal fisheries sector. Understanding the factors influencing this disparity could be crucial for policymakers to ensure more equitable distribution of assistance and address the needs of those who might be currently underserved or overlooked by existing government support initiatives. Beside the challenge of receiving government support, the majority of the traders (94.45%) did not participate in capacity development activities over the last five years, while only 5.55% reported engaging in such activities (Table 30).

**Table 30: Participation in capacity development activities over the last 5 years**

| Participation in capacity development activities | Freq. | Percent |
|---|---|---|
| No | 1,328 | 94.45 |
| Yes | 78 | 5.55 |
| **Total** | **1,406** | **100** |

This suggests a notable disparity in the involvement of the surveyed population in capacity-building initiatives. The low percentage of individuals participating in these activities may imply potential challenges or barriers to accessing or engaging with capacity development opportunities. From the KIIs, the disparity was attributed to various factors, such as lack of awareness about available opportunities, limited resources or funding for participation, or competing priorities that hinder individuals from dedicating time to capacity development.

Among traders who participated in capacity development activities, the specific topics/areas of such initiatives are provided in Table 31. Capacity development efforts have been more concentrated in business and entrepreneurial skills, with 65.33% of the traders participating in activities related to this area. This indicates a strong interest and recognition among a few of the surveyed population in enhancing skills that contribute to business development and entrepreneurship. Fish handling practices and fish processing were also notable, accounting for 24% and 13.33% of responses, respectively, suggesting the placement of some emphasis on skill development within the artisanal fisheries sector. It is important to note the relatively low percentages in some categories such as accounting/ book-keeping, fish marketing, and food safety and nutrition. These results provide a nuanced understanding of the areas where capacity development efforts have been more concentrated and thus inform targeted strategies for future capacity development initiatives. This will ensure alignment with the specific needs and interests of the fish traders, particularly in enhancing business-related and fisheries-specific skills.

**Table 31: Topic of capacity development activity respondents participated in over the last 5 years**

| Topic of Capacity Development | Frequency | Percent of responses | Percent of respondents |
|---|---|---|---|
| Accounting/book-keeping | 9 | 8.82 | 12.00 |
| Business and entrepreneurial skills | 49 | 48.04 | 65.33 |
| Fish handling practices | 18 | 17.65 | 24.00 |
| Fish processing | 10 | 9.8 | 13.33 |
| Fish marketing | 6 | 5.88 | 8.00 |
| Food safety and nutrition | 9 | 8.82 | 12.00 |
| Other (specify) | 1 | 0.98 | 1.33 |

Policymakers and programme designers should consider these nuances to create more tailored and effective interventions, fostering a more comprehensive approach to skill development that addresses both the dominant and underrepresented areas identified by the study.

In ranking the kind of policy support required by the traders, financial assistance emerges as a critical (95.25%) support area identified by the respondents. This result seems to suggest that traders do not necessarily perceive financial assistance as not important, despite the reported high-income levels from fish trade. This also underscores the significance of government-backed financial support in facilitating the growth and sustainability of artisanal fish trading. Access to grants, incentives, and subsidies can significantly alleviate financial constraints and promote investment in the sector, ultimately bolstering the livelihoods of fish traders. Moreover, better market facilities and infrastructures are identified by 80.61% of the respondents, highlighting the pressing need for improved physical infrastructure in fish markets. This includes facilities for processing, storage, and sanitation, which are vital for maintaining product quality and hygiene standards. Investing in market infrastructure can lead to increased market efficiency, better handling of fish products, and enhanced overall trading conditions for traders in the artisanal fisheries sector.

**Table 32: Most needed policy support for artisanal fish traders (Key areas for policy support)**

| Most needed policy support | Freq. | Percent of responses | Percent of respondents |
|---|---|---|---|
| Better access to technology | 923 | 11.3 | 61.70 |
| Better market facilities and infrastructures | 1206 | 14.76 | 80.61 |
| Business development services | 917 | 11.23 | 61.30 |
| Financial assistance (grants, incentives, subsidies, etc.) from government, from governmental agencies | 1425 | 17.45 | 95.25 |
| Less taxation and bureaucracy | 917 | 11.23 | 61.30 |
| Non-discriminatory legal frameworks and policies | 819 | 10.03 | 54.75 |
| Social protection and support services (e.g., healthcare, childcare facilities) | 1037 | 12.7 | 69.32 |
| Trade facilitation and market information | 862 | 10.55 | 57.62 |
| Others | 62 | 0.76 | 4.14 |

In addition, social protection, and support services, including healthcare and childcare facilities, are recognized by 69.32% of respondents. This brings to the forefront the importance of holistic support systems for the well-being of fish traders and their families. Access to healthcare and childcare services can enhance the overall quality of life for traders, addressing essential aspects of their personal and professional lives. It is crucial for policymakers to consider the broader social welfare of fish traders when formulating policies. The participants for the KIIs confirmed that

though not visible, there are indications that children support their parents in activities relating to artisanal small-scale fisheries, indicating the incidence of child labour in artisanal small-scale fisheries. The participants narrate stories of children either at the sea or river catching fish, at the processing centres helping with processing and at the marketplace helping with fish trade. This is worrying given the dangers involved, the lack of safety measures and little action by law enforcement agencies, such as the police, the Ministry of Gender Children and Social Protection and local authorities. There is the need to identify and strengthen collaborations among stakeholders in the sector, ensuring inclusion and engagement at all levels.

Again, non-discriminatory legal frameworks and policies, identified by 54.75% of the respondents, are also of paramount importance. Ensuring fair and inclusive policies is crucial for creating an enabling environment for all fish traders, regardless of their background or circumstances. The results also underscore the critical need for trade facilitation, less taxation with improved bureaucracy, and opportunities for business development. Addressing these needs through targeted policy interventions can lead to a more vibrant, sustainable, and inclusive artisanal fish trade sector in Ghana, ultimately benefiting the livelihoods of fish traders and contributing to the overall economic growth of the country. Despite acknowledging the diverse support needs, it appears that most of the traders are unaware of the Voluntary Guidelines for Security Sustainable Small-scale Fisheries (VGSSSF) (Table 33), which aims among others things to contribute to the equitable development of small-scale fishing communities, safeguard the rights of actors in the small-scale fisheries sector and provide guidance in developing and implementing participatory policies, strategies and legal frameworks to achieve sustainable fisheries management.

**Table 33: Respondents awareness of Voluntary Guidelines for Security Sustainable Small-scale Fisheries**

| **Awareness of Voluntary Guidelines** | **Freq.** | **Percent** |
|---|---|---|
| No | 1,025 | 84.85 |
| Yes | 183 | 15.15 |
| **Total** | **1,208** | **100** |

A large majority, 84.85% of the traders, reported that they were not aware of the VGSSSF guidelines, while only 15.15% indicated awareness. This stark contrast raises concerns about the

dissemination and communication strategies surrounding critical guidelines for sustainable small-scale fisheries. The low awareness could hinder the effective implementation of and demand for accountability on these guidelines, potentially jeopardizing the sustainability of small-scale fisheries. Efforts should be made to improve the dissemination and communication of these guidelines to ensure that small-scale fisheries are able to adopt sustainable practices. Furthermore, engaging local communities, fishers, and relevant organizations in the development and implementation of awareness campaigns can enhance the overall effectiveness and bring out the socio-economic and cultural relevance highlighted in the guidelines to bear on the communities they are designed to benefit.

### *4.5 Gender Equality and Empowerment*

This section delves into the issues of gender equality and empowerment within the small-scale artisanal fisheries sector in Ghana. The section also examines the gender balance regarding respondents' participation in business associations and stakeholder organizations. There appears to be divided opinions on the challenges faced by women traders due to their gender (Table 34). Approximately, 51.09% of the traders acknowledge that women traders encounter additional challenges due to their gender, while 48.91% believe otherwise.

**Table 34: Perception on additional challenges faced by women traders due to their gender**

| Perception on additional challenges faced by women | Freq. | Percent |
|---|---|---|
| No | 742 | 48.91 |
| Yes | 775 | 51.09 |
| **Total** | **1,517** | **100** |

The acknowledgment by over half of the traders suggests a recognition of gender disparities and potential barriers that women traders may encounter in carrying out fish-related activities. From the KIIs, participants also confirmed that women have an additional burden of combining domestic responsibilities, childcare and trade activities. Female traders who are nursing mothers are faced with issues of mobility because they have limited time to move around to sell fish. Fish traders and processors often travel to processing centers near the capture point to market centers in big cities. The key informants observed that due to time constraints and domestic responsibilities, fish

traders are often unable to stay in the market for days to sell their products, especially for married women and single or divorced women who have children.

In Table 35, limited access to financial services and credit emerges as a predominant concern, with 58.21% of women traders identifying this as a critical issue. This underscores the significant economic challenges faced by women in trade, highlighting the importance of addressing financial exclusion to empower women traders. Moreover, lack of support from the government is a notable issue, identified by 41.55% of respondents, indicating the potential impact of policy gaps or insufficient support mechanisms for women involved in fish trade activities. Policymakers should take note of these results to formulate targeted interventions that enhance financial accessibility and governmental support structures, fostering a more supportive environment for women in fish trade.

**Table 35: Critical issues confronting women traders in their business activities and environment (multiple response option)**

| Critical issues confronting women traders in business environments | Frequency | Percent of responses | Percent of respondents |
|---|---|---|---|
| None | 20 | 0.91 | 2.42 |
| Harassment (any improper discriminatory or threatening behavior causing harm or offence, including sexual harassment, physical, emotional, verbal and non-verbal harassment | 237 | 10.79 | 28.62 |
| Limited access to better job opportunities | 174 | 7.92 | 21.01 |
| Limited access to financial services and credit | 482 | 21.94 | 58.21 |
| Limited access to assets | 104 | 4.73 | 12.56 |
| Lack of support from family | 216 | 9.83 | 26.09 |
| Lack of support from government | 344 | 15.66 | 41.55 |
| Low bargaining power and voice | 77 | 3.50 | 9.30 |
| Lack of involvement in fisheries management processes | 86 | 3.91 | 10.39 |
| Too much domestic and care work | 370 | 16.84 | 44.69 |
| Unsafe labour conditions | 87 | 3.96 | 10.51 |

Other notable concerns include harassment (28.62%), limited access to better job opportunities (21.01%), too much domestic and care work (44.69%), and limited access to assets, low bargaining power and voice (9.3%). This indicates the multifaceted set of challenges, encompassing not only

economic barriers but also social and cultural factors that affect women traders. Efforts to address these issues should involve a holistic approach, considering both economic empowerment and societal changes that promote gender equality. In Figure 10, a notable portion, 28.36%, of the surveyed women reported encountering challenges in their work specifically linked to their gender.

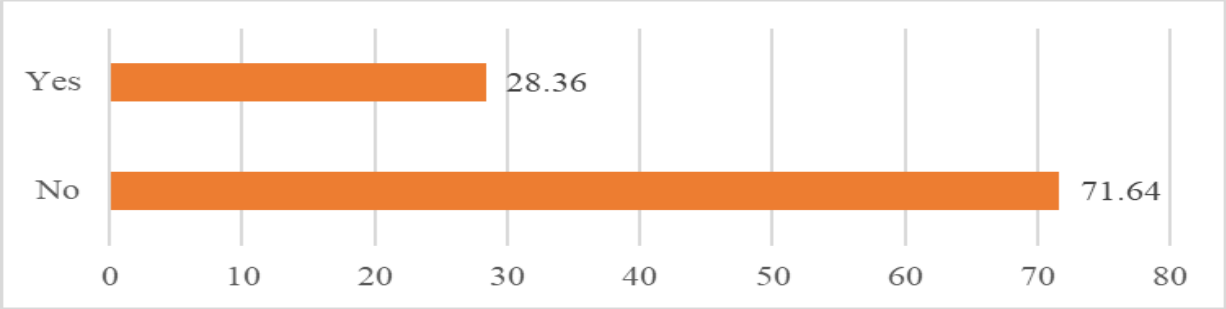


**Figure 10: Work specific challenges faced by women due to their gender**

The relatively high percentage of women (71.64%) acknowledging work-specific challenges linked to their gender emphasizes the need for proactive initiatives to create more inclusive and equitable work environments for women in artisanal fish trade. Strategies such as diversity and inclusion programmes, gender-sensitive policies, and awareness campaigns can help address these challenges and foster markets and workplaces where women feel supported and empowered to carry out their trade. In terms of specific work areas where women encountered challenges, financial services stand out prominently, with 65.57% of respondents identifying this area as one where they encounter gender-specific challenges (Table 36). This highlights a substantial gender disparity in access to financial services, potentially indicating issues related to credit, loans, or general financial inclusion that need to be addressed to empower women in the artisanal fisheries value chain. Marketing and trade also emerge as an area of concern, with 50.9% of respondents reporting challenges, emphasizing the importance of targeted interventions to promote gender equality in these sectors.

**Table 36: Work areas respondents experienced challenges due to gender as a woman**

| Work areas with women-specific challenges | Frequency | Percent of responses | Percent of respondents |
|---|---|---|---|
| Administration and bureaucracy | 28 | 5.92 | 8.38 |
| Business relationships | 17 | 3.59 | 5.09 |
| Customs and export | 6 | 1.27 | 1.80 |
| Financial services | 219 | 46.30 | 65.57 |
| Marketing and trade | 170 | 35.94 | 50.90 |
| Prefer not say | 26 | 5.50 | 7.78 |
| Other(specify) | 7 | 1.48 | 2.10 |

Administration and bureaucracy, business relationships, customs and export are also identified as areas with women-specific challenges, though with relatively lower percentages. This suggests that gender-related obstacles are not confined to a single aspect of fish-related activity, but are distributed across various domains, necessitating a comprehensive approach to address these challenges. Additionally, the cases indicating "Prefer not say", emphasize the sensitivity of gender-related challenges, underscoring the need to foster environments where women feel comfortable discussing and addressing these issues openly.

In terms of discussions on the specific women experiences in fish-related activities, it appears that most women do not feel comfortable openly discussing their encounters in the artisanal fisheries value chain. Majority of the respondents (54.84%) (Table 37), chose not to disclose their work-specific challenges and experiences, emphasizing the sensitivity and personal nature of these issues.

**Table 37: List of women experiences in fish-related activities (multiple response option)**

| Women experience in work activities | Frequency | Percent of responses | Percent of respondents |
|---|---|---|---|
| None | 72 | 16.51 | 16.59 |
| Harassment | 67 | 15.37 | 15.44 |
| Physical violence | 49 | 11.24 | 11.29 |
| Sexual harassment | 10 | 2.29 | 2.30 |
| Prefer not to say | 238 | 54.59 | 54.84 |

Among those who did share their experiences, harassment emerged as a prevalent concern, with 15.44% reporting such incidents. Physical violence was also identified by 11.29% of respondents, highlighting a distressing aspect of the artisanal fisheries environment for some women. The presence of sexual harassment, though lower at 2.3%, indicates the need for ongoing efforts to create safe and respectful workplaces, particularly for women in artisanal fish trade. This is critical because it emerged during the KIIs that due to inadequate supply of fish to traders due to lack of financing, there is barter of 'sex for fish', where women are sometimes sexually abused. There are instances where an older woman must keep her supply of fish, as such she put her younger daughter on the line for a fisherman to abuse. This is often so for traders who are not able to pre-finance fish supply and related activities of the fishers. With adequate financial support for traders and avenues for loans with low interest rates, issues of 'sex for fish' which affects women and girls could be non-existent.

In Figure 11, the results presented reflect responses from artisanal fish traders regarding their membership in business associations or stakeholder organizations within the fish trade and marketing industry. The majority of the respondents, constituting 65.05%, indicated that they are not affiliated with any business association or stakeholder organization. This suggests that a significant portion of individuals engaged in the fish trade in the survey communities may operate independently or without formal organizational support. This could potentially lead to challenges in accessing resources, market information, and collective advocacy, which are often facilitated by such associations.

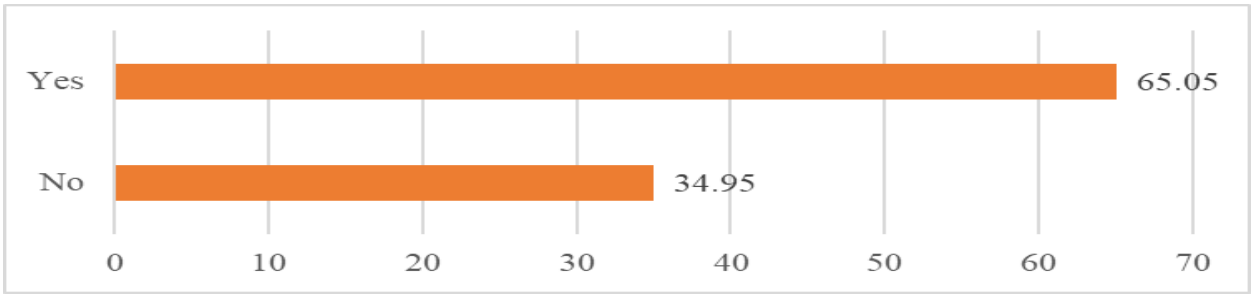


**Figure 11: Membership of business association or stakeholder organization**

Conversely, 34.95% of respondents reported being members of business associations or stakeholder organizations. This subset of individuals likely benefit from the resources, networking

opportunities, and collaborative efforts provided by these organizations. Membership in such groups can lead to improved market access, knowledge sharing, and collective bargaining power within the fish trade industry. This result suggests that while a significant portion operate independently, a noteworthy proportion acknowledge the advantages of being part of formalized groups such as business associations or stakeholder organizations. Among the respondents who are affiliated, the majority (64.21%) indicated their membership in local fish associations or cooperatives (Table 38). This high percentage suggests a strong presence of grassroots-level organizations within the industry. Local fish associations and cooperatives often play a crucial role in mobilizing resources, providing training, and facilitating collective action among fishers and traders at the community level. Their prominence in the result reflects a significant level of community-based organization and collaboration within the sector. Additionally, 13.52% of respondents reported being members of women's associations, highlighting the presence and importance of gender-specific organizations within the fish trade industry. Women's associations serve a critical role in empowering women engaged in various aspects of the industry, from fish processing to trading. They can provide a platform for skill-building, access to credit, and advocacy for gender-inclusive policies.

**Table 38: Respondents' organizational affiliation based on the subset belonging to associations**

| Type of organization | Freq. | Percent |
|---|---|---|
| Local fish association/cooperative | 323 | 64.21 |
| National fish association | 29 | 5.77 |
| Women's association | 68 | 13.52 |
| Informal group | 82 | 16.30 |
| Trade Union | 1 | 0.20 |
| **Total** | **503** | **100** |

Furthermore, 16.3% of respondents indicated their affiliation with informal groups. This category likely encompasses a diverse range of organizations that may not have formal legal structures or official registration. These groups may form around common interests or activities related to the fish trade, and they can serve as important hubs for information exchange, resource-sharing, and mutual support. The presence of a significant percentage of respondents in this category reflects the dynamic and varied nature of organizational forms within the industry.

A smaller proportion (5.77%) of the respondents reported being members of national fish associations. While this percentage is relatively lower compared to local associations and cooperatives, it signifies the existence of organized bodies at a national level. National fish associations often play a crucial role in advocacy, policy dialogue, and coordination with governmental and non-governmental stakeholders. Their presence indicates a level of engagement with broader industry issues and potentially influences policy decisions that affect the entire fish trade sector.

Despite their affiliation, the majority (76.88%) of respondents (Figure 12), reported that they did not receive any benefits based on their membership in associations or organizations. This suggests that a significant portion of individuals may be affiliated with organizations that do not provide clear or tangible advantages. This could signify a potential gap in the effectiveness or functionality of these groups, as members may not perceive them as instrumental in enhancing their professional or personal endeavors within the context of the fish trade industry.

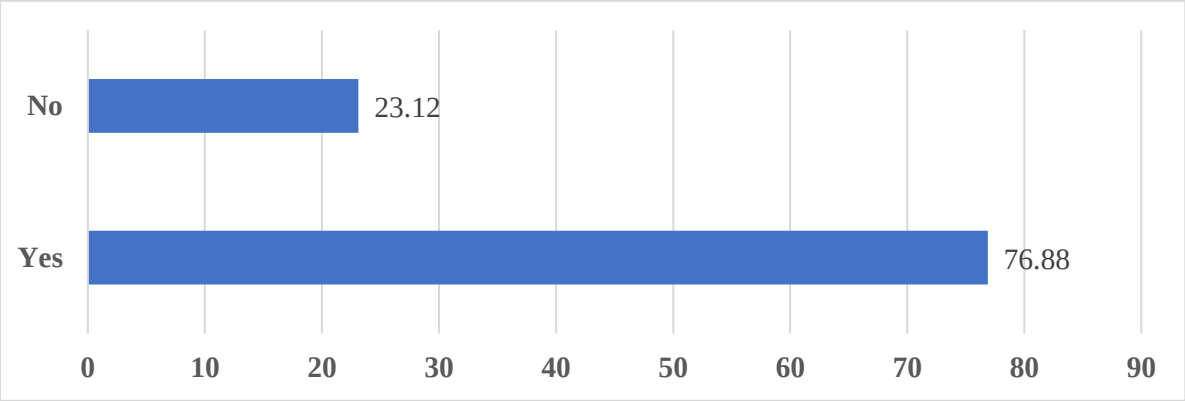


**Figure 12: Receipt of benefits due to membership of business association or stakeholder organization**

On the other hand, 23.12% of respondents indicated that they did receive benefits from their membership. This suggests that for this subset of individuals, their affiliation with a specific organization has been valuable and has led to discernible advantages. The most frequently cited benefit is market access, with 48.7% of respondents indicating that they gained this advantage through their affiliation (Figure 13). This high percentage reflects the critical role that organizational membership plays in facilitating access to markets for individuals engaged in the

fish trade. Market access is crucial for business growth and sustainability, as it enables traders to reach a wider customer base and expand their operations.

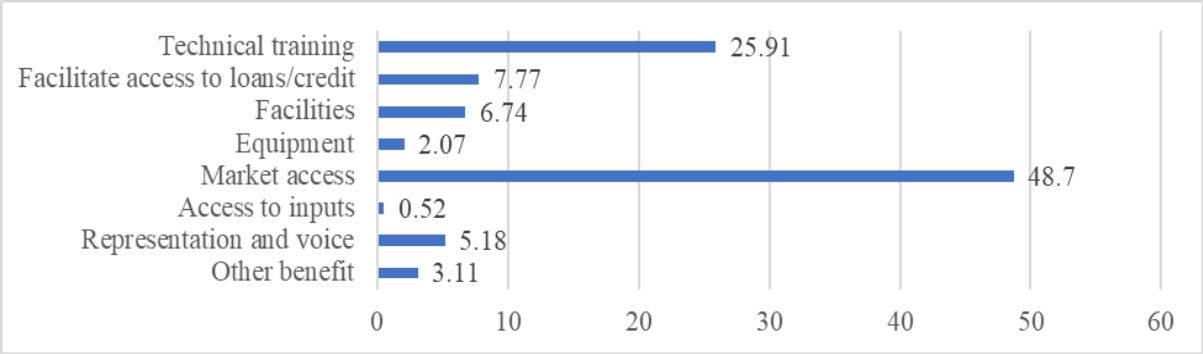


**Figure 13: Types of benefits received from affiliated organizations**

Technical training was the second most reported benefit from associating with organizations, with 25.91% of respondents acknowledging its receipt. This highlights the importance of capacity-building and skill development within the industry. Technical training equips individuals with the knowledge and skills necessary to improve their practices, enhance product quality, and increase their competitiveness in the market. This result underscores the value that organizations bring to their members by providing opportunities for ongoing learning and professional development.

Additionally, a notable percentage of the respondents mentioned facilitated access to loans or credit (7.77%) and representation and voice (5.18%) as benefits derived from their membership. Access to financial resources is critical for businesses to invest in equipment, expand operations, and navigate economic challenges. These results demonstrate that representation and voice is limited within the organization, hence, it might be difficult for artisanal fish traders to influence policies and decision-making of the industry.

However, in terms of satisfaction levels with business achievement, the results in Table 39 reveal that the majority of respondents expressed satisfaction with their business achievements. A substantial 42.23% reported being *"very satisfied"*, while an additional 46.3% indicated that they were *"somewhat satisfied"*. This combined total of nearly 88.5% suggests a predominantly positive outlook on the business outcomes within the industry. This high level of satisfaction may be indicative of successful business practices, potentially reflecting factors such as effective market access, quality products, and sound financial management.

**Table 39: Level of satisfaction or dissatisfaction with business achievements**

| Satisfactory levels | Freq. | Percent |
|---|---|---|
| Very satisfied | 644 | 42.23 |
| Somewhat satisfied | 706 | 46.3 |
| Neither satisfied nor unsatisfied | 62 | 4.07 |
| Somewhat dissatisfied | 87 | 5.7 |
| Very dissatisfied | 26 | 1.7 |
| **Total** | **1,525** | **100** |

Conversely, a smaller percentage of respondents expressed varying degrees of dissatisfaction with their business achievements. Approximately 5.7% reported being "somewhat dissatisfied," and only 1.7% stated they were *"very dissatisfied"*. These numbers suggest that a minority of individuals in the surveyed fish traders face challenges or are less content with their business performance. This could be attributed to factors such as market fluctuations, resource constraints, or regulatory hurdles.

Table 40 provides a breakdown of membership in business associations or stakeholder organizations by gender. The result shows that out of the total respondents who are members of associations, 492 (or 96.09%) are females, while 20 (or 3.91%) are males. Interestingly, a higher percentage of females indicated that they are not members of any business association or stakeholder organization (98.73%), as opposed to males (1.27%). This indicates that a greater proportion of females within the surveyed fish traders' group are not affiliated with formalized groups within the industry. This could imply that most females may not have greater access to or participation in organizational networks, that provide them with additional resources, networking opportunities, and collective advocacy. This is in contrast with the male group. This finding could suggest a potential gender disparity in organizational affiliation within the fish trade industry. It is worth exploring the underlying factors that contribute to this discrepancy, which may include access to information, cultural norms, or specific challenges faced by women in the industry.

**Table 40: Relationship between membership of business association and gender**

| Membership of business association or stakeholder organization | Gender | | |
|---|---|---|---|
| | Female | Male | Total |
| No | 936 | 12 | 948 |

| | | | |
|---|---|---|---|
| | 98.73 | 1.27 | 100 |
| | 65.55 | 37.5 | 64.93 |
| | 492 | 20 | 512 |
| | 96.09 | 3.91 | 100 |
| Yes | 34.45 | 62.5 | 35.07 |
| | 1,428 | 32 | 1,460 |
| | 97.81 | 2.19 | 100 |
| Total | 100 | 100 | 100 |
| Pearson chi² (1) = 10.8119 Pr = 0.001 | | | |

The statistical test, Pearson chi-square, indicates a significant association between gender and membership in business associations or stakeholder organizations ($X^2$ (1) = 10.812, Pr = 0.001). This suggests that there is a statistically significant relationship between gender and organizational affiliation within the fish trade industry. In this case, it shows that men tend to associate more compared to women. This finding reinforces the idea that gender plays a notable role in determining membership status of associations. This underscores the importance of further investigating the underlying factors contributing to this gender disparity and implementing targeted interventions to promote gender equality in organizational participation within the industry.

The study further determined whether being a member of an association or organization positively influenced fish supplies in the communities. In Table 41, the study presents results on the regularity of fish supplies based on membership in business associations/ stakeholder organizations. It is evident that the majority of respondents, both those who are members and those who are not, report having regular fish supplies for sale. Specifically, out of those who are not members, 75.11% have regular supplies, while among members, 73.11% reported access to regular fish supplies. This indicates that membership status in an organization does not appear to have a substantial impact on the regularity of fish supplies for sale.

**Table 41: Relationship between membership of business association and regularity of fish supplies**

| **Membership of business association or stakeholder organization** | **Regularity of fish supplies for sale** | | |
|---|---|---|---|
| | **No** | **Yes** | **Total** |
| No | 230 | 694 | 924 |

| | | | |
|---|---|---|---|
| | 24.89 | 75.11 | 100 |
| | 63.01 | 65.41 | 64.8 |
| | 135 | 367 | 502 |
| | 26.89 | 73.11 | 100 |
| Yes | 36.99 | 34.59 | 35.2 |
| | 365 | 1,061 | 1,426 |
| | 25.6 | 74.4 | 100 |
| Total | 100 | 100 | 100 |
| Pearson chi² (1) = 0.6836 Pr = 0.408 | | | |

Further analysis of the result shows that among those who do not get regular supplies, 63.01% have no membership in business associations or stakeholder organizations, while 36.99% belong to business associations or stakeholder organizations. This suggests that while there is a slight difference in the reported regularity of supplies between members and non-members, there is no clear association. The Pearson chi-square test confirms this, with a chi-square value of 0.6836 and a p-value of 0.408, indicating no significant association between membership status and the regularity of fish supplies for sale.

The result suggests that factors other than membership in business associations or stakeholder organizations may play a more substantial role in determining the regularity of fish supplies for sale. These factors as enumerated in the surveys include high prices, market conditions, seasonality of fish catch, competition with other traders, infrastructure, and logistical considerations, etc. It is important for policymakers and industry stakeholders to consider these broader factors when addressing issues related to the regularity of fish supplies in the market. The lack of a significant association between membership status and regularity of supplies also indicates that other strategies may be more effective in improving supply chain stability and reliability within the fish trade industry.

Furthermore, the study determined whether being a member of a business association has a positive influence on market access in other districts/ regions. In Table 42, it is evident that a majority of the respondents, both members and non-members, do not engage in marketing their products in other districts or regions. Among non-members, 91.62% do not participate in markets in other districts or regions, while among members, 89.54% also refrain from such markets. This indicates a prevailing trend of localized marketing strategies within the fish trade industry, regardless of organizational affiliation.

**Table 42: Relationship between business association and market access in other districts/ regions**

| Membership of business association or stakeholder organization | Market of products in other districts/regions | | |
|---|---|---|---|
| | **No** | **Yes** | **Total** |
| | 831 | 76 | 907 |
| | 91.62 | 8.38 | 100 |
| No | 66 | 60.32 | 65.49 |
| | 428 | 50 | 478 |
| | 89.54 | 10.46 | 100 |
| Yes | 34 | 39.68 | 34.51 |
| | 1,259 | 126 | 1,385 |
| | 90.9 | 9.1 | 100 |
| Total | 100 | 100 | 100 |
| Pearson $chi^2(1) = 1.6392$ Pr = 0.200 | | | |

Furthermore, among traders who do not partake in markets in other districts/regions in Ghana, 66% do not belong to business associations or stakeholder organizations, while 34% belong to such stakeholder organizations. This suggests a marginal difference in the reported marketing practices between members and non-members, but it is not statistically significant. The Pearson chi-square test further corroborates this finding, with a chi-square value of 1.639 and a p-value of 0.200, indicating no significant association between membership status and the expansion of product markets into other districts or regions. The findings indicate that factors apart from being a member of business associations or stakeholder organizations may have a greater impact on the level of market expansion into different districts or regions. These factors could encompass logistical constraints, market demand, transportation infrastructure, and regulatory considerations. Policymakers and industry stakeholders should consider these broader elements when formulating strategies to enhance market reach and penetration within the artisanal fish trade industry. The lack of a significant association between membership status and market expansion indicates that alternative approaches may be more effective in influencing market diversification practices within the industry.

Again, the study inquired whether membership of a business association influences access and participation in international trade and marketing of fish. In Table 43, the findings demonstrate that a significant portion of the fish traders, whether they are part of the group or not, are not

involved in conducting business with traders from foreign countries. Specifically, 93.28% of non-members indicated they are not involved in international trade, while 90.8% of members also do not participate in such trade. This indicates a prevailing trend of limited international trade within the fish trade industry, irrespective of organizational affiliation.

**Table 43: Business membership and access to international markets**

| **Membership of business association or stakeholder organization** | **Trade with traders from other countries** | | |
|---|---|---|---|
| | **No** | **Yes** | **Total** |
| | 888 | 64 | 952 |
| | 93.28 | 6.72 | 100 |
| No | 66.17 | 58.18 | 65.56 |
| | 454 | 46 | 500 |
| | 90.8 | 9.2 | 100 |
| Yes | 33.83 | 41.82 | 34.44 |
| | 1,342 | 110 | 1,452 |
| | 92.42 | 7.58 | 100 |
| Total | 100 | 100 | 100 |
| Pearson chi²(1) = 2.8734 Pr = 0.090 | | | |

The results from Table 43 also suggests a moderate difference in the reported international trade practices between members and non-members, but this is not statistically significant. The Pearson chi-square test supports this, with a $X^2$ value of 2.873 and a p-value of 0.090, indicating no statistically significant association between membership status and engaging in trade with traders and customers from other countries. These findings highlight that different factors/variables (like financial constraints, difficulties in compliance with international trade standards and regulations, traders personal disinterest in international trade, market linkages and information, knowledge of trade rules and procedures, etc.) other than being a member of a group have more substantial influence on engaging in international trade within the fish trade industry.

The respondents expressed varied opinions in terms of gender equality within the fish trade industry in Ghana. In Table 44, the majority of the respondents (68.31%) either agree or strongly agree that women traders are disadvantaged in their businesses due to family obligations, which limit their time for business activities. This highlights a recognized need for policies or support

mechanisms that cater to the unique needs of women in balancing family and business responsibilities. In addition, the results show that a substantial proportion of the respondents (63.67%) agree or strongly agree that limited access to credit is a primary reason for women's challenges and potential failures in their fish trade businesses. Thus, interventions like financial inclusion and access to capital for women entrepreneurs in the fish trade sector could be relevant for improving women's access to credit and creating an equal playing field in the fish trade industry.

**Table 44: Levels of agreement with gender equality themes**

| **Agreement with gender equality themes** | **Freq.** | **Percent** |
|---|---|---|
| *Women traders are more disadvantaged than men in their business because they have family obligations and cannot devote much time to their business activities.* | | |
| Strongly disagree | 120 | 7.89 |
| Disagree | 228 | 14.99 |
| Neither agree nor disagree | 134 | 8.81 |
| Agree | 487 | 32.02 |
| Strongly agree | 552 | 36.29 |
| Total | 1521 | 100 |
| *The main reason for women's failure in their business is their limited access to credit* | | |
| Strongly disagree | 98 | 6.41 |
| Disagree | 315 | 20.62 |
| Neither agree nor disagree | 142 | 9.29 |
| Agree | 528 | 34.55 |
| Strongly agree | 445 | 29.12 |
| Total | 1528 | 100 |
| *Men are more successful than women at trade activities because they have greater entrepreneurial ability* | | |
| Strongly disagree | 236 | 16.54 |
| Disagree | 279 | 19.55 |
| Neither agree nor disagree | 178 | 12.47 |
| Agree | 486 | 34.06 |
| Strongly agree | 248 | 17.38 |
| Total | 1427 | 100 |
| *If women were given the same education opportunities as men, they would be equally successful in their career* | | |
| Strongly disagree | 49 | 3.23 |
| Disagree | 101 | 6.66 |
| Neither agree nor disagree | 181 | 11.94 |
| Agree | 626 | 41.29 |
| Strongly agree | 559 | 36.87 |
| Total | 1516 | 100 |
| *Women cannot be as competitive as men in international trade without strong policy support* | | |
| Strongly disagree | 236 | 15.88 |

| | | |
|---|---|---|
| Disagree | 247 | 16.62 |
| Neither agree nor disagree | 224 | 15.07 |
| Agree | 490 | 32.97 |
| Strongly agree | 289 | 19.45 |
| Total | 1486 | 100 |
| *Discrimination against women in policies and legislation represent a serious obstacle to women's success in their business* | | |
| Strongly disagree | 65 | 4.29 |
| Disagree | 133 | 8.78 |
| Neither agree nor disagree | 238 | 15.72 |
| Agree | 728 | 48.08 |
| Strongly agree | 350 | 23.12 |
| Total | 1514 | 100 |
| *Policymakers are more actively promoting gender equality and women's empowerment compared to the past* | | |
| Strongly disagree | 361 | 23.88 |
| Disagree | 134 | 8.86 |
| Neither agree nor disagree | 239 | 15.81 |
| Agree | 589 | 38.96 |
| Strongly agree | 189 | 12.5 |
| Total | 1512 | 100 |
| *The government is paying increasing attention to the problems of artisanal fishers* | | |
| Strongly disagree | 526 | 34.65 |
| Disagree | 247 | 16.27 |
| Neither agree nor disagree | 221 | 14.56 |
| Agree | 369 | 24.31 |
| Strongly agree | 155 | 10.21 |
| Total | 1518 | 100 |
| *Strengthening organization and collective action is important to safeguard the rights and livelihood of artisanal fishers* | | |
| Strongly disagree | 67 | 4.4 |
| Disagree | 65 | 4.27 |
| Neither agree nor disagree | 290 | 19.03 |
| Agree | 759 | 49.8 |
| Strongly agree | 343 | 22.51 |
| Total | 1524 | 100 |
| *Trade policies and trade agreements are important to support fish traders' access to export markets* | | |
| Strongly disagree | 44 | 2.92 |
| Disagree | 63 | 4.19 |
| Neither agree nor disagree | 292 | 19.4 |
| Agree | 707 | 46.98 |
| Strongly agree | 399 | 26.51 |
| Total | 1505 | 100 |

This is important, given the fact that a significant portion of the respondents (51.44%) either agree or strongly agree that men are more successful in trade activities due to their perceived greater

entrepreneurial ability. The fact that a substantial number of the respondents hold beliefs that may contribute to gender disparities indicates the need for targeted awareness campaigns, training programs, and advocacy efforts to promote a more inclusive and balanced industry. Challenging these prevailing gender biases and stereotypes and providing opportunities for skill-building and capacity development for women can contribute to a more inclusive and equitable artisanal fish trade industry in Ghana.

This call for gender equality is further highlighted by the majority of respondents (78.16%) who agree/ strongly believe that if women were afforded the same education opportunities as men, they would be equally successful in their careers (Table 44). This indicates a widespread recognition of the potential for education and the need to invest in skills-building programmes that can empower women, enabling them to become more competitive in the fish trade and marketing sector as their male counterparts. Again, women cannot succeed in fish trade without an enabling or supportive policy environment. A little above average of the respondents (52.42%) share the sentiments (i.e., agree or strongly agree) that women cannot be as competitive as men in international trade without strong policy support. This is because most of the respondents (71.2% agree/strongly agree) believe that discrimination against women in policies and legislation represents a serious obstacle to women's success in fish trade. This indicates a widespread recognition of the need for legal and policy reforms to promote gender equality within the industry.

Thus, policymakers and stakeholders should focus on designing and implementing supportive policies that address the specific challenges faced by women in the Ghanaian artisanal fisheries market. This is important as the results show a mixed perception regarding the government's attention to the problems of artisanal fishers. While about 50.92% disagree or strongly disagree, a third (34.52%) agree or strongly agree that the government is paying increasing attention to these issues. This finding suggests that there may be room for further engagement and advocacy to ensure that the concerns of artisanal fishers are adequately addressed by government policies and initiatives.

Moreover, the majority (72.31%) of the respondents believe that strengthening organization and collective action is important to safeguard the rights and livelihoods of artisanal fishers. This highlights the recognition of the power of collective action and advocacy in protecting the interests of this important segment of the industry. Encouraging and supporting organizational efforts

among artisanal fishers can lead to improved working conditions and better access to resources. For most respondents (73.49% agree or strongly agree), trade policies and agreements are vital to support fish traders in expanding their business internationally and facilitate access to export products to external markets.

In terms of advice for policy making, the common themes and concerns which emerged from the open-ended question from the surveys centered around the need for policymakers to develop policies for financial assistance, market facilities, reduction in fuel costs, and infrastructure improvements. The traders expressed the need for financial assistance, indicating the need for accessible loans with low-interest rates. They also highlighted the importance of better market structures, including refurbished toilets, organized markets, expanded spaces and reduction in fuel cost. They perceived that bad road networks, police barriers, and transportation challenges contribute to increased costs for traders. They advocate for policymakers to collaborate with financial institutions to develop and implement financial support programmess for small-scale artisanal fisheries traders, enabling business expansion and investment in fishing inputs. They also perceived that allocating resources for market facilities, reducing fuel prices, and prioritizing infrastructure investments are crucial. Recognizing the unique needs of both women and men fish traders in policy formulations can create a more inclusive and equitable trading environment, ultimately benefiting the sector.

## 5.0 Conclusions and recommendations

Artisanal fisheries play a crucial role in the socio-economic fabric of Ghana, providing livelihoods for a significant portion of the population and contributing to both local and national economies. The fisheries sector represents a high-impact opportunity for women and men. Although women are responsible for many fish-related activities along the value chain, they are confronted by challenges ranging from reduced access to credit, storage facilities, fish supply, market information, support services - all factors affecting incomes and food safety and quality. By employing quantitative surveys and qualitative key informant interviews (KIIs) in a mixed methods design, the study was carried out among small-scale fish traders employed in the artisanal fisheries sector in Ghana to collect and analyze gender and socio-economic dimensions of fish marketing and trade. The study found a high percentage of self-employed individuals (93.93%) within the fish trade and marketing industry, indicating a significant level of entrepreneurship and

independent business ownership within the industry. The experience levels of fish traders were, on average, relatively high. This suggests that there is a wealth of knowledge and expertise within the industry, which can be a valuable resource for sustaining and growing the sector, albeit youth employment is quite negligible. The results show that a significant majority of respondents, approximately 94%, do not sell access/participate in international markets as they do not sell their products abroad. Artisanal fish traders mostly relied on other traders and fisherfolks for price information when fixing/determining the price for their products. Self-pricing based on traders' own judgement using details such as the fish size was also a popular strategy in price determination for fish products in Ghana's small-scale artisanal fisheries sector. There is always room for price negotiation though and traders are at times forced to sell at a giveaway price due to issues of improper preservation and storage, which then affects revenues and profits.

In addition, most of the respondents (54.07%) reported an increase in revenue in 2022 over the base year of 2021, compared to 45.93% who did not experience a rise in incomes during this period. The majority of the fish traders (71.34%) reported a decrease in revenue for the same period, a trend they attributed to factors like the Covid-19 pandemic, inflation, low demand, low fish stock, low sales, and increased transportation costs. . In the high season for fish, traders recorded an average monthly revenue of approximately GHS 6,500.00 compared to GHS 5,000.00 in the lean season. The majority of the fish traders (65%), were not affiliated with any business association or stakeholder organization, suggesting that a significant portion of individuals engaged in the fish trade in the survey communities may operate independently or without formal organizational support. This could potentially lead to challenges in accessing resources, market information, and collective advocacy, which are often facilitated by such associations.

In terms of business challenges, a striking 84.52% of the respondents view poor representation in national decision-making processes as moderately to extremely important. This underlines the need for greater advocacy and inclusion of the fish trade industry in policy formulation. Ensuring a strong voice in decision-making can lead to policies that better support and promote the growth of the sector. Additionally, almost 70% of respondents find the lack of market information, particularly price information, to be very or extremely important. This underscores the necessity of establishing efficient information dissemination channels within the industry. Access to timely and accurate market data can empower stakeholders to make informed decisions, ultimately

contributing to a better market. Financial assistance emerges as a critical area (95.25%) among respondents for policy to target, followed closely by better market facilities and infrastructures. For most traders, (73.49% agree or strongly agree) trade policies and agreements are vital to support fish traders in expanding their business internationally and facilitate access to export products to external markets.

The following recommendations are made based on the key findings from the study. It is recommended that collaboration among all stakeholders in the sector is strengthened and encouraged to implement policies in the sector to the letter. There is the need to develop policies for the post-harvest sector particularly fish trade and marketing to boost fish trade and marketing in Ghana. In doing so, capacities of processors and traders should be strengthened, the necessary strategies put in place for the safety of traders and sanitation issues looked at to ensure the safety of fish in the markets.

In addition, the development of policies on market and price information and trade facilitation would go a long way to help traders bridge the inconsistencies with pricing, which is a big challenge to most of the traders through its effects on revenues and profits. It would be especially helpful where traders can be given support that positions them to consistently price their fish according to weights, species, and source of the fish (inland or marine fisheries).

To improve market access, it is important to consider access to credit or financing of business in terms of policy support. Where fish traders have access to interest free or low interest credit, the quantities and quality of fish purchased and whether such traders will be involved in international trade could change positively.

The development of technologies to improve fish trade and marketing is crucial, with a focus on capacity building and improving fish handling, weighing, and packaging. Infrastructure and social amenities in fish markets should be modernized to improve mobility, protect fish from theft and rodents, and to ease the work burden on women traders. Capacity building is essential for improving financial capabilities, such as purchasing more, owning tangible resources, investing in knowledge and income, and managing income and expenditure. Market linkages are vital for fostering fish trade, both domestically and internationally. Digitalization of captured data on fish

products and distribution can help stakeholders make better decisions about pricing, species and product availability and distribution.

Lastly, gender disaggregated data on fish trade and marketing is essential, and a system should be established by the Ministry of Fisheries and Aquaculture Development and the Fisheries Commission to capture gender-disaggregated statistics and publish them for easy access. More efforts should be made to support the work of extension officers, regulators, and researchers by strengthening collaborations among all stakeholders and creating more avenues for research that leads to interventions within the artisanal fisheries value chain.

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## Appendices

### *Extra Tables*

**Table A3.1**: List of trader associations

| No | Name of Association | Location | Registration status |
|---|---|---|---|
| 1 | Nungo/Prampram Fishers Association | Prampram | Not registered |
| 2 | Tema Fishing Habour Fighters Association | Tema | Not registered |
| 3 | James Town Fishermen Association | James Town | Not registered |
| 4 | Makola Market Fish Traders Association | Makola | Not registered |
| 5 | National Inland Canoe Fishermen Council | Accra | Registered |
| 6 | Dzemeni fishers Association | Dzemeni | Registered |
| 7 | VRA/ Akosombo Fish Traders Association | Akosombo | Not registered |
| 8 | National Fish Traders and Processors Association | Accra | Registered |
| 9 | Yehowa ny3 Gblorlany3 | Dzemeni | Not registered |
| 10 | Kwasia Dwaaso Fishmongers Association | Makola | Not registered |

**Table A4.1**: A cross-tabulation of gender and market/location of trade

| | **Sex** | | |
|---|---|---|---|
| **Name of Market** | **Female** | **Male** | **Total** |
| | | | |
| Adabraka | 267 | 11 | 278 |
| Row % | 96.04 | 3.96 | 100 |
| | | | |
| Ashaiman | 184 | 0 | 184 |
| Row % | 100 | 0 | 100 |
| | | | |
| Kaneshie | 106 | 1 | 107 |
| Row % | 99.07 | 0.93 | 100 |
| | | | |
| Madina | 143 | 1 | 144 |
| Row % | 99.31 | 0.69 | 100 |
| | | | |
| Makola | 170 | 11 | 181 |
| Row % | 93.92 | 6.08 | 100 |
| | | | |
| Mamobi | 10 | 0 | 10 |
| Row % | 100 | 0 | 100 |
| | | | |
| Nima | 126 | 8 | 134 |
| Row % | 94.03 | 5.97 | 100 |
| | | | |
| Tema | 165 | 0 | 165 |
| Row % | 100 | 0 | 100 |
| | | | |
| Prampram | 26 | 0 | 26 |
| Row % | 100 | 0 | 100 |
| | | | |
| Akosombo/Atimpoku | 185 | 0 | 185 |
| Row % | 100 | 0 | 100 |
| | | | |
| Dzemeni | 53 | 0 | 53 |
| Row % | 100 | 0 | 100 |
| | | | |
| Total | 1,435 | 32 | 1,467 |
| Row % | 97.82 | 2.18 | 100 |

**Table A4.2:** Fish species and products sold by respondents

| Fish Species/products sold | Scientific names |
|---|---|
| Aborbi | Anchovies |
| Blolovi | Chrysihthys |
| Adjador | Herrings (Clupeidae) |
| Adjoetoe | Schelbibol |
| Adwene | Hydrocynos |
| Agbasra | Distichodus |
| Akaw | Synodontis |
| Akwaabi | Lates |
| Gbela | Cheilopogon Melanurus |
| Kpanla | Trachinotus Teraia |
| Odo | Gymnarchus Niloticus |
| Oheneba | - |
| Chub Marckerel | Scomber Japonicus |
| Herrings | Clupeidae |
| Electric Fish | Malapteruridae |
| Anchovy | Engraulis Spp |
| Baracuda | Sphyraena Barracuda |
| Doctor Fish | Acanthurus Chirurgus |
| Shrimps | Caridea |
| Grouper | Epinephelus |
| Tuna | Genus Thunnus |
| Red Snapper | Lutjanidae |
| Red Fish | Sciaenops Ocellatus |
| Butter Fish | Irvineia Voltae |
| Casasava Fish | Pseudotolithus Senegalensis |
| Age | Brotula Barbata |
| Crab | Brachyura |
| Lobster | Lobster |
| Mullet | Mugilidae |
| Naminami | Mormyridae |
| Agbogbo | Labeo |
| Akpa=Tilapia | Oreochromis Niloticus |
| Pampuro | Decateus Unctatus |
| Yalefo | Bagrus |
| Akpo | Auchenoglanis Occidentalis |
| Weivi | Seirrathrissa Leonensis |
| Silla | Coptodon |
| Eel | Pisodonophis Semicinctus |

| | |
|---|---|
| Visitor | Adventor Elongatus |
| Soda Fish | Dried Shrimp |
| Sole Fish | Solea Solea |
| Tilapia | Oreochromis |
| Sinesine | Hemiramphus Brasiliensis |
| Bole | Anthias Anthias |
| Wonyan | Priacanthus Arenatus |
| Dogomadumi | Trachinotus Ovatus |
| Kobi | Trachinotus Goreensis Cuvier |
| Apem | Coryphaena Hippurus Linnaeus |
| Kpolo | Lutjanus Fulgens |
| Yiwa | Pagellus Bellottii Steindachner |
| Shikashika | Pagrus Caeruleostictus |
| Obo | Trachinus Radiatus Cuvier |
| Sukwe | Galeoides Decadactylus |
| Tsetieku | Alistes Punctatus Gmelin |
| ***Scientific names not identified/found by team*** | |
| Aeroplane | |
| Akwawena | |
| Anckloo | |
| Anterley | |
| Anyaple | |
| Apataa | |
| Ayilo | |
| Bansina | |
| Boiboi | |
| Brekye | |
| Brodoi | |
| Epoanoma | |
| Galamsey | |
| Momoni | |
| Kwame Osei | |
| Kyerabowy | |
| Limba | |
| Manye | |
| Kamfra | |
| Kaname | |
| Kloka | |
| Kondro | |
| Newei | |
| Ngblekye | |

| | |
|---|---|
| Nkontire | |
| Npataa | |
| Onyankle | |
| Onyekal | |
| Opaa | |
| Opan | |
| Opara | |
| Opense | |
| Pataa | |
| Police Abaa | |
| Sawala | |
| Sea Fish | |
| Skeep | |
| Tukpo | |

# Council for Scientific and Industrial Research-Food Research Institute

## Final Questionnaire

## Survey on small-scale trade in artisanal fisheries in Ghana

The Food Research Institute (CSIR-FRI) is collecting data on small-scale trade in artisanal fisheries in Ghana in the context of a study on gender and trade in fisheries in West Africa.

The goal of the survey is to understand the socio-demographic profile of fish traders, their challenges and needs for policy support, especially in relation to market access and trade.

The results of this survey will be used for policy recommendations and actions that will benefit women and men fish processors and traders.

This survey is completely voluntary and anonymous. The information that you provide will remain strictly confidential and will be used for research purposes only.

The survey will take about 30-45 minutes to complete.

The Food Research Institute (CSIR-FRI) highly appreciates your participation in this survey.

*By selecting "I agree" below you are indicating that you are at least 18 years old, have read and understood this consent form and agree to participate in this research study.*

I agree | I do not agree

Enumerator ID: ……

Name of Supervisor: ……

Name of Market: ……..

Data Entry Technician ID: …… Participant Number: …….

Date: ……..

## SECTION 1. RESPONDENT PROFILE

1. Age: ……
2. Sex: F/M
3. Marital status:
   - Single
   - Married
   - Cohabitant
   - Separated
   - Divorced
   - Widowed
4. Place of residence and region: _____
5. Ethnicity: _____
6. Formal Education:
   - Primary school
   - Secondary school
   - Tertiary education
   - Vocational
   - Middle School
   - Other
   - None
7. Employment status:
   - Self-employed
   - Seasonal worker
   - Casual labourer
   - Employee
   - Owner and/or manager of an enterprise
   - Other
8. What are the fish-related activities you carry out? Select all that apply.
   - Fish farming
   - Fishing
   - Processing
   - Distribution
   - Marketing and trade
   - Other (please specify_____)
9. How many years of experience do you have in fish-related activities?.....

10. How many members are in your household? ……

11. Who is the head of your household?
    - Myself
    - My spouse
    - Other (please specify_____)

12. What is the main source of income in the household?
    - Fishing/fish farming
    - Fish processing
    - Fish processing and marketing
    - Fish marketing
    - Other fish-related activities (please specify_____)
    - Non-fish -related activities (please specify_____)

12.1. What are the other sources of income for the household? Please select all that apply:

- Fishing/fish farming
- Fish processing
- Fish processing and marketing
- Fish marketing
- Other fish-related activities (please specify _____)
- Non-fish -related activities (please specify_____)

13. Are any members of your household engaged in any productive activity(ies)? YES/NO

*>> If answer is YES, please respond to Q13.1 below and then continue to Q14;*
*>> if answer is NO, skip to Q14.*

13.1 Please select any productive activity carried out by household members indicating their relationship with you (for example: "wife"):

| | **Household members** | | | | | |
|---|---|---|---|---|---|---|
| | 1._____ | 2._____ _ | 3. _____ | 4. _____ | 5. _____ | 6. _____ |
| ***Fisheries*** | | | | | | |
| Fish farming/fishing | | | | | | |
| Fish processing | | | | | | |
| Fish marketing | | | | | | |
| Other fish-related activities | | | | | | |
| ***Agriculture*** | | | | | | |
| ***Manufacturing*** | | | | | | |
| ***Services*** | | | | | | |

## SECTION 2. MARKETING AND SALES

14 Where do you purchase the fish/fish products you sell?

- Own production
- Fisher folk
- Wholesalers
- Retailers
- Exporters
- Traders
- Other (please specify_____)

15 Do you get regular supplies? YES/NO

*>> If answer is YES, go to Q16; if answer is NO, please respond to Q15.1 below:*

15.1 Why do you not get regular fish supplies? Select all that apply.

- Not enough fish/fish product available
- Competition with other traders
- Competition with fish firms
- High prices
- Other (please specify_____)

16 What are the main species and fish products you sell? _____

17 Do you sell processed fish (smoked, dried, etc.)? YES/NO

*>> If answer is YES, please respond to Q17.1 below and then continue to Q18;*

*>> if answer is NO, skip to Q18.*

17.1 Which are the techniques you use for processing fish?

- Boiling
- Chilling/freezing
- Drying
- Improved smoking technologies
- Salting
- Traditional smoking
- Frying
- I do not know
- Other (please specify_____)

18 What is the main market(s) you sell your products? Please indicate the market name_____

19 How far is the market from home? Please indicate the distance travelled in km*: _____

** If not able to indicate the distance in km, indicate the average time (in minutes or hours) employed to reach the market and means of transportation used*: _____ Min/Hours by: _____

20 How many trips to the market do you do in a month? _____

21 How do you usually transport your products to the market?

- o Motorcycle
- o Tricycle
- o Bicycle
- o Foot
- o Public transport
- o Other (please specify_____)

22 Do you market your products also in markets located in other districts or regions of Ghana? YES/NO
*>> If answer is YES, please respond to Q22.1 below;*
*>> if answer is NO, skip to Q23.*

22.1 In which districts/regions do you market your products? _____

23 Who are your main market competitors?

- o Local traders
- o Foreign traders
- o National companies
- o International companies
- o Other (please specify_____)

24 To whom do you sell your products? Please select all that apply:

- End-users
- Retailers
- Traders
- Wholesalers
- Exporters
- Other (please specify_____)

25 In the last 12 months, have you sold your products to traders coming from other countries? YES/NO
*>> If answer is YES, please respond to Q25.1 and Q25.2 below and then go to Q26;*
*>> if answer is NO, skip to Q26.*

25.1 Where do these traders come from? Please indicate country of origin, if known: _____
25.2 Please estimate the percentage of products you sold to foreign traders in the last 12 months, out of total annual product quantity you have sold: ____%

26 Do you sell your products abroad? YES/NO
*>> If answer is YES, respond to Q26.1 and Q26.2 below and then go to Q27;*

*>> if answer is NO, skip to Q26.3 and then continue with Q27.*

26.1 How many years of experience do you have with international trade? _____

26.2 Please indicate the trade activities you mainly engage in:

- o Indirect export
  (**main product is sold to traders who export the product/ or main product is sold to enterprises whose final products are exported*)

  >> 26.2.1 please indicate the export destination country/countries:_____

- o Direct export

(**main product is directly traded internationally*)

>> 26.2.2 please indicate the export destination country/countries:_____

- Cross-border trade
  (**main product is mostly traded in neighbouring countries*)

>> 26.2.3 please indicate the neighbouring country/countries:_____

*>> If answer to Q26 is NO*:

26.3 Can you explain the reason why you do not engage in export activities? Please select all that apply:

- Difficulty complying with trade standards and regulations
- Export costs are too high
- Financial constraints
- I do not know I can export.
- I do not have the necessary technology or digital technology
- I do not have any experience
- I do not have time
- Markets are too far from my place
- My family does not agree
- Production volume is not sufficient
- Too complex bureaucracy
- I am not interested
- Other (please specify_____)

27 In your opinion, what are the requirements needed to trade internationally? Please rank the options below in order of importance with #1 being the most important:

- Adequate technology _____
- Capital _____
- Compliance with food quality and safety standards _____
- Knowledge of trade rules and procedures _____
- High-quality products _____
- Marketing strategy or plan _____
- Market linkages _____
- Market information _____
- Supportive policy environment (*export promotion initiatives, subsidies, etc*.) _____
- Other (please specify: _____) _____

28 For each fish product you sell, please fill out information related to quantity and price in the table below:

| **Fish species/product** | **Quantity per trip transported to market (kg)** | **Quantity sold per month (kg)** | **Average price per kg** | **Lowest price per kg sold in 2022** | **Highest price per kg sold in 2022** |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

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|---|---|---|---|---|---|
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| | | | | | |

29 What was the average monthly revenue from fish sales during high season (July to Sept) in 2022? …….

30 What was the average monthly revenue from fish sales during lean season (Nov to May) in 2022? ……

31 Overall, what was your annual revenue from fish sales in 2022? …….

32 Did the revenue in 2022 increase from 2021? YES/NO

32.1 If yes, why, in your opinion? _____

32.2 If no, why, in your opinion? _____

33 Did the revenue in 2022 decrease from 2021? YES/NO

33.1 If yes, why, in your opinion? _____

33.2 If no, why, in your opinion?

34 What factors do you think affect your profit? Select all that apply

- Demand
- Fish quality
- Fish supply
- Market facilities
- Transportation and logistics issues
- Prices
- Seasonal factors
- Other (please specify_____)

35 What is your main source of price information?

- Fisherfolk
- Traders

- Traders' association
- Official government sources
- Social media/internet
- Other (please specify_____)

36 Please indicate the type of access you have to the equipment, technology and facility listed below:

| Type of access to: | **Sole ownership** | **Shared ownership** | **Sole use** | **Shared use** | **NO access** |
|---|---|---|---|---|---|
| Fishing equipment | | | | | |
| Traditional processing equipment | | | | | |
| Improved processing technologies (*specify*_____) | | | | | |
| Storage facilities | | | | | |
| Transport | | | | | |
| Preservation facilities | | | | | |
| Other *(specify*_____) | | | | | |

## SECTION 3. BUSINESS CHALLENGES

37 Please rate the level of *importance* of the following challenges for your business activities:

| | **not important** | **slightly important** | **moderately important** | **very important** | **extremely important** |
|---|---|---|---|---|---|
| Difficult compliance with trade regulations and quality and safety standards | | | | | |
| Discrimination and/or harassment | | | | | |
| Financial issues (e.g. limited access to credit, taxation, limited support from government, etc.) | | | | | |
| High price fluctuation | | | | | |
| High costs of inputs | | | | | |
| Illegal fishing activities | | | | | |
| Lack of market information (getting price information) | | | | | |
| Low demand | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| Poor technology, market facilities and infrastructures (water, electricity, storage etc.) | | | | | |
| Transport or logistics issues (security and safety issues on roads and markets, market distance) | | | | | |
| Poor representation in national decision-making processes | | | | | |
| Loss and waste (e.g. spoilage) | | | | | |
| Bureaucracy (too complicated, lengthy, costly) | | | | | |
| Others (Indicate any other important challenge missing from the list above and rate) | | | | | |

38 What are the top *financial* challenges faced in your activity? Please select up to 3 options.

- Access to subsidies
- Access to credit
- Budget management
- Debt repayment
- Lack or inconsistent cash flow
- Keeping records
- Taxation
- Unexpected expenses
- Other (please specify_____)
- None

39 In the last 2 years, did you resort to any external source of finance? YES/NO
*>> If answer is YES, please respond to Q39.1 below; if answer is NO, go to Q40.*

39.1 Which external source of finance did you resort to? Select all that apply.

- Commercial banks
- Government financial assistance or its other type of support
- Informal networks (family, moneylenders, etc.)
- Microfinance institutions
- Stakeholder organization/association
- Other

## SECTION 4. POLICY SUPPORT

40 Did you receive any support from the government in the last 2 years? YES/NO
*>> If answer is YES, please respond to Q40.1 and then go to Q41;*
*>> if answer is NO, skip to Q41.*

40.1 Which type of support did you receive from the government? Select all that apply.

- COVID-19 recovery support – please specify the name/type of support: _____
- Financial assistance (*subsidies, loans…*) – please specify the name/type of support:_____
- Special incentives or funds for women – please specify the name/type of support:_____

- Other (please specify_____)

41 Have you participated in any capacity development activity in the last 5 years? YES/NO
*>> If answer is YES, please respond to Q41.1 and Q41.2 below;*
*>> if answer is NO, skip to Q42:*

41.1 Which was the topic of the capacity development activity you participated in?
- Accounting/book-keeping
- Business and entrepreneurial skills
- Fish handling practices
- Fish processing
- Fish marketing
- Food safety and nutrition
- Responsible post-harvest practices
- Other (please specify_____)

41.2 Did you get any positive result from the capacity development activity? YES/NO

*>> If answer is YES, please respond to Q40.2.1 below; if answer is NO, skip to Q41.*

41.2.1 Which positive results did you get from the capacity development? Select all that apply.
- Higher revenues from fish sales
- Higher product quality
- Higher product volume
- Improved skills and knowledge (please specify in which area_____)
- Increased access to improved processing technique
- Increased access to local or international markets
- Improved handling practices
- Increased food safety and quality standards
- Other (please specify_____)

42 What kind of policy support would you need most today? Please rank in order of importance the areas for support that you would most need today, with #1 being the most important.

- Better access to technology
- Better market facilities and infrastructures
- Business development services
- Financial assistance (grants, incentives, subsidies, etc.) from government, from governmental agencies
- Less taxation and bureaucracy
- Non-discriminatory legal frameworks and policies
- Social protection and support services (e.g. healthcare, childcare facilities)
- Trade facilitation and market information
- Other (please specify_____)

43 Have you ever heard of the "Voluntary Guidelines for Securing Sustainable Small-scale Fisheries"? YES/NO

## SECTION 5. GENDER EQUALITY AND EMPOWERMENT

44 What is the average time (number of hours per day) you allocate to:
- Work: ____

- Household tasks: ___
- Rest: ___
- Leisure: ___

45 Who makes decisions about income distribution from fish sales in the household?
- Myself
- My spouse
- Joint decision with my spouse
- Other household members

46 Do you think that women traders face additional challenges in their business, compared to men, because of their gender? YES/NO
*>> If answer is YES, please respond to Q47 and Q48;*
*>> if answer is NO, skip to Q49.*

47 Please select the 3 most critical issues you think women traders face in their business:

- Harassment (**any improper, discriminatory or threatening behavior causing harm or offence, including sexual harassment, physical, emotional, verbal and non-verbal harassment*)
- Limited access to better job opportunities
- Limited access to financial services and credit
- Limited access to assets
- Lack of support from family
- Lack of support from government
- Low bargaining power and voice
- Lack of involvement in fisheries management processes
- Too much domestic and care work
- Unsafe labour conditions
- None

48 Please indicate any other *important* issue that missed from the above list: _____

*>> If the respondent is a woman, please continue below. If the respondent is a man, skip to Q50 <<*

49 Have you ever faced any challenge in your work because you were a woman? YES/NO
*>> If answer is YES, please respond to Q49.1 and Q49.2.*

*>> If answer is NO, go to Q50.*

49.1 In which area of your work did you experience such challenges? Select all that apply.

- Administration and bureaucracy
- Business relationships
- Customs and export
- Financial services
- Marketing and trade
- Prefer not to say
- Other (specify_____)

49.2 Have you ever experienced any of the following during your work activities:
- Harassment
- Physical violence

- Sexual harassment
- None
- Prefer not to say

50 Please indicate your level of agreement with the following statements on a scale from 1 to 5 where 1 is "Strongly disagree" and 5 "Strongly agree".

| | | **Strongly disagree** | **Disagree** | **Neither agree nor disagree** | **Agree** | **Strongly agree** |
|---|---|---|---|---|---|---|
| 1 | Women traders are more disadvantaged than men in their business because they have family obligations and cannot devote much time to their business activities. | | | | | |
| 2 | The main reason for women's failure in their business is their limited access to credit. | | | | | |
| 3 | Men are more successful than women at trade activities because they have greater entrepreneurial ability. | | | | | |
| 4 | If women were given the same education opportunities as men, they would be equally successful in their career. | | | | | |
| 5 | Women cannot be as competitive as men in international trade, without a strong policy support. | | | | | |
| 6 | Discrimination against women in policies and legislation represents a serious obstacle to women's success in their business. | | | | | |
| 7 | Policymakers are more actively promoting gender equality and women's empowerment, compared to the past. | | | | | |
| 8 | The government is paying increasing attention to the problems of artisanal fishers. | | | | | |
| 9 | Strengthening organization and collective action is important to safeguard the rights and livelihoods of artisanal fishers. | | | | | |
| 10 | Trade policies and trade agreements are important to support fish traders' access to export markets. | | | | | |

51 Are you a member of any business association or stakeholder organization? YES/NO

*>> If answer is YES, please respond to Q51.1 and Q51.2;*

*>> if answer is NO, skip to Q52.*

51.1 Which type of organization?

- Local fish association/cooperative
- National fish association
- Women's association
- Informal group
- Trade union
- Other

51.2 Did you receive any benefits derived from your membership? YES/NO

*>> If answer is YES, please respond to Q51.2.1. If answer is NO, go to Q52.*

51.2.1 Please indicate the type of benefits you received. Select all that apply:

- Technical training
- Facilitated access to loans/credit
- Facilities
- Equipment
- Market access
- Access to inputs
- Representation and voice
- Other benefits (please specify: _____)

52 How satisfied or dissatisfied are you with your business achievements?

- o Very satisfied
- o Somewhat satisfied
- o Neither satisfied nor unsatisfied
- o Somewhat dissatisfied
- o Very dissatisfied

53 What advice you would give to policymakers to improve the conditions of small-scale traders in artisanal fisheries? How can the fisheries sector ensure that both women and men benefit equally from trade and market opportunities? Please share any ideas or suggestions:

_____
_____
_____
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## Key Informant Interview Guide

**Topic: Small-scale trade in artisanal fisheries in Ghana: assessing gender dimensions in fish marketing and trade for inclusive development.**

I am a researcher from the CSIR-Food Research Institute (CSIR-FRI). We are conducting research on the gender dynamics of fish trade in Ghana. The research seeks to achieve the following objectives: collect socio-demographic data on small-scale fish traders and their role along the fish value chain; analyze gender dimensions and socioeconomic patterns and dynamics in fish marketing and trade activities; assess the role played by gender and social factors on economic outcomes; and identify key challenges of fish traders and explore potential areas for policy support in relation to market access.

You have been identified as a key actor in the fisheries sector and we would like to get your expert views on the roles you and/or your organization plays in influencing how men and women fish traders experience fish trade and marketing. The interview will take about 30 to 40 minutes to complete. Your views will be kept confidential. You may decline to discuss any question at any time and for any reason, although we will ask that you try to respond to all the discussion themes if possible. If you have any further questions either now or after the research, you can contact the Research Team Leader, Dr. Esther Wahaga, on 0509039794. Thank you for accepting to participate in the study.

### Socio-Demographics and Trends in Fish Trade and Marketing

- What is your name? What organization do you represent? What do you do within the fisheries sector?

- How long have you worked in the fisheries industry/sector? How long have you worked in the current community? How long have you worked with the current organization? How long have you worked in your current role?

- How key is fish trade and marketing in this community? What opportunities does fish trade and marketing provided for men and women in the community?

### Marketing and Sales

- What are fish supply sources available to fish traders in this community? Where do you or members of your cooperative or network source their fish from? What are the challenges to fish sourcing for traders in this community (or for members of your cooperative or network)?

- Are fish traders in the community or your cooperative/network involved in fish export? What factors may be related to export market participation? What factors may be related to export market non-participation? Is the trade participation rate gender-balanced?

· What are the main marketing avenues available to fish traders in this community (or for fish trading members of your cooperative or network)? What are the market-related challenges faced by fish traders in this community (or for fish trading members of your cooperative or network)? How accessible are other fish markets (e.g., in other towns or cities) to women fish traders? How accessible are other fish markets (e.g., in other towns or cities) to men fish traders? What are the main challenges for men and women fish traders in accessing fish markets in other towns or cities?

· Does membership in cooperatives and networks correlate with market participation? Why or why not?

· Do improved fish processing and preservation equipment and facilities correlate with economic and trade outputs? Is there any gender gap in access to improved technologies and facilities?

· What types of market support do you or your organization provide for fish traders in the community (or in your cooperative or network)? What are the criteria for a fish trader to access these support services (e.g., equipment, technology, facilities, loans/credit, etc.)?

## Business Challenges

· Are there national or local cooperatives and networks focusing on assisting men and women involved in the fisheries trade? What are some of these and what roles do they play? What are their functions? What challenges do these cooperatives and networks face in the performance of their objectives that hinder their work?

· What are the key challenges in the trading and marketing of fish? Are these challenges gender-specific? Are there some location-specific challenges? Are there some social and customary challenges?

· What are some of the safety challenges faced by fish traders in this community or faced by fish trading members of your cooperative or network? Are there gender-specific safety challenges? (Do men and women fish traders face different safety challenges?)

## Gender Equality and Empowerment

· Are gender-based constraints and gaps (e.g., lack of time, limited mobility, and access to credit, family responsibilities and household duties) associated with economic outcomes such as revenue from fish sales? If yes, which constraints are more significant?

· Is it important to have gender-targeted services for men and women fish traders? Does your organization, cooperative or network make targeted efforts to get women fish traders to partake in your activities? What are some of the strategies you/your organization employs? Does your organization, cooperative or network make targeted efforts to get men fish traders to partake in your activities? What are some of the strategies you/your organization employs?

· Are issues of gender equality in fish trading and marketing themes your organization, cooperative or network considers/discusses? – Why? Why not? How can the fisheries sector ensure that both women and men benefit equally from trade and market opportunities?

## Policy Support

· What policies exist targeting inclusive and sustainable development of the fisheries sector in Ghana? How long have such policies been in place?

· What institutions (laws, regulations, rules, precepts, etc.) exist to support gender-responsive interventions for inclusive and sustainable development of the fisheries sector? Are these formal or informal institutions (laws, regulations, rules, etc.).

· What efforts are currently in place towards the formulation and implementation of gender-responsive science-based policy interventions for more inclusive and sustainable development of the fisheries sector?

· What forms of government support (e.g., equipment, technology, facilities, subsidies, loans/credit, training programs, etc.) exist for fish traders in the community or your cooperative/network? What is the procedure for accessing such government support services, if any? What are the hinderances to accessing such government support? Are there gender-based hinderances or challenges to accessing these government support services? How can the process of attaining such government support be streamlined or improved?

· What forms of non-government support (e.g., equipment, technology, facilities, subsidies, loans/credit, training programs, etc.) exist for fish traders in the community or your cooperative/network? Which organizations provide these support services? What is the procedure for accessing these support services? Are there gender-based hinderances or challenges to accessing these government support services? How can the process of attaining such government support be streamlined or improved?