



Food and Agriculture
Organization of the
United Nations



Empowering women in small-scale fisheries for sustainable food systems

Consolidated baseline report

Ghana, Malawi, Sierra Leone, Uganda and
the United Republic of Tanzania

Second edition

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Notes:

1. All data used in this report have been provided anonymously and no reference is made to any of the respondents who were interviewed for purposes of this baseline survey. All respondents were asked if they gave their consent to be interviewed and there were no objections. The database is, however, available for use by governments (each government being able to access only the data relating to its own country) and shared with FAO. The data are held on the KoBoCollect cloud server and are downloadable as an Excel file; they can be used for analysis as required.
2. This baseline survey report should be read in conjunction with the Women's Small-Scale Fisheries (SSF) Mapping Assessment¹ that was conducted during the same time period. This adds additional valuable commentary and data analysis specifically relevant to women's organizations and recommendations for consideration in project implementation.

¹ See the FAO 2022 publications titled *Mapping women's small-scale fisheries organizations in Ghana* (<http://www.fao.org/documents/card/en/c/cb8500en>); *Mapping women's small-scale fisheries organizations in Malawi* (<http://www.fao.org/documents/card/en/c/cb8499en>); *Mapping women's small-scale fisheries organizations in Sierra Leone* (<http://www.fao.org/documents/card/en/c/cb8497en>); and *Mapping women's small-scale fisheries organizations in Uganda* (<http://www.fao.org/documents/card/en/c/cb8498en>). A study was also conducted in United Republic of Tanzania under a Sida-funded project in 2019, however it is not published.

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Abbreviations and acronyms

COVID-19

coronavirus disease 2019

FAO

Food and Agriculture
Organization of the United
Nations

FGD

focus group discussion

FIES

Food Insecurity Experience
Scale

GHS

Ghanaian cedi (currency)

IGA

income-generating activity

KII

key informant interview

MDD-W

Minimum Dietary Diversity for
Women

MWK

Malawi kwacha (currency)

n=

number interviewed

NGO

non-governmental
organization

SLL

Sierra Leone leone (currency)

SSF

small-scale fisheries

SSF Guidelines

Voluntary Guidelines for
Securing Sustainable Small-
scale Fisheries in the Context
of Food Security and Poverty
Eradication

TZS

Tanzania shilling (currency)

UGX

Uganda shilling (currency)

Part 1

INTRODUCTION



1. Introduction

This report presents the design and results of a baseline survey with respect to a project of the Food and Agriculture Organization of the United Nations (FAO) focusing on empowering women in small-scale fisheries. The project supports the implementation of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (the SSF Guidelines), giving particular attention to the post-harvest sector in five countries in sub-Saharan Africa: Ghana, Malawi, Sierra Leone, Uganda and the United Republic of Tanzania.¹

The objectives of the baseline survey were the following.

- Provide a snapshot of the existing situation in project target areas at the time of data collection so as to allow managers and donors to measure changes as a result of the overall intervention and activities. Selected indicators for which the baseline survey collected data will be measured again in the future, to enable assessing change over the duration of the life of the project, in particular with regard to its impact and outcome indicators and targets.²
- Improve knowledge of the post-harvest sector and the challenges and opportunities for small-scale fishing communities, with a focus on women fishworkers, in project areas. This information on the local situation is important when designing and prioritizing project interventions.

Accordingly, the baseline survey included social, economic and institutional elements to allow for a better understanding of existing livelihoods, behavioural practices and the attitudinal positions taken by individuals in beneficiary communities. Five core areas stand out in the project, and have been captured in the baseline survey:

1. food security and nutrition – diets and food access;
2. gender equality – decision-making and women’s empowerment;
3. value chain development: responsible post-harvest practices;
4. institutional structures and capacity: women’s fishery organizations; and
5. information sharing and policy formulation: knowledge management and communications.

1 This initiative was started in 2020 through an extension of the project entitled “Enhancing the Contribution of Small-Scale fisheries to Food Security and Sustainable Livelihood through Better Policies, Strategies and Initiatives” (GCP/GLO/645/NOR), which focused on “Empowering Women in Small-Scale Fisheries for Sustainable Food Systems”, and was followed by an FAO Flexible Multi-Partner Mechanism (FMM) subprogramme on “Implementing the Small-Scale Fisheries Guidelines for gender equitable and climate resilient food systems and livelihoods” (FMM/GLO/155/MUL), starting in 2021.

2 The project has the following results framework impact and outcome indicators:

- change in Food Insecurity Experience Scale (FIES) (percentage experiencing moderate or severe food insecurity);
- change in women’s participation in relevant organizations;
- number of countries where key recommendations of the SSF Guidelines are referred to in relevant government policies, strategies, initiatives and statements, particularly relating to gender equality; and
- change in dietary patterns (measured by percentage of women of reproductive age meeting the Minimum Dietary Diversity – Women – MDD-W – indicator).

The survey was implemented in all five countries of the project; however, not all commenced at the same time. The following key steps were taken to ensure synergy across the countries:

- conceptualization of a monitoring framework including a baseline survey that could be adapted to fit different national contexts;
- development of three questionnaire types for the gathering of baseline data and that can be replicated at the end point of the project;
- identification and agreement of the data collection tool to be used (i.e. KoBoCollect³); and
- a training programme and delivery of the training for identified teams in each partner country. This covered both the questionnaires and the data collection tool itself.

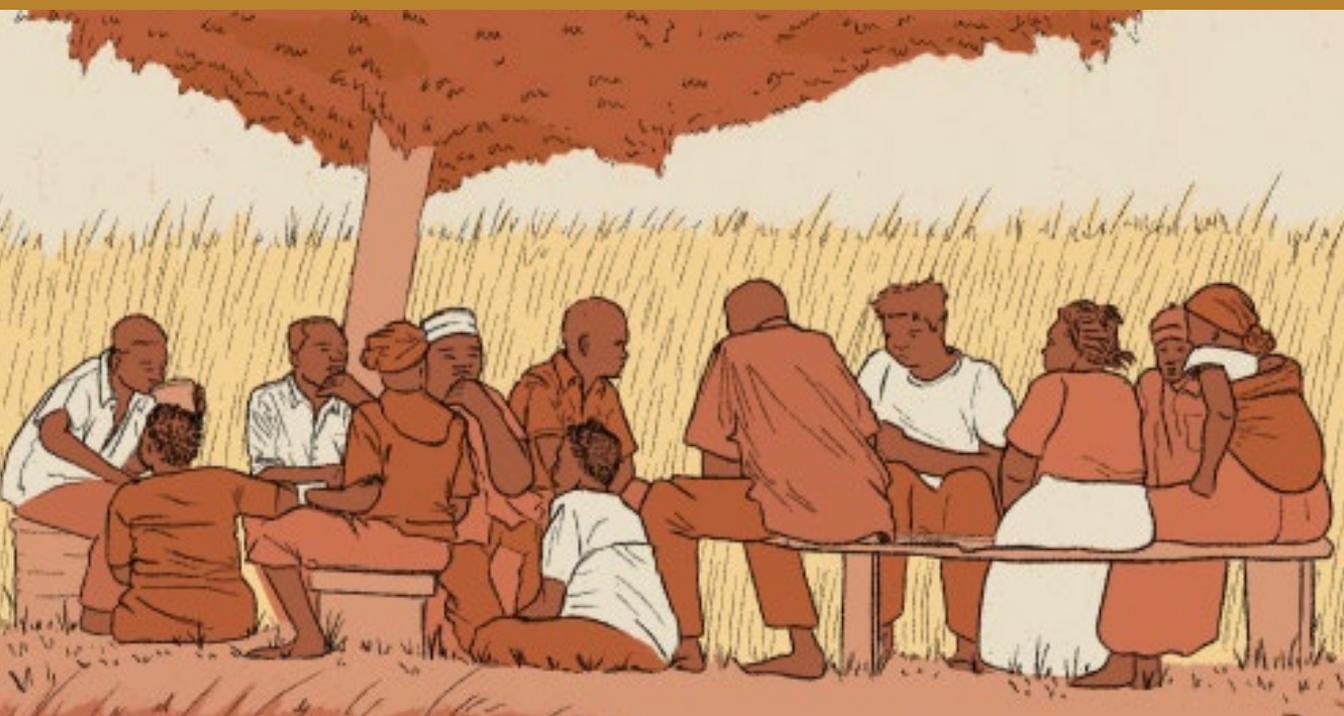
Section 2 explains the design of the baseline survey, including the questionnaire structure and survey methods. The survey also included questions to understand who the respondents were and their profiles are presented in Section 3 below. The indicators⁴ on which data was collected are presented with the results of the survey in Section 4, where these results are also discussed. The results are organized according to the five core areas listed above, that is (1) diets and food access; (2) decision-making and women's empowerment; (3) responsible post-harvest practices; (4) women's fishery organizations; and (5) knowledge management and communications. Sections 5 and 6 include conclusions and recommendations, respectively.

3 All data are held online on a secure server arranged by the KoBoCollect management team and downloadable in various formats, including Excel. The downloaded data represent a complete dataset for the entire project, with analysis on a country-by-country basis requiring further selection as needed.

4 See Footnote 3.

Part 2

DESIGN OF THE BASELINE SURVEY



2. Design of the baseline survey

2.1 Survey structure

The baseline survey collected data using a combination of survey instruments (see Table 1).

Table 1. Survey instruments for data collection in the five countries

Type of data collection	Target	Data collection profile
Questionnaire for individuals	Individual women, however some men were interviewed as well	Mainly quantitative but some qualitative data
Focus group discussions (FGDs)	Groups of women	Mainly qualitative but also some quantitative data
Key informant interviews (KIIs) of those in policy, programme or similar levels of sector influence	Policymakers, governments projects or programmes working in the small-scale fisheries or fisheries sector as whole, including social and health interventions	Majority qualitative but also some quantitative

Source: Authors' own elaboration.

The survey remained consistent across the five countries, with one adaptation for each country survey, based on the available foods in each country. This adaptation pertains to one indicator, Minimum Dietary Diversity for Women (MDD-W), for which a 24-hour dietary recall is required. This 24-hour recall can be performed through open recall or list-based methods (see FANTA, 2016 for further methodological information). For this baseline assessment, a list-based method was selected. Assistance was provided by nutrition specialists within FAO on locating pre-collected "Food Lists" for each project country. These lists were then incorporated into the survey to ensure that it was context-specific for each country.

2.2 Baseline training and field pre-test

As good practice dictates, training of the enumerator team was envisaged from the start. Training guidelines were developed and shared with the team. This gave the opportunity to present and discuss the overall project context and survey purpose with the team, and to introduce them to the three instruments designed for data collection. The training also included time to assist the team in familiarizing themselves with the survey and data collection tool for this task, KoBoCollect – a free, online application that can also be used offline, and is therefore suitable in locations where internet connection is poor.

It was agreed that a field pre-test of the individual questionnaires would take place soon after the training, to help the enumerator teams in each country to gain familiarity with the questions and to practice uploading data onto the KoBoCollect mobile application. The fieldwork commenced soon after this. The survey was conducted between 29 September 2020 and 2 February 2021 (see Table 3 for the survey dates in each country).

FGDs and KIIs followed a similar outline as the individual survey, based on the outline of the project's framework. These survey instruments sought the opinion of respondents on diet, gender issues in small-scale fisheries, and facilities they believe exist or are in place and serve small-scale fisheries participants. In addition, KIIs sought to gain an understanding of the knowledge of the SSF Guidelines and of that held on capacity development needs, as well as how learning and technological change occur.

2.3 Sample size and data collection programme

Calculating the sample size presented some difficulties due to unreliability of the data on the target population of women in small-scale fisheries, as women are often under-recognized and undercounted in official statistics. Thus, the following assumptions and criteria were suggested for the sampling to endow the baseline and endline survey with credibility, while at the same time remaining manageable (see Table 2).

Table 2. Sample size determination

Condition	Number
If:	
the total target small-scale fisheries population is	120 000 000*
of which 90 percent are in small-scale fisheries primary/secondary industry activities	108 000 000
of which 97 percent are in developing countries	104 760 000
of which 50 percent are women in small-scale fisheries	52 380 000
then:	
with a confidence level of:	95 percent
a confidence interval of:	2.5
the sample size would be:	1 536 (across all five countries)
rounding this down would result in:	300 interviews per country

Source: Authors' own elaboration.

* FAO. 2020. *The State of World Fisheries and Aquaculture 2020: Sustainability in action*. Rome. <https://doi.org/10.4060/ca9229en>

Table 3 provides the number of respondents interviewed in each of the five countries by type of survey instrument. The dates of the surveys are also given.

Table 3. Summary of respondent numbers per country

Survey numbers	Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania	TOTAL
Survey dates	29 September 2020 – 3 November 2020	16 November 2020 – 9 December 2020	23 January 2021 – 2 February 2021	29 September 2020 – 28 October 2020	9 December 2020 – 2 February 2021	29 September 2020 – 2 February 2021
Individuals	296	306	431	300	281	1 614 individuals
Focus group discussions	40	11	31	10	11	103 focus groups
Key informant interviews	7	10	10	10	18	55 key informants

Source: Authors' own elaboration.

2.4 Survey locations and target respondents

The following map shows the locations where data collection took place and the number of individual interviews conducted per point in the specific countries. The survey locations were selected on the basis of where project activities are planned in the SSF post-harvest sector. In general, all individual and focus group discussion (FGD) interviews were conducted in the field, while key informant interview (KII) sessions were held over the phone or in one-to-one meetings.⁵

Figure 1. Map of data collection locations in the five countries



Source: Siren, A. 2022. Map of data collection locations in the five countries. Modified by the author based on KoboCollect.

⁵ It should be noted that the survey was conducted at a time of high alert due to the COVID-19 pandemic and all social distancing and protocol were followed to minimize the possibility of physical contact.

2.5 Local community inclusion

A major commitment made by the project is the intent to directly involve local communities in the delivery of interventions. Ownership of the changes must rest with the communities targeted and partnership is key in this process. The design of the survey also took this approach and has ensured that at least one local small-scale fisheries representative was part of the data collection team; this was envisaged to boost collaboration and meet the positive commitments found within the SSF Guidelines.

2.5.1 Data analysis

The analysis was rigorously undertaken so that the data from the five countries were comparable and similar in presentation. Due to the large amount of data collected (much of qualitative nature), many responses were summarized or particular responses are highlighted in the report, as they added a qualitative value to the narrative that provided a deeper understanding and awareness of the situation faced by respondents. The analysis was statistical insofar as straight averages, percentages of totals and sums or counts were used to present data results. The results of the individual survey are presented in tables and graphs in the following sections of this publication, while qualitative additions from FGDs and KIIs are provided as supplements to help interpret the data.

Part 3
PROFILE OF
RESPONDENTS

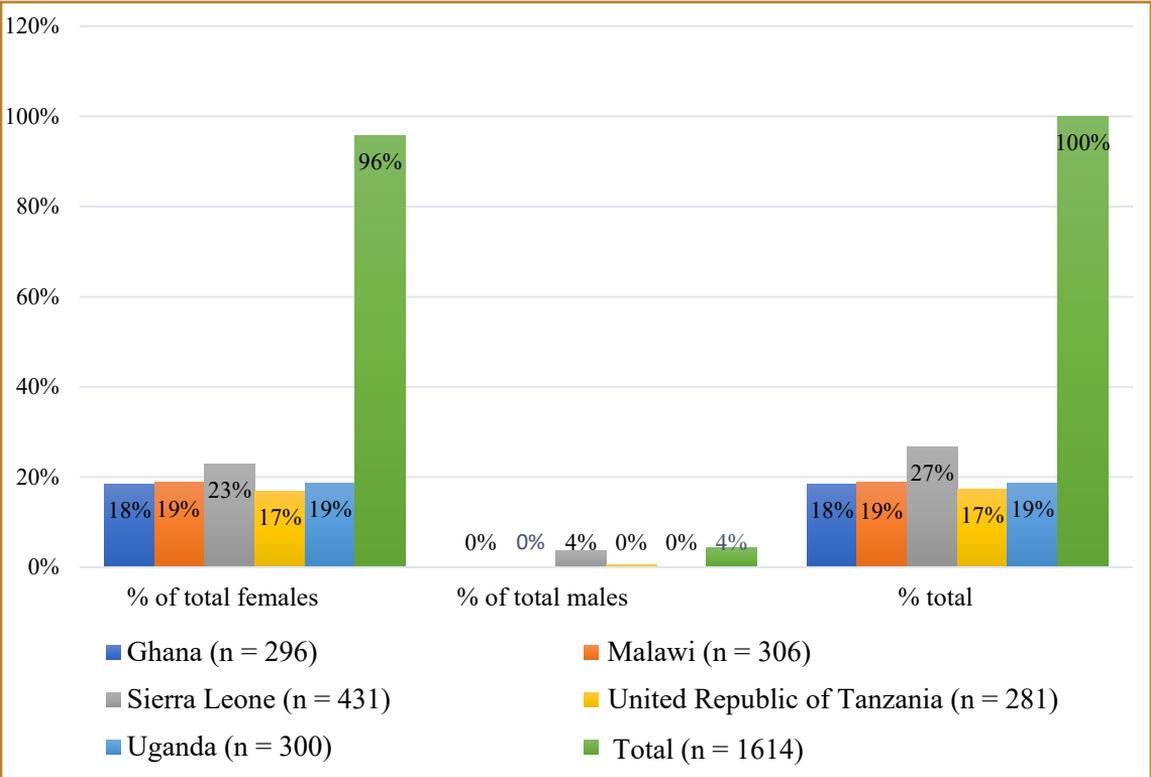


3. Profile of respondents

In total, the survey reached 1 614 individuals, 103 FGDs and 55 KIIs. However, participants were made aware (through informed consent) that the survey was voluntary, and if they consented to participate, they were not required to answer all questions. Thus, for some questions, results indicate a lower number of respondents.

The survey targeted mostly women small-scale fisheries actors along the small-scale fisheries value chain, as well as those in positions that worked with small-scale fisheries and projects and programmes to empower women in their livelihoods activities. Although the target respondents consisted mainly of female small-scale fisheries actors, some male respondents were also included in order to gain different perspectives, or where the enumerator was not able to speak directly with the women of the household. A total of 1 545 female and 69 male respondents were interviewed, representing 96 percent and 4 percent of respondents respectively. Figure 2 shows distribution of respondents by sex and by country.

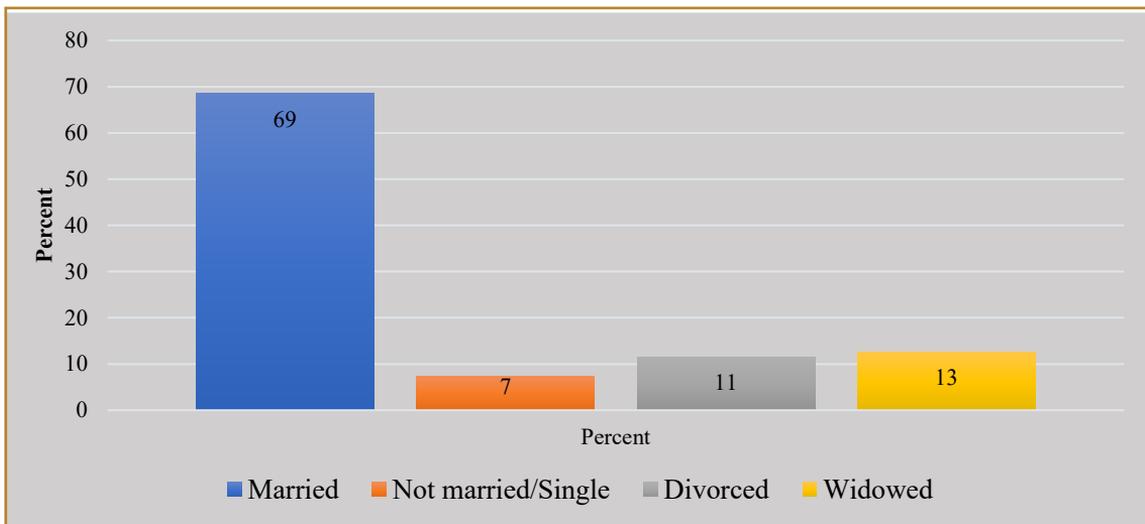
Figure 2. Distribution of sampled respondents, by sex and by country (n= 1 614)



Source: Authors' own elaboration.

A total of 1 106 respondents (69 percent) indicated being married, followed by 204 widowed (13 percent). The divorced and single/not married respondents were 11 percent and 7 percent, respectively. Figure 3 depicts the distribution of respondents by marital status.

Figure 3. Distribution of marital status of sampled respondents (n= 1 614)

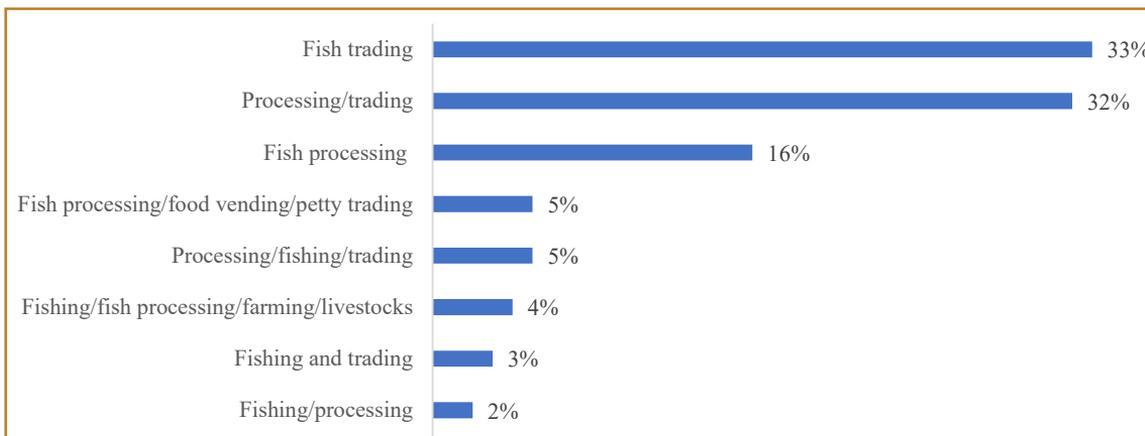


Source: Authors' own elaboration.

The mean age of the respondents in the survey was 41, the oldest being 84 years and the youngest being 17 years of age. In terms of education, the mean number of years spent in school was 5 years, and the maximum was 18 years. On average, the respondents' household size in the survey countries was eight, with the minimum members per household being one and the highest 40.

As expected due to selection criteria for our target respondents,, the major sources of income of the respondents' households in all five countries revolved around the fish value chain.. Fish trading was by far the most cited, at almost 34 percent, followed by fish processing combined with fish vending, at 32 percent. Those that rely on fish processing alone accounted for 16 percent of the responses. The other key sources of household income included a combination of fisheries activities, petty trading and agriculture (both crop and livestock production). A graphic representation of the respondents' declared sources of income is shown in Figure 4.

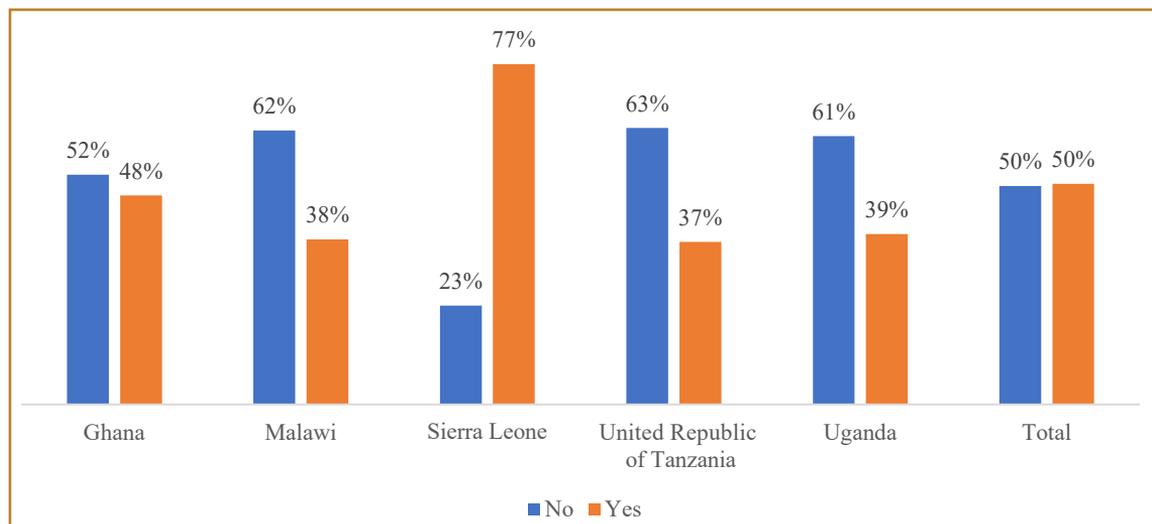
Figure 4. Major sources of income across the five survey countries (n= 1 600)



Source: Authors' own elaboration.

The survey sought to establish whether the respondent or another member of the household was involved in fish harvesting. Of the five countries, Sierra Leone had the highest percentage of a households with at least one member that participated directly in fishing, at 77 percent. At 48 percent, Ghana was the second highest. Uganda, Malawi and the United Republic of Tanzania were almost at par (39 percent, 38 percent and 37 percent, respectively). Figure 5 depicts the distribution of respondents who were fishers, by country.

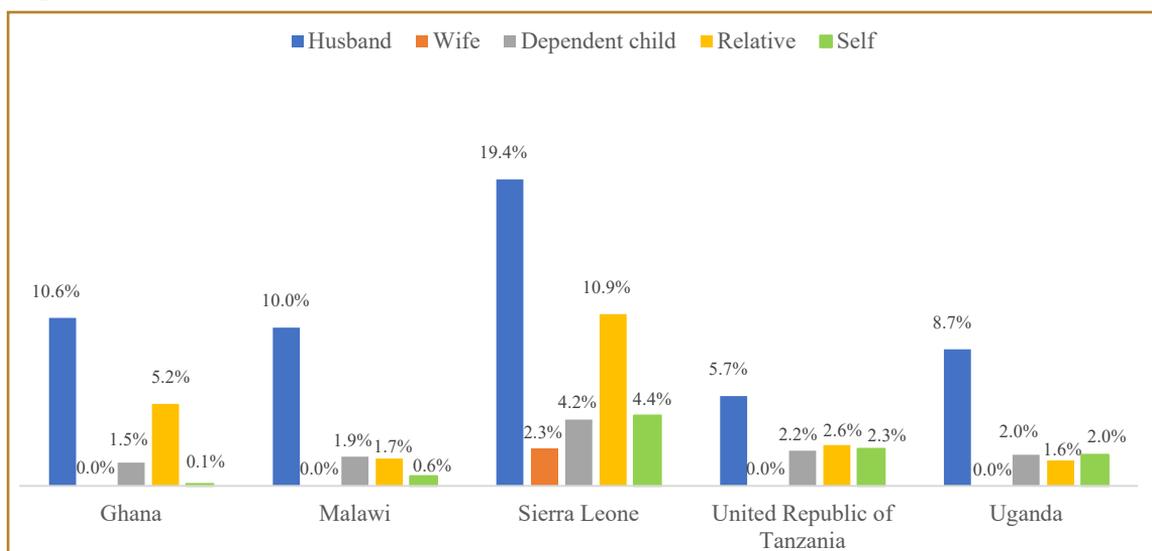
Figure 5. Percentage of households having a member participating in fishing, by country (n= 1 610)



Source: Authors' own elaboration.

In terms of which household member does fishing, the survey found that across all five countries, husbands were the ones who are largely responsible for fishing, followed by another relative. Results reported through FGDs and KIIs confirm that the majority of those involved in fishing are male. In Sierra Leone, 2.3 percent of survey respondents stated that the wife fished. This may have been due to more men having been surveyed in Sierra Leone than in other countries (4 percent of respondents in Sierra Leone were men, see Figure 2). Figure 6 depicts the distribution of who fishes in the household, by country.

Figure 6. Fishers in the household, by country (n= 1 614)

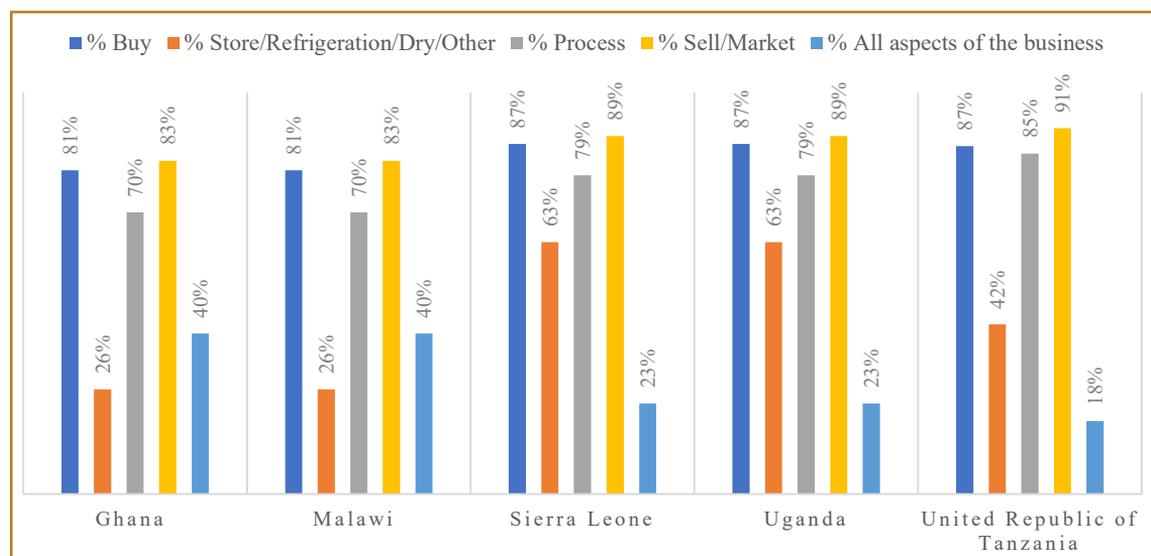


Source: Authors' own elaboration.

On whether respondents in participating countries farmed fish, the survey found only that 29 (2 percent) respondents participated in fish farming out of all participating countries. The highest number was found in Malawi, where a total of 15 (5 percent) respondents indicated that they farmed fish. As for who in the households farmed fish, the majority (55 percent) were the husbands of respondents. In follow-up, the respondents who noted that their household was involved in fish farming were asked if they processed the farmed fish, to which the majority responded no. An exception was Malawi, where approximately two-thirds of respondents stated that they did process farmed fish.

Members of the respondents' households in the participating country performed various roles in the fisheries supply chain. In terms of what the households did within the fish value chain, they were asked to select one or all the following: buying fish; selling and marketing; storing, drying or processing; or a combination or all of these. A majority of respondents in all countries reported being involved in fish selling or marketing and buying, at an average of 87 percent and 85 percent respectively. A total of 77 percent of the respondents stated that they processed fish. Figure 7 depicts the distribution of the respondents' specific fisheries activities dealing with fish, by country.

Figure 7. Fisheries activities in which respondents were involved, by country



Source: Authors' own elaboration.

The survey found that a large proportion of those processing fish were women, especially in Ghana, at 100 percent, and Uganda at 100 percent (taking into consideration that "Wife" and "Self" here mean the same), followed by Malawi (92 percent), the United Republic of Tanzania at 91 percent and Sierra Leone at 89 percent. Table 4 depicts the distribution of family members processing fish, by country.

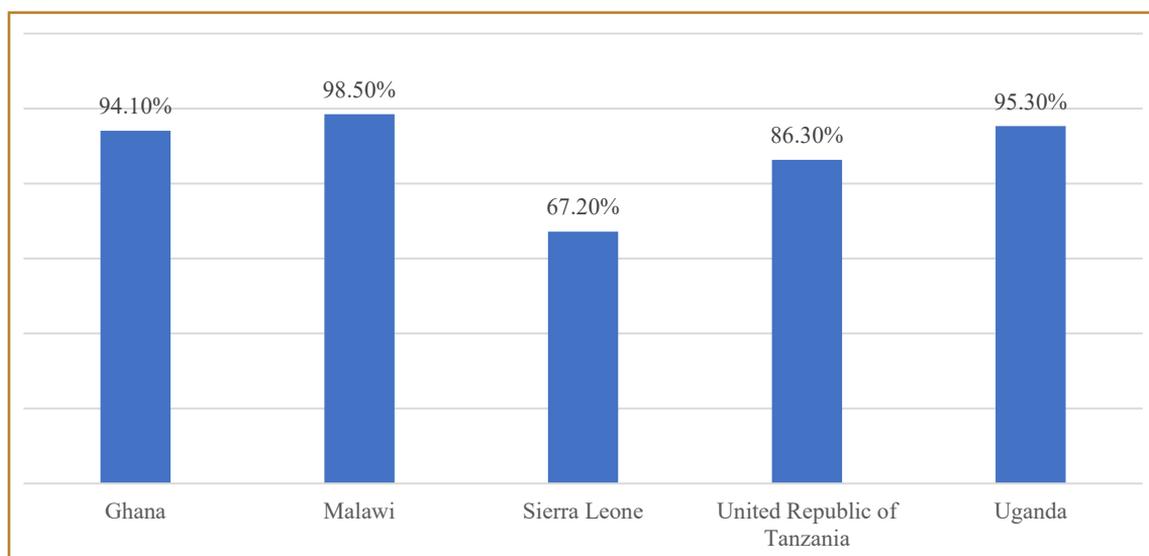
Table 4. Distribution of family members processing fish, by country

	Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania
Husband	0.0%	5.9%	0.0%	0.0%	0.0%
Wife	0.0%	0.0%	77.8%	33.3%	0.0%
Dependent child	0.0%	1.0%	0.0%	0.0%	2.9%
Relative	0.0%	1.0%	11.1%	0.0%	5.7%
Self ⁶	100.0%	92.2%	11.1%	66.7%	91.4%

Source: Authors' own elaboration.

Respondents were asked who in the household marketed or retailed fish. A total of 1 029 respondents (63.9 percent) reported having a member of their household who marketed or retailed fish, across all five countries. Among those who indicated marketing or retailing fish, the majority were the respondents themselves, ("Self"), average 88.3 percent. This finding is in agreement with other literature indicating that an overwhelming majority of women is engaged in the marketing and retailing of fish (Olapade and Sesay, 2019). Figure 8 depicts the distribution of respondents who reported that they themselves marketed or retailed fish, across the five countries.

Figure 8. Respondents in household who marketed or retailed fish themselves, by country

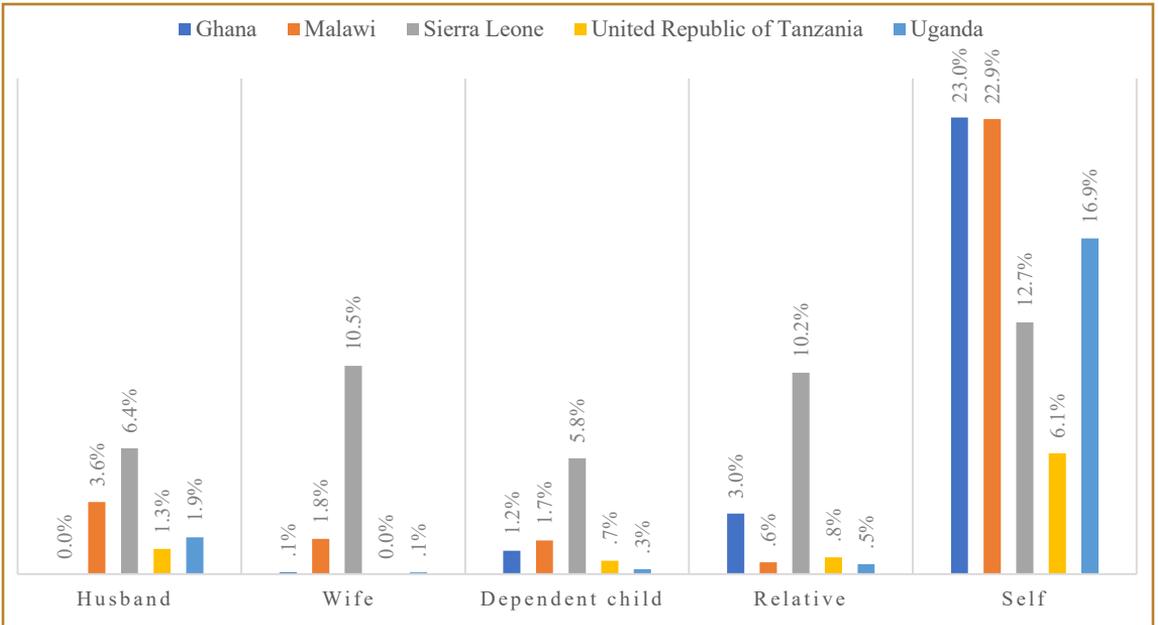


Source: Authors' own elaboration.

When asked who in the household traded fish, the trend was similar to that for processing, marketing and retailing fish except for Sierra Leone, where a greater percentage of respondents reported that other household members participated in the fish trade. In the other four countries, respondents reported that women (reported as "Self" or the wife of male respondents) were responsible for fish trading (average of 16.3 percent across the four countries). Figure 9 depicts the distribution of which family members traded fish, by country.

6 As noted in the profile of respondents, 96 percent of respondents were female while 4 percent were male, thus the category "Self" should be interpreted carefully. Although the survey targeted women working in small-scale fisheries, some men were also included as respondents, as in some cases, it was difficult to interview the women of the household.

Figure 9. Family members in the fish trade (wholesale), by country



Source: Authors' own elaboration.

Part 4

SURVEY SUMMARY RESULTS AND DISCUSSION



4. Survey summary results and discussion

4.1 Diets and food access

4.1.1 The Food Insecurity Experience Scale

The baseline survey included the Food Insecurity Experience Scale (FIES), an indicator that helps to determine household food insecurity as based on the experiences of survey respondents. The FIES is based on eight questions and uses a 12-month reference period. The FIES analysis results is presented in Table 5. The full set of analysis is presented in Annex 1. In summary, 82.6 percent of respondents in Sierra Leone experienced moderate to severe food insecurity, while the figure for Ghana was the lowest, with 54.8 percent. When it comes to severe food insecurity among the survey countries, Sierra Leone was still the highest, with 45.6 percent, while Malawi was the lowest, with 8.71 percent. Table 5 presents a summary of the percentage of respondents who experienced food insecurity, by country.

Table 5. Prevalence rates of food insecurity (percentage of individuals), by country

Country	Category	% of individuals	Margin of Error (MoE)
Ghana	Moderate or severe	54.82	9.08
	Severe	14.90	5.45
Malawi	Moderate or severe	54.72	8.47
	Severe	8.71	3.85
Sierra Leone	Moderate or severe	82.55	5.19
	Severe	45.58	6.64
Uganda	Moderate or severe	72.96	8.06
	Severe	18.32	6.93
United Republic of Tanzania	Moderate or severe	75.92	7.80
	Severe	35.49	7.61

Source: Authors' own elaboration.

4.1.2 Minimum Dietary Diversity for Women

In addition to the FIES, the survey administered the MDD-W. Dietary diversity is based on the understanding that a diet with an adequate diversity of foods is more likely to meet the nutritional needs for a well-functioning human body. The MDD-W is defined as:

a dichotomous indicator of whether or not women 15–49 years of age have consumed at least five out of ten defined food groups the previous day or night. The proportion of women 15–49 years of age who reach this minimum in a population can be used as a proxy indicator for higher micronutrient adequacy, one important dimension of diet quality (FANTA, 2016).

In this regard, when MDD-W was reached (by a person consuming at least one food from five or more food groups), it took a value of 1, and a value of 0 otherwise.⁷ A list-based 24-hour recall

⁷ The calculation of MDD-W includes only ten food groups. These are the first ten food groups (1 to 10) detailed in Table 7 of this publication. The consumption of at least five of these ten food groups has been validated as a proxy method associated with a probability of women of reproductive age suffering from micronutrient deficiencies.

was conducted with each individual respondent. The food lists were based on the ten MDD-W food groups and gave examples of foods in each food group, according to the local context. To analyse the data, a simple sum was calculated to determine the number of food groups consumed (out of ten). The survey results show that the percentage of the target population to reach MDD-W is highest in Uganda, at 59.3 percent, followed by Ghana at 55 percent; Sierra Leone had the lowest proportion, at 35.3 percent. Table 6 presents the details.

Table 6. MDD-W calculations, by country (n= 1 614)

Parameter	Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania
Total women	296	306	370	300	274
Total women who were MDD-W age-eligible (15–49 years)	167	262	292	245	211
Total women with complete data and consent, and ageeligible	151	211	241	231	174
Women reaching MDD-W	83	97	85	137	87
% women reaching MDD-W	55.0%	46.0%	35.3%	59.3%	50.0%

Source: Authors' own elaboration.

Although the MDD-W indicator is based on ten food groups, 18 food groups are included in list-based recall methods, in order to capture a “snapshot” of the whole diet. The food groups included in the survey (1–18) are detailed in Table 7 below. In particular, high consumption levels of food groups 14, 15 and 16 have been associated with a higher risk of several diet-related diseases, such as obesity and hypertension. Therefore, although these food groups should not be included in the MDD-W calculation, they provide relevant dietary information. See Table 7 for the percentage of respondents who self-reported consuming foods from each of the food groups, with the ten food groups included in the MDD-W in **bold text**.

Table 7. Percentage of women consuming each food group

Food groups	Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania
1 – Grains, white roots, tubers and plantains	100.0%	99.5%	84.2%	96.1%	98.9%
2 – Pulses (beans, peas and lentils)	11.9%	19.4%	15.4%	64.5%	43.1%
3 – Nuts and seeds	21.9%	7.1%	36.5%	9.1%	13.8%
4 – Dairy	27.2%	5.2%	19.5%	41.1%	6.9%
5 – Meat, poultry and fish	95.4%	80.6%	73.4%	85.7%	84.5%
6 – Eggs	41.1%	5.7%	10.0%	24.2%	4.0%
7 – Dark green leafy vegetables	15.2%	54.0%	46.9%	27.3%	44.3%
8 – Other vitamin A-rich fruits and vegetables	21.9%	74.4%	18.3%	56.3%	58.0%
9 – Other vegetables	92.7%	82.0%	34.9%	72.3%	64.4%
10 – Other fruits	54.3%	12.3%	32.0%	25.5%	44.3%
11 – Insects and other small protein foods	0.0%	0.5%	1.7%	13.9%	4.6%
12 – Red palm oil	0.0%	0.0%	0.0%	0.0%	0.0%
13 – Other oils and fats	0.0%	0.0%	0.0%	0.0%	0.0%

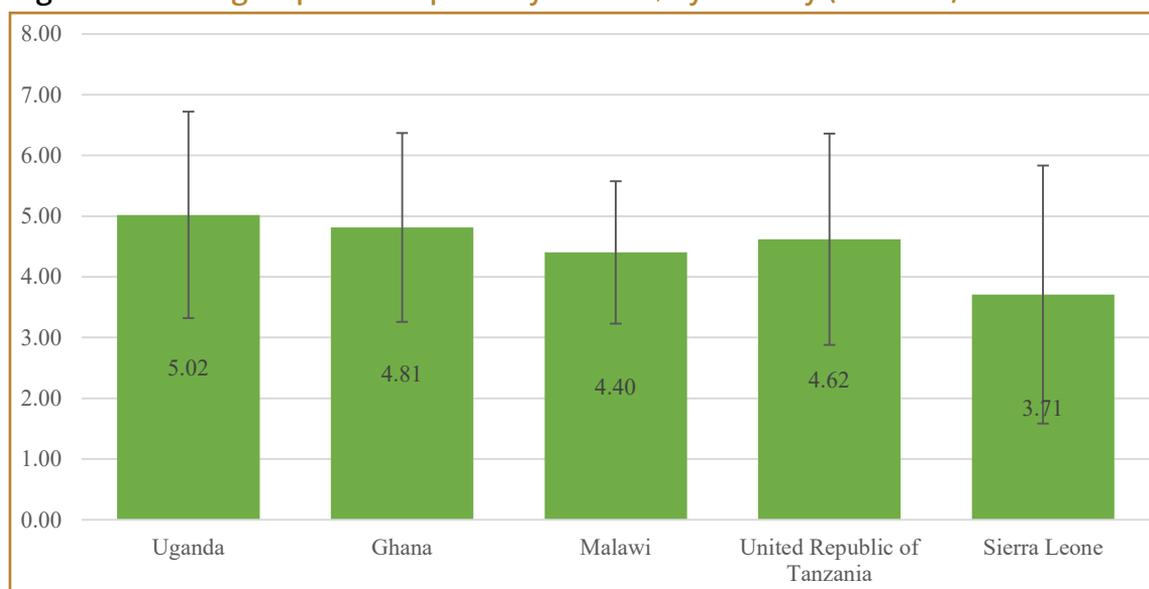
Food groups	Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania
14 – Savoury and fried snacks	13.9%	21.8%	2.5%	4.8%	8.0%
15 – Sweets	37.7%	1.9%	24.9%	11.3%	9.8%
16 – Sugar-sweetened beverages	41.1%	58.3%	30.3%	77.5%	66.1%
17 – Condiments and seasonings	40.4%	6.2%	18.3%	32.9%	6.3%
18 – Other beverages and foods	0.0%	0.0%	0.0%	0.0%	0.0%

Source: Authors' own elaboration.

As seen in Table 7, the food groups reportedly consumed most commonly by respondents across the five countries are 1 (grains, white roots and tubers, and plantains), 5 (meat, poultry and fish), 9 (other vegetables) and 16 (sugar-sweetened beverages).

In terms of the average (mean) number of food groups consumed by women in all countries, Uganda has the highest mean, 5.02 food groups (out of 10 food groups which comprise the MDD-W score), while Sierra Leone has the lowest, at 3.7. Figure 10 shows the range across all the countries.

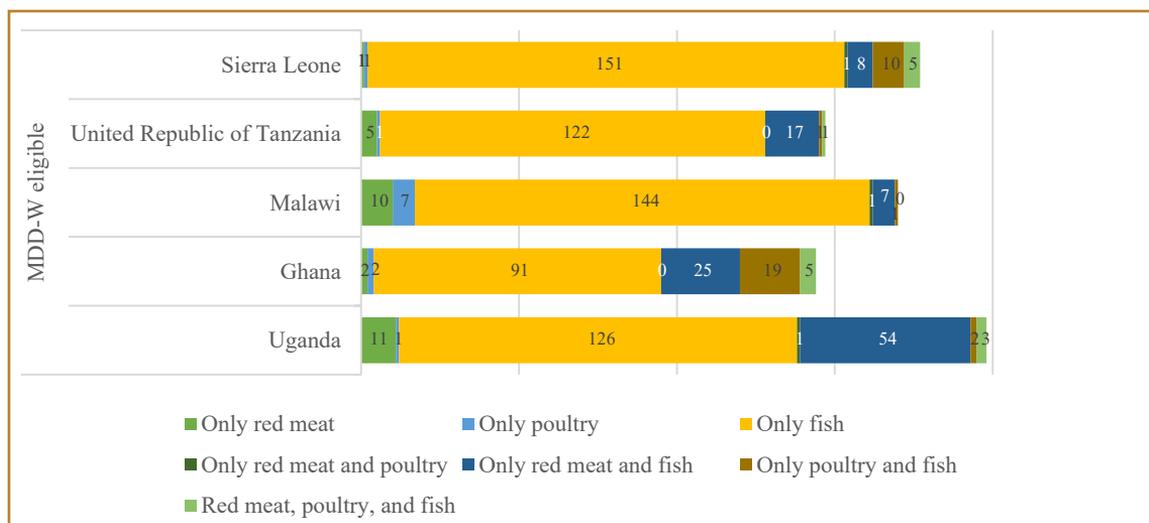
Figure 10. Food group consumption by women, by country (n= 1 546)



Source: Authors' own elaboration.

Figure 11 depicts the disaggregation of foods in food group 5 (meat, poultry and fish) as reported consumed by respondents in the previous 24 hours for MDD-W eligible respondents (women of reproductive age, or 15–49 years). In all countries, the vast majority consume fish only, followed by red meat and fish, and then only red meat.

Figure 11. Main food groups consumed by MDD-W-eligible women (n= 1 177)



Source: Authors' own elaboration.

4.1.3 Fish species consumed and access to fish for consumption

With respect to fish species, Table 8 illustrates the fish preferences of respondents in each country. This table provides the fish species reported to be most consumed, by country. In the United Republic of Tanzania, the most cited fish species was silver cyprinid or *dagaa* (*Rastrineobola argentea*), at 46 percent. The qualitative data confirmed that small-scale fisheries households prefer consuming small fish species to medium and large fish, which are usually reserved for sale.

Table 8. Primary fish preference, by country (n= 1 614)

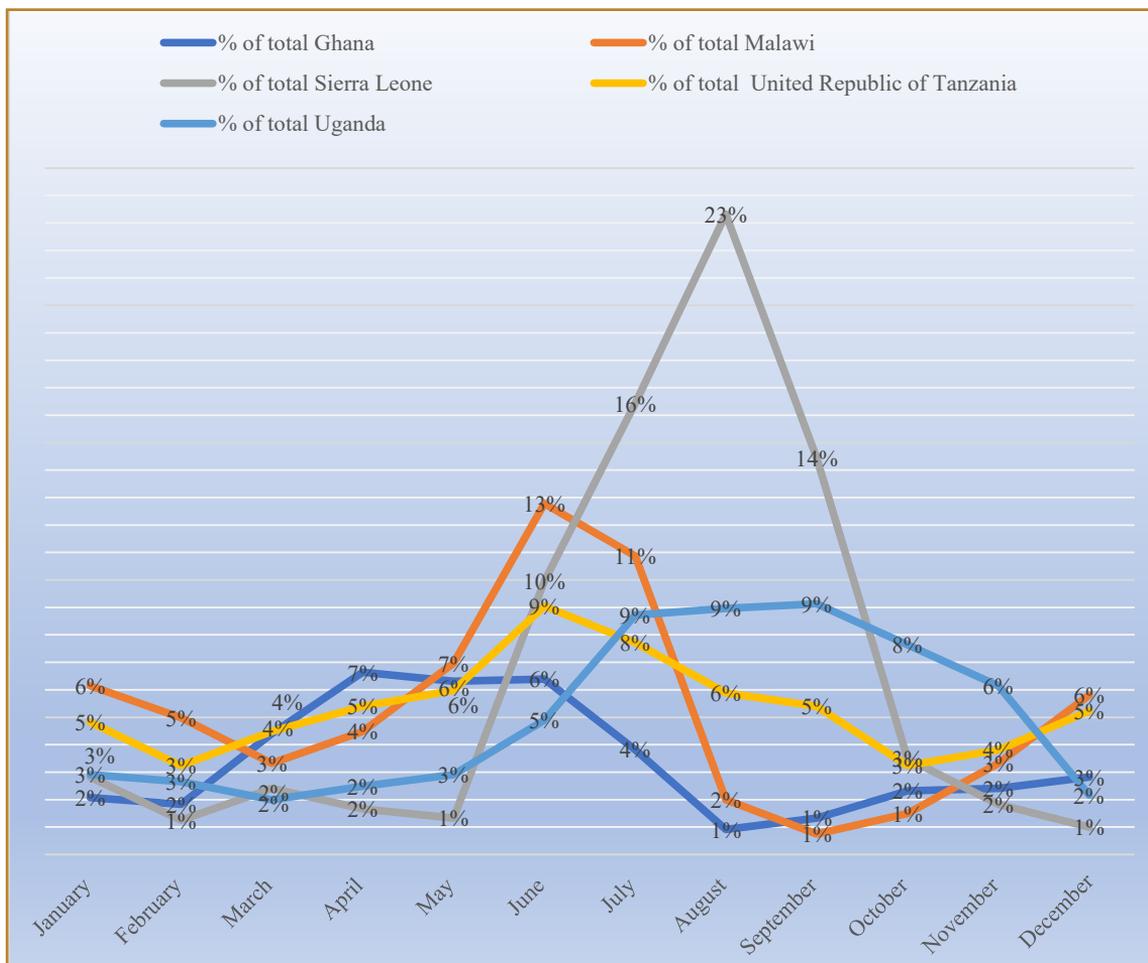
Country	Fish species	Frequency	Percent (as total of respondents in each country)
Ghana	Round sardinella (<i>Sardinella aurita</i>)	40	19
Malawi	<i>Usipa</i> or Lake Malawi Sardine (<i>Engraulicypris sardella</i>)	275	90
Sierra Leone	<i>Bonga shad</i> (<i>Ethmalosa fimbriata</i>)	337	78
Uganda	<i>Mukene</i> or silver cyprinid (<i>Rastrineobola argentea</i>)	106	35
United Republic of Tanzania	<i>Dagaa</i> or silver cyprinid (<i>Rastrineobola argentea</i>)	131	46

Source: Authors' own elaboration.

Overall, 20.1 percent of the respondents indicated that they bought fish all year round, while 79.9 percent said that in certain months, they could not buy fish. Figure 12 depicts the frequently cited months (at peak) per country when respondents could not buy fish. Generally, the pattern appears to show that between June to September, households encounter challenges in buying fish. The reasons cited by respondents included: high price (most common response in Ghana, Uganda and the United Republic of Tanzania), while bad weather (which includes wind, rain, storms and heat

waves) was cited most often for Malawi and Sierra Leone. Fish scarcity or shortage was also cited as one of the reasons across the countries.

Figure 12. Months during which respondents reported being unable to buy fish, by country (n= 1 614)



Source: Authors' own elaboration.

In terms of how often fish is consumed in the household, all households in the survey countries indicated that their diets frequently contain fish. The highest percentage of households consumed fish seven days per week except Uganda, where the highest was three days per week. In Sierra Leone, households that consumed fish seven days per week totaled 91.2 percent, while in Ghana, 87.5 percent of the surveyed households ate fish at least seven days per week. In the United Republic of Tanzania and Malawi, the households consuming fish seven days per week were 37 percent and 28 percent respectively. There were no households indicating that they did not include fish in their diet (see Table 9). This agrees fully with the qualitative data collected in all five countries indicating that among small-scale fisheries households, diets are dominated by fish consumption, indeed sometimes constituting the only source of animal protein and a high source of many essential nutrients, such as omega-3 fatty acids and vitamin D.

Table 9. Frequency of fish consumption per week, by country (n= 1 600)

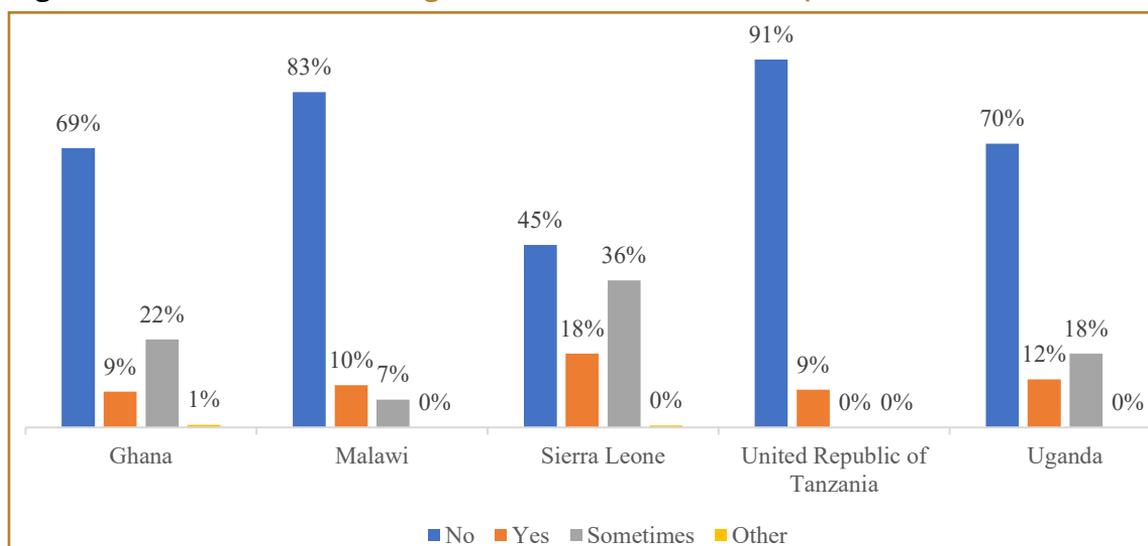
	One day	Two days	Three days	Four days	Five days	Six days	Seven days	Do not eat at all
Ghana	0.3%	0%	1%	4.7%	5.1%	1.4%	87.5%	0%
Malawi	1%	9%	21%	14%	15%	12%	28%	0%
Sierra Leone	0.5%	0.7%	0.7%	1.7%	1.9%	3.3%	91.2%	0%
Uganda	13%	23%	29%	20%	5%	2%	7%	1%
United Republic of Tanzania	12%	13%	16%	10%	7%	5%	37%	0%

Source: Authors' own elaboration.

In respect of the amount of fish consumed each day, the study found that this aspect is dependent on the type of fish consumed as well as the number of household members. Although there were varied units according to the local customary measurements reported, after some harmonization of the data, it was possible to conclude that on average, households consumed approximately 1.2 kg of small fish (*dagaa*, *usipa*, silver cyprinid, *mukene*, etc.) per day. When it comes to large fish, households consume on average two whole fish per day (the weight varies by the size of a whole fish and what is considered “large”, however a large fish is generally understood as those that are shared amongst two or more people). For extra-large fish (such as tuna and *Bagrus meridionalis*), households divide them into portions and consume them within two to four days.

The survey sought to understand if respondents' households catch their own fish for direct consumption. The results show that on average, 71 percent of respondents in all five countries did not catch their own fish. On average, only 12 percent of the households indicated that they caught their own fish for consumption, while the percentage of respondents in Sierra Leone is much higher, at 36 percent. The high proportion of households not catching their own fish for consumption is also corroborated by the participants in the FGDs. Figure 13 shows the comparison by country.

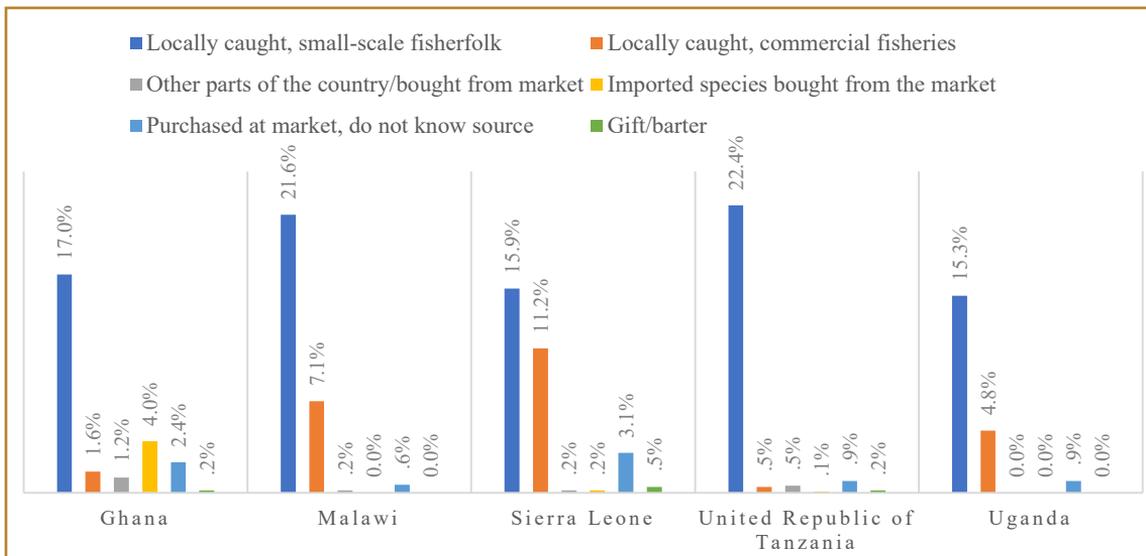
Figure 13. Households catching their own fish for consumption (n= 1 598)



Source: Authors' own elaboration.

For the households that do not catch their own fish, across the five countries, most of the fish consumed came from small-scale fisherfolk (locally caught), as reported by 92.2 percent of respondents, followed by commercial fisheries (locally caught) at 25.3 percent.⁸ The other sources were purchasing at market but do not know source, at 7.9 percent and imported species bought from the market at 4.3 percent; however, purchase of imported species was reported only in Ghana. Figure 14 shows the various sources of fish that respondents from each country reported buying for own consumption.

Figure 14. Source of fish if household did not catch own fish, by country (n= 1 095)

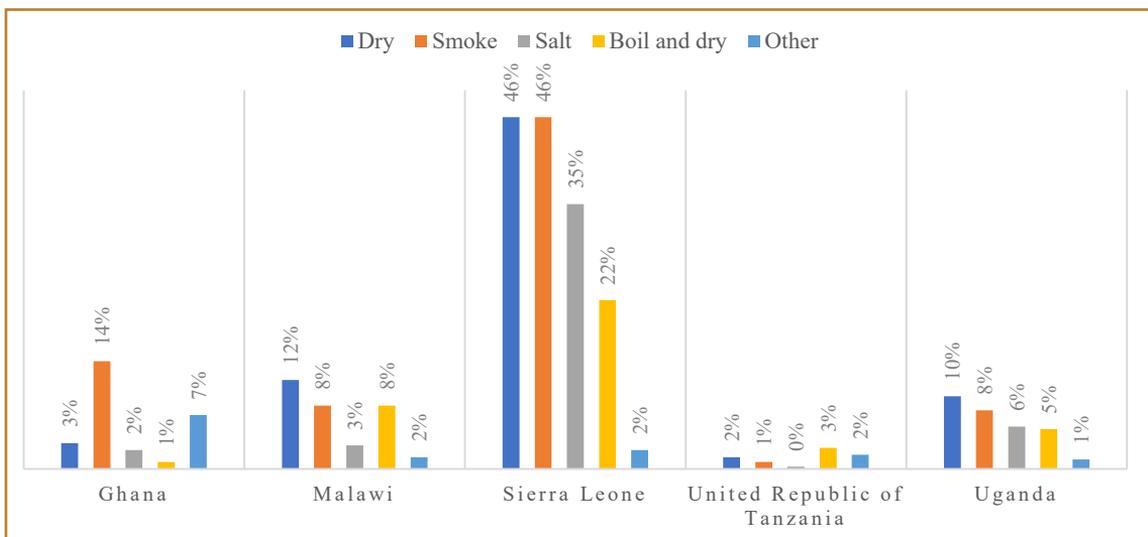


Source: Authors' own elaboration.

The survey aimed to understand the methods of fish processing or preparation for own consumption practiced in the target communities. Out of the five countries, a greater percentage of respondents in Sierra Leone reported various methods for fish processing. The common methods of processing used were drying and smoking, at 46 percent each. This was followed by salting, at 35 percent, and boil and dry at 22 percent. The trend was similar in Ghana, Malawi and Uganda. Surprisingly, the United Republic of Tanzania seemed to be lagging behind in processing fish before consumption, compared to other countries. Figure 15 depicts the distribution of methods of fish processing and preparation before consumption, by country. Other methods of fish processing or preparation included deep-frying and chilling.

⁸ Respondents could report more than one option, as fish may be sourced from multiple sources.

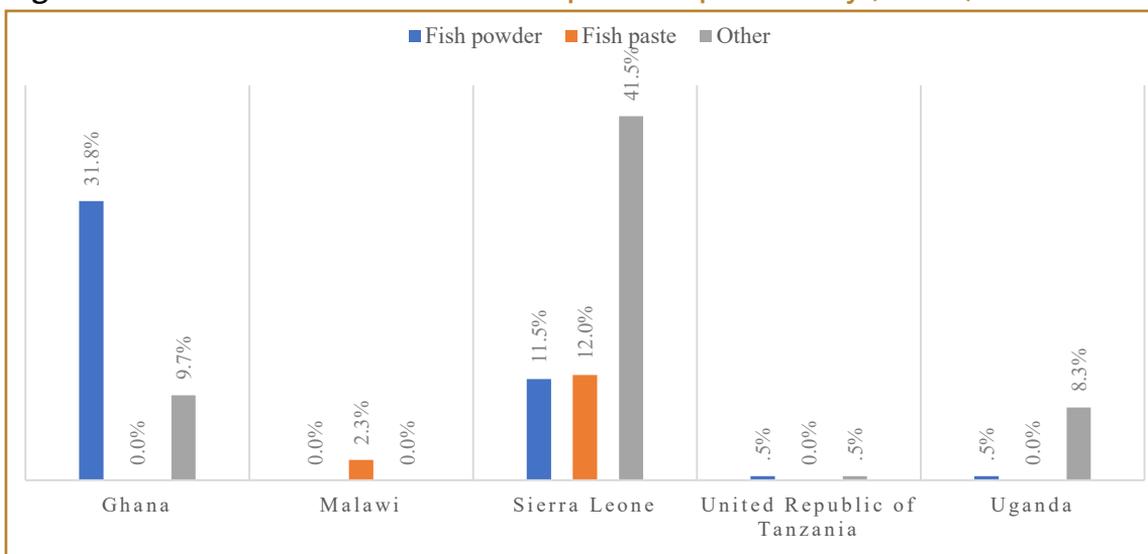
Figure 15. Methods of fish processing and preparation before consumption (n= 323)



Source: Authors' own elaboration.

The small-scale fisheries project intends to facilitate the development of value-added fish and fish products from small-scale fisheries value chains across the five countries. The survey aimed to establish if households buy or consume fish products such as fish powder, fish paste or other value-added fish products that may be specific to certain locations⁹. The majority of respondents in all five countries (84 percent) indicated that at the time, they did not buy those products, while 16 percent reported buying fish products. It was observed that respondents in Sierra Leone bought more fish powder and paste compared to the other four countries. Figure 16 depicts distribution of the use of fish products per country.

Figure 16. Purchase of value-added fish products per country (n= 217)



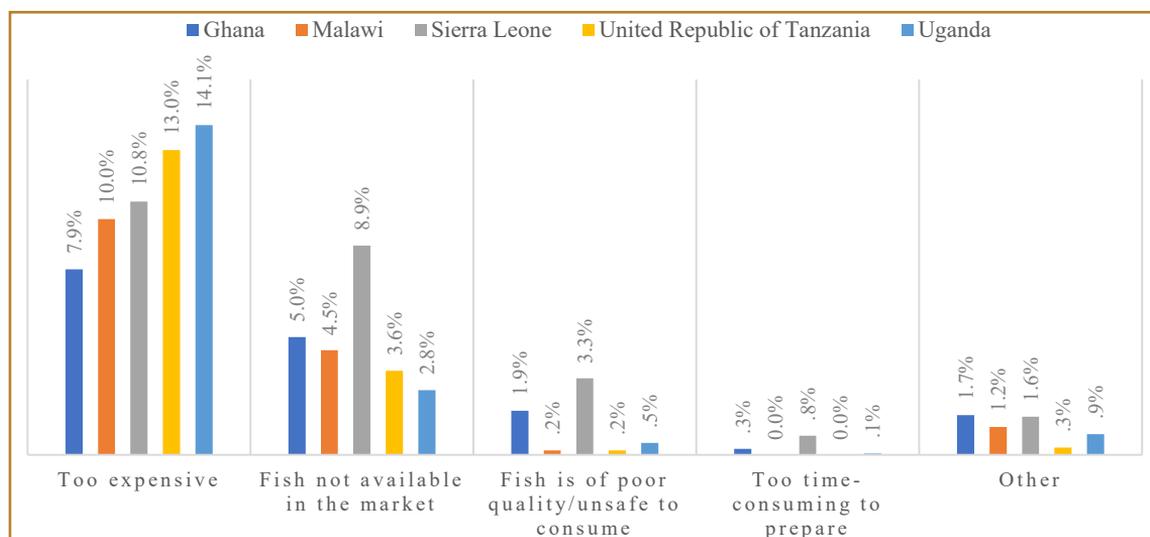
Source: Authors' own elaboration.

⁹ Fish powder refers to dried and powdered fish which can be added to dishes, while fish paste is processed in various ways (such as fermentation), but generally is a semi-liquid spread or puree consumed with other foods. Other value-added fish products were observed in target communities, but may be specific to these communities and thus fish powder and fish paste are given as more common examples.

The survey found that respondents in Sierra Leone reported purchase of fish products more than other countries. The survey aimed to understand if there were particular household members that consumed value-added fish products, for example if fish powders are fed to young children. As for who in the household consumes fish products, it was found that relatives and dependent children used more fish products, followed by husbands and wives.

The major barriers reported by small-scale fisheries households to consuming fish across the five countries is the price of fish and fish availability in the market when it is needed (reported by 55.8 percent and 24.7 percent of respondents, respectively). Among the five countries, respondents in Sierra Leone, Uganda and the United Republic of Tanzania reported high prices of fish as a barrier more commonly, compared to Ghana and Malawi. In terms of fish quality, Ghana, Sierra Leone and – to some extent – Uganda respondents reported poor quality as a barrier, which rendered the fish unsafe for human consumption. Figure 17 depicts the barriers to fish consumption reported by the sampled respondents. Among the other principal barriers to fish consumption cited were respondents’ dietary preferences, a lack of money to buy fish, and health problems.

Figure 17. Barriers to fish consumption, by country (n= 1 593)

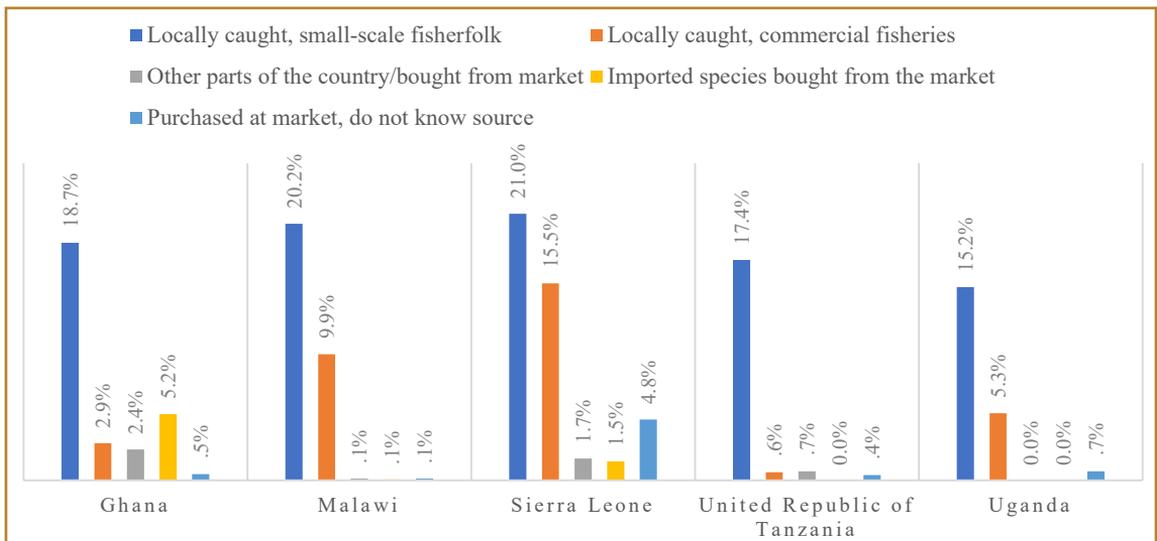


Source: Authors’ own elaboration.

4.1.4 Access to fish for processing and marketing

In respect of fish for processing and marketing, the majority (88 percent) of respondents across countries indicated that they did not always catch their own fish for processing or marketing, although a minimal proportion (6.7 percent) of respondents from Sierra Leone indicated that they did. Of those that did not catch their own fish, 92.6 percent indicated that they sourced it locally from small-scale fisherfolk. An average of 34.3 percent of respondents indicated sourcing fish from commercial fisheries (locally caught) in Malawi, Sierra Leone and Uganda, and 6.8 percent of respondents in Ghana and Sierra Leone bought imported fish from markets. Details per country are depicted in Figure 18.

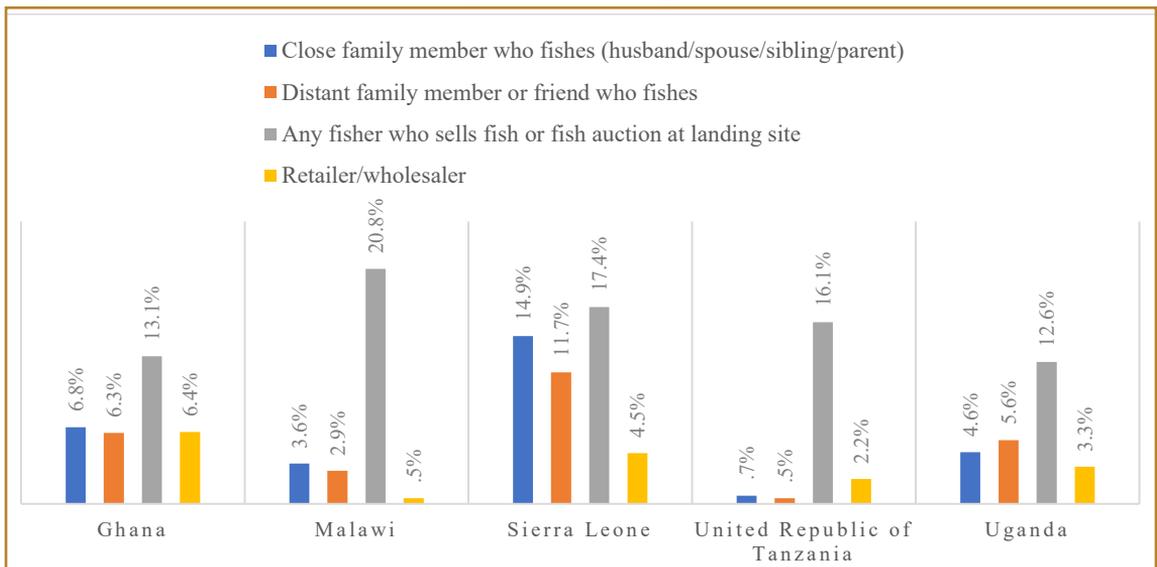
Figure 18. Source of fish purchased for processing, by country (n= 1 399)



Source: Authors' own elaboration.

As for the parties from whom the respondents buy fish, an average of 82 percent of respondents bought fish from any fisher who sold fish or at auctions at the landing site. Others bought fish at wholesale or retail outlets (11 percent) and the remaining respondents reported buying fish from a family member who fished, i.e. husbands/spouses, siblings, parents or other family members who fished. Figure 19 depicts where respondents buy fish.

Figure 19. Parties from whom respondents bought fish (n= 1 399)



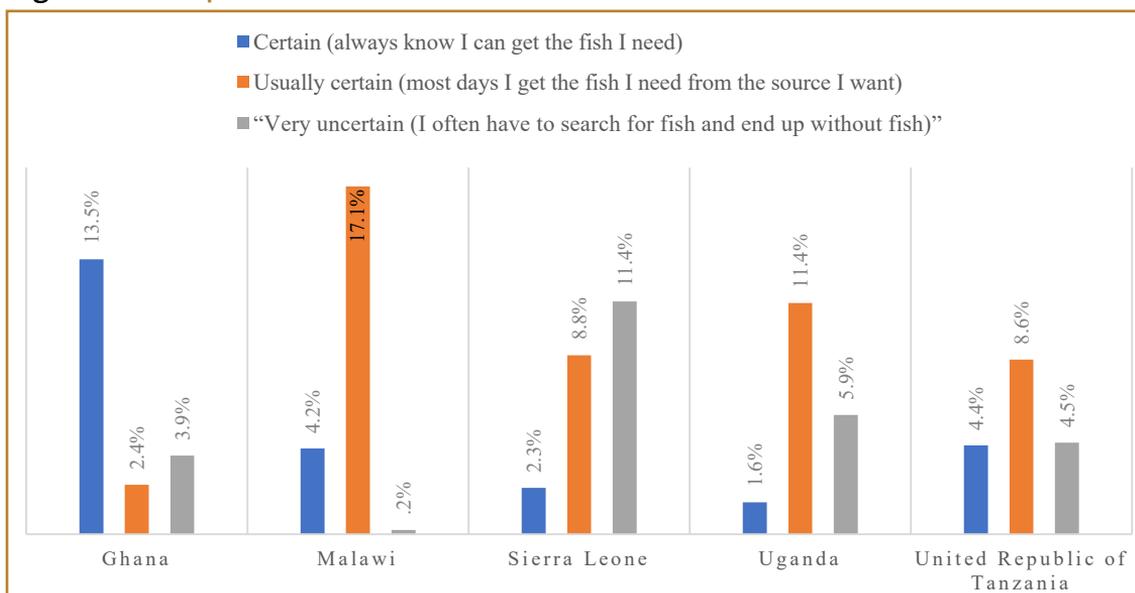
Source: Authors' own elaboration.

As to why respondents source fish from these sources, there were varied responses due to the open-ended nature of the survey question. Generally, there was not much difference across the five countries. In Ghana, proximity, reliability, assurance of fresh fish, and customers preferring processed fish from the source rather than frozen ones, topped the list of reasons. Some respondents cited

having a business relationship with the fishers (often noted as fishermen in this case) at the landing site, and as such, were able to negotiate prices. Some small-scale fisheries women paid money in advance and obtained fish equivalent to what they paid once the fishers returned to shore. In Malawi, apart from proximity, some respondents indicated that they sourced from a retailer/wholesaler called Maldeco Fisheries, the only commercial fishing company from which fish is readily available in all seasons. Similarly, Tanzanian respondents stated that their chosen sources (mainly any fisher at the landing site) were the only source available at the landing site and that they were close to their place of residence. In Uganda, fish was more widely available from more commercialized boat owners and handlers, while others bought because the fishers were their relatives and friends. For Sierra Leone, small-scale fisheries members mainly chose to obtain their fish from these sources (see Figure 19) because they trusted the quality of the fish and could purchase it at affordable prices.

Overall, an average of 48.2 percent of respondents reported that they were *usually* certain they would obtain fish from the source they wanted across the five countries, while 25.9 percent of respondents were *always* certain that they would get the fish they needed. Other respondents (25.9 percent) indicated they often had to search for fish and ended up unable to obtain it. In Ghana, a huge proportion of the respondents (13.5 percent) were always certain that they would be able to access fish when needed. In Malawi, Uganda and the United Republic of Tanzania, small-scale fisheries members were usually certain to get fish, as most days they were able to obtain it. In Sierra Leone, small-scale fisheries members often had to search for fish and ended up being unable to obtain the fish they needed (in terms of quality or quantity). Figure 20 depicts respondents' access to fish when needed, compared by country. This question was asked in order to understand small-scale fisheries women's access to fish for their livelihood activities; however, this access could be affected by several factors, including low fish availability or seasonality, high prices or lack of capital to purchase fish, or lack of quality fish on the market.

Figure 20. Respondents' access to fish when needed



Source: Authors' own elaboration.

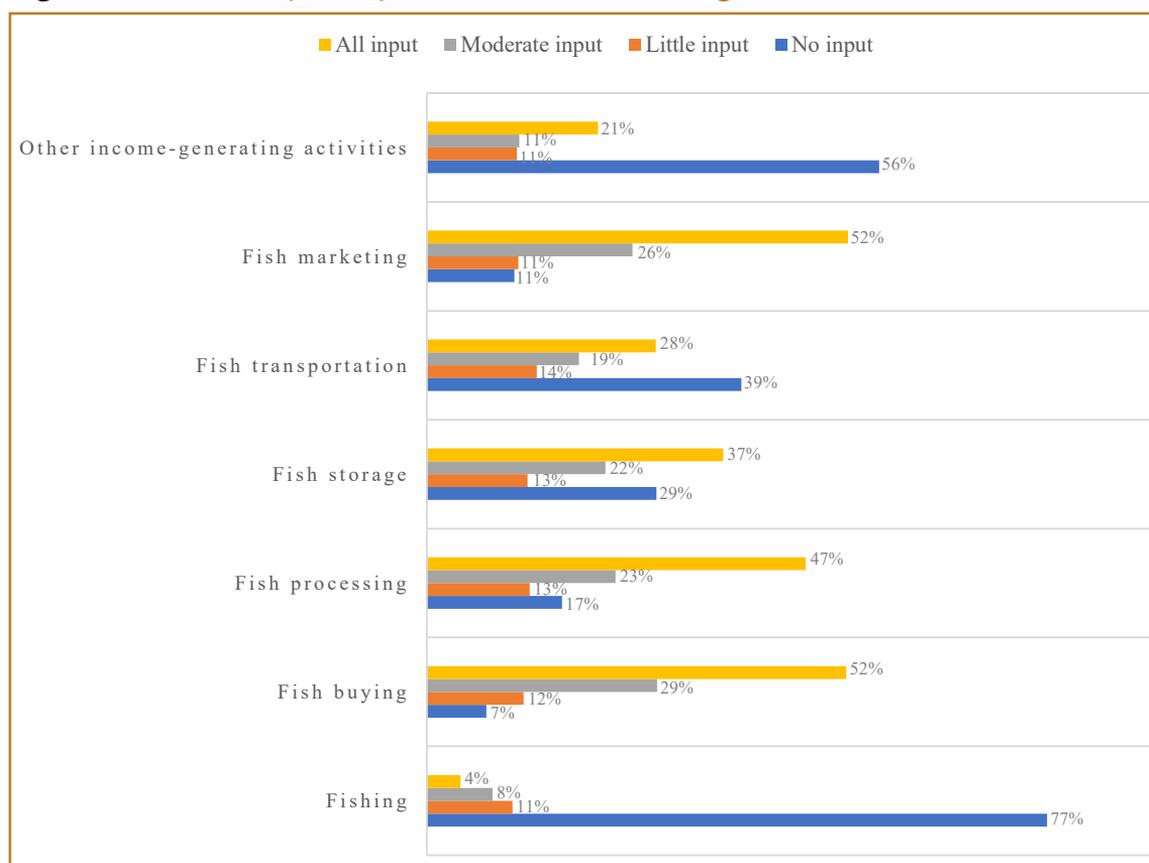
4.2 Decision making and women's empowerment

Role in household decision making around fish-related and other activities

Household decision making is a collective process in which more than one person is involved. It is often used as an indicator of the “empowerment” of women, if they participate, or even lead, some household decisions. The survey aimed to understand the role of women in household decision making around fish-related and other livelihood activities. It focused on six elements: fishing, buying, processing, storage, transportation and marketing. It also looked at other income-generating activities (IGAs), such as selling groceries, making and selling mats, agricultural production (crops) and livestock rearing.

Across the five countries, female respondents reported that they participated to various degrees (ranging from no input to all input) in decision making around activities related to small-scale fisheries and other IGAs. When it came to fish buying, processing, storage and marketing or trading, a greater proportion of the respondents indicated making all decisions, compared to activities such as fishing, fish transportation and non-fish-related IGAs (grocery, making and selling mats, agricultural production, livestock rearing, etc.). This demonstrates that there was likely to be a gendered division of decision-making power on different activities, probably in line with the gender roles associated with these activities. Figure 21 depicts participation of respondents in decision making for various activities across the five countries, with the possible answers being “No”, “Little”, “Moderate” or “All” input in relation to the proportion of decision making in which respondents reported participating for each activity.

Figure 21. Women's participation in decision making (n= 1 614)



Source: Authors' own elaboration.

A full set of scores for each parameter detailing the proportion or degree of contribution to decisions made (no input, little input and moderate and all input) is inserted in Annex 1.

4.2.1 Access to productive assets

The survey sought to understand issues of access to productive assets among the survey population and in relation to the family member who, within the household, specifically owned the assets and made decisions pertaining to acquisition, ownership, use, rental and disposal.

Table 10 depicts the ownership of fishing assets as reported by respondents in each country and on average for each of the five countries. As reported by survey respondents, fishing and fish-related business assets owned by small-scale fisheries households included means of communication (such as cell phones), owned by an average of 17 percent of respondents, followed by fish processing equipment (drying mats, knives, etc.) owned by an average of 16 percent of respondents. Other types of assets owned include fish storage equipment (14 percent), locally produced fishing equipment (10 percent), transporting equipment to collect fish (8 percent) and imported produced fishing equipment (7 percent) on average.

Table 10. Ownership by households (?) of fisheries assets (n = 1 614)

Asset type owned	% of total (Yes) Ghana	% of total (Yes) Malawi	% of total (Yes) Sierra Leone	% of total (Yes) Uganda	% of total (Yes) United Republic of Tanzania	% total (Average)
Locally produced fishing equipment (n = 815)	12%	9%	22%	3%	5%	10%
Imported produced fishing equipment (n = 566)	7%	7%	15%	4%	2%	7%
Transportation equipment to collect fish (n = 679)	5%	14%	9%	11%	3%	8%
Fish processing equipment (n = 1 255)	16%	17%	21%	14%	10%	16%
Fish storage equipment (n = 1 102)	15%	15%	15%	15%	8%	14%
Means of communication (e.g. cell phone) (n = 1 380)	18%	17%	18%	17%	15%	17%

Source: Authors' own elaboration.

In terms of country-level comparisons, a similar proportion of respondents in the five countries own cell phones (on average, 17 percent), the highest being in Ghana (18 percent) and the lowest in the United Republic of Tanzania (15 percent). Similarly, the respondents in the United Republic of Tanzania were the fewest reporting ownership of fish storage equipment (8 percent), while 15 percent of respondents in Ghana, Malawi, Sierra Leone and Uganda each reported ownership of storage equipment. Concerning ownership of transportation equipment, the most respondents from Malawi (14 percent) reported that they owned transportation for fish collection, followed by Sierra Leone and Uganda (9 percent and 11 percent respectively). Again, fewer respondents reported owning locally produced fishing equipment as well as imported ones in Uganda and the United Republic of Tanzania (about 3 percent). Overall, the findings may mean high asset poverty among survey respondents (small-scale fisheries members) in the United Republic of Tanzania.

The survey findings indicate that the major source of asset ownership is through buying. Almost all (94 percent) of the respondents mentioned that the imported produced fishing equipment, transportation equipment to collect fish, and means of communication were acquired through buying. Locally produced fishing equipment and fish processing equipment were also purchased, as reported by 95 percent and 97 percent of respondents, respectively.

These results offer additional insight when considered alongside the results related to engagement in small-scale fisheries activities. Access and ownership of a cell phone, for instance, is crucial at almost all nodes of the fisheries value chain, that is, from pre- to post-harvest activities, as it enhances access to information and networks. The findings indicate that the level of ownership and control of most assets is tilted towards women in all domains except fishing, where imported assets have higher economic value.

Table 11. Asset ownership in all countries (n= 1 344)

Who owns most of the assets	% of total, Self (respondent)	% of total, Spouse (husband)	% of total, Other household member	% of total, Equally shared between spouses
Locally produced fishing equipment	67%	14%	6%	13%
Imported produced fishing equipment	39%	35%	12%	15%
Transportation equipment to collect fish	69%	7%	6%	18%
Tools (e.g. drying mats, knives)	77%	6%	5%	13%
Fish processing equipment	74%	6%	6%	14%
Fish storage equipment	75%	6%	5%	14%
Means of communication (e.g. cell phone)	72%	7%	5%	16%

Source: Authors' own elaboration.

The survey sought to understand who makes decisions to sell assets related to fishing activities most of the time. When it comes to locally produced fishing equipment, 63 percent of respondents indicated making decisions on their own (without any need to consult their spouses or other family members). The same trend is observed for transportation equipment to collect fish (63 percent), tools such as drying mats and knives (71 percent), fish processing equipment (69 percent), fish storage equipment (71 percent), and means of communication such as cell phones (68 percent). On the contrary, for imported fishing equipment, the spouse is the one who makes most decisions (as reported by 34 percent of respondents). The trend is the same across all countries except Malawi, where 13 percent of respondents indicated that they themselves made the decision to sell. Table 12 highlights who decides to sell fishing or fish business assets in all five survey countries.

Table 12. Family member who decides to sell fishing or fish business assets in all countries (n= 1 322)

Who can decide to sell assets most of the time	% of total, Person interviewed	% of total, Spouse	% of total, Other household member	% of total, Joint decision between spouse and respondent
Locally produced fishing equipment	63%	17%	5%	15%
Imported produced fishing equipment	30%	34%	16%	20%
Transportation equipment to collect fish	63%	10%	7%	21%
Tools (e.g. drying mats, knives)	71%	9%	5%	15%
Fish processing equipment	69%	10%	6%	15%
Fish storage equipment	71%	9%	4%	16%
Means of communication (e.g. cell phone)	68%	9%	5%	18%

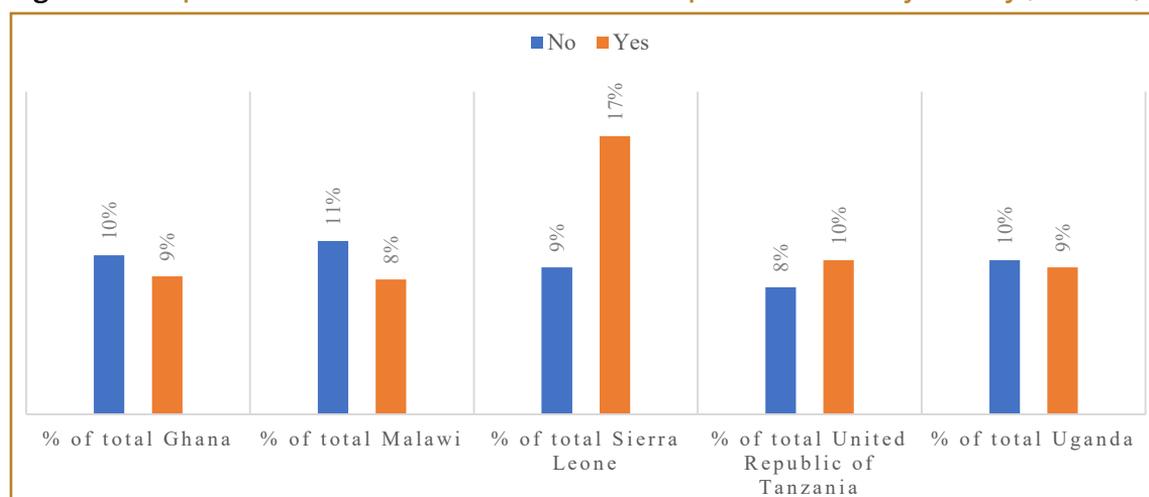
Source: Authors' own elaboration.

Similar tendencies were mirrored in all countries for making decisions on asset acquisition, asset rental or asset donation. Joint husband-and-wife decision making was reported mostly for assets used for processing, handling, storage, transportation and marketing.

4.2.2 Access to fisheries extension services

Fisheries extension services (also known as agricultural advisory services) is a system that assists people in the fishing industry, through educational procedures; improving fishing, fish farming and fish processing methods; increasing production efficiency and income; and improving socio-economic conditions. On whether the respondents had access to and met with an extension worker in the past 12 months, 848 respondents (53 percent) indicated having had such a meeting and 754 (47 percent) had not (average across the five countries). Inter-country comparison shows that respondents in Sierra Leone had more access to extension workers (as 64 percent of respondents reported) followed by Malawi and the United Republic of Tanzania, at 56 percent and 55 percent respectively. Respondents in Uganda and Ghana reported the lowest access to extension workers at 49 percent and 46 percent each. Figure 22 depicts the distribution of respondents who had access to extension workers, by country.

Figure 22. Respondents' access to extension workers in past 12 months, by country (n= 1 602)

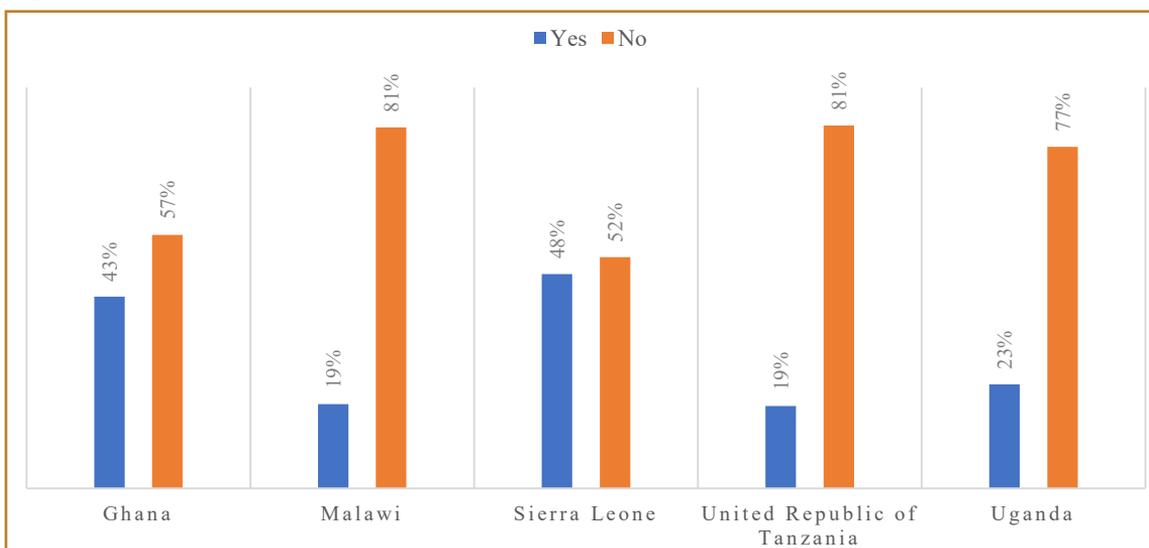


Source: Authors' own elaboration.

Of the respondents that indicated they met an extension worker, such workers were primarily male (as reported by 56 percent of respondents, n= 472) while 7 percent of respondents had met a female extension worker and 37 percent both a male and a female extension worker (n= 311). On the frequency of meeting extension workers, there was a wide range of answers, with some respondents indicating one meeting while others had met an extension worker as frequently as 365 times (this was reported in Sierra Leone).

The survey also found that 68 percent of respondents had not received any training on fishing practices, fish processing and storage methods, fish trading and marketing, or food safety and nutrition in the past 12 months. Inter-country comparison shows that respondents in Malawi, Uganda and the United Republic of Tanzania reported less trainings on issues of capacity development in those areas than in Ghana and Sierra Leone. Figure 23 depicts the distribution of sampled respondents reporting to have had received training in fishing practices, fish processing and storage methods, fish trading and marketing, food safety and nutrition, by country.

Figure 23. Distribution of people who received training in the five survey countries (n= 1 604)



Source: Authors' own elaboration.

Most of the trainings were facilitated by fisheries extension workers of the government fisheries department or ministry of fisheries. Other organizations that offered trainings were the National Fish Processors and Traders Association (NAFPTA), the Sustainable Fisheries Management Project (SFMP), Friends of the Nation (FON), Cerath Development Organization, Tanzania Bureau of Standards (TBS), Tanzania Women Chamber of Commerce (TWCC), Daasgift, beach management units (BMUs), village community banks (VICOBAs), the Tanzania Fisheries Research Institute (TAFIRI), and the Tanzania Women Fish Traders Association. Other respondents could not remember who trained them. Details are provided in Table 13.

Table 13. Training providers across the five survey countries

Who provided the training to respondents	Frequency
Fisheries department	404
FAO	29
Central Western Fishmongers Association (CEWEFIA)	16
Ministry of Fisheries and Marine Resources (MFMR)	11
Tanzania Fisheries Research Institute (TAFIRI)	4
Christian Aid	4
SNV Netherlands Development	4
Tanzania Women Chamber of Commerce (TWCC)	3
NGO (name forgotten)	3
Fellow women processors	2
LDF (local development fund)	2
Beach management unit	1
NGO (name forgotten)	1
Tanzania Women Fish Traders Association	1
Tanzania Bureau of Standards officers	1
VICOBA	1
United Nations Development Programme	1
Cooperatives	1
Nsomba Nchuma	1
Chikaiko Fisheries	1
CARE Malawi	1
Emmanuel International	1
Small Enterprise Development Organisation Of Malawi (SEDOM)	1

Source: Authors' own elaboration.

Most of the respondents (90.2 percent) felt that the trainings received were useful and that the content was put into practice, while the remaining 9 percent felt that the training content was not useful.

Participants in the training stated that they benefitted because the content helped them to improve the quality of fish processed; in other cases, the training helped to gain knowledge on fish handling and storage. Other respondents appreciated the training because it expanded their knowledge on value chains, and sharpened their skills in entrepreneurship and on proper conduct of business. For some, the trainings served as a platform to build business networks. Table 14 lists some of the training areas and the respondents' perceived benefits in the five survey countries.

Table 14. Summary of training areas and perceived benefits

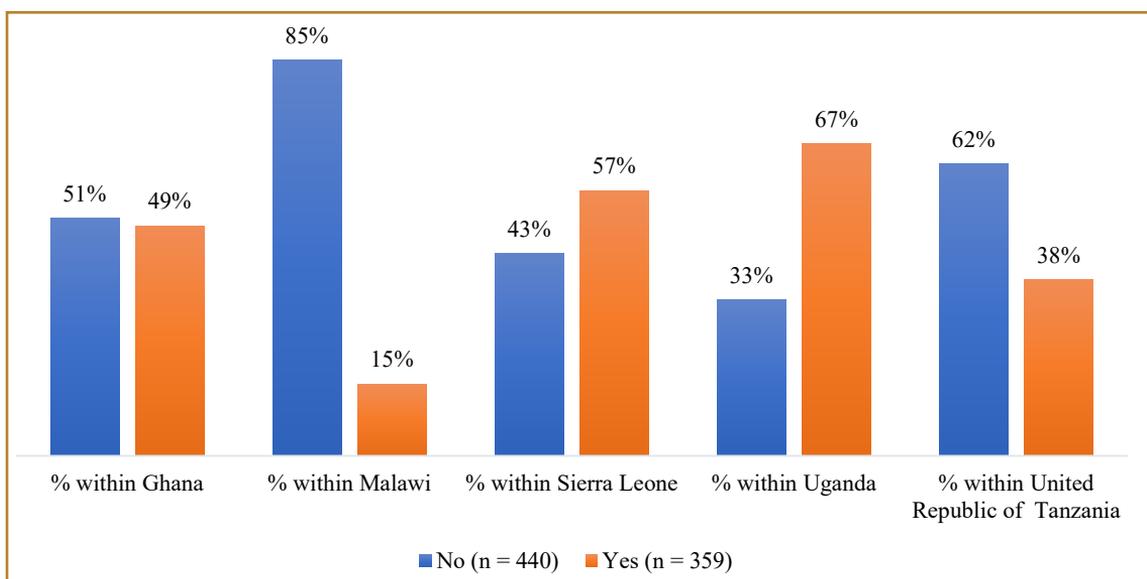
No.	Training area/benefit
1	Understanding how to properly conduct business, type of fish to buy, maintaining work and personal hygiene
2	Importance of fish products such as fish powder and paste
3	Understanding management regulations, including on legal size of fish
4	Improved processing and value addition, such as drying sardines on raised drying racks, producing quality products fetching high prices
5	Learning correct ways to buy, handle, transport and sell fish to obtain profit
6	Knowledge on farming and fish farming
7	Distinguishing between types of fish to buy, thus protecting their business
8	Guarding against illegal fishing; environment conservation
9	Gender issues and women's empowerment
10	Entrepreneurship and how to be efficient and effective in conducting their business, a better understanding on how to conduct business
11	Understanding fish processing technology and the importance of sustainable fishing practices, use of solar drier, improved oven (<i>Ahotor</i>)
12	Knowledge on the right ways to store fish, unable to do so at the moment due to insufficient capital
13	Learning financial management that helped manage accounts and understand monthly profit or loss

Source: Authors' own elaboration.

During FGDs, the respondents acknowledged that extension workers and agents were accessible to women participating in small-scale fisheries. Approximately 72 percent of the participants acknowledged that they were able to access extension services through officers and agents, while 28 percent indicated that they could not. Participants also reported that these extension workers and agents were not knowledgeable about women's issues. The assumption was that when extension services were delivered through male extension workers, there was high likelihood that the service would not be adapted to issues that affected women. Coupled with social and gender norms, women may have been less likely to present their issues to a male extension worker. Individual leadership and influence in institutions that affect livelihoods

The small-scale fisheries project aims to empower women to participate and be representatives within local and regional small-scale fisheries organizations. It also seeks to facilitate women from different localities, countries and regions in learning from each other. The survey found that 67 percent of respondents in Uganda participated in local government meetings, followed by Sierra Leone, at 57 percent. Almost half of respondents in Ghana indicated having participated in local government meetings. The lowest figures among the five countries were found in the United Republic of Tanzania (38 percent) and Malawi (15 percent). Figure 24 depicts the percentages of respondents who reported participating in local government meetings, by country.

Figure 24. Participation in local government meetings, by survey country



Source: Authors' own elaboration.

On leadership and influence, an average (mean) of 19.8 percent of respondents felt comfortable speaking up in public to help decide on projects and issues affecting any element associated with fisheries activities. A total of 553 respondents (34.6 percent) indicated that they were very comfortable with speaking up in public to help decide on projects and issues affecting fisheries activities. The greatest percentage of respondents who reported being comfortable with speaking in public was found in Sierra Leone (54 percent), followed by Uganda (34 percent). The lowest proportion was found in Ghana (19 percent), while Malawi and the United Republic of Tanzania were at 29 percent each. A total of 379 respondents (23.7 percent) indicated not being comfortable with speaking up in public to help decide on projects and issues affecting fisheries activities. The highest feeling of not being comfortable occurred in the United Republic of Tanzania, as 32 percent of respondents reported to be not at all comfortable, followed by Sierra Leone at 30 percent and Ghana at 25 percent. Malawi and Uganda were at 16 percent and 13 percent, respectively. Table 15 depicts the distribution of sampled respondents feeling comfortable speaking up on issues affecting fisheries across the five survey countries.

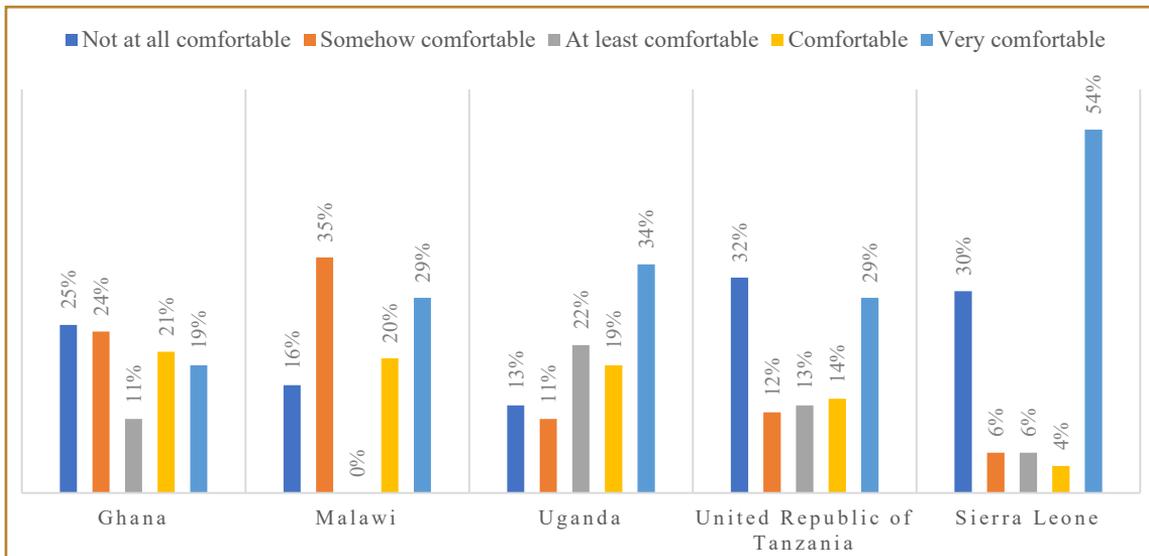
Table 15. Respondents feeling comfortable speaking in public to decide on projects

	Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania	Total
Not at all comfortable	25%	16%	30%	13%	32%	24%
Somewhat comfortable	24%	35%	6%	11%	12%	17%
Neutral	11%	0%	6%	22%	13%	10%
Comfortable	21%	20%	4%	19%	14%	15%
Very Comfortable	19%	29%	54%	34%	29%	35%

Source: Authors' own elaboration.

On whether respondents felt comfortable speaking up in public to protest about activities that are related to fish processing, selling or marketing, a total of 543 respondents (34 percent) indicated feeling very comfortable. At 54 percent, Sierra Leone had the highest percentage of those feeling very comfortable, followed by Uganda at 34 percent and Malawi and the United Republic of Tanzania, at 29 percent each. Fewer respondents in Ghana reported feeling comfortable speaking up in public to protest about fisheries activities (19 percent). A total of 401 respondents (25.1 percent) indicated that they were not at all comfortable with speaking up in public to protest about activities that are related to fisheries. Figure 25 depicts the distribution of sampled respondents feeling comfortable with protesting across the five countries.

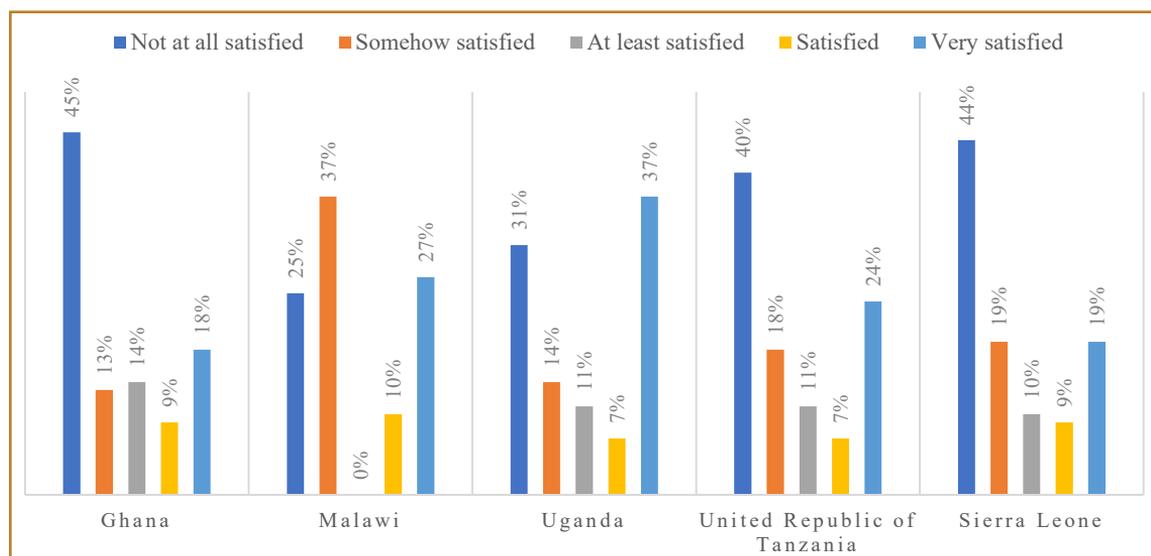
Figure 25. Distribution of respondents feeling comfortable with speaking up or protesting



Source: Authors' own elaboration.

Having participated in government meetings and engaged fisheries structures, on average, 37 percent of respondents felt not at all satisfied that the result was what they wanted from the engagement. Country-level details are captured in Figure 26.

Figure 26. Small-scale fisheries actors who felt satisfied that speaking up achieved their desired result



Source: Authors' own elaboration.

Findings from the FDG and KII qualitative data indicated mixed feelings on whether respondents felt that their (or women's) voices were actually heard in meetings. The majority of respondents indicated that they felt that their voices were heard. One respondent in Ghana cited an incident in which a woman complained about inconsistencies in the pricing of fish caught. The beach management unit listened to the concern and ensured that all fish prices were uniform along the landing beaches. However, in all countries, women indicated that even when they were able speak up, most of the issues discussed went unresolved.

Table 16. Percentage of local fisheries organizations who attended local government meetings on fisheries-related topics (as reported by survey respondents)

Responses	% within Ghana	% within Malawi	% within Sierra Leone	% within Uganda	% within United Republic of Tanzania	% Total
No (n = 440)	51%	85%	43%	33%	62%	55%
Yes (n = 359)	49%	15%	57%	67%	38%	45%

Source: Authors' own elaboration.

Among the topmost concerns raised by members of women organizations during local government meeting in all five countries were: lack of access to financial capital including soft loans; lack of supporting mechanisms for women's entrepreneurship; and poor or no infrastructure such as cold rooms, dryers, ovens, modern technologies and road network. Small-scale fisheries members also indicated not being able to attend capacity-development initiatives (trainings on fisheries), practicing of illegal fishing activities along the beaches, challenges associated with the operationalization of women's groups or associations (fees, revenue, etc.), poor living conditions among small-scale fisheries members, as well as a lack of women's empowerment initiatives at landing sites on issues of land, sexual violence etc. Table 17 depicts the main concerns discussed during local government meetings in all five countries.

Table 17. Concerns discussed during local government meetings in all countries

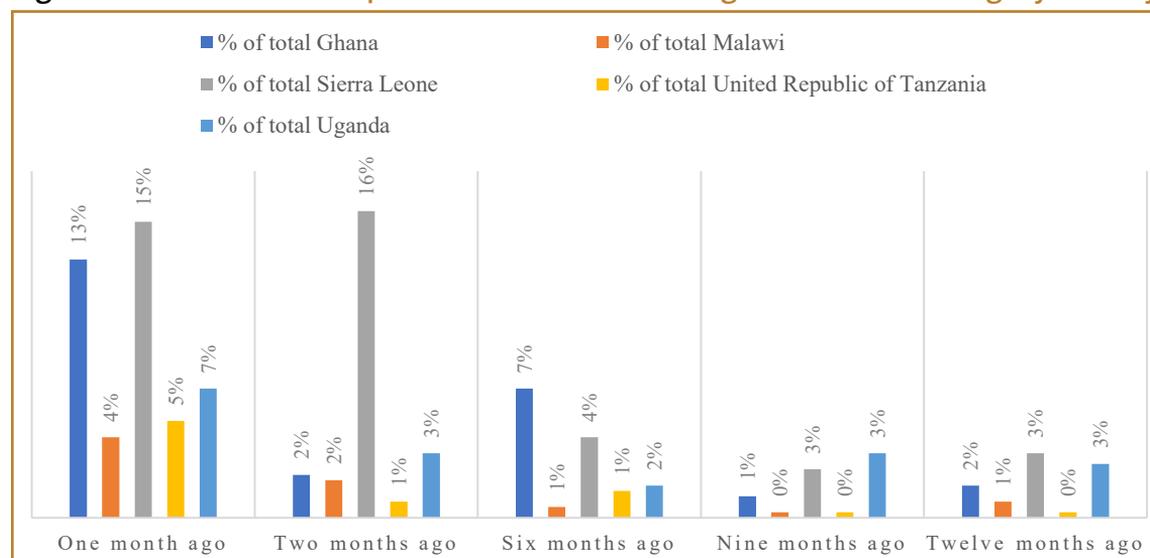
Concerns expressed by local fisheries organizations at local government meetings	Frequency
Lack of access to financial capital, including soft loans	93
Lack of supporting mechanisms for women entrepreneurship	33
Poor or no infrastructure (cold rooms, dryers, ovens, modern technologies, road networks)	30
Unable to attend capacity development initiatives (training on fisheries)	18
Practicing of illegal fishing activities along the beaches	15
Challenges associated with operationalization of women's groups or associations (fees, revenue, etc.)	13
Poor living conditions among small-scale fisheries members	7
Lack of women's empowerment initiatives at landing sites (land, sexual violence, etc.)	7
Poor organization management	6
Theft of fishing facilities (fish gear, fish, etc.)	6
Lack of support from the government	4
Unstandardized fish prices	4
Unclear organizational development and sustainability	3
Poor involvement in fisheries activities	2

Source: Authors' own elaboration.

Most respondents felt that they were not supported, as highlighted by one woman during an FGD in Ghana, who said “*We don't have leaders in fisheries governance to direct us, we struggle alone without anyone coming to show us what to do or assist us. When you are collapsing you go alone with no hand to lean on*”.

The majority (45 percent) of those who had met local government officials indicated having attended such a meeting in the past month; the highest proportion was found in Sierra Leone (15 percent), followed by Ghana at 13 percent. A total of 24 percent of respondents attended such meetings in the past two months, again with the highest percentage of respondents in Sierra Leone. Figure 27 depicts the last time respondents attended a meeting, by country.

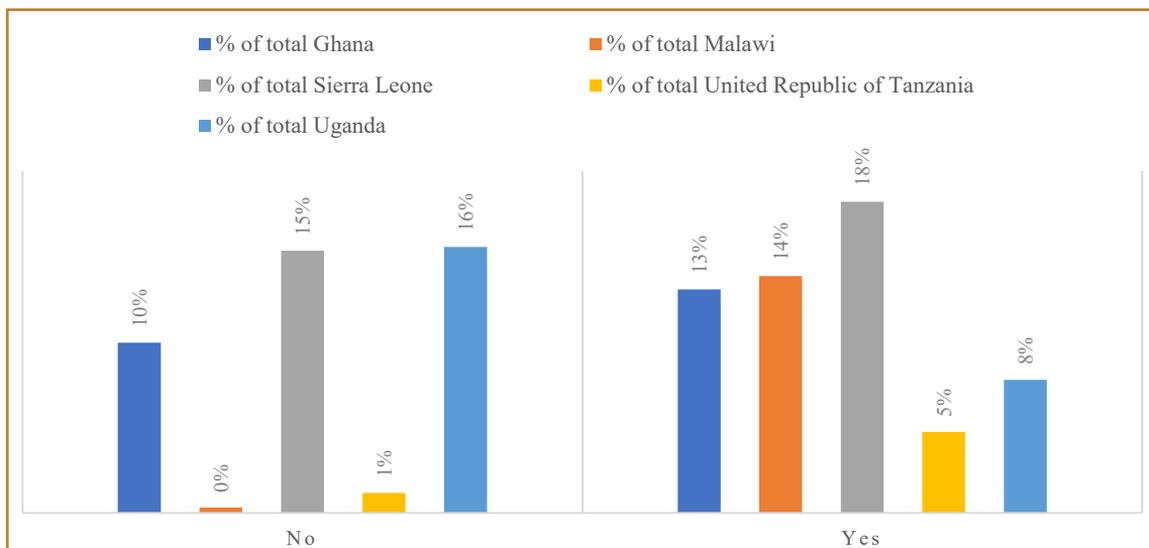
Figure 27. The last time respondents attended a local government meeting, by country



Source: Authors' own elaboration.

In general terms, organizations help amplify small-scale fisheries members' voice when dealing with activities related to small-scale fisheries. The survey found that 741 (58 percent) respondents thought that organization would help them enhance their voice in responding to activities related to small-scale fisheries. The remaining 42 percent of respondents felt otherwise. The KIIs held indicated that organized groups, especially for women, were important in the fishing sector. It is helpful to solve group problems and make group decisions in line with organizational development. Working as a team improves processing, handling and marketing of fish. Organizations help to support members financially and help them access group loans, as well as to have a stronger voice, greater access to information, social support, and many other benefits. Figure 28 presents the distribution of respondents' perceptions on whether their participation in an organization helps amplify their voice, by country.

Figure 28. Perception on if an organization would help amplify respondents' voice, by country



Source: Authors' own elaboration.

The survey sought to understand the willingness of small-scale fisheries members to pay membership to locally available organizations in their countries. A total of 54 percent of respondents indicated that they would not be willing to pay for membership in a locally available organization. As for willingness to pay such membership, respondents in Sierra Leone, Malawi and Ghana indicated being more willing to pay (15 percent, 11 percent and 10 percent) compared to the United Republic of Tanzania and Uganda (14 percent and 12 percent).

4.2.4 Gender attitudes of respondents

The survey included questions to understand respondents' attitudes towards gender responsibilities and the degree to which women should be involved in various activities. This was assessed by reading a short hypothetical situation to the respondent and asking if they agree, partially agree or disagree (see Table 18). Generally, the majority of respondents (85.9 percent) disagreed that men should mostly be the ones who belong to fisheries clubs, organizations or associations, and not women. The majority (76 percent) also disagreed that men should primarily be the ones who control the earnings or income obtained from the sale of fish and that men should primarily be the ones who transport fish to a market for sale (60.6 percent of respondents). More than three-quarters (77 percent) of respondents disagreed that women should not own canoes, fishing nets and other means to fish, while 51 percent of respondents disagreed that women should primarily be the ones who trade or market fish, and not men. Similarly, 47.2 percent of respondents disagreed

that women should primarily be the ones cleaning and processing fish. About 38 percent agreed that this should be the case.

When presented with the statement “women should not get involved in fishing full-time, this is a man’s responsibility”, the majority (58.7 percent) agreed that this is true. Similarly, on women being the primary member of the household responsible for preparation of meals including fish, more than half (52 percent) of respondents agreed. For country-level details on each of the gender attitudes that were asked (see Annex 3).

Table 18. Variations in gender attitudes of respondents

			Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania
1	Women should not get involved in fishing full-time, this is a man’s responsibility	Agree	72%	54%	55%	73%	40%
		Partially agree	2%	5%	10%	4%	11%
		Disagree	26%	42%	35%	23%	49%
2	Women should not own canoes, fishing nets and other means to fish	Agree	11%	24%	27%	3%	19%
		Partially agree	1%	7%	8%	3%	9%
		Disagree	88%	69%	65%	94%	72%
3	Women should primarily be the ones who clean and process fish	Agree	43%	47%	44%	30%	22%
		Partially agree	8%	10%	16%	30%	11%
		Disagree	49%	44%	40%	40%	67%
4	Women should primarily be the ones who trade or market fish, not men	Agree	39%	37%	44%	23%	12%
		Partially agree	9%	12%	18%	33%	10%
		Disagree	52%	51%	38%	44%	78%
5	Men should primarily be the ones who transport fish to a market for sale	Agree	22%	17%	26%	15%	6%
		Partially agree	12%	12%	32%	34%	10%
		Disagree	65%	71%	42%	51%	83%
6	Men should primarily be the ones who control the earnings or income obtained	Agree	5%	10%	21%	8%	12%
		Partially agree	10%	7%	20%	9%	12%
		Disagree	85%	83%	59%	83%	77%
7	Women should primarily be the ones who prepare meals (including fish)	Agree	42%	52%	57%	71%	34%
		Partially agree	9%	8%	16%	23%	12%
		Disagree	48%	40%	27%	6%	54%
8	Men should mostly be the ones who belong to fisheries clubs and organizations	Agree	2%	5%	9%	5%	9%
		Partially agree	4%	7%	13%	5%	10%
		Disagree	94%	88%	78%	90%	81%

Source: Authors’ own elaboration.

Qualitative discussions revealed that women face gender-based discrimination and some forms of violence in the fish value chain. Women reported that some men at the landing site steal fish from them, and the situation is exacerbated by a lack of beach security structures at most of the landing sites. In addition, transactional fish-for-sex relationships – in which fishers (most often men) demanded sex from women in order for them to buy or access fish – were reported in Ghana, Malawi, Uganda and the United Republic of Tanzania. In the latter country, it was noted in discussions that sometimes law enforcement (police) are at the forefront in harassing women and demanding sex in exchange for services. Respondents reported that at home, some men prevent their wives from participating in fisheries-related activities. In some cases, women are also emotionally abused, by being called names such as “prostitutes” or “loose women” for engaging in fisheries activities. Some challenges that small-scale fisheries women face reportedly emanate from cultural and religious beliefs. In Sierra Leone, women may be fined for not covering their heads at landing sites.

4.2.5 Gender relations in small-scale fisheries

Qualitative interviews revealed that women are noticing a marked shift in social and gender norms and the promotion of equal participation. For instance, society is more receptive of women engaging in fisheries activities and no longer find it odd. In the past, societal norms and gender roles favouring men acted as a barrier to women participating in fish-related businesses, by denying them access to fish; however, these issues have slowly faded. There is also a shift in gender roles, as previously, men would neither process nor transport fish, as these were considered to be part of women’s role; however, today it is more acceptable for the workload to be shared between men and women.

It was established that women have access to capital largely through women’s saving schemes that enable them to pre-finance fishing trips and invest in other social and economic activities. However, at times, they face the challenges of being cheated by fishers selling the pre-financed fish to different customers without their knowledge. With increased capacity development initiatives, women are able to bargain for better fish prices at landing sites and properly manage their businesses to maximize profits. The baseline survey also established that women have started owning bigger assets, such as boats and fishing gears. Challenged by cultural norms, women employ men as crew members to operate their boats and nets, as they themselves often cannot go fishing due to social norms or competing duties (such as domestic duties).

4.2.6 Gender-based violence in small-scale fisheries

On the forms of discrimination or hardships women experience in the fishing sector in all five survey countries, the qualitative data (obtained through FGDs) revealed that access to fish, especially for women with little capital, is almost impossible. In the United Republic of Tanzania, it was reported that women porters struggled to be given a chance to carry fish and that policemen usually harassed them. In addition, women were usually not allowed to speak during public meetings, which limited their voice on issues that concern them in the small-scale fisheries context. In Sierra Leone, some fishermen did not allow women to approach to their boats when practicing “secret society ceremonies” for at least two hours before they buy fish, because of cultural beliefs. Among porters, it was reported that women were pushed and, sometimes, those who did not wish to enter a sexual relationship with fishermen are denied the right to buy fish. Women who are involved in fisheries activities could experience gender-based violence when they delayed activities and or were unable to balance fish-related activities with other family duties. In Malawi, qualitative interviews reported that derogatory terms, such as “prostitutes”, were used to refer to small-scale fisheries women, because of the belief that women should be limited to domestic duties and reproductive tasks. In Uganda, small-scale fisheries women complained that during the auctioning of fish, they sometimes had to go into the water as they fought to access fish; this caused dirty water to enter to their private parts, resulting in infections. Upon reflection, the project team questioned if this could possibly be due to

a taboo meant to keep women from entering the water, or if there were contaminants in the water that caused infections particularly for women in relation to men. Across the five survey countries, qualitative interviews reported that husbands often sought to control the earnings from women's fisheries-related activities, and conflicts arose if the husband was denied. It was reported that some couples separated as the husband did not want to support the wife in her fisheries-related activities.

4.2.7 Time allocation

The survey aimed to assess women's time allocation for different activities, in order to better understand the various tasks that women habitually perform and how the project could leverage its activities while also avoiding adding burdensome tasks for women. Time-use measures account for in-home and out-of-home activity engagements, including productive, reproductive and community activities and the time allocation patterns of individuals. Activities were separated by those that were typically done daily versus those that were typically done on a weekly basis, and are reported accordingly below.

Across the five countries, on average, respondents reported that 6.27 hours of their day were spent on sleeping or resting. Between 5 to 10 percent (approximately 2 hours) of the day was spent on cooking, while it was reported that approximately 1.2 hours per day were spent eating, resulting in approximately 3 hours per day spent preparing and consuming foods. For those that reported that they fished, they stated that this consumed on average 1.8 hours of each day.

In terms of weekly activities, fish processing and trading took 20 hours and 14.5 hours respectively, each per week. Respondents in Ghana, followed by Malawi, reported the greatest weekly time allocation on these activities, in relation to the other survey countries. In addition to activities out of the home, respondents reported that domestic work took an average of 7.3 hours per week. Table 19 depicts the time allocated to different activities by respondents, by country.

Table 19. Average time allocated to activities, by country

	Ghana		Malawi		Sierra Leone		Uganda		United Republic of Tanzania		All
Per day	Hrs	% of day	Hrs	% of day	Hrs	% of day	Hrs	% of day	Average hrs	% of day	Ave hrs
Sleeping and resting	7.5	31%	8.0	33%	3.3	14%	8.4	35%	4.2	17%	6.3
Cooking	2.2	9%	2.1	9%	1.9	8%	1.7	7%	2.2	9%	2.0
Fishing	1.5	6%	2.6	11%	1.8	7%	3	13%	0.5	2%	1.9
All eating	1.5	6%	0.1	0%	2.2	9%	0.4	3%	2.1	9%	1.2
Per week	Average hrs	% of week	Average hrs	% of week	Average hrs	% of week	Average hrs	% of week	Average hrs	% of week	Average hrs
Fish processing	27.7	16%	26.9	16%	10.8	6%	25.5	15%	10.1	6%	20.2
Fish trading	22.1	13%	20.9	12%	9.7	6%	12.1	7%	7.7	5%	14.5
Transporting fish	6.3	4%	5.6	3%	4.9	3%	3.8	2%	2.4	1%	4.6
Gardening, farming and/or livestock rearing	1.9	1%	5.9	4%	2.0	1%	6.6	4%	4.2	3%	4.1
Doing other types of business	8.4	5%	9.9	6%	3.6	2%	3.2	2%	2.5	2%	5.5
Purchasing household items	1.4	1%	0.4	0%	2.9	2%	0.2	0%	3.7	2%	1.7
Domestic work	5.2	3%	10	6%	7.5	4%	7.3	4%	6.4	4%	7.3
Daily travelling	8.8	5%	12.1	7%	4.4	3%	3.8	2%	5.3	3%	6.9
Leisure activities	5.5	3%	5.0	3%	2.3	1%	3.3	2%	4.2	3%	4.1
Sports	0.6	0%	4.6	3%	0.4	0%	2.5	1%	0.2	0%	1.6
Religious activities	3.8	2%	6.9	4%	4.6	3%	5.1	3%	5.8	3%	5.3

Source: Authors' own elaboration.

4.3 Responsible post-harvest practices

The project intends to reduce post-harvest loss of fish, as it has a major economic impact on the incomes of the women participating in fisheries value chains. The literature shows that post-harvest fish losses in small-scale fisheries occur at all stages in the fish supply chain, from capture to consumer.¹⁰

During the FGD and KII, respondents indicated that fish loss was highly dependent on season, although poor processing practices were also a known reason for fish loss. Respondents in all countries cited the rainy season as contributing to more fish losses (sometimes as high as 50 percent of quantity lost) due to higher moisture, causing spoilage. Even after thorough drying, some fish were lost due to poor handling (prior to processing) or poor processing methods, to the effect that they broke. Respondents in Ghana and Sierra Leone indicated that they sold broken pieces to animal feed producers.

Poor handling practices lead to sustained and increased microbial contamination, hastening the spoilage rate of fresh fish. Such practices include placing fish on the floor of dirty canoes; using dirty equipment, fish boxes and baskets; not washing fish; washing fish in dirty water; placing fish on unhygienic surfaces; and physically damaging fish by throwing them or standing on them (Towers, 2011). Such spoilage leads to processed products of inferior quality.

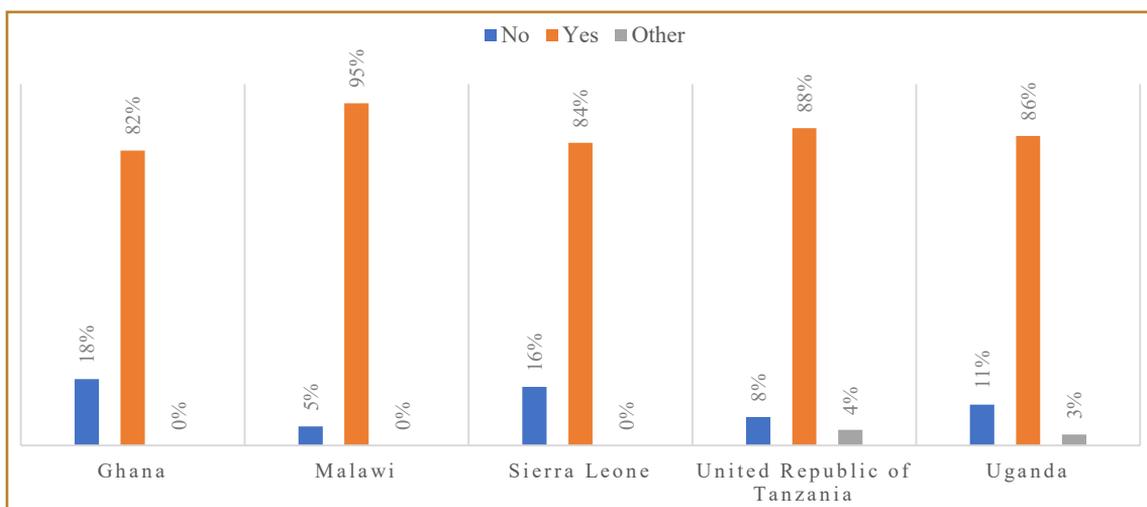
Respondents were asked if they had ever had to sell fish at a lower price or for a loss: a total of 1 383 (87 percent) respondents stated that they had sold fish at lower price. The highest percentage of respondents (95 percent) who indicated selling fish at a loss were in Malawi, followed by the United Republic of Tanzania (88 percent). A relatively lower percentage of respondents in Ghana reported selling fish at a lower price or for a loss (82 percent). Figure 29 depicts respondents reporting to have sold fish for a low price, by country (shown as those reporting “Yes”).

Figure 29. Research official showing fish loss due to microbial activity (circled in red)



10 For further information on gendered issues relating to loss and waste in fish value chains, see Randrianantoandro, Ward and Safa Barraza, 2022.

Figure 30. Respondents reporting having sold ('yes') fish for a low price, by country



Source: Authors' own elaboration.

Respondents were asked to indicate the highest and lowest prices that they received for fish sold. The price differences were calculated as the difference between the average highest and lowest prices and divided by the average highest, in order to calculate the price difference irrespective of which unit of volume was used. The survey was limited to collecting data on the average price for all fish products as an estimate (rather than per product, e.g. dried fish, smoked fish, fresh fish); price variations in Table 20 may thus be overrepresented, as variation between product type is not accounted for separately. Overall, respondents reported a price difference of averagely 63.8 percent between their highest and lowest prices, showing extreme price variation. Table 20 highlights the price variations across the five countries.

Table 20. Price variations across the five survey countries*

Country	Maximum price	Minimum price	Average price high	Average price low	Price difference	Average price decrease, by country
Ghana (GHS)	110 000	9 000	1 396	532	864.00	62%
Malawi (MWK)	15 000	3 000	2 740	1 021.3	1 718.70	63%
Sierra Leone (SLL)	8 750 000	2	3 808 152.23	194 389.36	3 613 762.87	80.5%
Uganda (UGX)	70 000	20 500	11 193	5 959	5 234	46%
United Republic of Tanzania (TZS)	475 000	7 503	18 401.86	6 085.77	12 316.09	67%
Overall average (all countries)						63.8%

Note: * <https://www.oanda.com/currency-converter/en>

The reasons cited for why respondents sold fish at low prices included unfavorable weather conditions (especially rains and inadequate sunlight, which affected the drying process of fish) and large volumes of fish, leading to oversupply at market. Other factors that led to small-scale fisheries throwing away fish emanated from poor fish handling processes, leading to fish being mashed up or broken, and poor storage facilities leading to mould growth, which facilitated microbe development. There were reports of unsafe fishing practices, such as the use of dynamite in fishing (reported by respondents in Ghana), which may have contributed to poor-quality fish.

In terms of access to facilities at landing sites, there were marked variations, even though small-scale fisheries in Ghana seemed to have greater access to the facilities. Table 21 depicts the distribution of respondents with access to common facilities at landing sites.

Table 21. Facilities available at a place where respondents sold fish (n = 1 525)

Facilities	% within Ghana	% within Malawi	% within Sierra Leone	% within Uganda	% within the United Republic of Tanzania
Cold room	20.0%	27.0%	29.0%	1.0%	23.0%
Dry room	31.4%	30.3%	22.1%	6.6%	9.7%
Water	25.3%	33.5%	16.5%	4.9%	19.8%
Electricity	36.8%	26.4%	3.7%	10.2%	22.9%
Tables	8.5%	24.8%	33.3%	18.0%	15.5%
Lock-up/cupboard/lockers	30.0%	22.2%	19.2%	20.2%	8.4%
Bathrooms	29.9%	33.2%	7.7%	8.8%	20.4%
Childcare centres	79.1%	2.3%	11.6%	2.3%	4.7%
Others	13.9%	7.7%	35.2%	33.0%	10.2%

Source: Authors' own elaboration.

On how respondents transported fish to different places for processing and selling, the survey found that 51 percent of respondents used taxis (due to long distances to landing sites or markets). This was followed by 32 percent who reported transportation of fish and fish products by walking. Other respondents used paid carriers to deliver fish or used their own transport in the form of pushbikes to access markets, at 11 percent and 6 percent, respectively. Responses on the means of transportation for fish and fish products are detailed in Table 22, by country.

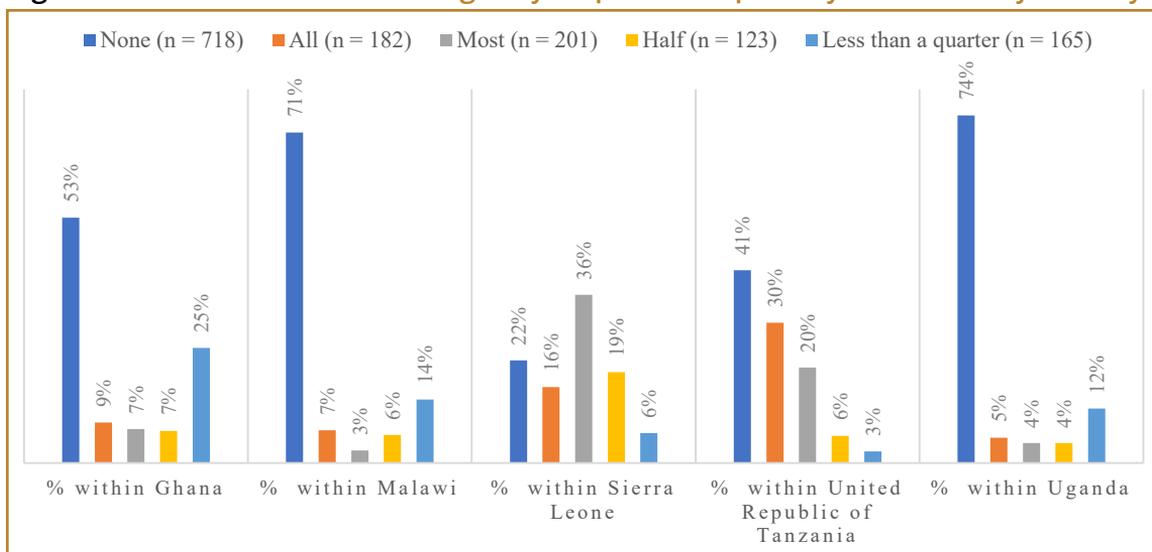
Table 22. Respondents' means of transporting fish to market, by country

Country	% of total Own transport	% of total Delivered	% of total Use taxi	% of total Walk	% total
Ghana (n = 287)	0%	3%	12%	4%	20%
Malawi (n = 306)	0%	0%	19%	2%	21%
Sierra Leone (n = 413)	6%	3%	11%	9%	28%
Uganda (n = 217)	0%	2%	7%	6%	15%
United Republic of Tanzania (n = 244)	0%	3%	2%	11%	17%
Total (N = 1467)	6%	11%	51%	32%	100%

Source: Authors' own elaboration.

Of the fish that respondents buy, the survey aimed to understand how much is processed, sold as fresh and consumed at the level of small-scale fisheries households. A total of 718 (52 percent) respondents indicated that none of the fish they bought was sold fresh. Selling fresh fish was more common in the United Republic of Tanzania (30 percent of respondents reported that all fish was sold fresh, followed by 20 percent who reported that most fish was sold fresh). In comparison, in Uganda and Malawi, respondents reported that none of the fish was sold fresh (74 percent and 71 percent, respectively) or less than one-quarter of the fish was sold in fresh form (12 percent and 25 percent). Figure 30 depicts how much fish was sold fresh, by country.

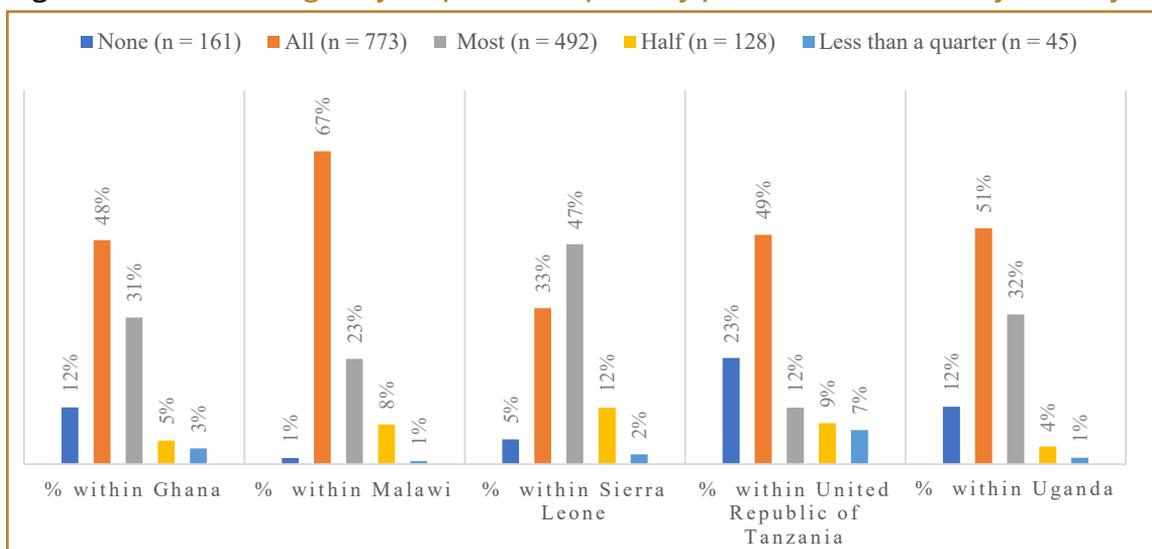
Figure 31. Distribution of fish bought by respondent, quantity sold fresh, by country



Source: Authors' own elaboration.

Next, the survey sought to understand the proportion of fish that respondents buy, process and sell, so as to understand if there is fish that is not sold for various reasons (no market, spoilage, or if part of the fish is kept for subsistence) A total of 773 (48 percent) respondents indicated that all the fish they bought was processed and sold. The majority (67 percent) of respondents in Malawi processed all their fish before selling. Almost half (47 percent) of respondents in Sierra Leone indicated that they processed most of the fish before selling. Figure 33 depicts the distribution of respondents who processed fish before selling, by country.

Figure 32. Of fish bought by respondent, quantity processed and sold by country

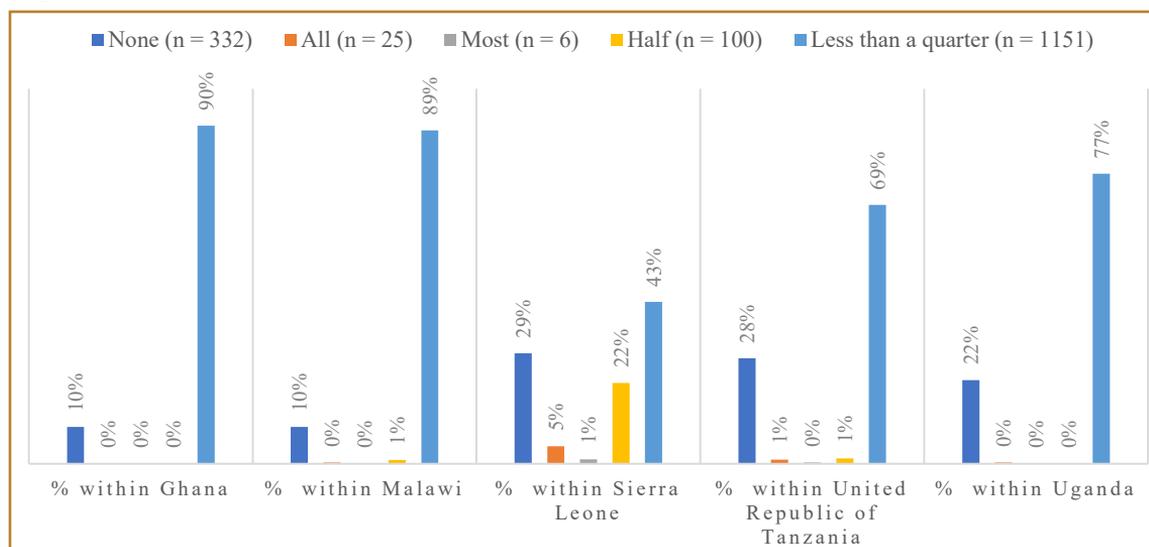


Source: Authors' own elaboration.

During follow-up, respondents were asked about the quantity of fish that they bought and took home for consumption, as they may have used part of their purchase or fish for business activities for subsistence. A total of 1 151 (71 percent) respondents indicated that less than one-quarter was taken home for consumption and 332 (21 percent) respondents indicated not consuming any of the

fish that they purchased for business activities at home. Interesting dynamics could be observed in Sierra Leone, where 29 percent of respondents indicated that they took none of the fish home, while on the other hand, 22 percent of respondents in the country indicated that they took half of the fish for consumption. A few (5 percent) of the respondents in Sierra Leone took all (or almost all) fish for home consumption. Figure 32 depicts the distribution of respondents indicating having taken fish home for consumption.

Figure 33. Of fish bought by respondent, quantity taken home for consumption



Source: Authors' own elaboration.

When it comes to the type of market where respondents sold fish, the findings show that on average, 11 percent preferred to sell fish at community markets, followed by regional markets and wholesale markets, at 9 percent and 8 percent respectively. Other preferred markets were retail and marketing products from home (6 percent each), and vending on foot (at 28 percent and 15 percent respectively). Table 23 depicts the distribution of the preferred markets where respondents sold fish, by country.

Table 23. Preferred markets where respondents sold fish, by country (n= 1 564)

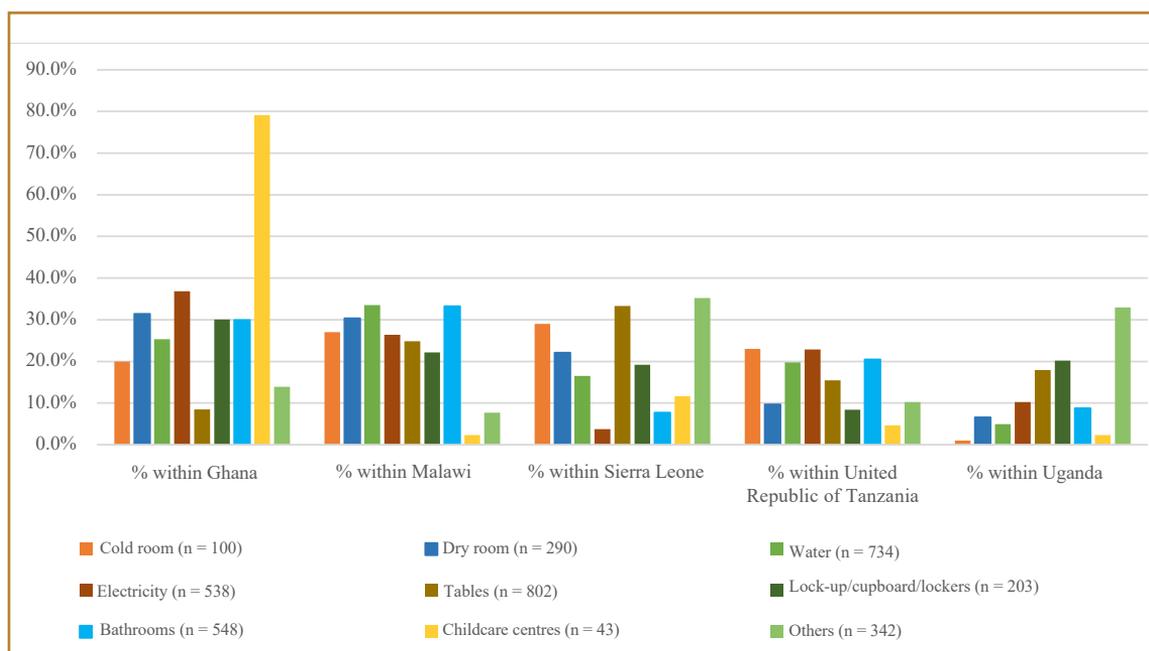
Types of market	% of total Ghana	% of total Malawi	% of total Sierra Leone	% of total Uganda	% of total United Republic of Tanzania	Average %
Regional market (n = 685)	10%	12%	15%	4%	3%	9%
Home (n = 435)	4%	5%	9%	5%	5%	6%
Community market (n = 894)	9%	10%	20%	11%	7%	11%
Wholesale market (n = 598)	9%	13%	11%	3%	3%	8%
Retail market (n = 487)	2%	4%	15%	3%	7%	6%
On foot (n = 238)	1%	1%	9%	1%	2%	3%

Source: Authors' own elaboration.

Where respondents indicated that they sold their fish, a total of 1 172 (77 percent) rented the sales facilities, as opposed to 23 percent who owned those facilities. In the United Republic of Tanzania, ownership of the facilities where respondents sold fish was lowest (2 percent) compared to other countries, where such ownership was slightly higher (around 5 percent).

Common amenities found at the market facilities where respondents indicated selling their fish included tables, water, bathrooms, electricity, dry rooms, lockers, cold rooms and childcare centres, in order of frequency. Less than 40 percent of respondents noted that they had access to most of the listed facilities, except for childcare centers in Ghana, where 79.1 percent of respondents noted that they had access to these (although only 43 people responded in total, thus the high percentage may be due to self-selection of respondents answering the question if they had access to these facilities). A total of 342 respondents indicated “Others” (shelters or shade used to take refuge from sun and rain) as facilities that were also available at the landing sites, as depicted in Figure 35.

Figure 34. Distribution of facilities available at markets, by country



Source: Authors' own elaboration.

On how often the respondents sold fish at a market facility indicated above, 40 percent of respondents across the five survey countries sold their fish twice a week in a mentioned facility. At the country level, 65 percent of respondents in Malawi reported that they sold fish at a mentioned market facility twice a week. Table 24 depicts the distribution of how often respondents sold fish at a market facility, by country.

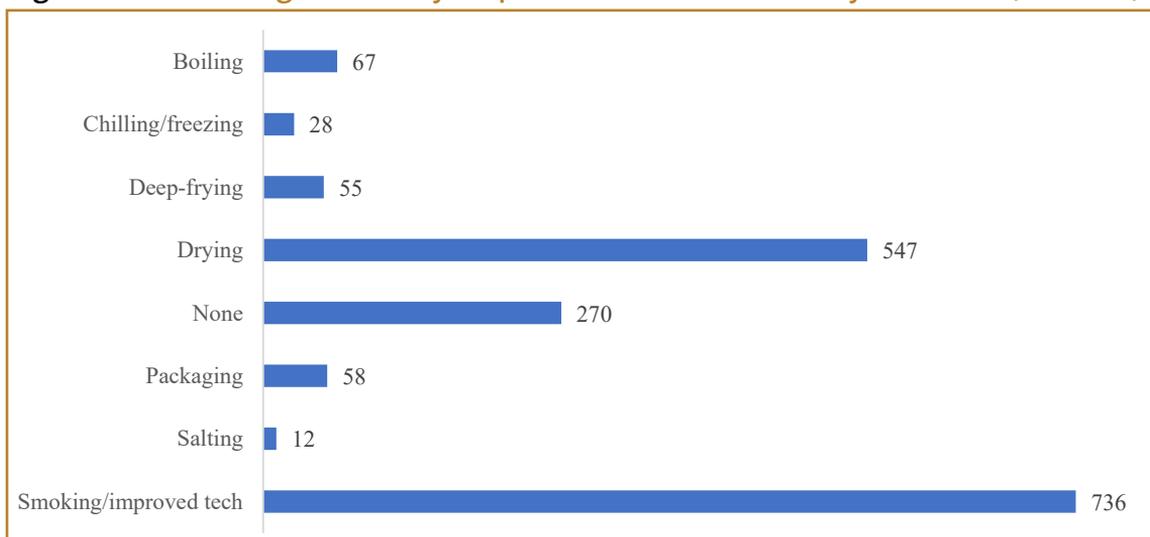
Table 24. Distribution of how often respondents sold fish at market facility, by country

Frequency	Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania	Total
Once a week	27%	8%	55%	24%	12%	28%
Twice a week	39%	65%	25%	38%	41%	40%
Every other week	14%	10%	13%	16%	14%	13%
Once a month	1%	3%	1%	3%	5%	3%
Other (more often than twice a week or less often than once a month)	18%	14%	7%	20%	29%	16%

Source: Authors' own elaboration.

Respondents were asked about the different practices they adopted or techniques they used for processing and handling fish. The most adopted technology across the five countries was fish smoking using firewood in both improved and traditional kilns (n= 736 respondents mentioned fish smoking), followed by sun-drying (n= 547). Some respondents indicated that they did not employ any technology, as they sold directly to consumers without any processing. The rest of the technologies were freezing or chilling, salting, deep-frying, boiling and packaging. Figure 36 depicts the technologies used by respondents in the five survey countries.

Figure 35. Technologies used by respondents in all five survey countries (n= 1 532)



Source: Authors' own elaboration.

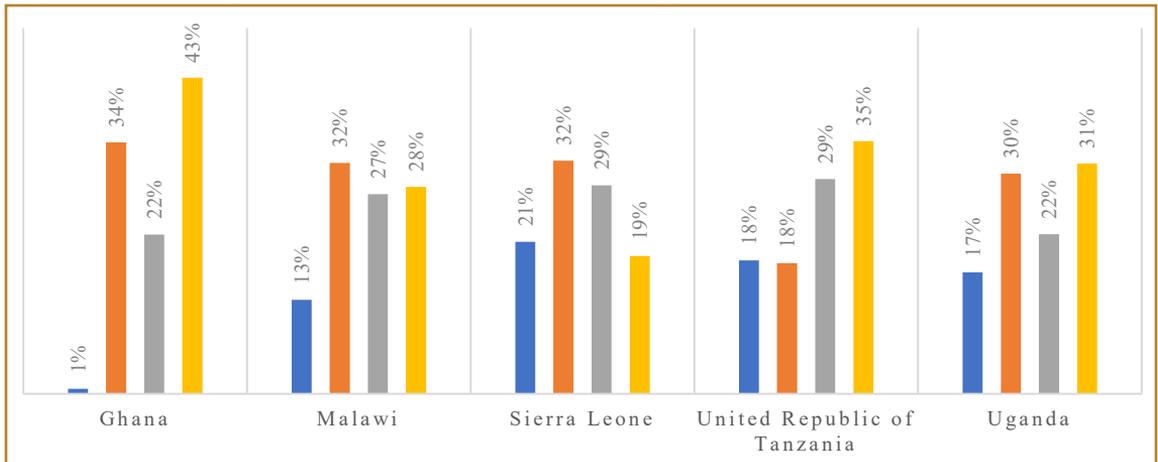
Across the five countries, the overwhelming majority (n= 1 017, or 68 percent) indicated they had not received any training on the use of fishing technologies. Of the 32 percent of respondents that had received training, the focus was on fish handling, processing and storage, and food safety, and on smoking kilns.

The small-scale fisheries project is built on the understanding that the environment is, and continues to, change. As such, the survey also sought to understand if small-scale fisheries members had changed what they did in their business due to changes in the environment (changes in heat patterns, dryness, levels of water in the rivers, fish population, etc.), which could have resulted in changes such

as reduced catch, more competition to buy fish, migration or non-local fishing people in their area. All respondents indicated that there have been changes in the environment and that the changes have affected their business, in that they must buy more fish at times to avoid shortages, they experience increasing prices, and they encounter the need to preserve more fish.

The topmost approach employed across the countries in response to changes in the environment was to increase the prices of fish, followed by trying to preserve fish through processing (using methods including sun-drying, smoking, etc.) The former was adopted in all countries (on average, 30 percent of respondents reported this) except the United Republic of Tanzania (where only 18 percent reported this adaptation). The latter was adopted mostly by respondents in the United Republic of Tanzania and Sierra Leone, at 29 percent. Unfortunately, the survey did not probe more on the other strategies. Figure 35 depicts details on how respondents adapted their business models due to environmental changes.

Figure 36. Changes in fish business due to changes in the environment



Source: Authors' own elaboration.

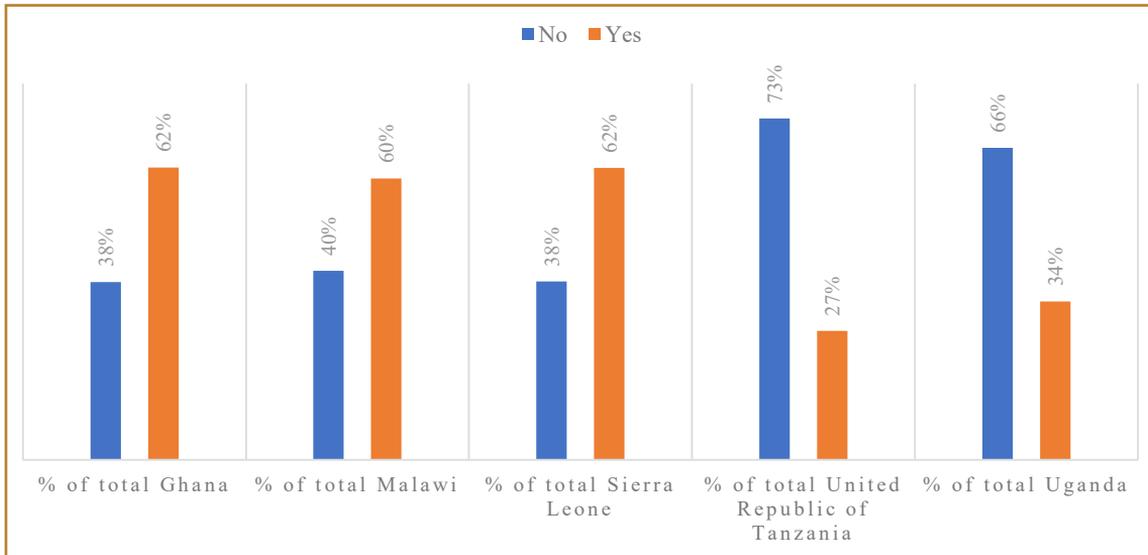
On how these changes have impacted the small-scale fisheries businesses, there were varied responses: some indicated that the changes enabled them to increase their profits, while others reported that they were able to sell fish even during lean periods. Other fishworkers reported that they encountered losses, to the extent of needing to use their savings. For others, business had slowed down. The changes have forced others to learn new technologies.

4.4 Women's fishery organizations

The survey sought to understand the availability of local fisheries organizations and perceived economic and social development benefits for women participating in such organizations. Overall, almost equal proportions of the respondents indicated having been members of local fisheries organizations (50.2 percent Yes; 49.8 percent No). Looking at inter-country comparisons, Ghana, Sierra Leone and Malawi have more members involved in local fisheries organizations (62 percent, 62 percent and 60 percent each, respectively) while Uganda and the United Republic of Tanzania lag behind, at 34 percent and 27 percent respectively. This is a somewhat surprising finding, as there are large women's organizations in both countries (such as the Katosi Women Development Trust in Uganda and the Tanzanian Women Fish Workers Association – TAWFA). In addition, respondents in the United Republic of Tanzania and Uganda disagreed that men should mostly be the ones who belong to fisheries clubs and organizations, and not women (in the United Republic of Tanzania, 81 percent disagreed, and in Uganda 90 percent disagreed: see Section 4.2.5 on gender attitudes).

Thus, there may be an opportunity to expand membership. Figure 36 depicts the distribution of respondents who reported being a member of a local fisheries organization, by country.

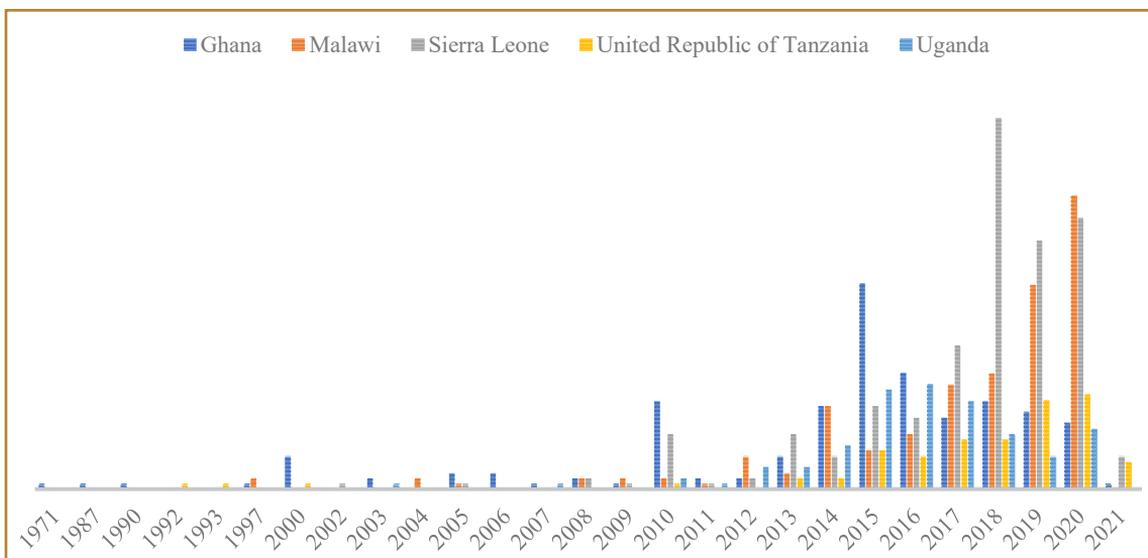
Figure 37. Respondent membership in local fisheries organization, by country (n= 1 605)



Source: Authors' own elaboration.

Of those that belonged to local fisheries organizations, one member in Ghana indicated having been a member since 1971. Membership rose sharply from 2015 to 2018, especially in Ghana, while Sierra Leone and Malawi followed suit between 2018 and 2020. Figure 37 depicts how long respondents have been a member of fisheries organizations, by country.

Figure 38. Year respondents joined fisheries organizations, by country (n= 900)

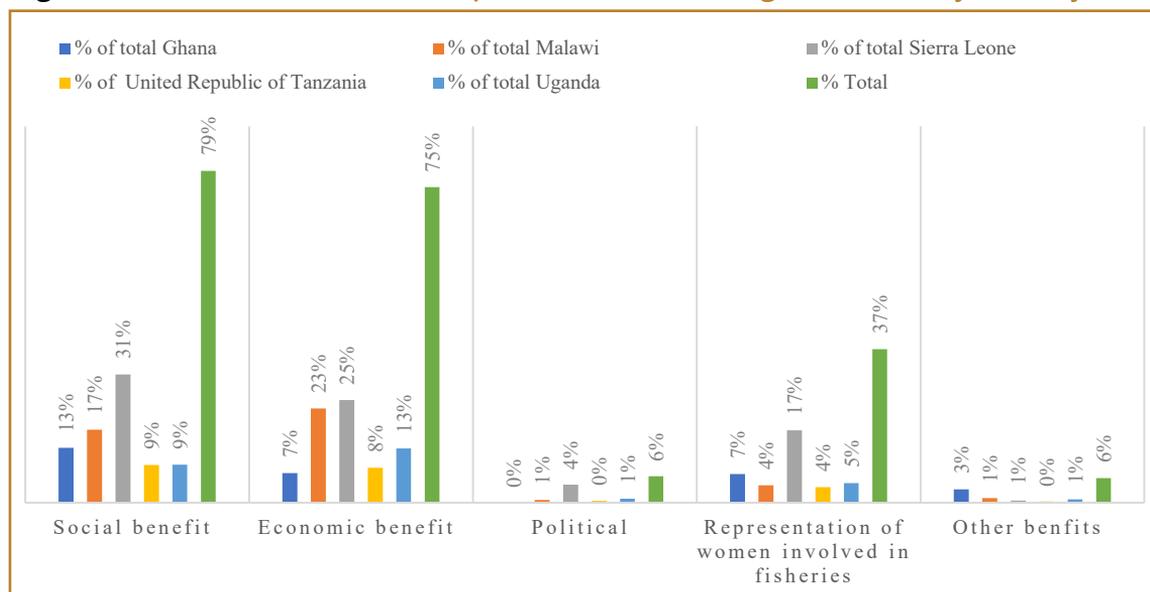


Source: Authors' own elaboration.

At the time of the survey, respondents reported that on average, local fisheries organizations had a total of 42 members (the minimum number of members being 3 and the maximum 900). When the respondents joined the local fisheries organizations, the average number of members were 26 people in a group (the minimum number of members being 1 and the maximum 300).

The survey asked respondents what benefits there were for being a member of a local fisheries organization in their countries. In all countries, respondents reported that benefits were social (79 percent) and economic (75 percent). The qualitative data reported in the survey showed that respondents felt that women's groups offered a supportive environment where honesty was encouraged, and where women felt that they could nurture themselves as well as others. Figure 39 depicts the benefits, reported by respondents, of membership in local fisheries organizations, by country.

Figure 39. Benefits of membership in local fisheries organizations, by country



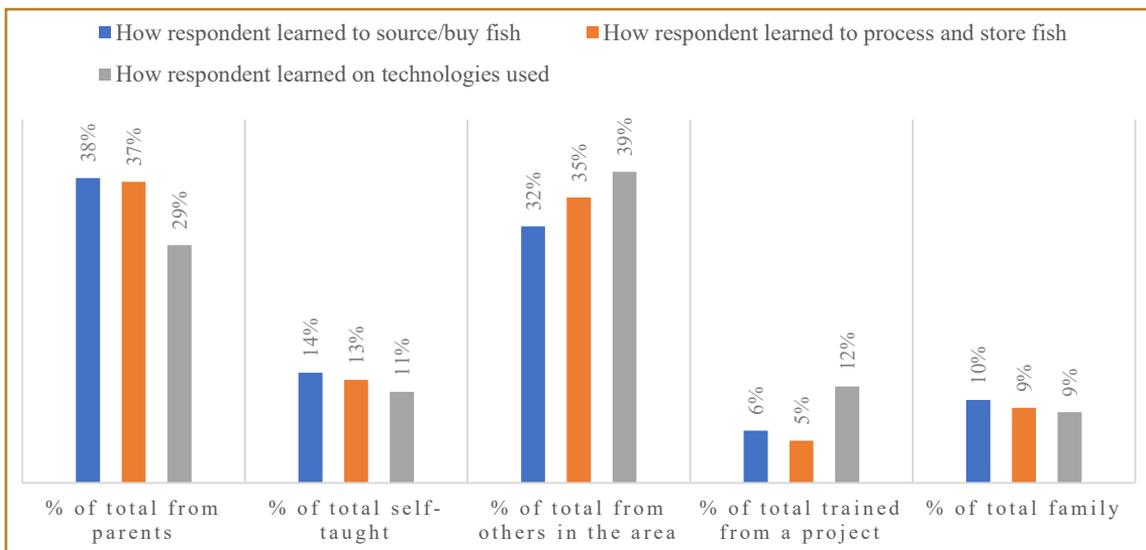
Source: Authors' own elaboration.

4.5 Knowledge management and communications

Lastly, the survey aimed to understand how the capacity of women in small-scale fisheries has been built on issues such as sourcing and buying fish, handling and processing of fish, and the use of technologies in the small-scale fisheries supply chain. To this end, a series of questions were asked as to whether the recipient received training, how long the training was, what type of training, and what further training might be useful.

As to where respondents learned how to source or buy fish, 48 percent of respondents reported that they learned from parents or other family members, followed by 32 percent of respondents who learned from others in the area and 14 percent who were self-taught. Only 6 percent learned from projects sponsored from outside the community. There is little cross-pollination in adapting new ways of sourcing or buying fish. Similarly, a high percentage of respondents reported learning about fish processing and storage from parents or family (47 percent), from others (35 percent) or were self-taught (13 percent), with only 5 percent reporting learning from a project. The same trend was observed in the use of technologies: 39 percent of respondents reported that they learned from others in the area, followed by 38 percent who learned from parents or family, 12 percent who learned from a project, and 11 percent who were self-taught. Figure 40 depicts the details by country.

Figure 40. Sources of learning for fish-related activities, in all countries

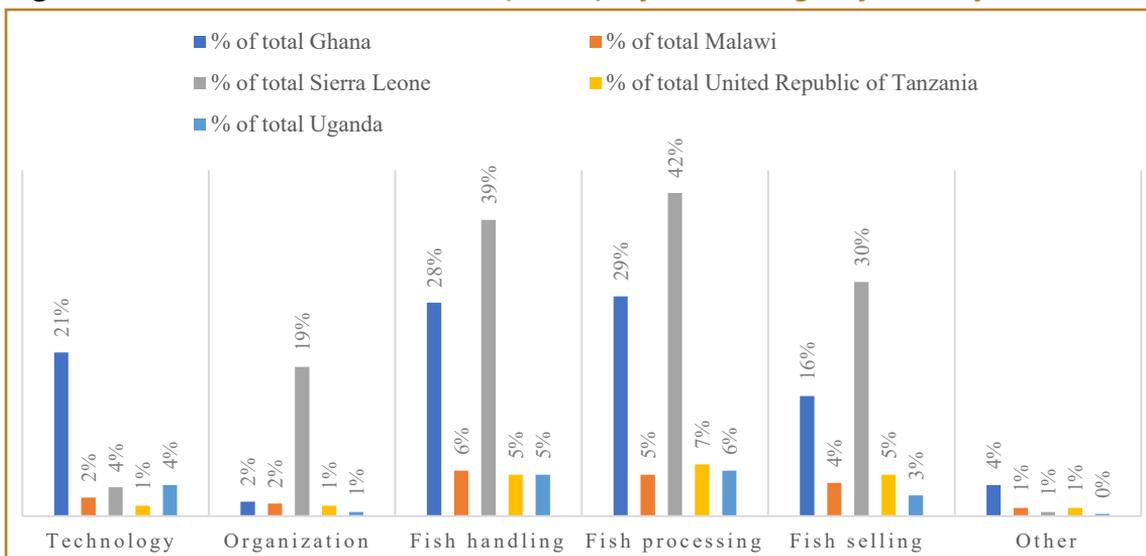


Source: Authors' own elaboration.

As for training, only 23 percent (n= 372) of respondents reported that they received training from projects in the past. Inter-country comparison indicate that the highest percentage of respondents in Sierra Leone (10 percent) had received training, followed by Ghana at 8 percent. In terms of number of days for training, the average number was three days (the minimum was 1 day and the maximum 10 days).

When it came to new ideas reported to have been learned from special projects by small-scale fisheries members, Sierra Leone and Ghana reported the most new ideas in relation to fish processing, handling and selling, while fewer respondents in Malawi, the United Republic of Tanzania and Uganda reported learning new ideas from past project trainings. A greater percentage of respondents in Ghana (21 percent) indicated learning new technology in comparison to other countries, while in Sierra Leone, 19 percent indicated to have learned about organizations and organizational management.

Figure 41. New ideas learned from special project trainings, by country



Source: Authors' own elaboration.

Other specific new ideas respondents reported to have learned from special project trainings included challenges fishers face, entrepreneurship (bookkeeping and business plan development), home management, nutrition, and financial literacy including savings schemes. Other trainings included alternative livelihoods, such as soap making.

As for training that would be helpful for small-scale fisheries members across all countries, a majority reported that it would be helpful to have more training on fish processing, followed by fish handling, entrepreneurship and business management, packaging and marketing, financial literacy, fish buying and alternative livelihoods.

When asked about ideas learned from others, respondents mainly reported fish processing (71 percent), followed by fish selling (70 percent) and fish handling (66 percent). Respondents in Malawi indicated learning new ideas from others chiefly in the areas of fish processing and handling (24 percent and 22 percent of respondents respectively), while 21 percent of Ugandan respondents learned new ideas in relation to selling fish.¹¹ Table 25 depicts the distribution of respondents who learned new ideas about various areas of the fisheries supply chain, by country.

Table 25. New ideas learned from other women in other areas or regions, by country

Field	% of total Ghana	% of total Malawi	% of total Sierra Leone	% of total Uganda	% of total United Republic of Tanzania	% total
Technology (n = 84)	0%	5%	4%	3%	2%	15%
Organization (n = 102)	0%	2%	9%	4%	3%	18%
Fish handling (n = 374)	4%	22%	17%	14%	10%	66%
Fish processing (n = 398)	4%	24%	19%	13%	11%	71%
Fish selling (n = 396)	9%	14%	15%	21%	11%	70%
Other (n = 26)	1%	0%	2%	1%	2%	5%
Total Valid (n = 564)	1%	%	2%	1%	2%	5%

Source: Authors' own elaboration.

Respondents were then asked about their preferred training approach, in order to gain understanding of how target community members preferred to learn or engage in trainings. The training approaches reported included: (i) role plays and demonstrations; (ii) classroom teaching; and (iii) FGDs and exchange programmes. Other methods cited were the use of Information, Education and Communication (IEC) materials such as posters and videos. Role plays and demonstrations were well suited to the respondents in this survey, as they reported to be preferred by many respondents, possibly due to the low average number of years of schooling reported (five years).

¹¹ This could include learning from others in organized training sessions or learning from friends, family or community members.

Part 5

CONCLUSIONS





5. Conclusions

5.1 Diets and food access

From a food security, nutrition and diet point of view, it is apparent that fish constitutes a large part of the diet of respondents. Fish species are not particularly varied and are clearly similar in each country where interviews took place.

- **FIES.** Analysis for the five survey countries shows that on average, 68.2 percent of all respondents experienced moderate or severe food insecurity, while 24.6 percent of those experienced severe food insecurity.
- **MDD-W.** Across the five survey countries, on average, less than half of the women in the target population reached MDD-W in the 24 hours prior to the survey (the highest proportion being in Uganda and the lowest in Sierra Leone). Grains, roots and tubers, plantains, meat, poultry and fish, and other vegetables, fruit, sugar, and sweetened beverages were the most reported food groups consumed. Fish is the most consumed source of animal protein as was it eaten almost seven times per week by the survey population, across all five countries.

The target sample (women involved in fisheries-related activities) should be noted in relation to dietary practices such as fish consumption, as it may be expected that those involved in fishing activities may consume more fish. It is also noteworthy that the MDD-W indicator is validated as a proxy indicator for micronutrient adequacy in the diet of women of reproductive age; however, there is some evidence suggesting that it may also reflect a “worst-case scenario” for household food consumption, as gendered politics of household food provisioning may result in women (or, often, young children) consuming less diverse foods than other household members (Gupta, Sunder and Pingali, 2020). Women may experience greater challenges with meeting their nutrient needs due to gendered norms in household food provisioning, greater nutrient needs during menstruation, pregnancy and lactation, and also due to challenges relating to livelihood activities and IGAs to purchase foods. There is evidence that increased decision making and women’s empowerment result in a higher likelihood of achieving dietary diversity (Amugsi *et al.*, 2016), thus the recommendations from this survey go hand-in-hand with such evidence.

5.2 Decision making and women empowerment

The survey results show that women who were small-scale fisheries members made a great contribution to the fisheries sector although they faced barriers that limit their participation, such as social norms, values, sexual violence, and roles limiting women’s participation in decision making in structures like Beach Village Committees (BVCs). Decision making by respondents across the five countries is done by both men and women, on issues around fish-related activities and other IGAs. A greater proportion of decisions on fish buying, processing, storage, and marketing and trading are done by women, compared to activities such as fishing, fish transportation and IGAs (which happen to be non-fish-related, such as grocery sales, making or selling mats, agricultural production and livestock rearing).

5.3 Responsible post-harvest practices

Poor infrastructure, and lack of skills and capacity expose small-scale fisheries to huge fish losses and waste across the five survey countries (at times as high as 50 percent). Some areas of the survey population appear to work at markets or landing sites that have good services in terms of utilities and social care, while other areas have the bare minimum. Poor handling practices lead to sustained and increased microbial contamination, hastening the spoilage rate of fish. Such practices include using dirty canoes, equipment, fish boxes and baskets; not washing fish; washing fish in dirty water;

placing fish on dirty surfaces; and physically damaging fish by throwing or standing on top of them when storing or drying. With improved processing and storage facilities, small-scale fisheries can control the supply of fish on the market, thereby controlling prices and stabilizing their income.

5.4 Women's fishery organizations

An almost equal proportion of respondents indicated that they were either members of local small-scale fisheries women's organizations or not. This gives an opportunity for the project to strengthen existing groups, encourage membership of these groups, or support the formation of new small-scale fisheries women's groups. Working with loose groups or no groups at all will greatly affect organization and implementation because of the lack of leadership. The survey finds that women's participation in local government and fisheries-related organizations is often simply that – participation; even if given the chance to speak, their inputs are not often taken into account. This dynamic may affect women's future participation and interventions, as well as their interaction with other supply chain actors.

5.5 Knowledge management and communications

The survey found that respondents' learning largely happens within the community, as opposed to external capacity development initiatives. This has an effect on cross-pollination in adapting to new ways and technologies when it comes to all aspects of the fish supply chain, such as fishing, processing, handling, value addition, transportation and marketing, and highlights the importance of co-design and community-led interventions.

Although there is regular contact with fisheries extension staff across the five countries, the findings challenge the transfer of knowledge to small-scale fisheries members. Learning that is taking place in the fisheries sector does not necessarily come from extension services; rather, it is inherited from parents and other family sources. Similarly, the SSF Guidelines are still not widely known among extension workers, officials and small-scale fisheries members.

Part 6

RECOMMENDATIONS





6. Recommendations

The following recommendations emanate from the survey.

Diets and food access. From a dietary perspective, it appears that diets lack diversity and are reliant on starch (rice, cassava, plantain, etc.) and fish. Even though fish is consumed by most of the survey population, the actual quantities consumed were difficult to establish. Efforts to improve diets, nutrition and food access should focus on two areas.

1. Increasing the quantity of fish consumed by population groups that consume small quantities (women, schoolchildren, young children, infants) through supply- and demand-side interventions. These interventions can include reduction of fish loss and waste, by-product utilization, and participatory design of fish products that may be desirable and acceptable to various populations (fish snacks, fish powders, etc.)
2. Enhancing awareness on dietary diversity. Fish is a nutrient-dense food that should be part of a healthy, balanced and diverse diet. Nutrition education can help raise awareness of the importance of a diverse diet, with hands-on demonstrations such as cooking demonstrations, to optimize local meals.

Additionally, there may be a need to conduct a deeper survey on how fish products are used (human consumption or animal feed)¹² and their contribution to nutrition. Fish is the most important animal-source food in the diets of Sierra Leoneans, providing about 80 percent of animal protein intake, and it is important for nutrition, especially in a country that ranks very low globally in terms of poverty and nutrition indicators, which is particularly concerning for women and young children (Pasqualino *et al.*, 2016). For Ghana, the secondary literature seems to point to some levels of fish powder export (WITS, 2022). Very few respondents across all five survey countries reported using value-added fish products, although it was noted that these were generally consumed by dependent children or other relatives; this offers an opportunity to further develop fisheries supply chains to target vulnerable household members with age-appropriate and culturally acceptable fish products.

Decision making and women empowerment. In terms of decision making, it was noted that women made decisions mostly around fish processing, while men usually made decisions on the use of income in the household and other areas. To promote equality, there is a need to consider enhancing gender-transformative approaches in project implementation. Investment in the empowerment of small-scale fisheries structures in the prevention of gender-based violence is needed, going beyond prevention to look at response and redress systems (that will eventually influence a better implementation of policy).

There is more work to be done in helping women to have a voice to speak up and protest about fisheries activities related to processing and marketing in Ghana, Sierra Leone and the United Republic of Tanzania, where the respondents surveyed reported high levels of dissatisfaction.

Responsible post-harvest practices. There is a need to invest in research and development of improved processing and handling technologies that can minimize fish loss, which is still rather high among the survey population. The project can work with universities and research institutions on such technologies. Second, as highlighted by sustained learning initiatives often originating from within the community, there is a need to (1) increase awareness among the small-scale fisheries members of new technologies; and (2) co-design and adapt new technologies to the needs of the community.

¹² An initial study on the socio-economic and biological impacts of the fish-based feed industry in the project countries was conducted in support of this recommendation (Thiao and Bunting, 2022).

As it seems that these communities prefer to use more traditional processing technologies rather than adopting improved ones, a deeper understanding of the longer-term barriers to adoption can help to better design sustainable solutions.

Women's fisheries organizations. In general, there is a need for more support to establish and build the capacity of groups and associations. There is already willingness on the part of small-scale fisheries women to be part of groups (with some even willing to pay membership fees), that can be leveraged. Efforts should be made to incorporate savings groups and to explore options for women's small-scale fisheries organizations to access finance for their activities. There is a need for deliberate training on gender-transformative approaches, to help amplify women's voices on issues that affect them and their businesses.

Knowledge management and communication. There seems to be frequent contact between small-scale fisheries members and extension workers (particularly in Sierra Leone); however, this is not translating into knowledge exchange. It is recommended to explore opportunities to digitalize and contextualize extension services in the wake of the COVID-19 pandemic. Dissemination of the SSF Guidelines can influence every aspect of the fisheries sector.

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ANNEXES



Annex 1. Who owns most of the assets, by country

The following questions from each survey type were analysed. Other questions were examined insofar as they could add value from a qualitative point of view.

Individual questionnaire		FGD questionnaire		KII questionnaire	
Question	Analysis undertaken	Question	Analysis undertaken	Question	Analysis undertaken
1.1.2	Count of responses and then percentage analysis	1.1.2	Count of responses and percentage analysis of FGD per region	1.2.1	Count of responses by gender
1.2.2	Count of responses by age	1.3.1	Count of responses per first mentioned fish species caught	1.2.2	Count of responses by identified role
1.2.3	Count of respondents in in different categories of civil status	1.4.1	Count of responses per food regularly consumed	1.3.1	Straight narrative taken
1.2.4	Count of years of education and average of respondents with X number of years	1.4.3	Count of responses from FGDs in terms of source of fish	1.5.5.1 to 1.5.5.10	Count of responses
1.3.1	Count and average by category of income source	1.5.4 to 1.5.7	Sum of responses and percentage analysis	1.6.2	Straight narrative taken
1.3.12 and 1.3.13	Count of respondents and sum of responses	1.5.5.2	Straight narrative taken	1.8.6	Straight narrative taken
1.3.14	First response taken (fish species), aggregated and then analysed as a percentage of total	1.5.5.3	Count and percentage analysis		
1.3.15	Data was grouped into broad activities and percentage analysis undertaken of total	1.5.5.7	Straight narrative taken		
1.13.16 and 1.3.17	Average incomes per region and overall average for the survey	1.6.2 to 1.6.4	Straight narrative taken		
1.4.1	FIES analytical methodology applied	1.6.9	Count of responses from FGDs		
1.4.2	MDD-W analytical methodology applied	1.7.1	Count of responses		

Individual questionnaire		FGD questionnaire		KII questionnaire	
1.5.1	First response taken (fish species), aggregated and then analysed as a percentage of total	1.7.2	Count of responses and percentage analysis of FGD per region		
1.5.4	Percentage response analysis per month	1.8.1	Count and percentage analysis		
1.5.5.	Count of responses	1.8.2 to 1.8.3	Count of responses		
1.5.9	Percentage response analysis per day and by week				
1.5.12	Count of responses				
1.5.13	Count of responses and then percentage analysis per process				
1.5.15	Count of responses				
1.7.2.1	Count of responses				
1.7.3.2	Count of responses by region per asset				
1.7.4.1 and 1.7.4.2	Count of responses by region per asset				
1.7.6.1 to 1.7.7.8	Count of responses per region				
1.8.1	Count of responses per sub-question				
1.8.2 and 1.8.3	Average high and low prices per region and overall				
1.8.8	Count of responses				
1.8.9	Count of responses				
1.8.11	Count of responses				
1.8.14	Percentage of responses				
1.8.15	Percentage of responses				
1.8.17	Sum of responses and then percentage of responses per item				
1.9.1	Count of responses and then percentage analysis				
1.9.2	Count of responses as yes or no and percentage analysis				

Individual questionnaire		FGD questionnaire		KII questionnaire	
1.9.5	Count of responses and then percentage analysis per year				
1.9.6	Count of responses				
1.9.7 to 1.9.8	Count of responses and then percentage analysis				
1.9.9	Count of responses and then percentage analysis per year				
1.9.10	Count of responses				
1.10.4	Count of responses and then percentage analysis				
1.10.5	Count of responses and then percentage analysis				
1.10.6	Count of responses and then percentage analysis				
1.10.7	Count of responses				
1.10.8	Count of responses				

Annex 2. Respondents' level of input in decision making, by country

Fisheries business activities	Country	% of total None	% of total Little	% of total Moderate	% of total All	% Total
Fishing	Ghana (n = 282)	17%	1%	1%	0%	19%
	Malawi (n = 301)	19%	1%	0%	0%	20%
	Sierra Leone (n = 413)	14%	7%	5%	2%	28%
	United Republic of Tanzania (n = 200)	12%	1%	1%	0%	13%
	Uganda (n = 288)	16%	1%	2%	1%	19%
	Total (N = 1484)	77%	11%	8%	4%	100%
Fish buying	Ghana (n = 292)	1%	0%	2%	15%	19%
	Malawi (n = 302)	0%	2%	7%	10%	19%
	Sierra Leone (n = 416)	2%	7%	7%	11%	27%
	United Republic of Tanzania (n = 252)	3%	2%	7%	4%	16%
	Uganda (n = 296)	1%	1%	5%	12%	19%
	Total (N = 1558)	7%	12%	29%	52%	100%
Fish processing	Ghana (n = 296)	2%	0%	2%	13%	18%
	Malawi (n = 306)	1%	2%	7%	9%	19%
	Sierra Leone (n = 431)	4%	7%	5%	10%	27%
	United Republic of Tanzania (n = 281)	7%	2%	5%	4%	17%
	Uganda (n = 300)	3%	0%	4%	11%	19%
	Total (N = 1614)	17%	13%	23%	47%	100%
Fish storage	Ghana (n = 296)	3%	0%	2%	12%	18%
	Malawi (n = 306)	2%	2%	7%	8%	19%
	Sierra Leone (n = 431)	5%	7%	6%	8%	27%
	United Republic of Tanzania (n = 281)	13%	1%	2%	2%	17%
	Uganda (n = 300)	5%	2%	5%	7%	19%
	Total (N = 1614)	29%	13%	22%	37%	100%
Fish transportation	Ghana (n = 296)	8%	0%	2%	8%	18%
	Malawi (n = 306)	1%	2%	8%	8%	19%
	Sierra Leone (n = 431)	9%	8%	4%	6%	27%
	United Republic of Tanzania (n = 281)	13%	2%	2%	1%	17%
	Uganda (n = 300)	9%	1%	4%	4%	19%
	Total (N = 1614)	39%	14%	19%	28%	100%
Fish marketing	Ghana (n = 296)	0%	0%	2%	15%	18%
	Malawi (n = 306)	1%	2%	7%	10%	19%

Fisheries business activities	Country	% of total None	% of total Little	% of total Moderate	% of total All	% Total
	Sierra Leone (n = 431)	4%	7%	4%	11%	27%
	United Republic of Tanzania (n = 281)	5%	1%	7%	4%	17%
	Uganda (n = 300)	1%	1%	5%	12%	19%
	Total (N = 1614)	11%	11%	26%	52%	100%
Other income-generating activities	Ghana (n = 296)	11%	0%	1%	7%	18%
	Malawi (n = 306)	8%	2%	4%	4%	19%
	Sierra Leone (n = 431)	13%	6%	2%	6%	27%
	United Republic of Tanzania (n = 281)	12%	2%	2%	2%	17%
	Uganda (n = 300)	12%	1%	2%	3%	19%
	Total (N = 1614)	56%	11%	11%	21%	100%

Annex 3. Who owns most of the assets per country

Who owns most of the assets	Country	% of total Self (respondent)	% of total Spouse (husband)	% of total Other household member	% of total Equally shared	% Total
Locally produced	Ghana (n = 186)	18%	3%	2%	1%	24%
	Malawi (n = 140)	10%	3%	1%	4%	18%
	Sierra Leone (n = 348)	29%	6%	2%	7%	44%
	United Republic of Tanzania (n = 82)	8%	1%	1%	1%	10%
	Uganda (n = 35)	2%	2%	0%	0%	4%
	Total (N = 791)	67%	14%	6%	13%	100%
Imported produced	Ghana (n = 110)	5%	10%	4%	1%	20%
	Malawi (n = 115)	14%	1%	1%	5%	21%
	Sierra Leone (n = 231)	14%	17%	6%	6%	42%
	United Republic of Tanzania (n = 23)	2%	1%	1%	1%	4%
	Uganda (n = 66)	4%	5%	1%	2%	12%
	Total (N = 545)	39%	35%	12%	15%	100%
Transportation	Ghana (n = 69)	7%	1%	2%	1%	11%
	Malawi (n = 221)	22%	2%	1%	10%	35%
	Sierra Leone (n = 133)	12%	3%	3%	3%	21%
	United Republic of Tanzania (n = 46)	6%	0%	0%	1%	7%
	Uganda (n = 166)	22%	1%	0%	3%	26%
	Total (N = 635)	69%	7%	6%	18%	100%
Tools	Ghana (n = 271)	18%	0%	2%	1%	21%
	Malawi (n = 273)	14%	1%	0%	6%	21%
	Sierra Leone (n = 359)	18%	4%	2%	3%	28%
	United Republic of Tanzania (n = 161)	11%	0%	0%	1%	12%
	Uganda (n = 236)	16%	1%	0%	2%	18%
	Total (N = 1300)	77%	6%	5%	13%	100%
Fish processing	Ghana (n = 249)	21%	0%	2%	1%	24%
	Malawi (n = 224)	14%	1%	1%	7%	22%
	Sierra Leone (n = 295)	18%	5%	3%	3%	29%
	United Republic of Tanzania (n = 110)	9%	0%	0%	1%	11%
	Uganda (n = 156)	13%	0%	0%	2%	15%
	Total (N = 1034)	74%	6%	6%	14%	100%

Who owns most of the assets	Country	% of total Self (respondent)	% of total Spouse (husband)	% of total Other household member	% of total Equally shared	% Total
Fish storage	Ghana (n = 232)	19%	0%	2%	1%	22%
	Malawi (n = 244)	15%	1%	0%	7%	23%
	Sierra Leone (n = 241)	14%	4%	2%	3%	23%
	United Republic of Tanzania (n = 110)	8%	0%	0%	2%	10%
	Uganda (n = 238)	20%	1%	0%	2%	22%
	Total (N = 1065)	75%	6%	5%	14%	100%
Communication	Ghana (n = 284)	16%	0%	3%	2%	21%
	Malawi (n = 268)	11%	1%	0%	7%	20%
	Sierra Leone (n = 279)	15%	3%	1%	2%	21%
	United Republic of Tanzania (n = 236)	15%	1%	0%	1%	18%
	Uganda (n = 277)	15%	1%	1%	3%	21%
	Total (N = 1344)	72%	7%	5%	16%	100%

Annex 4. Gender attitudes for all countries

Women should not get involved in fishing full time, this is a man's responsibility * 1.1.1 Country cross-tabulation	Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania	Total
Agree (% of total)	13.40%	10.20%	14.40%	13.80%	6.90%	58.70%
Partially agree (% of total)	0.30%	0.90%	2.60%	0.80%	1.90%	6.50%
Disagree (% of total)	4.80%	7.90%	9.30%	4.30%	8.60%	34.80%
Women should not own canoes, fishing nets, and other means to fish * 1.1.1 Country cross-tabulation	Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania	Total
Agree (% of total)	2.10%	4.60%	7.10%	0.60%	3.30%	17.80%
Partially agree (% of total)	0.10%	1.30%	2.10%	0.60%	1.60%	5.60%
Disagree (% of total)	16.30%	13.20%	17.00%	17.60%	12.50%	76.60%
Women should primarily be the ones who clean and process fish * 1.1.1 Country cross-tabulation	Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania	Total
Agree (% of total)	8.00%	8.90%	11.70%	5.60%	3.80%	38.00%
Partially agree (% of total)	1.40%	1.80%	4.10%	5.60%	1.90%	14.80%
Disagree (% of total)	9.00%	8.40%	10.50%	7.60%	11.70%	47.20%
Women should primarily be the ones who trade or market fish, not men * 1.1.1 Country cross-tabulation	Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania	Total
Agree (% of total)	7.10%	7.10%	11.50%	4.30%	2.10%	32.30%
Partially agree (% of total)	1.70%	2.30%	4.80%	6.10%	1.70%	16.60%
Disagree (% of total)	9.60%	9.70%	10.00%	8.30%	13.40%	51.10%
Men should primarily be the ones who transport fish to a market for sale * 1.1.1 Country cross-tabulation	Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania	Total
Agree (% of total)	4.10%	3.20%	6.80%	2.80%	1.10%	18.10%
Partially agree (% of total)	2.30%	2.30%	8.50%	6.40%	1.80%	21.30%
Disagree (% of total)	12.10%	13.60%	11.00%	9.50%	14.50%	60.60%

Men should primarily be the ones who control the earnings/income obtained* 1.1.1 Country cross-tabulation	Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania	Total
Agree (% of total)	0.90%	1.90%	5.60%	1.50%	2.00%	12.00%
Partially agree (% of total)	1.90%	1.30%	5.20%	1.80%	2.00%	12.10%
Disagree (% of total)	15.70%	15.80%	15.50%	15.50%	13.40%	75.90%
Women should primarily be the ones who prepare meals (including fish) * 1.1.1 Country cross-tabulation	Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania	Total
Agree (% of total)	7.80%	10.00%	14.90%	13.30%	6.00%	51.90%
Partially agree (% of total)	1.70%	1.50%	4.10%	4.30%	2.10%	13.70%
Disagree (% of total)	9.00%	7.70%	7.10%	1.20%	9.40%	34.40%
Men should mostly be the ones who belong to fisheries clubs, organizations * 1.1.1 Country cross-tabulation	Ghana	Malawi	Sierra Leone	Uganda	United Republic of Tanzania	Total
Agree (% of total)	0.40%	0.90%	2.20%	0.90%	1.50%	6.00%
Partially agree (% of total)	0.70%	1.30%	3.30%	0.90%	1.80%	8.10%
Disagree (% of total)	17.50%	17.00%	20.10%	17.10%	14.20%	85.90%

Annex 5. Questionnaires used

..\Richard from Paul\Methodology and Questionnaires\Questionnaires - Empowering Women in SSF for Sustainable Food Systems - 17-7-2020.docx

This report presents the design and results of a baseline survey with respect to a project of the Food and Agriculture Organization of the United Nations (FAO) focusing on empowering women in small-scale fisheries. The project supports the implementation of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (the SSF Guidelines), giving particular attention to the post-harvest sector in five countries in sub-Saharan Africa: Ghana, Malawi, Sierra Leone, Uganda and the United Republic of Tanzania.

Fisheries and Aquaculture Division – Natural Resources and Sustainable Production

Email: SSF-Guidelines@fao.org

Twitter: @FAOfish

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