

# Informal fish retailing in rural Egypt: Opportunities to enhance income and work conditions for women and men



# INFORMAL FISH RETAILING IN RURAL EGYPT: OPPORTUNITIES TO ENHANCE INCOME AND WORK CONDITIONS FOR WOMEN AND MEN

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## CONTENTS

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Introduction	4
Informal employment, decent work and gender	5
Research sites and methods	7
Study sites	7
Research methods	8
Gender analysis of fish retailing outcomes and work conditions in rural Egypt	10
Demographic characteristics	10
Gender context: The realm of acceptable behavior	11
Entry into and organization of fish retailing work	13
Employment and income security	15
Fish purchases and preferences	17
Market relationships and services	20
Use of earnings	21
Work locations and conditions	22
Constraints and collaboration	26
Conclusions and recommendations: Improving working conditions for women and men	
informal fish retailers	29
References	31
Glossary of terms	32
List of tables	33
List of figures	34
Annex	35
Notes	46

Egyptian aquaculture has seen steady growth over the last 20 years. It is now a strategically important industry that provides around 65 percent of the fish eaten by Egyptians. The aquaculture value chain employs at least 100,000 full-time equivalents, 50 percent of whom are youth.<sup>1</sup>

Aquaculture-derived fish is by far the cheapest farmed animal protein source in the country, making the sector particularly important for the country's 21 million poor people. Continued, sustainable growth of aquaculture has the potential to lift people out of poverty and to improve poor people's food and nutrition security through increased supply of protein and essential micronutrients. Achieving these impacts, however, depends on how the growth is achieved and how inclusively its benefits are shared.

Poor rural consumers benefit from Egypt's aquaculture sector through access to small and medium-sized farmed tilapia sold by informal fish retailers, many of whom are women. In fact, informal fish retail is the main, if not only, segment of the farmed fish value chain where women are found.<sup>2</sup> The "Improving Employment and Incomes Through the Development of Egypt's Aquaculture Sector" project — referred to by the acronym IEIDEAS — is funded by the Swiss Agency for Development and Cooperation and works with women fish vendors to improve their work conditions and earnings. The project is implemented by WorldFish and CARE in the El-Mineya, Fayoum, Kafr El Sheikh, Sharqia and Beheira governorates.<sup>3</sup> The IEIDEAS project faces a challenging task, given the range of risks and constraints the fish retailers face, but one that is important in order to improve the attractiveness of this economic activity and to secure poor consumers' access to farmed fish.

This report aims to inform current and future strategies to improve conditions in informal fish retail by understanding in more depth the similarities and differences in employment quality and outcomes across different fish retailers. It is particularly focused on identifying whether and how gender inequality influences different dimensions of the work, and whether women and men have similar outcomes and employment conditions. This knowledge will help to design interventions to overcome gender-based constraints, as well as approaches that address shared obstacles and include both women and men in gender-responsive ways to ensure that all of those involved in the sector benefit.

Rural fish vending is an employment activity sitting squarely within the informal economy, which is based on the workers' unregistered status and their related lack of claim to formal sources of social, economic or legal protection. Informal employment is a significant and often growing segment of the labor force in many developing countries, because it is an easy means of entry into work when formal jobs and access to them are limited, a way to diversify income streams, and a means for firms to reduce labor costs through the flexibility of subcontracted workers.<sup>4</sup>

The current economic crisis in Egypt and the limited number of public sector jobs in relation to the large number of people seeking work — particularly young women and men — make informal employment a viable, if not preferred, option for many. Rising food insecurity and pressure to make ends meet also push families to intensify their existing livelihood strategies, including putting more family members — including women — into paid work. Informal self-employment such as vending can offer ready income-earning options in such conditions.

While informal employment is a significant and stable component of the labor force in Egypt<sup>5</sup> and other developing countries, it is characterized by various forms of insecurity. As noted earlier, these insecurities relate to the unregistered nature of the work, which generally means that workers are not covered by public or private sector social protection schemes when these exist, may not have employment contracts or benefits, may lack secure and equitable access to business services or space from which to run their business, and may not have representation in policy debates or in interactions with employers, traders or others with important influence on their business.<sup>6</sup>

More specific to the focal group of workers of interest in this report is the literature on the risks and insecurities that women and men vendors — a sub-category of the informal self-employed — face. These risks emerge from most vendors' lack of legal status, which means that they do not have any license or registration related to their work.<sup>7</sup> This unregistered status

means that most lack secure claim to space from which to vend in marketplaces or on the street, may have difficulty accessing credit from banks or microfinance institutions and other support or services, and may be vulnerable to harassment and exploitation. The insecurity of tenure around space to vend can expose vendors to poor working conditions, including absence of toilets and clean water and exposure to adverse weather conditions. Added to this is the dimension of voice and how vendors are positioned relative to those supplying or buying the products they sell. The quality and breadth of these relationships, including the amount of negotiating power vendors have over the price, quality and quantity of goods they sell, have a significant influence on the regularity and level of income they earn. All of these factors contribute to deficits in the achievement of the International Labour Organization standard of decent work, which is defined in the context of the informal economy in relation to the range and quality of opportunities available, the ability to claim and secure rights as workers, access to social protection, and ability to organize locally and globally.<sup>8</sup>

It is also well established that women and men in the informal economy can have very different opportunities and outcomes based on how gender norms and attitudes shape daily life, including how institutions like the market function in the specific society in question.<sup>9</sup> Women in the informal economy are often concentrated in more vulnerable, low-return segments, including home-based work. Women vendors may also sell lower-value merchandise due to difficulty in obtaining the working capital to enter higher-value markets. Women in all types of self-employment may be unable to own or control the same assets as men, may operate at a smaller scale, and have less ability to claim family labor or afford to hire paid workers. Due to norms around the household division of labor, women also generally spend a considerable portion of their day caring for the family, leaving less time for income-generating activities or requiring them to multitask while working for pay. This need to care for the home, coupled with cultural norms around women's visibility in the public



sphere in some contexts — including in Egypt — mean women may have narrower options for purchasing inputs or selling goods and less opportunity to participate in training or in worker organizations. They also may lack networks through which to access information about prices, technologies or service providers.

These gendered risks and insecurities mean that informal employment is not necessarily a pathway out of poverty for many individuals and families. Policy and program interventions are needed to enhance the quality of the work and

its related earning potential in gender-responsive ways. In order to define relevant gender-responsive policy and program interventions, gender analyses of the conditions and outcomes of work are needed. This report provides just such an analysis for informal fish retail in rural Egypt in order to understand the interconnecting roles of gender inequality and informality in influencing employment quality and outcomes, and to tease out implications for future efforts to enhance employment conditions in the sector for both women and men.



A trader selling fish to women retailers at an upgraded fish market in Fayoum

## RESEARCH SITES AND METHODS

### Study sites

The study was implemented in the five IEIDEAS project governorates: Fayoum, El-Mineya, Sharqia, Beheira and Kafr El Sheikh. Characteristics of each of the sites are presented in Table 1 to provide context for later cross-governorate comparisons of fish retailer experiences.

All of the governorates are centers of agricultural production, and there is considerable variation across the five in terms of intensity of aquaculture, with Kafr El Sheikh producing the largest amount of farmed fish in Egypt, and having a major fish market — El Borsa — which is responsible for setting the daily price of fish in Kafr El Sheikh villages and neighborhoods, as well as in surrounding governorates. Also, it has around 10 wholesale and retail markets distributed among the

different aquaculture centers, such as El Riyad, Balteem, Qelin and El-Hamool. The main types of fish sold in Kafr El Sheikh are tilapia, mullet, African catfish and carp. Sharqia is the second-highest producer of farmed fish in Egypt. The primary types of fish sold in Sharqia are tilapia, grey mullet or *bouri*, carp, African catfish, thin-lipped mullet or *tobar*, mackerel, and sardines. Beheira also produces significant quantities of fish, as demonstrated in Table 1, including mullet, tilapia, silver carp and African catfish. Fish farms in Fayoum contribute about 1 percent of national fish production. The governorate produces mullet, tilapia, African catfish and carp. Fayoum has around 10 fish markets, mainly in Ibshway, Sanhour and Youssef El Sedeeq. Fish farming is a new activity in El-Mineya, and the main fish cultured and sold in local markets are tilapia, African catfish and bagrus catfish or *bayad*.

	Governorates				
	Beheira	Fayoum	El-Mineya	Kafr El Sheikh	Sharqia
Population (thousands)	4,901	2,605	4,308	2,706	5,530
% total population in labor force (15+)	38.2	34.6	35.4	35.8	34.6
% of women in total labor force (15+)	30.6	24.9	31.4	24.7	28.7
% unemployed <sup>10</sup>	6.8	2.9	5.5	10.0	11.7
% women unemployed	13.7	8.0	9.0	20.7	17.7
Adult literacy rate	63.4	59.1	58.7	65.7	67.8
Female literacy rate	54.2	49.9	47.1	57.3	60.4
Real gross domestic product per capita (\$, purchasing power parity)	8,592	7,667	7,869	8,116	7,909
% poor	23.5	28.7	30.9	11.2	19.2
% ultrapoor	3.8	5.9	7.0	2.1	1.9
Fish production (metric tons)	29,731	6,271	negligible	324,479	76,845
Fish production (% national total)	5%	1%	0%	55%	13%

**Sources:** Institute of National Planning. (2010). Egypt human development report, youth in Egypt: Building our future. Cairo: UNDP and INP; Macfadyen, G., Allah, A.M.N., Kenawy, D.A.R., Ahmed, M.F.M., Hebicha, H., Diab, A., Hussein, S.M., Abouzied, R.M., and El-Naggar, G. (2011). Value-chain analysis of Egyptian aquaculture. Project report 2011-54. Penang, Malaysia: WorldFish.

**Table 1.** Descriptive information about target governorates



Unemployment rates vary across the governorates, hitting a rate at or above 10 percent in two of the three Delta governorates, and being considerably lower in the two Upper Egypt governorates — particularly in Fayoum. Similarly, women’s unemployment rates, which are far higher than the overall unemployment rates, are lower in the Upper Egypt governorates than in the Delta. This is likely driven in part by relative poverty rates, which are higher in Upper Egypt. Poverty may drive people in general and women specifically to take up work that they might not otherwise choose to do; unemployment is not an option if a family is to meet its basic needs.

## Research methods

The aim of this study is to conduct a gender analysis of the conditions and outcomes of retail work in the farmed fish value chain in order to identify whether and how gender interacts with characteristics of the employment itself — particularly its informality, scale and quality of trader relations — to result in different outcomes and conditions of work for women and men. In order to carry out the analysis, a consulting firm was hired to collect both quantitative and qualitative information on the current situation of women and men fish retailers in the IEIDEAS project locations, with emphasis on quantitative survey data.

### Quantitative survey and sample

The structured questionnaire focused primarily on individual fish retailers and included questions on household characteristics, including household members and housing and economic conditions. The issues addressed in the survey included fish-related and nonpaid activities of fish retailers, species and qualities of fish bought, prices, sales volumes, wastage, trader relations, transport, storage and point of sale conditions, and gender attitude and decision-making questions. The questionnaire was translated from English into Arabic and field tested in two governorates before being finalized for field implementation.

The target sample size for the study was driven by estimates of the population of women fish retailers reached by the IEIDEAS project. Total listed beneficiaries in each governorate formed the population of 1,260 women retailers,

and the number of study respondents per governorate was determined in proportion to the governorate’s share of total beneficiaries. However, in some governorates, women fish retailers sold their fish in different final markets, and respondent selection in these cases was stratified by market reached. In order to enable analysis by stratum, a minimum sample of 35 respondents per stratum was requested. This led to a desired sample size of women fish retailer beneficiaries of 374. In the governorates of Fayoum and Beheira, the study also interviewed women fish retailers not in the project as a comparison group to enable assessment of the effects of the IEIDEAS project at the end of the project. The target sample size of women retailer nonbeneficiaries matched that of beneficiaries in those two governorates (n=164). Nonbeneficiary women were identified at fish retail markets where they work. For the purposes of this gender analysis, the women respondents are combined into one group. Finally, men fish retailers were also sampled from the markets in which they work, with the target male sample size equal to that of women beneficiary fish retailers in each governorate, except in El Mineya, where existing information noted that men fish retailers were not working in one project site. In the end, all the men retailers in Fayoum and Kafr El Sheikh who were identified in the markets were selected in order to achieve the maximum respondents possible, while in the other sites men were randomly selected by including every second male retailer until the desired sample size was reached.

Table 2 shows the target and actual sample size per governorate. A total of 748 questionnaires were completed instead of 877 due to shortfalls in respondents in some categories. In Sharqia, the community development authority’s list of women fish retailers only had 33 who had been fish retailers before the project; these 33 were included in the study. In Kafr El Sheikh, there were few men fish retailers. Therefore, the total number of interviewed men was only 55 instead of 70. In Fayoum, almost all the men who work in fish-related activities are fishers and not fish retailers. For this reason, the total number of interviewed men was only 12.

### Qualitative interviews and focus groups

Qualitative interview guides with open-ended and semi structured questions were developed for use in conducting in-depth interviews and focus group discussions with the women beneficiaries and in-depth interviews with traders. The questions in the focus group discussion guidelines explored participants’ perceptions related to fish retailing activities, obstacles faced and benefits gained by participating in the project activities.

The participants in the focus group discussions were selected in collaboration with the community development associations in the target governorates. The associations

arranged the focus group discussions for the interview teams and also provided the teams with traders’ contacts. Additionally, individual interviews with two women retailers per governorate were conducted. The focus group discussions and individual interviews, including those with traders, took place in the community development associations in all the governorates except for Sharqia, where the focus group discussion was conducted in the home of one of the beneficiaries and the interviewers spoke to traders in the market.

### Constraints and limitations

The field teams faced a range of challenges related to different issues: the political situation and security in Egypt in the data collection period; curfew and restrictions in public transportation that posed some logistical problems; research fatigue among respondents, as they had participated in several similar data collection exercises with promises of future benefits that have not been realized; and the fact that the interviews were conducted during fish retailers’ working hours, influencing their concentration and willingness to participate.

Governorates	Sex	Target Sample	Interviewed Sample
Fayoum	Women	188	190
	Men	94	12
El-Mineya	Women	70	70
	Men	35	35
Sharqia	Women	70	33
	Men	70	71
Kafr El Sheikh	Women	70	72
	Men	70	55
Beheira	Women	140	142
	Men	70	68
<b>Total</b>	Women	538	507
	Men	339	241
	All	877	748

**Table 2.** Proposed and actual sample size

## GENDER ANALYSIS OF FISH RETAILING OUTCOMES AND WORK CONDITIONS IN RURAL EGYPT

This section assesses the extent to which gender matters to the outcomes of and work conditions in fish retailing. It describes some of the basic characteristics of the respondents and the gender context in which fish retailers work, based on data on gender attitudes among the respondents and patterns of intra-household decision-making. It then goes on to examine how this gender context affects the organization of fish retail work, the scale, returns and relationships involved in the work, work conditions and access to needed services, and the constraints fish retailers report as limiting their economic potential.

### Demographic characteristics

The average age of the women and men fish retailers in the sample is 37 and 36 years, respectively, and most are married. Women predominate in the widowed or divorced category and men in the single category. There are significant differences in household size and composition between the women and men fish retailers. On average, women fish retailers live in larger households, and within these households

there are more children under age 15 (2.1 versus 1.5). They also live in families with a significantly lower share of nonworkers (see Table 8 in the annex). The latter may indicate that women retailers' families have a higher relative poverty status, as their larger families with more children are driven to put more members into the labor force to survive. Gender differences in household size in El-Mineya and relatively large average family sizes among the women respondents in Fayoum seem to drive the general finding regarding women fish retailers' larger households. Only in Beheira do the men fish retailers have a significantly larger number of children than the women do, on average.

A much larger share of the women fish retailers are illiterate compared to the men, except in Fayoum, and more men have secondary education or higher (Figure 1). It could be argued that this difference in educational attainment reflects the selection criteria used to mobilize women's participation in the IEIDEAS project. However, similar levels of illiteracy are found among the women nonproject participants.

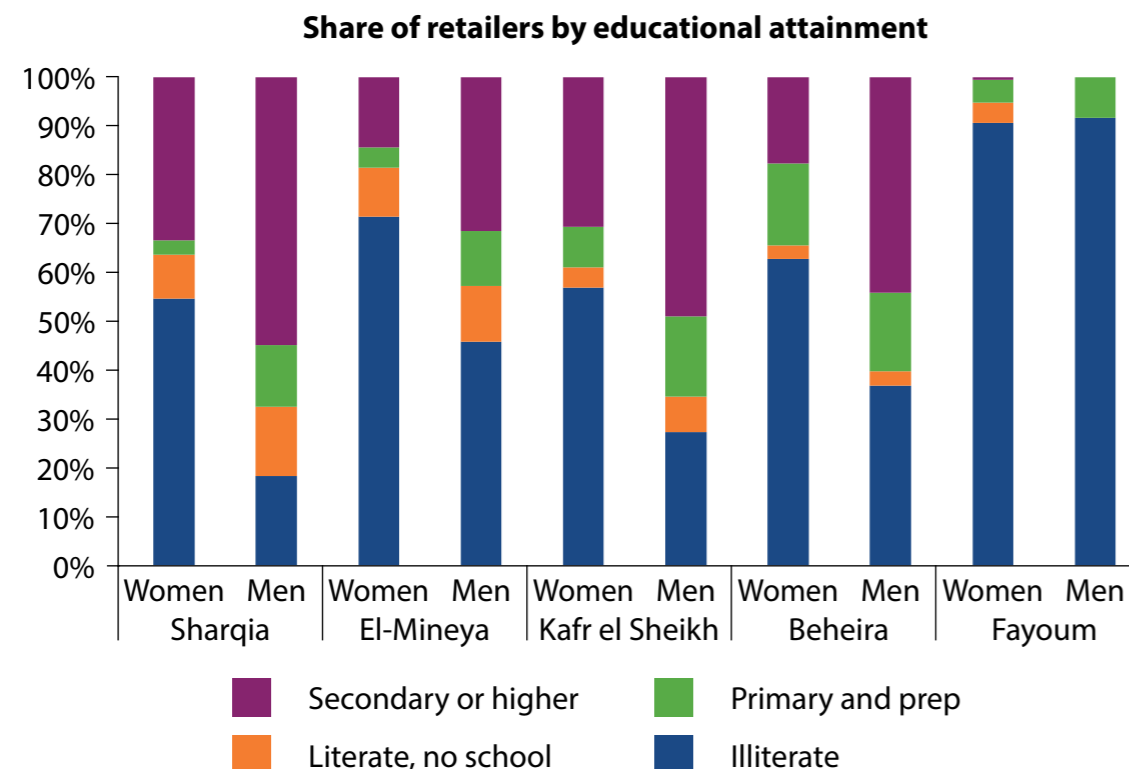


Figure 1. Share of retailers by educational attainment

### Gender context: The realm of acceptable behavior

Gender norms and attitudes frame the context within which women and men enter the paid economy, and shape their opportunities. As noted earlier, gender norms can influence the types and locations of work considered acceptable for women and men, the time they have available for paid work, the appropriateness of men's involvement in domestic and caring labor, and the scope women and men have to be involved in decisions about the use of the income they earn. To frame the analysis of women and men fish retailers' employment conditions and outcomes, this section describes respondents' views on what is appropriate behavior for women and men in rural Egypt; it does not represent national views but does provide insights into accepted gender roles and relations, based on responses to a series of questions on gender attitudes. The responses paint a picture of the social context within which fish retailers operate and how it sets different parameters of acceptability for women and men. The results also illustrate cross-governorate differences in some of these attitudes that indicate variation in the room to maneuver which women fish retailers have in their family and work lives.

Three questions focused on the gendered division of labor and particularly on attitudes about the relative intensity of women's work and the appropriateness and ability of men to be involved in domestic work (see Table 9 in the annex). In three governorates (El-Mineya, Fayoum and Kafr El Sheikh), large shares of both women and men disagree with the proposition that men can care for children as well as women can, signaling support for women's traditional role in child care. Sharqia and Beheira stand out as having more than half of the men and about two-thirds or more of the women agreeing that men can do this work as well as women. Only in Beheira is there a significant difference between women and men in their level of agreement with the statement, with significantly more women than men agreeing.

The majority of respondents in all governorates, except for the women respondents in Kafr El Sheikh, agree with the idea that it is embarrassing for men to help with household work. This strong agreement is a reflection of the traditional gender division of labor, with women responsible for general homemaking activities. The agreement also signals the challenge involved in achieving more equitable sharing of domestic work, as issues of honor and status are involved. There is also a belief that the work women do is less taxing than men's, again with Kafr El Sheikh being different. The majority of women respondents there disagree with this belief, at levels significantly different from those of the men.

Another relevant social norm in the Egyptian context has to do with women's mobility. While women fish retailers work in public, this is often out of necessity, as female seclusion tends to be the ideal, particularly in rural areas. The responses to the gender attitude questions related to women's mobility provide some interesting insights. On the one hand, there is strong and clear agreement across women and men in all governorates that women need men's permission in order to leave the home; they are not independent agents able to come and go without this approval. An interesting contradiction arises in two other statements related to women's mobility and work. On the one hand, a majority of women and men in most governorates agree that women and men have the same right to work outside of the home. There is more disagreement with this statement among men in Sharqia, Fayoum and Kafr El Sheikh, and among women in Fayoum. However, when more conditions are placed on the statement, the responses shift markedly; the majority of woman and men across governorates agree that it is not acceptable for a married woman to work outside of the home if her husband earns sufficient income. So, female seclusion is held as an ideal standard when financial conditions allow, even though there is agreement with the abstract notion of women's equal right to work outside of the home.



Low expectations around women’s capacities can lead to limits being placed on their agency by women themselves and by others. There is evidence that this may be an issue in some of the study governorates, reflected in results regarding perceptions of women’s capacities to make important decisions by themselves and somewhat less so in perceptions of women’s capabilities to be community leaders (Figure 2). Considerable shares of respondents disagree with the statement that women can make important decisions by themselves, and this is particularly the case among women and men in El-Mineya and Fayoum, and among men in Kafr El Sheikh. There is more belief in women’s capabilities to be community leaders; however, a considerable share of men in Kafr El Sheikh and women in Fayoum disagree with this. Such attitudes may make women less confident to take up decision-making roles or may lead to resistance from others when they do.

Finally, gender attitude questions were asked about financial decision-making and control over savings. There was widespread agreement about the importance of joint financial decision-making in the home. However, when questions focused on women’s own control over resources, there was less agreement. In relation to married women’s independent use of their own savings, there were interesting levels of

disagreement with women’s “right” in this regard among women; more women in Fayoum and El-Mineya reported conservative attitudes, and more women in Beheira and Sharqia reported progressive attitudes. Higher shares of men than women disagreed with married women’s right to make such independent decisions in all governorates except El-Mineya.

How does decision-making play out in practice? Respondents were asked about actual decision-making in the home in relation to the use of the respondent’s own earnings, use of total household income and large household purchases. The findings correspond with the general agreement on the importance of joint financial decision-making in the sense that significant majorities of both women and men report being consulted in all three of these decisions and having a say in the final decision (see Tables 10–12 in the annex). However, responses to questions about what happens if there is a disagreement are interesting. Tradition plays out in these cases, with the majority of women across governorates reporting that their spouse’s views prevail in such circumstances and almost all men reporting that their view prevails. Compared to the other governorates, fewer women in Kafr El Sheikh and Beheira report their husband’s view as prevailing. In the end, it appears that joint decision-making works when there is agreement between spouses.

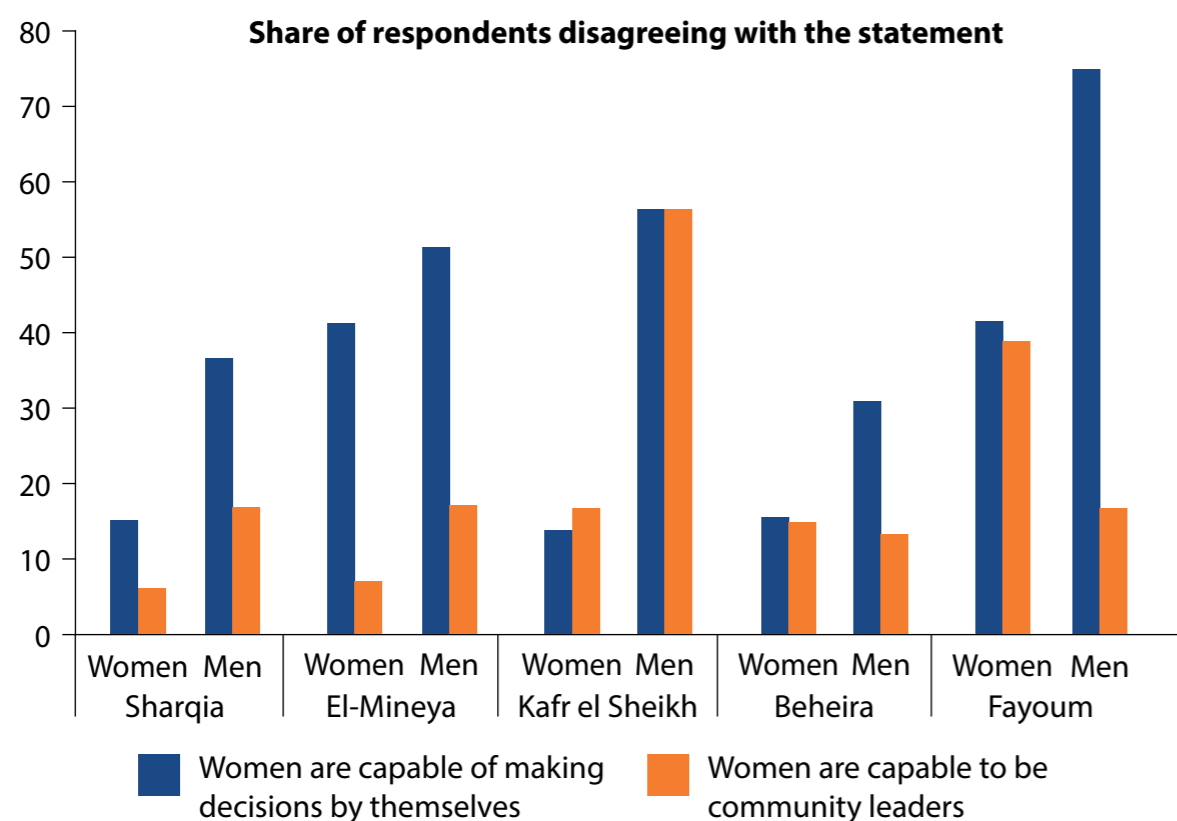


Figure 2. Share of respondents disagreeing with the statement

Box 1. Some women’s motivations for entering fish retail

Tradition and family business

Heba, a 50-year-old fish retailer from Fayoum, in fish retail for 30 years: “All the family members are working in fish-related activities; my husband and boys are fishermen.”

Laila, an 18-year-old fish retailer from Beheira, in fish retail for three years: “I have worked in fish retail since I was a child. All my family members work in fishing and selling fish. After my marriage I continued to work on a daily basis to help my husband.”

Economic need and support from network

Fatima, a 30-year-old fish retailer from Sharqia, in fish retail for 10 years and head of her household: “I have applied to many jobs without success. One of my friends was a fish retailer; she suggested I work like her and I started to sell fish.”

Mona, a 35-year-old fish retailer from Kafr El Sheikh, in fish retail for 10 years: “I tried to find a job but I failed. Some family members and friends suggested this job so I started to work as a fish retailer.”

In summary, the results describe a social context in which women’s traditional roles in the family are strong, where women can move out of the home for work when economic need requires but only with permission from husbands, where women’s leadership capacity has limited acceptance among many men and some women, and where women’s control over financial resources, even those they earn or contribute to, is limited; joint decision-making is an ideal, but when conflicts arise, men’s views dominate. It is within this understanding of gender that the women and men fish retailer respondents in this study operate. The balance of the report assesses how this gender context affects employment options and outcomes for women and men in the sector.

Entry into and organization of fish retailing work

Most women and men fish retailer respondents have been in the profession for more than three years, so it is an established activity. There is more variation in how long retailers have been in the profession in Sharqia, where about one-third of women and men respondents have been involved for only one to three years, and 15 percent of women for less than one year. Longevity in the fish retail profession is partly explained in Fayoum and El-Mineya by links to fisher spouses among the women, and family tradition for both women and men. Similarly, more than half of men in Beheira report family tradition as one reason for entering fish retail.

Very few women or men entered the profession out of personal interest, with significant shares across governorates reporting that a lack of other options drove them to this work (Figure 3; multiple responses possible). This response was more common in Kafr El Sheikh, with its high concentration of fish production, and among women in Fayoum. The large share of total fish production in Kafr El Sheikh seemed to ease entry into fish retail, even if it is not a preferred livelihood option. More women fish retailers than men, except in Fayoum, report entering fish retail due to having a network to help them. This response was most common among women in Sharqia and Beheira. All reported entering the profession in order to earn income.

As is typical in many informal enterprises, both men and women rely on family help in their fish retailing businesses, though significantly more women do so than men across governorates: 69 percent of women compared to 58 percent of men. The highest shares of both women and men relying on family assistance are in El-Mineya, Beheira and Fayoum. Significantly more women than men rely on assistance in Kafr El Sheikh. There are gender differences in the type of help received. Women are more likely to have help in physically buying fish, particularly in El-Mineya and Kafr El Sheikh, and in receiving cash to pay for their fish. Both men and women report receiving assistance with transporting fish. More fish retailer respondents in El-Mineya compared to the other governorates report receiving this assistance. Help in selling fish was also reported, with the

only significant gender difference in El-Mineya, where many more men report having this help; Kafr El Sheikh is the other governorate with higher levels of both women and men retailers reporting receiving help with fish selling.

Spouses are the most common source of help among those fish retailers receiving family support in their business. Across all governorates, men are significantly more likely to have spousal help. Other female family members are the second common source of help, with significantly more women than men relying on this source in El-Mineya, Kafr El Sheikh and Beheira. Children are an important source of family labor for women, particularly in Fayoum; they may contribute to the business, domestic work or both.

Many fish retailers work long weeks and days to sell their fish. During peak season, just more than 60 percent of all respondents report selling fish daily. More or less equal shares of men and women in Sharqia, Kafr El Sheikh and Beheira report selling fish daily, with this share ranging from just under 60 percent to 75 percent. However, gender differences exist in Fayoum and El-Mineya, with fewer women than men in Fayoum and more women than men in El-Mineya reporting selling fish daily. The number of hours spent per day during the peak season differs significantly between men and women overall, with the majority of men selling for more than seven hours per day and women for between three and seven hours. These gender differences are driven by the

experiences of women and men in Sharqia and Beheira where significantly more men report selling for more than seven hours per day than women. El-Mineya and Fayoum are different, in that few to no men or women retailers report selling for more than seven hours per day in peak season. This finding may be associated with the relatively lower volumes of fish they sell compared to retailers in the other governorates (see Table 3). In the low season, the number of hours women spend selling fish per day is significantly lower than for men in Sharqia and Beheira and higher in El-Mineya.

Not surprisingly, there are significant gender differences in time spent in domestic work across all governorates. The majority of men in all governorates report spending one to three hours per day on such tasks, while more women than men report spending from three to seven hours daily. Women in Sharqia and Beheira spend the most time in domestic work per day, with the majority of respondents spending more than three hours per day on these tasks. These time-use findings correspond with the gender attitudes reported previously regarding support for women's roles in caring for the family. There are fewer gender differences in leisure time per day. It is only in El-Mineya and Beheira where significantly more women than men report having only one to three hours in leisure. The difference in El-Mineya is large: 74 percent of women are in this category, while 68 percent of men report having three to seven hours of leisure per day.

These time-use patterns are reflected in experiences of conflict in balancing fish retail work and domestic responsibilities. Across governorates, 67 to 100 percent of men report never having faced such conflicts. Almost all women in El-Mineya, where less time per day was spent in fish retail, also report never facing such problems. Other women, particularly those in Fayoum, Kafr El Sheikh and Sharqia, report experiencing such challenges. However, these conflicts only lead to about one-third of women in these governorates reporting that they work fewer hours selling fish than they would like to due to household work. A larger share of the women overall, and significantly more women than men across governorates, report having less time for other activities than they would like, due to the time it takes to sell their fish. Therefore, interventions that enable women to sell their fish more quickly would help them to allocate their time to more preferred uses.

### Employment and income security

Employment and income security are important features of decent work in the informal economy.<sup>11</sup> They are associated with levels and regularity of income, as well as the range and quality of relationships with sources of merchandise. For fish vendors, the types and volumes of fish they can purchase, and at what margins they can sell it, matter to income security. The range and quality of relationships with traders, including reliance on them for credit, can influence employment security.

### Species, prices and volumes

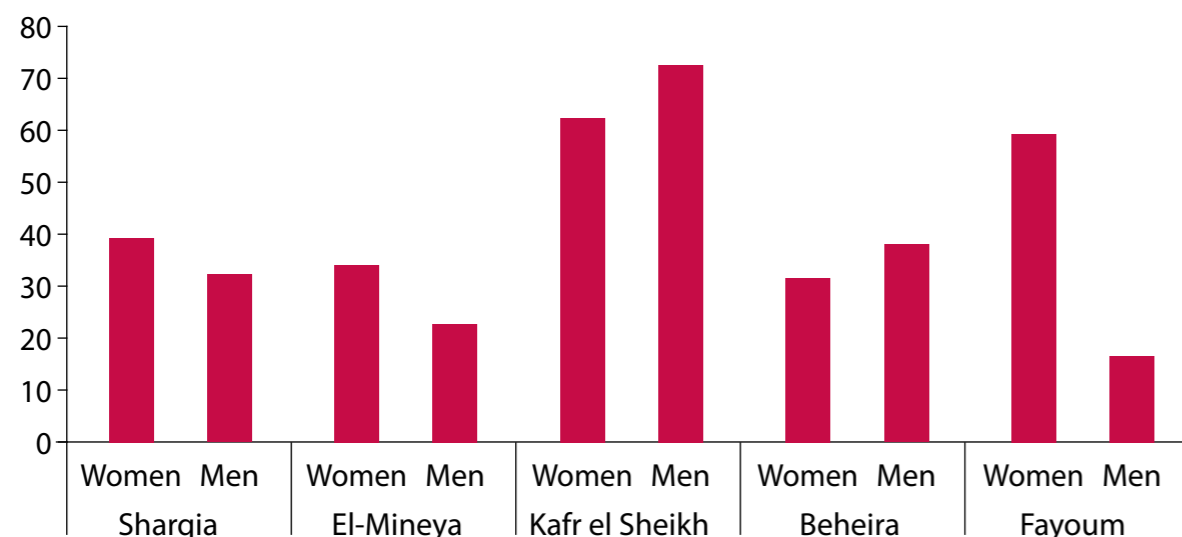
While in El-Mineya and Fayoum all respondents sold tilapia both during peak season and on their last selling day, this was the case for 85 percent, 95 percent and 89 percent of respondents in Sharqia, Kafr El Sheikh and Beheira, respectively (see Table 3). In addition, there were significant differences between men and women in Sharqia and Beheira, with a larger share of women than men involved in selling tilapia. Catfish was sold by 17 percent of respondents in peak season; however, no catfish was sold in Fayoum. In Sharqia and Beheira, a larger share of women than men were involved in selling catfish. For mullet sales, a significantly larger share of men were involved in Sharqia, where none of the women sold mullet, while 18 percent of men did, and in Fayoum, where 50 percent of men (n=12) sold mullet and only 2 percent of women did so. In the overall sample,

the differences between men and women in selling carp are not significant; however, significantly more women in Sharqia sold this species than men in Sharqia. Men were more likely to sell mackerel and other fish species not separately mentioned in Sharqia and Beheira, as well as sardines in Beheira. Overall, men were involved in selling a higher number of different fish species at the same time: an average of 1.8 for men, versus 1.4 for women in the peak season. Further qualitative investigation is needed to explore the reasons for the existing gender differences in species sold, focusing on retailer preferences, ability to access and afford desired species, and trader relationships.

The grades of fish bought differ significantly between governorates for tilapia, mullet, carp and mackerel (Figure 4; see also annex). For example, in El-Mineya and Fayoum relatively more grade 1 tilapia was bought compared to the other governorates; in Sharqia and Kafr El Sheikh, more grade 1 mullet was bought; and in Sharqia, relatively more grass carp was bought. In the governorates, there were few significant differences between men and women in the grades of fish sold. In fact, one clear finding is that overall, women and men rural fish retailers sell primarily grade 1 and 2 tilapia, which are the larger-sized grades. In El-Mineya, men sold relatively more grade 1 and women relatively more grade 4 tilapia. In Beheira, men sold relatively more grade 1 and 4 tilapia, and women sold grade 2. In Fayoum, the 12 men sold only grade 2 tilapia, while only about half of the women sold this grade, about 40 percent grade 1, and the remainder grades 3 and 4. In Kafr El Sheikh, women sold common carp, while men seemed to prefer silver carp, while in Beheira this situation was reversed. Relatively more men also sold grade 1 mullet in Beheira.

The average morning selling price for a kilogram of tilapia was 11.6 Egyptian pounds, for catfish 11.2 Egyptian pounds and for mullet 21.7 Egyptian pounds on the day of last reported sale, and slightly higher during peak season — 12.2, 11.4 and 22.0 Egyptian pounds per kilogram, respectively. The average reduced selling price at the end of the day was 10.0, 10.4 and 20.0 Egyptian pounds per kilogram on the day of last reported sale, and 10.7, 10.7 and 20.3 Egyptian pounds per kilogram in peak season. This reduced price reflects loss of fish quality throughout the day.

**Share of respondents entering fish retail due to having few other options**



**Figure 3.** Share of respondents entering fish retail due to having few other options



The average purchase volume of tilapia was 57 kilograms per purchase per retailer in peak season; however, there are differences between the governorates. In El-Mineya and Fayoum, retailers bought smaller volumes than in the other governorates. There are also differences between men and women. In Sharqia, Fayoum and Beheira, men bought significantly more tilapia in each purchase than women. For the overall sample, this is 47 kilograms for women versus 80 kilograms for men. There were also significant differences between men and women in the proportion of fish that was sold at a reduced price: 20 percent and 16 percent for women, versus 12 percent and 11 percent for men on the last reported selling day and the peak season, respectively. Reasons for this latter gender difference need to be explored in more detail; it may be due to differential access to final consumers, so slower sales per day, or to a need to sell the fish more quickly in order to have sufficient time for other responsibilities.

For catfish and mullet, the average purchase volume was about 40 kilograms for each. While for catfish there is variation between

the governorates, there are no significant differences between men's and women's purchase volumes in the governorates. In Kafr El Sheikh, men retailers bought significantly more mullet than women retailers.

The data on sales and costs were used to calculate retailer margins and net profits (presented in Table 4). These calculations were based on peak season purchases, sales and costs. The costs include both variable costs, such as bags, transport, ice and market fees, and fixed costs such as equipment. The latter were based on capital depreciation estimates and sales frequencies. In Sharqia and El-Mineya, the margin of tilapia per kilogram — that is, price sold minus price bought — was significantly higher for women than for men, while in the other governorates no significant differences were found. The margins on tilapia were lowest in Fayoum at 0.66 Egyptian pounds per kilogram and highest in Kafr El Sheikh at 2.28 Egyptian pounds per kilogram (Table 4).

Across the aggregate sample, women earn less gross income than men on average, have smaller-scale enterprises (lower cost of fish purchased linked to lower volumes for some and different species mix), have lower variable costs and earn lower net profit (Table 4). These aggregate findings hide considerable variations between governorates. For example, monthly net profits during peak season are highly variable, with the highest level reported in Beheira, followed by Kafr El Sheikh. In these two districts, volumes of fish bought and sold per retailer were highest. The most significant differences in net profits between men and women were reported in El-Mineya, Fayoum and Beheira, with women reporting higher profits in the first governorate and lower profits in the latter two. The difference in El-Mineya was caused by two factors: First, women reported a higher margin per kilogram of tilapia (2.23 versus 1.66 Egyptian pounds per kilogram), and second, they reported a higher frequency of sales (18.5 versus 14.1 times per month). In Fayoum, women reported a lower volume per tilapia purchase (27.7 versus 35.8 kilograms), and a lower frequency of sales (16.2 versus 26.2 times per month), and in Beheira, the difference came from a significantly higher average volume of tilapia per purchase among men (75.26 versus 128.43 kilograms).

in El-Mineya having these difficulties versus less than 6 percent in Sharqia. In all governorates except for Kafr El Sheikh, there were also significant differences between responses of women and men retailers, with men experiencing more difficulties than women in Fayoum, El-Mineya and Beheira, and fewer in Sharqia. Fish being too expensive was the most important reason for these difficulties in Sharqia, Fayoum and Beheira, while the unavailability of good-quality fish was more important in El-Mineya and Kafr El Sheikh. Men and women in the same governorate also experienced different reasons for difficulties in obtaining the preferred fish.

In some governorates, poor consumers prefer buying smaller-sized fish (6–8 fish per kilogram) because these are more easily distributed to family members and more convenient to prepare. In cities and in better-off families, large-sized fish are preferred. Quality of fish for retailers in El-Mineya is likely also influenced by the distance fish has to travel before reaching the retailers, as there is very little aquaculture production in this governorate. As shown in Table 3, prices per kilogram of fish are lower in El-Mineya. This is likely due to the lower quality of fish being sold there.

The majority of both women and men fish retailers are directly involved in buying fish, signaling that mobility constraints do not significantly affect women fish retailers' ability to interact in markets. However, more women in El-Mineya (43 percent) and Kafr El Sheikh (15 percent) report having their spouses or other family members buy fish. Another important source of fish for women retailers in El-Mineya is fish caught or produced by family members. In Beheira and Sharqia, men retailers are more likely to have a trader come to them for their fish purchase than women retailers (44 percent for men versus 13 percent for women and 23 percent for men versus 3 percent for women, respectively). Whether this has to do with bargaining power or preference remains unclear.

Note that negative values were reported for Fayoum. This is due to the fact that smaller quantities are being traded in Fayoum, while variable costs are high,<sup>12</sup> especially compared to El-Mineya, where gross fish income is similar. In Fayoum, a relatively high proportion of fish is also wasted, stored or consumed — in terms of value, about 4 percent for Fayoum versus 2.8 percent for the entire sample — and average reported purchase price for retailers is higher in Fayoum (11.1 versus 9.9 Egyptian pounds per kilogram for tilapia) and margins lower (0.66 Egyptian pounds per kilogram versus 1.55 Egyptian pounds per kilogram for the entire sample).

### Fish purchases and preferences

Overall, 26 percent of respondents indicated having difficulties buying the type, quality or quantity of fish they wanted. There were, however, major differences between governorates, with 57 percent of respondents

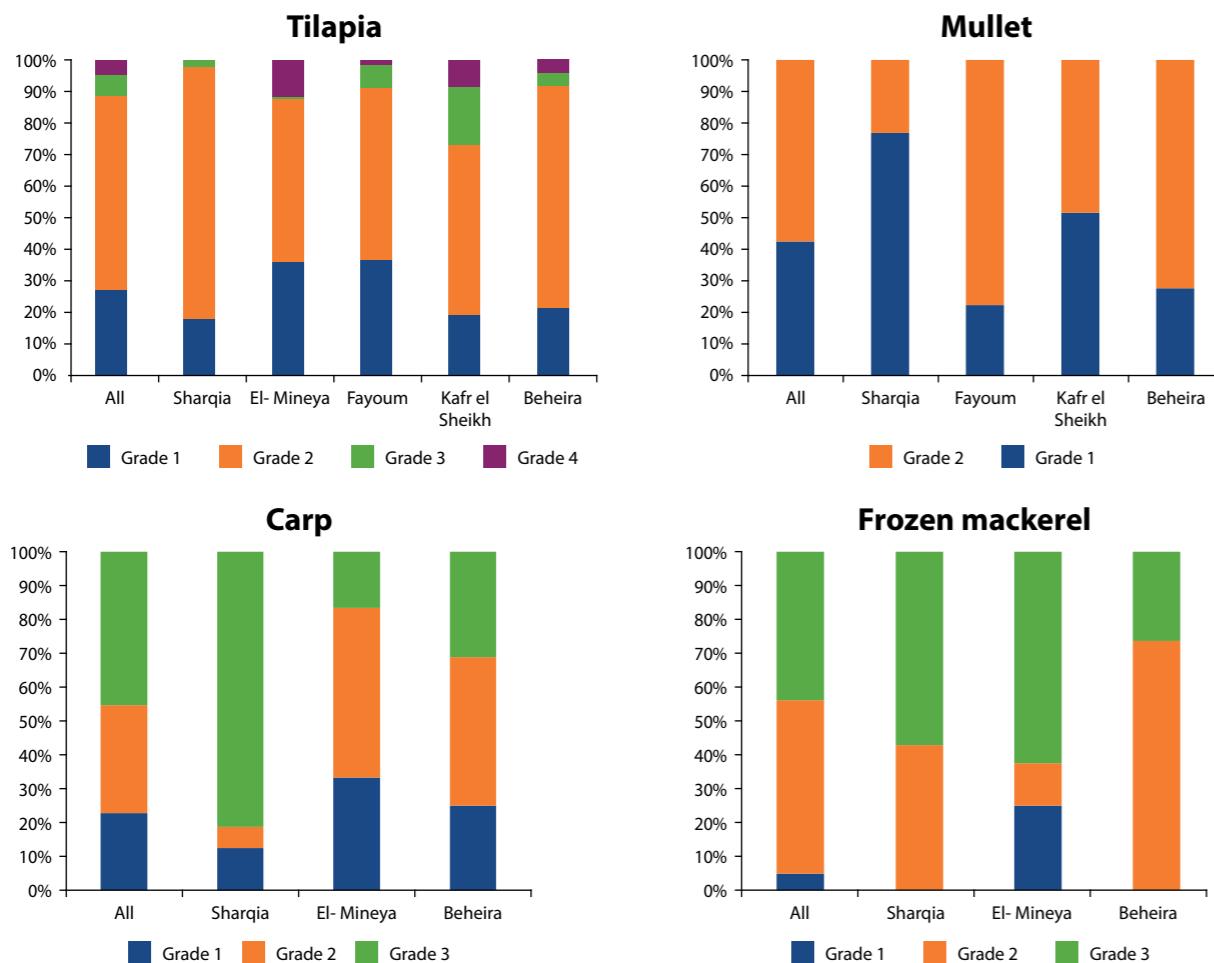


Figure 4. Grades of fish shown as share of respondents by governorate

	Share of retailers (%)				Volume (kg/day)*				Buying price/kg (Egyptian pounds)				High sales price/kg (Egyptian pounds)			
	Women	Men	All	Sig.	Women	Men	All	Sig.	Women	Men	All	Sig.	Women	Men	All	Sig.
<b>Tilapia</b>																
All	97.2	88.0	94.3	***	46.90	79.65	56.75	***	10.03	9.73	9.94		12.36	11.97	12.24	**
Sharqia	93.9	81.7	85.6	*	41.94	80.43	67.02	***	9.88	10.41	10.22	*	11.80	12.01	11.93	
El-Mineya	100.0	100.0	100.0		24.93	24.14	24.67		6.88	6.67	6.81		9.52	8.80	9.28	
Fayoum	99.5	100.0	99.5		27.71	35.83	28.19	**	11.05	11.75	11.09		13.12	14.08	13.18	*
Kafr El Sheikh	94.4	96.4	95.3		69.48	75.66	72.19		9.34	9.40	9.36		12.65	12.49	12.58	
Beheira	94.4	79.4	89.5	***	75.26	128.43	90.53	***	10.62	10.88	10.69		12.74	13.02	12.82	
<b>Catfish</b>																
All	16.6	19.1	17.4		43.27	33.04	39.65	**	9.13	9.73	9.35		11.23	11.78	11.43	
Sharqia	18.2	19.7	19.2		36.67	28.21	30.75		7.83	10.36	9.60		9.67	11.61	11.03	***
El-Mineya	11.4	14.3	12.4		15.00	19.00	16.54		8.31	9.40	8.73	***	10.25	11.60	10.77	
Kafr El Sheikh	25.0	34.5	29.1		29.44	28.68	29.05		10.25	9.58	9.91		12.89	12.26	12.57	
Beheira	36.6	11.8	28.6	***	53.17	60.63	54.17		9.02	9.25	9.05		10.99	11.06	11.00	
<b>Mullet</b>																
All	14.6	30.3	19.7	***	36.42	43.77	40.07	**	18.66	18.51	18.59		22.09	21.86	21.98	
Sharqia	0.0	18.3	12.5	***		33.85	33.85			14.31	14.31			17.08	17.08	
El-Mineya	1.6	50.0	4.5	***	16.67	17.50	17.22		19.33	27.00	24.44	***	21.33	29.83	27.00	***
Kafr El Sheikh	72.2	78.2	74.8		37.69	51.51	43.95	***	19.17	18.74	18.98		23.25	22.44	22.88	*
Beheira	13.4	16.2	14.3		36.05	39.55	37.33		17.16	17.91	17.43		19.05	20.91	19.73	

Note: Significance levels are \*\*\*, \*\*, \* for 0.01, 0.05 and 0.10 respectively.

**Table 3.** Volumes, buying price and selling price in peak season, by species, retailer's sex and governorate

	Women		Men		All		Sig.
	N	Mean	N	Mean	N	Mean	
<b>All</b>							
Gross income (value fish sold in Egyptian pounds/month)	494	15,910.29	228	29,927.13	722	20,336.66	***
Costs of fish purchase (Egyptian pounds/month)	494	13,331.51	228	25,739.23	722	17,249.74	***
Other variable costs (Egyptian pounds/month)	494	741.29	228	838.56	722	772.01	**
Capital depreciation (Egyptian pounds/month)	494	3.42	228	4.36	722	3.72	**
Net profit (Egyptian pounds/month)	494	1,797.63	228	3,344.97	722	2,286.26	***
<b>Sharqia</b>							
Gross income (value fish sold in Egyptian pounds/month)	33	16,302.42	69	26,451.96	102	23,168.28	**
Costs of fish purchase (Egyptian pounds/month)	33	13,406.06	69	23,812.90	102	20,445.98	***
Other variable costs (Egyptian pounds/month)	33	756.58	69	851.67	102	820.90	
Capital depreciation (Egyptian pounds/month)	33	2.66	69	4.54	102	3.93	
Net profit (Egyptian pounds/month)	33	1,591.67	69	1,782.85	102	1,721.00	
<b>El-Mineya</b>							
Gross income (value fish sold in Egyptian pounds/month)	70	5,288.71	34	3,478.09	104	4,696.78	**
Costs of fish purchase (Egyptian pounds/month)	70	3,862.14	34	2,840.81	104	3,528.25	
Other variable costs (Egyptian pounds/month)	70	164.53	34	204.03	104	177.44	
Capital depreciation (Egyptian pounds/month)	70	0.88	34	1.00	104	0.92	
Net profit (Egyptian pounds/month)	70	1,261.16	34	432.25	104	990.17	***
<b>Fayoum</b>							
Gross income (value fish sold in Egyptian pounds/month)	189	5,767.80	12	19,235.83	201	6,571.87	***
Costs of fish purchase (Egyptian pounds/month)	189	5,353.00	12	16,966.67	201	6,046.36	***
Other variable costs (Egyptian pounds/month)	189	653.93	12	652.92	201	653.87	
Capital depreciation (Egyptian pounds/month)	189	5.09	12	4.23	201	5.04	
Net profit (Egyptian pounds/month)	189	-244.22	12	1,612.02	201	-133.40	***
<b>Kafr El Sheikh</b>							
Gross income (value fish sold in Egyptian pounds/month)	63	28,665.44	50	29,159.05	113	28,883.85	
Costs of fish purchase (Egyptian pounds/month)	63	23,935.32	50	25,072.85	113	24,438.65	
Other variable costs (Egyptian pounds/month)	63	1,054.81	50	995.00	113	1,028.35	
Capital depreciation (Egyptian pounds/month)	63	2.76	50	4.25	113	3.42	
Net profit (Egyptian pounds/month)	63	3,672.55	50	3,086.95	113	3,413.44	
<b>Beheira</b>							
Gross income (value fish sold in Egyptian pounds/month)	139	29,175.95	63	50,653.37	202	35,874.36	***
Costs of fish purchase (Egyptian pounds/month)	139	24,125.00	63	42,406.75	202	29,826.73	***
Other variable costs (Egyptian pounds/month)	139	1,004.82	63	1,077.86	202	1,027.60	
Capital depreciation (Egyptian pounds/month)	139	2.91	63	6.08	202	3.90	***
Net profit (Egyptian pounds/month)	139	4,043.22	63	7,162.69	202	5,016.12	**

Note: Significance levels are \*\*\*, \*\*, \* for 0.01, 0.05 and 0.10, respectively.

**Table 4.** Monthly costs and net profits in peak season by sex and governorate (in Egyptian pounds)



## Market relationships and services

About 60 percent of the respondents bought all of their supply from the same suppliers, 14 percent did so for part of their supply, and 25 percent did so sometimes, while only 2 percent never did. Only in Fayoum was there a significant difference between women and men, with women more often buying from the same suppliers than men. There was also large variation between the governorates. The majority of women and men fish retailers buy from the same suppliers in Sharqia, El-Mineya and Beheira, while in Kafr El Sheikh there is a more even split between those buying some or all from the same suppliers. This finding for Kafr El Sheikh may be related to the scale of the fish market there and the large number of traders. In any event, this finding signals that strong relationships are built with suppliers. These relationships are informal, with the majority of women and men across governorates reporting having no contract with their supplier; only a small share of the total sample (15 percent), and more women than men (17 percent versus 9 percent) report having a verbal contract.

About 65 percent received credit from their supplier or suppliers, and in Fayoum, Kafr El Sheikh and Beheira this was more

frequently the case for women. The majority of respondents were of the opinion that buying price was not higher as a result of buying on credit. Overall, 92 percent of women that received credit indicated a repayment period of one day, 7 percent of a few days and 1 percent of a week. For men this division was 79 percent, 20 percent and 1 percent, respectively. Of all respondents receiving fish on credit, 45 percent indicated that they were obliged to buy from the same supplier while owing them credit. Higher shares of women than men in Sharqia, El-Mineya, Fayoum and Kafr El Sheikh report being unable to buy from another supplier when they owe credit, signaling that they feel more locked into supplier relationships in these circumstances than men. In Beheira, a higher share of men report this lack of choice.

Only about 22 percent of retailers provided value-added services to their customers, ranging from only 1 percent in Beheira to 43 percent in Fayoum. The most common service is cleaning or gutting of fish (77 percent of all respondents that provide services), followed by providing credit or delayed payment to customers (29 percent).



Women sell fish from a new marketplace in Fayoum, Egypt

## Use of earnings

The income earned from fish retailing is spent on a variety of items. The largest share of respondents spent the income on basic food, shelter and clothing for their family, health expenses, and personal consumption. However, there is variation between governorates and between men and women. In Sharqia, a significantly higher share of women retailers

used some of the money for education costs; in El-Mineya, this was done by a higher share of men. In Fayoum and Kafr El Sheikh, a larger share of men spent the income on personal consumption, while in Sharqia, this was done by the women (Table 5). In the Delta governorates, more women and men are able to put aside some of their earnings as savings compared to those in Upper Egypt, likely due to the large volume of fish sold.

	All				Sharqia			
	Women	Men	All	Sig.	Women	Men	All	Sig.
Basic food, shelter, clothing for family	99.2	96.7	98.4	**	100.0	98.6	99.0	
Savings	13.8	19.1	15.5	*	15.2	21.1	19.2	
Education	16.0	22.0	17.9	**	33.3	14.1	20.2	**
Health	86.0	82.2	84.8		81.8	78.9	79.8	
Large household items	26.6	16.6	23.4	***	18.2	15.5	16.3	
Bulk food (grains, etc.)	54.4	50.6	53.2		45.5	49.3	48.1	
New tools and equipment	8.5	7.9	8.3		15.2	4.2	7.7	*
Personal consumption	78.1	89.2	81.7	***	100.0	91.5	94.2	*
Other	1.6	2.5	1.9		0.0	0.0	0.0	
	El-Mineya				Fayoum			
	Women	Men	All	Sig.	Women	Men	All	Sig.
Basic food, shelter, clothing for family	100.0	91.4	97.1	**	98.4	100.0	98.5	
Savings	0.0	0.0	0.0		5.8	0.0	5.4	
Education	7.1	20.0	11.4	*	8.4	0.0	7.9	
Health	100.0	100.0	100.0		87.9	100.0	88.6	
Large household items	1.4	2.9	1.9		22.1	50.0	23.8	**
Bulk food (grains, etc.)	12.9	2.9	9.5		60.0	0.0	56.4	***
New tools and equipment	5.7	0.0	3.8		13.7	50.0	15.8	***
Personal consumption	98.6	100.0	99.0		65.3	100.0	67.3	**
Other	0.0	0.0	0.0		2.6	0.0	2.5	
	Kafr El Sheikh				Beheira			
	Women	Men	All	Sig.	Women	Men	All	Sig.
Basic food, shelter, clothing for family	98.6	96.4	97.6		100.0	97.1	99.0	**
Savings	18.1	29.1	22.8		28.9	22.1	26.7	
Education	63.9	61.8	63.0		2.1	2.9	2.4	
Health	91.7	85.5	89.0		74.6	70.6	73.3	
Large household items	23.6	10.9	18.1	*	48.6	23.5	40.5	***
Bulk food (grains, etc.)	47.2	65.5	55.1	**	73.2	73.5	73.3	
New tools and equipment	11.1	16.4	13.4		0.0	1.5	0.5	
Personal consumption	59.7	78.2	67.7	**	89.4	88.2	89.0	
Other	4.2	10.9	7.1		0.0	0.0	0.0	

Note: \*\*\*, \*\*, \* t-test significant at the 0.01, 0.05 and 0.10-level respectively.

Table 5. Use of earnings: Share of respondents (%)



## Work locations and conditions

Few fish retailers sell from secure locations, as evidenced by the numbers of women and men reporting lack of secure trading venue as a work-related constraint (Figure 5). Fewer respondents report this problem in Kafr El Sheikh, where there are more recognized fish marketplaces due to the scale of the industry there, and in Fayoum.

That said, it is Beheira where essentially all respondents report selling from a marketplace

(Table 6). In other sites, there is more variation, with a few selling from shops in Kafr El Sheikh and Sharqia, and most selling from either a market or a spot either on the street outside of the market or outside of the retailer's own home. The latter two sales locations are most prevalent in El-Mineya, where mobile vending is common. Significant gender differences in sales locations are present in Sharqia, Fayoum and El-Mineya. In Sharqia, more women than men sell outside of their home instead of in marketplaces, while in El-Mineya and Fayoum the reverse is true.

Share of retailers reporting insecure selling site as a constraint

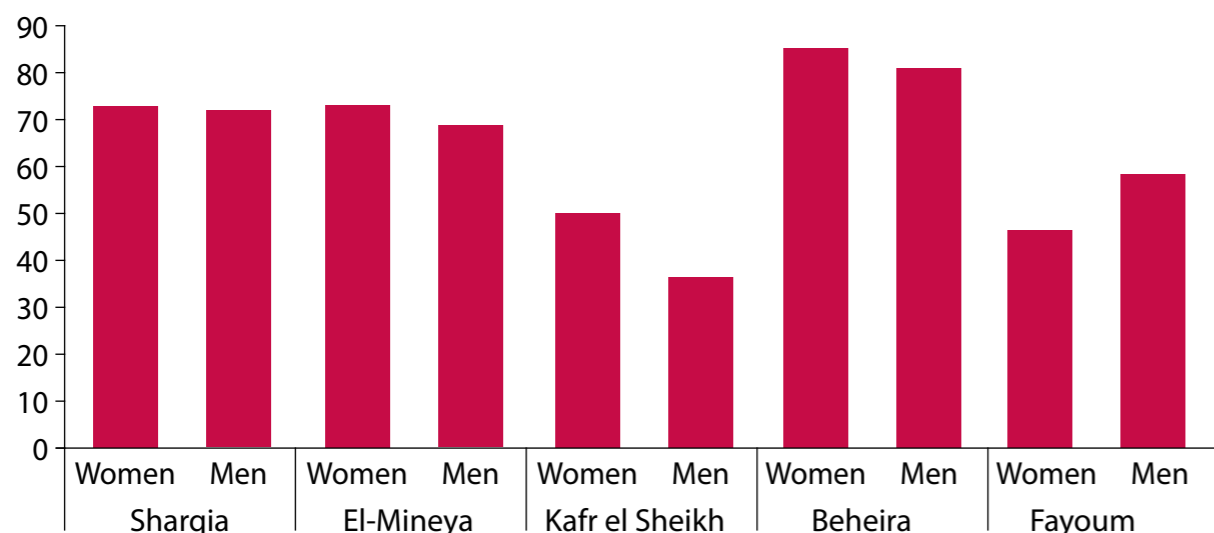


Figure 5. Share of retailers reporting insecure selling site as a constraint

	Sex	N	Market place	Shop	Street outside market	Street outside home
Sharqia***	Women	33	72.7	0	0	27.3
	Men	71	93	2.8	4.2	0
El-Mineya**	Women	70	35.7	0	52.9	11.4
	Men	35	14.3	0	48.6	37.1
Kafr El Sheikh	Women	72	72.2	2.8	25	0
	Men	55	70.9	7.3	20	1.8
Beheira	Women	142	99.3	0	0.7	0
	Men	68	100	0	0	0
Fayoum***	Women	190	83.2	0	16.3	0.5
	Men	12	58.3	0	25	16.7

**Note:** Significance levels are \*\*\*, \*\*, \* for 0.001, 0.01 and 0.05 respectively.

Table 6. Main sales location by share of respondents, sex and governorate

Among those not selling from their homes, almost all in Sharqia and Beheira sell within their home villages. The other three sites have more retailers — both women and men — selling in other villages, with this most prevalent in El-Mineya (60 percent of women and 77 percent of men selling outside the village). The prevalence of selling in one's home village has potential implications for earnings due to market saturation, and for the reach of fish to rural consumers living farther from sources of farmed or caught fish.

The informality of fish retail in rural Egypt is also reflected in workplace conditions, which are generally inadequate, though they vary across governorates; in Sharqia and El-Mineya, they also vary between women and men. Even in Kafr El Sheikh, the marketplaces in which respondent retailers work offer few amenities. The main benefit those in Kafr El Sheikh have is a covered marketplace, protecting them from direct sun. This is one of the more common "amenities" across governorates, though less so in El-Mineya, particularly among the few men retailers there. Beheira has among the poorest work conditions for both women and men, with few reporting access to toilets or running water or the presence of a concrete or tile floor. So even though essentially all respondents in Beheira sold from a marketplace, as in Kafr el Sheikh, this does not mean that they have access to basic services. Men in El-Mineya and women in Sharqia fare better than most, and even with that it is only about one-fifth to one-third who have access to toilets or running water, and few to none have an easily cleanable market surface. Significantly more men than women in Sharqia work from poorly provisioned sites in terms of toilets and water.

Fish storage containers include wash tubs, wooden boxes, and metal or plastic crates. Plastic crates are most common, used by the majority of women and men fish retailers in the Delta governorates and men in El-Mineya. Hygiene practices are not very good, likely in part due to the lack of facilities in sales locations. While a majority of women and men fish retailers across governorates report washing their fish containers regularly after use, in some governorates a considerable number still report never doing so — as many as 30 percent in Sharqia and 21 percent in Kafr El Sheikh. Among those who do wash their containers, most only use water, with no soap. Often, not even running water is used. Similarly, hand washing after handling fish is not very common. For example, in Sharqia the majority of men (62 percent) report never washing their hands after handling fish, while women are more likely to do so a few times per day (30 percent of women versus 16 percent of men). In El-Mineya, about 90 percent of both women and men report washing their hands after handling fish sometimes — meaning not every day — or never.

Overall, these results show that both men and women fish retailers work in poor conditions, with considerable scope for improvements that would enhance their well-being, hygiene practices and potentially their sales.

### Access to transport and cold storage services

Two key services supporting fish retail work are transport and access to ice to store fish while selling and longer term if unsold fish are kept overnight. Both women and men fish retailers in most governorates identify both of these services as constraints, as Figures 6 and 7 illustrate.



Wholesaler loading fish onto his truck at the WorldFish Research Center, Abbassa, Egypt



Retailers need to travel to the market in which they buy fish and then transport that fish to the places where they sell. The latter can be particularly challenging, as local minibuses used as public transport often do not want to carry retailers and their fish due to unwieldy containers and the smell of the fish. These public buses are used most often in Fayoum, Beheira and Kafr El Sheikh, with women in the latter location significantly more likely to take this form of transport than men. Motorized tricycles and nonrefrigerated trucks are other common means of transport. Finally, some fish retailers report walking as one mode of transport; this is most common in El-Mineya, where fish retailing is mobile instead of from fixed market locations. Significantly more women report walking in El-Mineya, and similarly in Beheira, though at much lower levels.

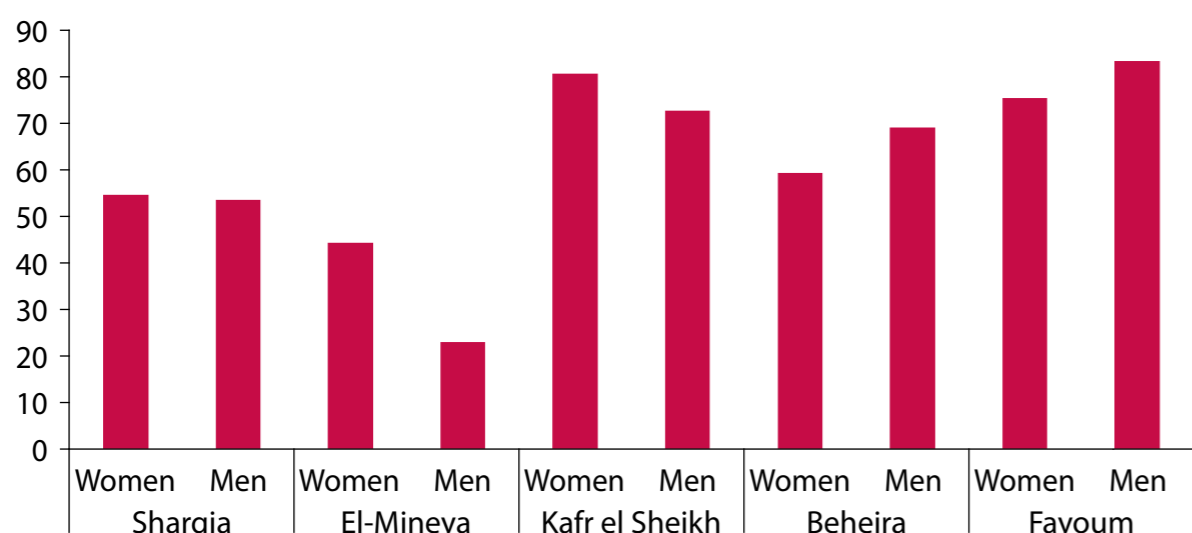
Over half — and in some governorates close to or more than three-quarters — of fish retailers report transport costs as a problem (Figure 6). In the focus group discussions in Sharqia, Fayoum and Beheira, these costs were reported to be 5–7 Egyptian pounds per day to reach the place where they sell fish — not necessarily including travel from home to the trader. In the focus group discussion in Beheira, some women also said that hiring a truck from the fish farm where they buy fish to the market could cost about 60 Egyptian pounds, which four participants said they split between themselves. It is only in El-Mineya, and more so among men, that transport costs are not reported to be a problem. This is in large part because from

50 to 60 percent of retailers buy fish from a trader who comes to them, so they do not incur transport costs.



Travel to buy fish and then on to the point of sale also takes time. Most retailers spend less than one hour in travel to the point of fish purchase,<sup>13</sup> with significantly more men in Sharqia and women in El-Mineya traveling from one to three hours. From point of purchase to point of sale, significantly more men in Sharqia and women in Beheira travel from one to three hours, with most traveling less than one hour. In Fayoum, almost 60 percent of the women fish retailers travel between one and three hours to their point of purchase and then again to the point of sale. Fish farms are a cheaper and more assured source of fish in Fayoum, but are distant from the women fish retailers' communities. Therefore, the women retailers invest significant time in traveling to buy fish.

**Share of respondents reporting transport costs as a constraint**



**Figure 6.** Share of respondents reporting transport costs as a constraint

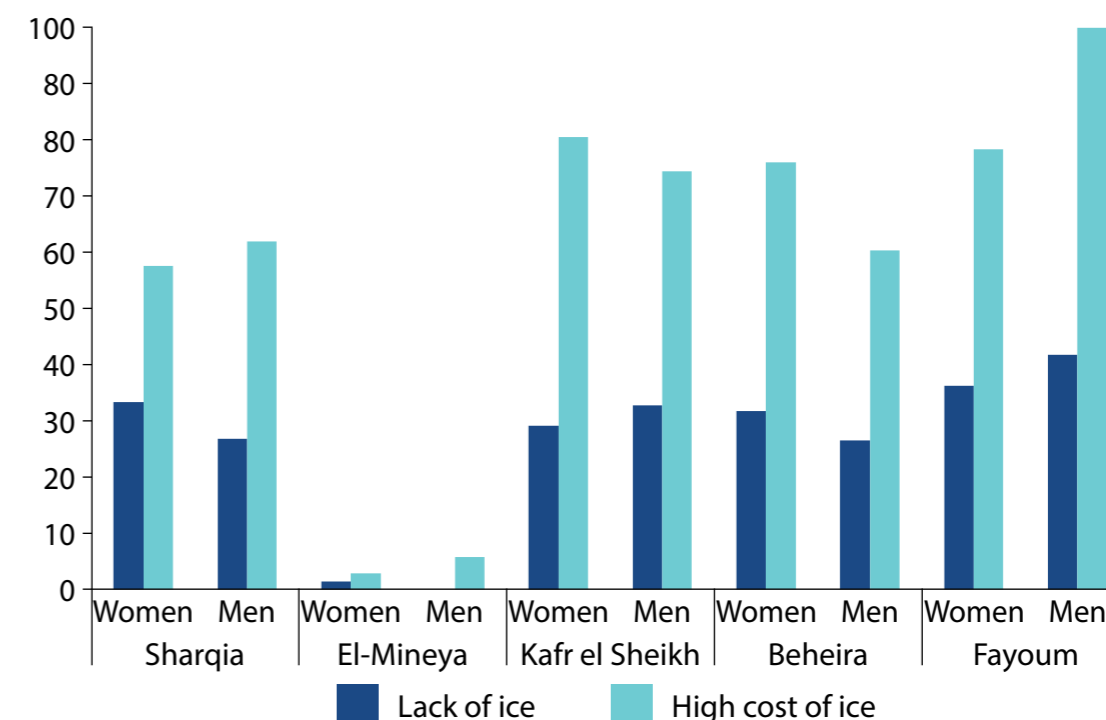
The cold chain and access to ice are important for fish retailers, improving product quality and durability, and potentially reducing wastage and risk of income loss. About one-third of both women and men fish retailers report lack of ice as a constraint, except in El-Mineya, where lack of ice is not reported to be a problem (Figure 7). The high cost of ice is even more of a constraint for both women and men, with a significant gender difference only in Beheira, where more women report it as a problem. The reason ice availability is not a problem in El-Mineya is because few retailers use it. With no difference by gender, 87 percent of retailers report transporting and storing fish during the day without ice. This may be due to the weight of ice, since mobile vending is common in El-Mineya. The lack of ice means fish must be sold that day; 94 percent of the retailers in El-Mineya report never storing unsold fish overnight. If aquaculture expands in El-Mineya and retailers begin to sell in greater volumes, then demand for ice may increase.

In the other governorates, fish are transported and kept during the day either live in water, on ice or without ice. The mix across these three differs more by governorate than by gender. Almost all women and men fish retailers in Kafr El Sheikh transport and keep fish on ice. In Fayoum, almost one-third of the women transport and sell fish live. In all governorates except El-Mineya, even if fish are not transported on ice, those not sold live are

kept on ice during the selling day. In the overall sample, there is a gender difference in monthly expenditure on ice in the four governorates where it is used, with women spending 208 Egyptian pounds on average per month in peak season and men spending 299 Egyptian pounds per month. However, this difference is driven mainly by low levels of spending among women in Fayoum. Mean levels of spending per month in each of the other three governorates using ice do not differ by gender.

These handling practices need to be understood in the context of the farmed fish supply chain, where the usual link between the fish farms and retailers is the wholesaler or transporter.<sup>14</sup> There are two types: wholesalers who specialize in transporting live fish and those who sell dead fish. "Live fish" wholesalers carry plastic drums and oxygen cylinders in their pickups or small trucks, while "dead fish" wholesalers simply use 25-kilogram-capacity plastic crates covered by a tarpaulin. Live fish transport is widespread in Fayoum, as wholesalers can sell at premium prices to urban markets in Cairo, whereas in other governorates the bulk of fish is sold dead. While most dead fish wholesalers add ice to the fish in their 25-kilogram plastic crates when they collect fish from fish farms, the amount is not enough to chill the fish below ambient temperatures. During warm weather, the fish spoil very quickly, so most wholesalers must sell their fish as soon as possible, preferably within the same day.

**Share of respondents reporting access to and cost of ice as constraints**



**Figure 7.** Share of respondents reporting access to and cost of ice as constraints

Men and women fish retailers are similar in their overnight fish storage behavior. The only gender difference is in Beheira, where significantly more women report never storing fish overnight and more men report always or sometimes doing so. In Sharqia, 40 percent of all respondent fish retailers report never storing fish, compared to 36 percent in Fayoum and 26 percent in Kafr El Sheikh. Those retailers who do store fish mainly do so for just one night, either on ice or in a refrigerator. Given the general challenges around maintaining fish quality, stored fish is likely to sell at lower prices.

*I buy the fish at high prices and sometimes I have to sell it at low prices to avoid keeping it till the next day.*

– Alia, a fish retailer in Fayoum

## Constraints and collaboration

This section analyzes work-related constraints beyond those already discussed, and the extent to which they differ by gender. It also examines the respondents' responses to questions about their interest in collaboration with other fish retailers in specific areas, to identify similarities and differences by gender. Both of these results together begin to point the way forward to gender-responsive initiatives to improve the quality and outcomes of fish retail work in rural Egypt.

As discussed previously, many women and men fish retailers identified the lack of a secure selling site as a constraint. Linked to this, in all but El-Mineya — where many retailers are mobile — and Kafr El Sheikh, close to or just more than half of women and men retailers report harassment from the public or police as a problem. Interestingly, both women and men respondents in Kafr el Sheikh report paying among the highest average amounts in monthly commissions and informal payments (185 Egyptian pounds) compared to the other governorates, perhaps in part explaining their relative lack of problem with harassment. However, the women respondents in Fayoum pay the most, at 213 Egyptian pounds per month on average, and half also report

harassment. Sharqia is the only site where there is a gender difference in the level of fees paid, with men paying on average 108 Egyptian pounds and women paying 58 Egyptian pounds per month. The focus group discussions with women fish retailers underscore the strain these fees cause in relation to the low margins retailers make. Women retailers in Sharqia, Beheira and Fayoum report paying 5 Egyptian pounds per day to the market owner for a place to sell, while in Kafr El Sheikh the participants said they paid 40 Egyptian pounds per week. However, if fined for selling outside of the market, they could pay as much as 1,000 Egyptian pounds.

The study asked whether various market characteristics were constraints; those related to demand, competition and market access were more generally reported to be challenges. Low demand for fish is a problem across governorates, with only men in Beheira less likely to report this compared to all others, and significantly less than women in that location. Related to this, competition between retailers and limited market access were also reported to be constraints by consistently large shares of women and men retailers. Few gender differences exist; more women than men in El-Mineya report competition to be a problem, while more women than men in Beheira report limited market access to be a constraint. Competition between fish retailers and being barred from selling in certain markets by established retailers were noted in the focus group discussion in Fayoum as challenges faced by both women and men retailers.

Supply constraints were less consistently reported. Irregular fish supply was most common in El-Mineya and among men in Beheira. "Too few traders" is not part of the supply problem according to most respondents; it is only in Kafr El Sheikh and Beheira where one-third to almost one-half of respondents noted this as a constraint, and there was no significant gender difference.

In focus group discussions in Sharqia and Kafr El Sheikh, women did report being unable to negotiate with traders about prices, so the balance of power in these relationships may be an issue. The earlier reported findings about the significant share of women and men who buy consistently from the same supplier, and women's lower likelihood of buying from another supplier when credit is owed, also indicate that these relationships may be unequal.

Finally, access to credit was not considered a problem among many women respondents in Upper Egypt or men in El-Mineya, while one-quarter to one-third of respondents in the Delta governorates and two-thirds of the 12 men in Fayoum reported credit constraints. The only gender differences were in Beheira and Fayoum, where more men found credit access problematic (Figure 8). In the focus group discussions, women did report that they found the need to have to pay for fish the next day, irrespective of whether they sold it all or not, a considerable strain.

Overall, then, the data on the constraints the retailers face show few gender differences, meaning that there is considerable similarity in perceived work-related challenges. The women focus group discussion participants, when asked specifically about problems women especially face, also largely concluded that apart from having to leave their children with family or neighbors, women and men fish retailers face similar challenges. El-Mineya differed slightly, in part due to the prevalence of mobile vending, where retailers sell directly to consumers at their homes. Women in the focus group discussion there reported that women were less able than men to go to homes to sell fish.

Share of respondents reporting lack of credit sources as a constraint

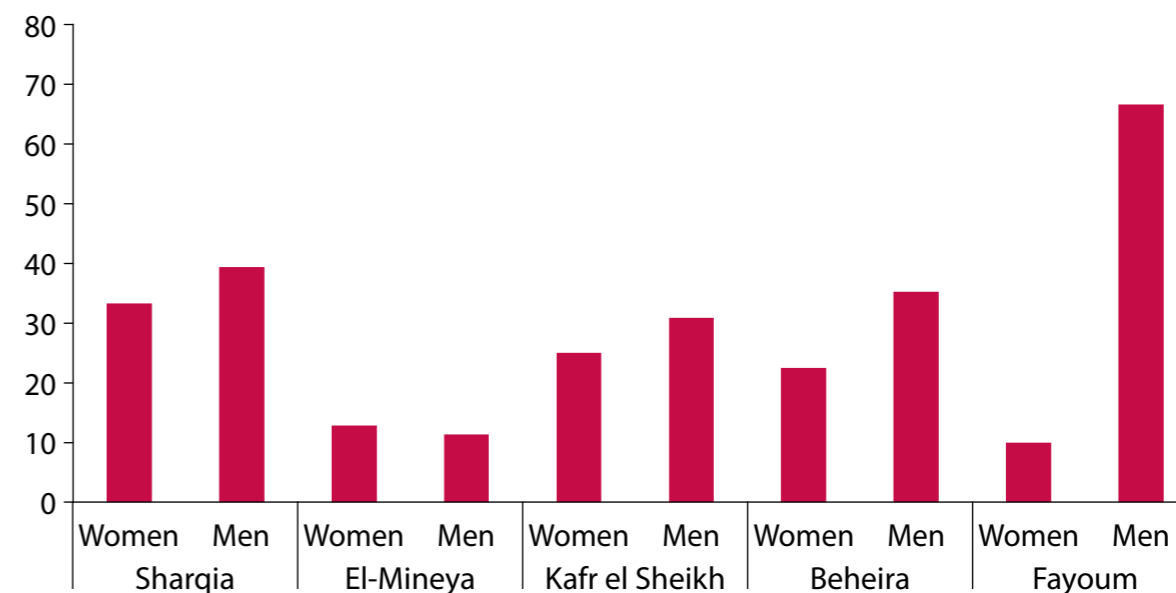


Figure 8. Share of respondents reporting lack of credit sources as a constraint



The similarities in challenges that women and men face can be the basis for collaboration among fish retailers to bring about mutually beneficial change. This action needs to come from motivation among the retailers to work together. Such motivation to cooperate with other fish retailers exists across the governorates, and is particularly high in Fayoum, Beheira and Kafr El Sheikh, with more than 90 percent of women in the latter location willing to collaborate (significantly more than the men; Table 7). Sharqia seems to be a place marked by individuality among the women fish retailers.<sup>15</sup> This is reflected in the lower shares of both women and men willing to collaborate compared to Fayoum, Beheira and Kafr El Sheikh. Also, fewer women and men in El-Mineya are willing to work together, with men significantly less interested than women.

In what areas do women and men report wanting to cooperate? Some clear priorities emerge (Table 7). Over 65 percent of women and men indicate wanting to collaborate in transporting and buying fish, across both gender and governorates. Selling fish and obtaining secure market space also received very high shares of “votes,” but in each case one governorate stood out where the retailers were less interested in cooperation. For selling fish, women and men in El-Mineya are far less interested, while for a secure sales location, fewer men and women in Kafr El Sheikh are interested in working together, although still more than half expressed interest. Sharing cold storage had more variable interest, while cooperating to obtain credit had the least interest, and was one of the few issues where there was evidence of gender differences. Women in El-Mineya and Beheira were significantly less likely than men to want to collaborate on this issue.

	Sharqia		El-Mineya		Kafr El Sheikh		Beheira		Fayoum	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
N	33	71	70	35	72	55	142	68	190	12
Interested in cooperating (%)	42.4	57.7	51.4	20.6**	91.5	78.2*	73.2	83.8	72.7	100
<b>Would like to cooperate in regard to:</b>										
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
N	14	41	36	7	65	43	104	57	128	12
Buying fish	85.7	68.3	91.7	85.7	68.7	72.1	69.2	70.2	83.5	66.7
Selling fish	64.3	65.9	22.9	14.3	71.6	76.7	71.2	66.7	68.1	66.7
Sharing cold storage	78.6	63.4	19.4	28.6	71.6	59.5	38.5	52.6	42.8	91.7***
Transporting fish	100.0	82.9	77.8	100.0	91.0	90.7	72.8	78.9	84.1	100.0
Obtaining credit	50.0	51.2	11.1	42.9**	37.3	46.5	28.8	52.6*	41.3	66.7
Obtaining secure market space	92.9	95.1	83.3	100	54.0	60.5	90.4	82.5	74.3	100.0*

**Note:** Significance levels are \*\*\*, \*\*, \* for 0.001, 0.01 and 0.05 respectively.

**Table 7.** Opportunities for cooperation

## CONCLUSIONS AND RECOMMENDATIONS: IMPROVING WORKING CONDITIONS FOR WOMEN AND MEN INFORMAL FISH RETAILERS

This study assesses how gender and informality intersect to affect the conditions and outcomes of work for women and men fish retailers in rural Egypt. Women and men work in the fish retail sector within a social context in which women’s roles in child care and homemaking are primary, and where economic need underlies women’s visible engagement in markets, loosening mobility constraints associated with purdah. Men are viewed as primary providers, and as their ability to fulfill this role improves, women’s income-generation role is expected to decline.

Norms about women’s role in caring for the family have a considerable influence on women’s work, and in fact, this role forms the largest gender-based constraint that women face. Women work on average fewer hours per day in fish retail than men, work more hours in domestic labor, and are more likely to report a conflict between fish retail work and domestic responsibilities. In focus group discussions with women fish retailers, the need to leave children with family or neighbors was identified as the main gender difference experienced.

That said, women’s fish retail enterprises tend to be of smaller scale than men’s. Women sell a narrower range of fish species and often buy lower volumes, leading to lower profits. This is not universal, however, with women retailers in Kafr El Sheikh earning profits on a similar scale as their male counterparts. Potential reasons for the gender differences in enterprise scale may be a mix of time and capital constraints. Women have less time per day to sell the fish they buy, and more women than men rely on credit to buy their lower volumes of fish. Therefore, even if they wish to buy higher volumes, credit constraints may be a barrier. Men also face credit constraints, with more men than women reporting this in all governorates except El-Mineya, and more men than women reporting interest in collaborating around credit access.

Time constraints may underlie the finding that women sell a larger amount of fish at reduced prices than men; they may do this to clear their stock quickly so they can return home to other duties. Lack of ice and the high cost of ice, reported by both women and men as problematic in most governorates, intensify the need to sell stock within a day.

In many ways, informality seems to be as large an influencing factor on conditions and outcomes of work in fish retail as gender is. Lack of secure vending sites, the cost of sitting fees and commissions for the spaces vendors do access, and lack of basic services in markets are significant problems for both women and men. Neither group has the legal status and representation through which to claim such rights. Access to affordable transport services is another common challenge, as well as high competition between retailers for a somewhat limited market.

Even with the recognition of competition as a problem, many women and men fish retailers appear willing to cooperate around some of these key constraints. These openings identify a number of recommendations for future engagement with women and men fish retailers to enhance the economic potential of their livelihood activity.

**Work with both women and men fish retailers in gender-responsive ways.** Among women and men fish retailers, economic need has loosened sex segregation norms, meaning that women have gained permission to work outside of the home, even in markets with men. This reality means that targeting either women or men for interventions to enhance work conditions and outcomes may be short-sighted and could foster conflict and jealousy, as well as reducing the potential for collective solidarity by excluding a large segment of fish retailers with shared economic interests. Given the cultural context, engaging with women and men retailers cannot be done in an ad hoc way. Interventions must be carefully planned to take account of, and act to slowly foster change in, the ways that gender norms affect different actors’ attitudes about and perceptions of appropriate opportunities for women and men, to ensure that both groups can fully participate and benefit.

**Enhance fish retailer voice and recognition.** Organizing women and men fish retailers is one important means to provide a platform for joint fish purchases and sales, as well as to enable them to gain a stronger voice to claim services from local government — in particular, secure space to vend that is accessible to women and men retailers and consumers and provisioned with what both women and men identify as the

minimal basic services. Any such organizations must be formed and developed through gender-responsive means that purposefully build women's confidence and voice so that they can articulate their specific needs and interests and participate on equal terms with men in realizing them. This may involve a planned process where women and men are first organized separately, to build confidence and self-efficacy among the women, before bringing them together for further action. Gaining women's participation in such activities may require first engaging with family members and community leaders to create an enabling environment for women's mobility and active involvement. A review of good practice in organizing informal women workers in the Middle East, North Africa and South Asia can inform such efforts.

**Address domestic responsibilities and time constraints.** One of the strongest gender-based constraints identified through the gender attitude questions was the understanding that domestic responsibilities are women's primary role. Challenging and changing this role allocation to foster greater sharing of domestic tasks and more choice for women regarding how to spend their time is a serious undertaking, relevant to gender equality goals cross-nationally. There is no easy fix. One technical option is to work with community development associations and local authorities in rural Egypt to enhance their provision of quality, affordable child care for poor working women. Strategic interventions aiming for longer-term shifts in norms and practices may emerge from engaging with ongoing efforts in the development community around care work. This issue has gained traction in recent development debates, leading to increased investment in research and toolkits, including Oxfam's Rapid Care Analysis ([www.oxfam.org.uk](http://www.oxfam.org.uk)). The analysis fosters discussions of the distribution of care work in rural communities, to explore how it impacts families and women. The aim is to increase the recognition of care work, reduce the burden of arduous tasks like collecting water, and redistribute responsibility for care within the family and between the state and the family.

**Engage with market systems to improve the provision of transport and cold storage services.** Transport and cold storage are two major constraints affecting women and men retailers' economic outcomes. Identifying ways to motivate existing service providers, and new suppliers if needed, to provide these needed services to fish retailers in pro-poor, gender-responsive ways is a sustainable approach to

addressing these problems. Replacing existing market actors with donor-funded interventions may lead to short-term success, but often at a small scale and with the risk that once the project is finished such solutions may not endure. Fostering connections with service providers and building understanding of shared interests through innovation platforms or participatory market chain development is one way forward. Such approaches must be designed and implemented in gender-responsive ways from the start to ensure that women can effectively participate.

**Pursue further research to better understand certain aspects of women and men fish retailers' relationships.** Finally, there is a need for further studies on aspects of informal fish retail that were not covered in this study. One such study would focus on the relationships between fish retailers and traders to understand their characteristics, whether and how gender affects the quality and characteristics of these relationships, and how to go about enhancing the bargaining position of women and men retailers in trader relations. Another study would delve into how the household roles and relationships of women and men fish retailers influence their work life, and vice versa. Such a study would investigate how family roles and responsibilities influence decisions about work. It would also consider how the experience of work, including the networks formed and income earned, affect intra-household relationships, including perceptions of women's and men's value and their negotiating power. Such a study would expand the conceptualization of value chain actors beyond their role as economic agents to capture the multiple dimensions of their identities as workers, parents and spouses and how these interrelate to affect work-related incentives and overall value chain performance. A third area of inquiry would be around better understanding the real preferences of poor and better-off consumers across rural and urban markets and whether the present structure of the value chain is able to meet those preferences. Finally, there is a need to better disaggregate data for urban and rural markets and understand the differences between them.

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## GLOSSARY OF TERMS

decent work	productive work in which rights are protected, which generates an adequate income, with adequate social protection; it is a key part of the International Labor Organization's agenda.
governorate	an administrative unit in Egypt; each governorate is administered by a governor, who is appointed by the president.
tricycle	a three-wheeled motorized vehicle, commonly used to transport people and goods, especially in rural areas
<i>bouri</i>	grey mullet
<i>tobar</i>	thin-lipped mullet
<i>bayad</i>	bagrus catfish

## LIST OF TABLES

Table 1.	Descriptive information about target governorates	7
Table 2.	Proposed and actual sample size	9
Table 3.	Volumes, buying price and selling price in peak season, by species, retailer's sex and governorate	18 – 19
Table 4.	Monthly costs and net profits in peak season by sex and governorate (in Egyptian pounds)	18 – 19
Table 5.	Use of earnings: Share of respondents (%)	21
Table 6.	Main sales location by share of respondents, sex and governorate	22
Table 7.	Opportunities for cooperation	28
Table 8.	Demographic characteristics of fish retailers and their households	35
Table 9.	Gender attitudes by share of respondents, by governorate	36 – 37
Table 10.	Intra-household decision-making, by share of respondents and governorate: Decisions about the use of your earnings	38 – 39
Table 11.	Intra-household decision-making, by share of respondents and governorate: Decisions about how to spend total household income	38 – 39
Table 12.	Intra-household decision-making, by share of respondents and governorate: Decisions about large household purchases	40 – 41
Table 13.	Share of respondents reporting help in fish retail business and source of help, by sex and governorate	40 – 41
Table 14.	Grades of fish sold by number and share of respondents, by governorate	42 – 43
Table 15.	Fish bought by number of respondents, man volume, buying and selling price in peak season by species, sex of retailer and governorate	44 – 45

## LIST OF FIGURES

Figure 1. Share of retailers by educational attainment	10
Figure 2. Share of respondents disagreeing with the statement	12
Figure 3. Share of respondents entering fish retail due to having few other options	14
Figure 4. Grades of fish shown as share of respondents by governorate	16
Figure 5. Share of retailers reporting insecure selling site as a constraint	22
Figure 6. Share of respondents reporting transport costs as a constraint	24
Figure 7. Share of respondents reporting access to and cost of ice as constraints	25
Figure 8. Share of respondents reporting lack of credit sources as a constraint	27

## ANNEX

Governorate	Sex	N	Age		Household size		Children <5		Children <15		Share of non workers in HH	
			mean	Std err	mean	Std err	mean	Std err	mean	Std err	mean	Std err
Sharqia	Women	33	33.7	1.70	4.4	0.33	0.67	0.15	1.97	0.26	0.46	0.04
	Men	71	32.8	1.20	4.2	0.19	0.65	0.10	1.65	0.16	0.66*	0.02
El-Mineya	Women	70	36.9	1.20	5.4	0.20	0.73	0.12	2.40	0.21	0.50	0.03
	Men	35	41.4	2.30	4.3*	0.34	0.60	0.14	1.50*	0.21	0.51	0.05
Kafr El Sheikh	Women	72	36.4	1.20	4.5	0.19	0.44	0.09	1.80	0.17	0.49	0.03
	Men	55	38.3	1.50	4.1	0.22	0.53	0.09	1.40	0.18	0.56	0.04
Beheira	Women	142	40.8	0.93	3.6	0.12	0.22	0.04	0.98	0.10	0.35	0.02
	Men	68	31.8**	1.00	4.2*	0.18	0.79**	0.11	1.5*	0.18	0.59**	0.03
Fayoum	Women	190	35.2	0.77	5.6	0.14	0.91	0.06	2.90	0.13	0.48	0.02
	Men	12	42.6*	2.30	5.4	0.47	NA		2.00	0.43	0.56	0.03
Total	Women	507	37.1		4.8		1.60		2.10		0.45	
	Men	241	35.5		4.3**		1.50		1.50**		0.59**	

Significance levels are \*\*, \* for 0.01 and 0.05 respectively.

**Table 8.** Demographic characteristics of fish retailers and their households



N	Sharqia		El-Mineya		Kafir El Sheikh		Beheira		Fayoum	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
	33	71	70	35	72	55	142	68	190	12
<b>It is acceptable for a married woman to have her own savings that she can spend as she wishes</b>										
Agree	48.5	28.2*	11.4	8.6	62.5	27.3***	50.0	47.1**	36.8	0.0*
Somewhat agree	45.5	42.3	47.1	65.7	12.5	36.4	43.0	29.4	13.2	8.3
Disagree	6.1	29.6	41.4	25.7	25.0	36.4	7.0	23.5	50.0	91.7
<b>Husband and wife should decide together on how to spend money</b>										
Agree	57.6	32.4*	91.4	85.7	80.6	63.6	53.5	64.7	70.5	100.0
Somewhat agree	42.4	63.4	8.6	14.3	15.3	27.3	38.7	27.9	25.3	0.0
Disagree	0.0	4.2	0.0	0.0	4.2	9.1	7.7	7.4	4.2	0.0
<b>Men can take care of children just as well as women can</b>										
Agree	18.2	11.3	7.1	5.7	15.3	9.1	30.3	7.4***	20.0	25.0
Somewhat agree	45.5	43.7	21.4	8.6	6.9	12.7	40.1	44.1	13.2	16.7
Disagree	36.4	45.1	71.4	85.7	77.8	78.2	29.6	48.5	66.8	58.3
<b>Women's work is not as tiring as men's work</b>										
Agree	36.4	52.1*	21.4	22.9	19.4	47.3***	35.2	33.8	27.4	50.0
Somewhat agree	24.2	32.4	45.7	37.1	8.3	32.7	27.5	33.8	38.9	16.7
Disagree	39.4	15.5	32.9	40.0	72.2	20.0	37.3	32.4	33.7	33.3
<b>It is embarrassing for a man to help his wife with household work</b>										
Agree	24.2	33.8	61.4	51.4	26.4	38.2	35.2	29.4	43.7	41.7**
Somewhat agree	42.4	49.3	21.4	25.7	20.8	23.6	40.1	41.2	18.9	58.3
Disagree	33.3	16.9	17.1	22.9	52.8	38.2	24.6	29.4	37.4	0.0
<b>It is not acceptable for a married woman to work outside of the home if her husband is earning enough for the family</b>										
Agree	54.5	69.0	68.6	54.3	79.2	85.5	40.8	52.9*	73.7	100.0
Somewhat agree	24.2	25.4	11.4	22.9	11.1	9.1	34.5	39.7	15.3	0.0
Disagree	21.2	5.6	20.0	22.9	9.7	5.5	24.6	7.4	11.1	0.0
<b>Women have the same right as men to work outside of the home</b>										
Agree	27.3	5.6**	51.4	51.4	37.5	10.9***	58.5	17.6***	28.9	8.3
Somewhat agree	51.5	50.7	34.3	22.9	33.3	23.6	34.5	54.4	27.4	16.7
Disagree	21.2	43.7	14.3	25.7	29.2	65.5	7.0	27.9	43.7	75.0
<b>Women are capable to be community leaders</b>										
Agree	42.4	7.0***	37.1	22.9	51.4	12.7***	53.5	20.6***	34.7	16.7**
Somewhat agree	42.4	56.3	21.4	25.7	34.7	30.9	31.0	48.5	23.7	66.7
Disagree	15.2	36.6	41.4	51.4	13.9	56.4	15.5	30.9	41.6	16.7
<b>A woman cannot leave the home without the permission of her husband</b>										
Agree	84.8	94.4	82.9	80.0	91.7	87.3	83.1	89.7	80.0	91.7
Somewhat agree	12.1	4.2	1.4	0.0	1.4	7.3	15.5	10.3	7.4	0.0
Disagree	3.0	1.4	15.7	20.0	6.9	5.5	1.4	0.0	12.6	8.3
<b>Women are capable of making important decisions by themselves</b>										
Agree	63.6	36.6*	47.1	11.4***	33.3	7.3***	56.3	33.6**	24.2	8.3*
Somewhat agree	30.3	46.5	45.7	71.4	50.0	36.4	28.9	52.9	36.8	16.7
Disagree	6.1	16.9	7.1	17.1	16.7	56.4	14.8	13.2	38.9	75.0

Significance levels are \*\*\*, \*\*, \* for 0.001, 0.01 and 0.05 respectively.

**Table 9.** Gender attitudes by share of respondents, by governorate

N	Sharqia		El-Mineya		Kafr El Sheikh		Beheira		Fayoum	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
	33	71	70	35	72	55	142	68	190	12
<b>Consulted?</b>										
Always	66.7	91.5***	91.4	100	72.2	87.3	83.1	98.5***	77.4	100
Sometimes	33.3	8.5	4.8	0.0	23.6	12.7	16.9	1.5	21.1	0.0
Never	0.0	0.0	1.4	0.0	4.2	0.0	0.0	0.0	1.6	0.0
<b>Participate in final decision?</b>										
Always	57.6	90.1***	32.9	100***	51.4	92.7***	81.0	98.5***	52.6	100**
Sometimes	42.4	9.9	64.3	0.0	41.7	7.3	19.0	1.5	44.7	0.0
Never	0.0	0.0	2.9	0.0	6.9	0.0	0.0	0.0	2.6	0.0
<b>In case of disagreement, whose opinion prevails?</b>										
Respondent	21.2	94.4***	10.0	100***	29.2	94.5***	52.1	95.6***	14.2	100***
Spouse	78.8	1.4	90.0	0.0	63.9	1.8	47.2	0.0	85.8	0.0
Other HH female	0.0	1.4	0.0	0.0	1.4	0.0	0.7	0.0	0.0	0.0
Other HH male	0.0	2.8	0.0	0.0	5.8	3.6	0.0	4.4	0.0	0.0

Significance levels are \*\*\*, \*\*, \* for 0.001, 0.01 and 0.05 respectively.

**Table 10.** Intra-household decision-making, by share of respondents and governorate: Decisions about the use of your earnings

N	Sharqia		El-Mineya		Kafr El Sheikh		Beheira		Fayoum	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
	33	71	70	35	72	55	142	68	190	12
<b>Consulted?</b>										
Always	69.7	88.7*	74.3	97.1*	59.7	80.0*	69.7	89.7***	73.7	91.7
Sometimes	30.3	9.9	24.3	2.9	37.5	20.0	30.3	10.3	25.3	8.3
Never	0.0	1.4	1.4	0.0	2.8	0.0	0.0	0.0	1.1	0.0
<b>Participate in final decision?</b>										
Always	57.6	85.9**	27.1	97.1***	43.1	89.1***	69.7	88.2**	52.1	100**
Sometimes	42.4	12.7	70.0	2.9	52.8	10.9	30.3	11.8	46.3	0.0
Never	0.0	1.4	2.9	0.0	4.2	0.0	0.0	0.0	1.6	0.0
<b>In case of disagreement, whose opinion prevails?</b>										
Respondent	18.2	85.9***	11.4	94.3***	30.6	94.5***	31.0	83.8***	12.6	100***
Spouse	81.8	2.8	88.6	0.0	62.5	1.8	65.5	0.0	87.4	0.0
Other HH female	0.0	2.8	0.0	0.0	1.4	0.0	0.0	1.5	0.0	0.0
Other HH male	0.0	8.5	0.0	5.7	5.6	3.6	3.5	14.7	0.0	0.0

Significance levels are \*\*\*, \*\*, \* for 0.001, 0.01 and 0.05 respectively.

**Table 11.** Intra-household decision-making, by share of respondents and governorate: Decisions about how to spend total household income



N	Sharqia		El-Mineya		Kafr El Sheikh		Beheira		Fayoum	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
	33	71	70	35	72	55	142	68	190	12
<b>Consulted?</b>										
Always	66.7	85.9*	67.1	91.4*	66.7	89.1**	77.5	83.8**	75.8	41.7*
Sometimes	33.3	14.1	30.0	8.6	29.2	5.5	22.5	11.8	23.7	58.3
Never	0.0	0.0	2.9	0.0	4.2	5.5	0.0	4.4	0.5	0.0
<b>Participate in final decision?</b>										
Always	60.6	81.7*	20.0	97.1***	61.1	85.5**	76.8	82.4***	64.7	100*
Sometimes	39.4	18.3	71.4	2.9	30.6	9.1	23.2	10.3	33.2	0.0
Never	0.0	0.0	8.6	0.0	6.3	5.5	0.0	7.4	2.1	0.0
<b>In case of disagreement, whose opinion prevails?</b>										
Respondent	18.2	88.7***	8.6	91.4***	33.3	90.9***	39.4	83.8***	13.2	100***
Spouse	81.8	0.0	91.4	0.0	58.3	3.6	57.7	0.0	85.8	0.0
Other HH female	0.0	2.8	0.0	0.0	1.4	0.0	1.4	4.4	0.5	0.0
Other HH male	0.0	8.5	0.0	8.6	6.9	5.5	1.4	11.8	0.5	0.0

Significance levels are \*\*\*, \*\*, \* for 0.001, 0.01 and 0.05 respectively.

**Table 12.** Intra-household decision-making, by share of respondents and governorate: Decisions about large household purchases

N	Sharqia		El-Mineya		Kafr El Sheikh		Beheira		Fayoum	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
	33	71	70	35	72	55	142	68	190	12
Help received?	57.6	45.1	70.0	77.1	76.4	47.3**	64.8	70.6	72.1	100*
<b>Help from: N</b>										
19	32	49	27	55	26	92	48	137	12	
Child	31.6	15.6	26.5	11.1	32.7	19.2	16.3	0.0**	51.1	0.0***
Spouse	63.2	87.5*	67.3	96.3**	43.6	84.6***	50.0	77.1**	13.9	91.7***
Other female in HH	26.3	12.5	75.5	25.9***	49.1	19.2**	44.6	18.8**	46.7	50.0
Other male in HH	10.5	3.1	32.7	11.1*	23.6	26.9	13.0	16.7	16.8	16.7

Significance levels are \*\*\*, \*\*, \* for 0.001, 0.01 and 0.05 respectively.

**Table 13.** Share of respondents reporting help in fish retail business and source of help, by sex and governorate

	All		Sharqia		El-Mineya		Fayoum		Kafr El Sheikh		Beheira		Sig.
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
<b>Tilapia</b>	<b>701</b>	<b>100.0</b>	<b>89</b>	<b>100.0</b>	<b>105</b>	<b>100.0</b>	<b>201</b>	<b>100.0</b>	<b>120</b>	<b>100.0</b>	<b>186</b>	<b>100.0</b>	<b>***</b>
Grade 1	191	27.3	16	18.0	38	36.2	74	36.8	23	21.5	40	21.5	
Grade 2	430	61.3	71	79.8	54	51.4	109	54.2	65	70.4	131	70.4	
Grade 3	47	6.7	2	2.3	1	1.0	15	7.5	22	3.8	7	3.8	
Grade 4	33	4.7	0	0.0	12	11.4	3	1.5	10	4.3	8	4.3	
<b>Catfish</b>	<b>133</b>	<b>100.0</b>	<b>19</b>	<b>100.0</b>	<b>13</b>	<b>100.0</b>			<b>39</b>	<b>100.0</b>	<b>62</b>	<b>100.0</b>	
Dead	131	98.5	18	94.7	13	100.0			39	100.0	61	98.4	
Alive	2	1.5	1	5.3	0	0.0			0	0.0	1	1.6	
<b>Mullet</b>	<b>144</b>	<b>100.0</b>	<b>13</b>	<b>100.0</b>			<b>9</b>	<b>100.0</b>	<b>93</b>	<b>100.0</b>	<b>29</b>	<b>100.0</b>	<b>**</b>
Grade 1	61	42.4	10	76.9			2	22.2	48	51.6	8	27.6	
Grade 2	83	57.6	3	23.1			7	77.8	45	48.4	21	72.4	
<b>Carp</b>	<b>44</b>	<b>100.0</b>	<b>16</b>	<b>100.0</b>					<b>12</b>	<b>100.0</b>	<b>16</b>	<b>100.0</b>	<b>***</b>
Common	10	22.7	2	12.5					4	33.3	4	25.0	
Silver	14	31.8	1	6.3					6	50.0	7	43.8	
Grass	20	45.5	13	81.3					2	16.7	5	31.3	
<b>Mackerel</b>	<b>41</b>	<b>100.0</b>	<b>14</b>	<b>100.0</b>					<b>8</b>	<b>100.0</b>	<b>19</b>	<b>100.0</b>	<b>***</b>
Grade 1	2	4.9	0	0.0					2	25.0	0	0.0	
Grade 2	21	51.2	6	42.9					1	12.5	14	73.7	
Grade 3	18	43.9	8	57.1					5	62.5	5	26.3	
<b>Sardines</b>	<b>21</b>	<b>100.0</b>	<b>4</b>	<b>100.0</b>					<b>4</b>	<b>100.0</b>	<b>13</b>	<b>100.0</b>	
Grade 1	2	9.5	1	25.0					1	25.0	0	0.0	
Grade 2	12	57.1	1	25.0					1	25.0	10	76.9	
Grade 3	7	33.3	2	50.0					2	50.0	3	23.1	
<b>Other fish</b>	<b>45</b>	<b>100.0</b>	<b>13</b>	<b>100.0</b>			<b>7</b>	<b>100.0</b>	<b>5</b>	<b>100.0</b>	<b>20</b>	<b>100.0</b>	<b>*</b>
Grade 1	2	4.4	0	0.0			1	14.3	1	20.0	0	0.0	
Grade 2	22	48.9	5	38.5			2	28.6	1	20.0	14	70.0	
Grade 3	19	42.2	8	61.5			4	57.1	3	60.0	4	20.0	
Grade 4	2	4.4	0	0.0			0	0.0	0	0.0	2	10.0	

**Note:** This shows the significance of the Pearson's chi-squared statistic for the hypothesis-test that the grades do not depend on the governorates. Significance levels are \*\*\*, \*\*, \* for 0.01, 0.05 and 0.10 respectively. A significant value means the hypothesis should be rejected.

**Table 14.** Grades of fish sold by number and share of respondents, by governorate



	Women retailers					Men retailers					All retailers					t-test share	t-test volume	t-test price 1	t-test price 2
	Number	Share of retailers	Volume (kg/day)#	Buying price/kg (EGP)	High sales price/kg (EGP)	Number	Share of retailers	Volume (kg/day)#	Buying price/kg (EGP)	High sales price/kg (EGP)	Number	Share of retailers	Volume (kg/day)#	Buying price/kg (EGP)	High sales price/kg (EGP)				
<b>All</b>																			
Tilapia	493	0.972	46.90	10.03	12.36	212	0.880	79.65	9.73	11.97	705	0.943	56.75	9.94	12.24	***	***		**
Catfish	84	0.166	43.27	9.13	11.23	46	0.191	33.04	9.73	11.78	130	0.174	39.65	9.35	11.43		**		
Mullet	74	0.146	36.42	18.66	22.09	73	0.303	43.77	18.51	21.86	147	0.197	40.07	18.59	21.98	***	**		
Carp	27	0.053	27.41	9.13	11.43	11	0.046	28.36	9.95	12.18	38	0.051	27.68	9.37	11.64				
Mackerel	9	0.018	40.56	11.94	13.89	34	0.141	71.91	12.46	15.07	43	0.057	65.35	12.35	14.83	***	*		
Sardines	4	0.008	28.00	8.13	10.25	17	0.071	48.82	10.18	12.24	21	0.028	44.86	9.79	11.86	***	*		
Other	11	0.022	20.09	15.27	17.73	35	0.145	43.91	10.56	12.94	46	0.061	38.22	11.68	14.09	***	***	***	**
<b>Sharqia</b>																			
Tilapia	31	0.939	41.94	9.88	11.80	58	0.817	80.43	10.41	12.01	89	0.856	67.02	10.22	11.93	*	***	*	
Catfish	6	0.182	36.67	7.83	9.67	14	0.197	28.21	10.36	11.61	20	0.192	30.75	9.60	11.03				***
Mullet	0	0.000				13	0.183	33.85	14.31	17.08	13	0.125	33.85	14.31	17.08	***			
Carp	11	0.333	27.73	8.50	10.64	2	0.028	27.50	9.75	12.50	13	0.125	27.69	8.69	10.92	***			
Mackerel	1	0.030	25.00	10.50	12.00	14	0.197	65.00	13.00	14.89	15	0.144	62.33	12.83	14.70	**			
Sardines	1	0.030	20.00	10.00	12.00	3	0.042	60.00	11.00	12.33	4	0.038	50.00	10.75	12.25				
Other	0	0.000				14	0.197	44.07	9.29	11.07	14	0.135	44.07	9.29	11.07	***			
<b>El-Mineya</b>																			
Tilapia	70	1.000	24.93	6.88	9.52	35	1.000	24.14	6.67	8.80	105	1.000	24.67	6.81	9.28				
Catfish	8	0.114	15.00	8.31	10.25	5	0.143	19.00	9.40	11.60	13	0.124	16.54	8.73	10.77			***	
<b>Fayoum</b>																			
Tilapia	190	0.995	27.71	11.05	13.12	12	1.000	35.83	11.75	14.08	202	0.995	28.19	11.09	13.18		**		*
Mullet	3	0.016	16.67	19.33	21.33	6	0.500	17.50	27.00	29.83	9	0.045	17.22	24.44	27.00	***		***	***
Other	5	0.026	6.20	20.00	22.80	1	0.083	5.00	30.00	35.00	6	0.030	6.00	21.67	24.83				
<b>Kafr El Sheikh</b>																			
Tilapia	68	0.944	69.48	9.34	12.65	53	0.964	75.66	9.40	12.49	121	0.953	72.19	9.36	12.58				
Catfish	18	0.250	29.44	10.25	12.89	19	0.345	28.68	9.58	12.26	37	0.291	29.05	9.91	12.57				
Mullet	52	0.722	37.69	19.17	23.25	43	0.782	51.51	18.74	22.44	95	0.748	43.95	18.98	22.88		***		*
Carp	4	0.056	21.25	8.75	11.38	5	0.091	22.40	8.00	10.60	9	0.071	21.89	8.33	10.94				
Mackerel	4	0.056	42.50	12.50	14.75	5	0.091	27.00	11.00	15.00	9	0.071	33.89	11.67	14.89				
Sardines	3	0.042	30.67	7.50	9.67	1	0.018	10.00	8.00	10.00	4	0.031	25.50	7.63	9.75				
Other	3	0.042	23.33	11.00	14.67	3	0.055	36.67	10.44	11.33	6	0.047	30.00	11.17	13.00				
<b>Beheira</b>																			
Tilapia	134	0.944	75.26	10.62	12.74	54	0.794	128.43	10.88	13.02	188	0.895	90.53	10.69	12.82	***	***		
Catfish	52	0.366	53.17	9.02	10.99	8	0.118	60.63	9.25	11.06	60	0.286	54.17	9.05	11.00	***			
Mullet	19	0.134	36.05	17.16	19.05	11	0.162	39.55	17.91	20.91	30	0.143	37.33	17.43	19.73				
Carp	12	0.085	29.17	9.83	12.17	4	0.059	36.25	12.50	14.00	16	0.076	30.94	10.50	12.63				
Mackerel	4	0.028	42.50	11.75	13.50	15	0.221	93.33	12.43	15.27	19	0.090	82.63	12.29	14.89	***	*		
Sardines	0	0.000				13	0.191	49.23	10.15	12.38	13	0.062	49.23	10.15	12.38	***			
Other	3	0.021	40.00	11.00	12.33	17	0.250	47.35	10.44	13.47	20	0.095	46.25	10.53	13.30	***			
#Is the mean volume of those that buy this species only. Significance levels are ***, **, * for 0.01, 0.05 and 0.10 respectively.																			

**Table 15.** Fish bought by number of respondents, mean volume, buying and selling price in peak season by species, sex of retailer and governorate

- <sup>1</sup> Macfadyen, G., Allah, A.M.N., Kenawy, D.A.R., Ahmed, M.F.M., Hebicha, H., Diab, A., Hussein, S.M., Abouzied, R.M., and El-Naggar, G. (2011). Value-chain analysis of Egyptian aquaculture. Project report 2011-54. Penang, Malaysia: WorldFish.
- <sup>2</sup> Ibid.
- <sup>3</sup> Governorates are administrative units administered by governors, who are appointed by the president.
- <sup>4</sup> Chen, M.A., Vanek, J., and Carr, M. (2004). Mainstreaming informal employment and gender in poverty reduction. London: The Commonwealth Secretariat.
- <sup>5</sup> Wahba, J. (2009). Informality in Egypt: A stepping stone or a dead end? Working Paper 456. Cairo: Economic Research Forum; el Mahdi, A., and Rashed, A. (2007). The changing economic environment and the development of the micro and small enterprises in Egypt 2006. Working Paper 706. Cairo: Economic Research Forum.
- <sup>6</sup> Chen, M.A., Vanek, J., and Carr, M. (2004). Mainstreaming informal employment and gender in poverty reduction. London: The Commonwealth Secretariat; Kabeer, N. (2008). Mainstreaming gender in social protection for the informal economy. London: The Commonwealth Secretariat; Chant, S., and Pedwell, C. (2008). Women, gender and the informal economy: An assessment of ILO research and suggested ways forward. Geneva: International Labour Organization; ILO [International Labour Organization]. (2013). Promoting women's empowerment: A gendered pathway out of informality. In *The informal economy and decent work: A policy resource guide*, section 6.1. Geneva: International Labour Organization.
- <sup>7</sup> ILO [International Labour Organization]. (2013). Street vendors: Innovations in regulatory support. In *The informal economy and decent work: A policy resource guide*, section 4.3b. Geneva: International Labour Organization.
- <sup>8</sup> ILO [International Labour Organization]. (2013). Street vendors: Innovations in regulatory support. In *The informal economy and decent work: A policy resource guide*, section 4.3b. Geneva: International Labour Organization; Trebilcock, A. (2005). Decent work and the informal economy. Discussion Paper 2005/04. Helsinki: UNU WIDER; Chen, M.A., Vanek, J., and Carr, M. (2004). Mainstreaming informal employment and gender in poverty reduction. London: The Commonwealth Secretariat.
- <sup>9</sup> Chen, M.A., Vanek, J., and Carr, M. (2004). Mainstreaming informal employment and gender in poverty reduction. London: The Commonwealth Secretariat; Kabeer, N. (2008). Mainstreaming gender in social protection for the informal economy. London: The Commonwealth Secretariat; ILO [International Labour Organization]. (2013). Promoting women's empowerment: A gendered pathway out of informality. In *The informal economy and decent work: A policy resource guide*, section 6.1. Geneva: International Labour Organization; Kantor, P. (2003). Women's empowerment through homebased work: Evidence from India. *Development and Change* 34(3): 425–445.
- <sup>10</sup> Official 2007 figures as reported in Egypt Human Development Report 2010. It is understood that these figures have increased in 2011 as a result of political upheaval and social instability in Egypt and the wider Arab region, notably in Libya, where many Egyptian laborers worked.

- <sup>11</sup> ILO [International Labour Organization]. (2002). Decent work and the informal economy. Report VI, International Labour Conference, 90th Session, International Labour Organization, Geneva.
- <sup>12</sup> Higher prices for fish in Fayoum were also identified along the whole value chain in the 2011 value chain analysis (Macfadyen, G., Allah, A.M.N., Kenawy, D.A.R., Ahmed, M.F.M., Hebicha, H., Diab, A., Hussein, S.M., Abouzied, R.M., and El-Naggar, G. (2011). Value-chain analysis of Egyptian aquaculture. Project report 2011-54. Penang, Malaysia: WorldFish).
- <sup>13</sup> The survey question was asked as a categorical variable, not continuous, meaning some nuance has been missed.
- <sup>14</sup> Macfadyen, G., Allah, A.M.N., Kenawy, D.A.R., Ahmed, M.F.M., Hebicha, H., Diab, A., Hussein, S.M., Abouzied, R.M., and El-Naggar, G. (2011). Value-chain analysis of Egyptian aquaculture. Project report 2011-54. Penang, Malaysia: WorldFish.
- <sup>15</sup> Galie, A. (2014). External review of Outcome 2 of the project "Improving Employment and Income Through Development of Egypt's Aquaculture Sector (IEIDEAS)" from a gender perspective. Internal document. Cairo: WorldFish.





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**About the CGIAR Research Program on Livestock and Fish**

In developing countries, poor people, especially women and children, consume very little meat, milk and fish. This contributes to nutrient deficiencies and poor physical and cognitive development for children, and poor health and livelihood outcomes for adults. Additionally, the productivity of small- and medium-scale livestock and fish producers and marketing systems in developing countries lags far behind those in other parts of the world.

The CGIAR Research Program on Livestock and Fish seeks to increase the productivity of small-scale livestock and fish systems in sustainable ways, making meat, milk and fish more available and affordable to poor consumers across the developing world.

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