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COVID-19 impacts on women fish processors and traders in sub-Saharan Africa:

Insights and recommendations for building forward better

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COVID-19 impacts on women fish processors and traders in sub-Saharan Africa: Insights and recommendations for building forward better

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Executive summary

Background, aim and scope

The COVID-19 pandemic and accompanying responses to mitigate this global health crisis have resulted in substantial disruptions to demand, production, distribution and labor in fisheries, aquaculture and food systems. These disruptions have severely impacted women processors and traders, who play a critical role in the fisheries and aquaculture sectors and associated food systems in sub-Saharan Africa. And yet, COVID-related data and responses have tended to be gender-blind or overly representative of men's experiences and needs in the sector. As a result, policy and investments run the risk of *compounding* COVID-19's noted exacerbation of inequalities. This report aims to address this gap and avoid this risk. It synthesizes the impacts on some of the two and a half million women who work across Africa trading and processing fish (FAO et al. in prep). The report then puts forward recommendations for national and regional policy and development actors engaged in sub-Saharan Africa. Implementing these recommendations will enable sector responses and investments to be more inclusive, equitable and effective.

Fish trader with yaboi (sardines) in Senegal.

The report draws on key informant interviews (KIIs) and focus group discussions (FGDs) with national representatives of the African Women Fish Processors and Traders Network (AWFishNet), which spans 28 countries within the African Union. Information from the KIIs and FGDs is supplemented with accounts of the lived experiences of women fish processors and traders that were documented through a participatory reporting methodology. In terms of scope, the study collated experiences of women fish processors and traders across 13 countries in West, Central, Southern and East Africa: Sierra Leone, Ghana, Togo, Nigeria, Cameroon, the Republic of Congo, the Democratic Republic of Congo, Zambia, Malawi, Madagascar, Tanzania, Kenya and Uganda. The data were collected from December 2020 to June 2021.

Gendered impacts of COVID-19: Women fish processors and traders have experienced severe income, asset and post-harvest losses, compounded by preexisting labor and financial inequities

Inequitable gendered divisions of labor (including an overreliance of women on low-paid and informal work and higher burdens of unpaid domestic care work) and gender inequalities in financial assets persist in fish food systems. These existing patterns of inequality have amplified the hardships and challenges women have experienced because of COVID-19 containment measures and food system disruptions. In particular, the study found that women fish processors and traders have suffered economic impacts, including significant declines in income and depleted savings. As a result, some women entrepreneurs have lost their fish processing or retailing businesses entirely. Paying back loans has become more difficult, especially for poorer women. This has led to some women business owners becoming trapped in the cycle of having to take loans to repay loans. More competition for fish coupled with fewer fish and fish products have compounded women's economic distress. In some contexts, this convergence of factors has amplified power-laden and risky sex-for-fish transactions. Disruption to distribution and retailing systems has increased post-harvest fish losses (through waste of slow to sell products), which have impacted women more than men because of women's greater participation in post-harvest activities (i.e., 90% of people working in fish processing and trading across Africa are women; FAO et al. in prep). Moreover, the losses in income and food have led to losses in food and nutrition security. There are reports of some women reducing their food intake to only one meal per day. In terms of well-being, the financial insecurity, household or individual food insecurity, indebtedness and increasing burdens of unpaid care work were reported to have substantially impacted women's mental health and led to greater levels of stress.

Recommendations to "build forward better" with inclusivity and equity

This report outlines 10 policy recommendations for national and regional actors designing and implementing policies, programs and governance of fisheries, aquaculture and food systems in sub-Saharan Africa. The recommended actions address preexisting challenges and barriers that women fish processors and traders have experienced, as well as actions that respond to COVID-19's exacerbation of hardships and the emergent opportunities to build the resilience of women and the fisheries and food systems in which they work.

As per the UN's COVID-19 response framework (UN 2020a) and the African Union's Guidelines on Gender-Responsive Responses to COVID-19 (AU n.d.), women are a priority group in society experiencing the highest degree of socioeconomic marginalization and thus require specific attention in COVID-19 responses. Moreover, in addition to global commitments toward gender equality (e.g. UN Sustainable Development Goal 5: Gender Equality and Empower All Women and Girls), the African Union itself has specific commitments to address gender barriers. These include the framework for socioeconomic development Agenda 2063 and the African Union's strategy on Gender Equality and Women's Empowerment 2018–2028 (2019). These obligate the African Union, regional intergovernmental bodies and national governments to legislate, finance and implement programs to address gender inequality, strengthen women's agency and amplify women's voices. As such, to be effective and inclusive, the policy, governance and programming strategies of governments, regional organizations and nongovernmental organizations (NGOs) must respond to the lived experiences and needs of diverse women *and* ensure that women's voices are included in plans to build forward better from COVID-19. This report synthesizes evidence-based experiences and needs and, based on these, has identified the following 10 recommendations:

1. **Apply well-designed gender-responsive social protection mechanisms**, such as cash and in-kind transfers, as well as employment schemes. These must reach, benefit and empower women who have low incomes in fish supply chains to prevent further asset loss and nutritional declines and spark local economic recoveries.

2. **Extend affordable and flexible financial services and remove barriers to women's economic recovery and empowerment**. These measures include savings mechanisms, loans, and debt forgiveness for COVID-19 recovery, as well as overcoming technosocial and financial barriers through enhanced access to digital financial services as well as lowered conditions and interest rates. In combination, these will promote financial inclusion and greater economic resilience of women fish processors and traders, and the supply chains they support.

3. **Increase gender-equitable access and availability of affordable fit-for-user processing and storage technologies and improve processing, storage and transportation infrastructure**. Design more sustainable technologies, such as solar driers and biogas kilns, to meet women processors' evolving requirements. Improve affordability and expand capacities of infrastructure, and create safer, more hygienic facilities that are responsive to women's needs. These are required to enable businesses to grow and to reduce economic and food quality and quantity losses.

4. **Increase investments in sustainable management of fisheries and aquaculture and in equitable, safe and dignified access to fish** to secure sustained flow of fish in supply chains. This includes enhancing women's direct access to and control over physical fisheries resources (fish, boats and gear, lakes and ponds) as well as fit-for-context strategies addressing transactional sex-for-fish.

5. **Improve accessibility of formal and peer-to-peer business capacity development for women**, especially women from low-income groups. Include a short-to-medium term focus on business recovery and resilience. This is a foundation for women fish processors and traders' economic empowerment, which is in turn vital for resilience of families and communities.

6. **Address the digital gender gap by empowering women equitably through information and communication technologies**. Improving women entrepreneurs' market connectivity and digital capabilities will help ensure that women are not left behind, but rather thrive, in the digital transformation. This requires investment in gender-equitable "last mile" access to devices, reliable electricity and internet, and accessible digital skills training for women.

7. **Enable women to realize their right to information**. Removing obstacles to information access and building and supporting the capability of women's networks leads to more effective translation of policy into practice and of lessons from practice into policy.

8. **Enable gender-inclusive fisheries and aquaculture governance, and transition rapidly to women's full participation and leadership in policymaking**. The former includes recognizing and counting (data on) women as key actors in the sector. The latter involves rapidly removing context-specific social and institutional barriers to women's full engagement—including as leaders—at all levels and in all areas of policymaking that affect women fish processors and traders.

9. **Proactively engage diverse women fish processors and traders, on par with men, in COVID-19 recovery planning processes**, including youths and people from disadvantaged groups. It is critical for recovery processes to recognize that the agency of women fish processors and traders is essential to effective and just recovery planning. Enabling women's agency in this will require developing and applying processes and arrangements that allow diverse women fish processors and traders to contribute and be heard in shaping the design, development and implementation of COVID-19 recovery plans.

10. **Invest in collective organizations and networks**. Financially resource and strengthen the networking and governing capabilities and voice of regional and national networks of women fish processors and traders, and build the accountability and responsiveness of governance bodies to the experiences and leadership of women fish processors and traders.

1. Introduction

Alongside the global death toll and pervasive health risks, the COVID-19 pandemic triggered profoundly negative social and economic impacts on global, national and individual scales. The pandemic and accompanying containment measures that were implemented to reduce the spread of the virus have had deep and far-reaching impacts for women, men, households and communities engaged in food production and distribution. But the impacts have not been experienced equally—women from lower income and marginalized groups have been hit the hardest (Kabeer et al. 2021). In other words, "women face structural barriers that have made them more vulnerable to the pandemic's impacts—and eliminating these barriers will jumpstart the recovery" (Gates 2021, np).

Worldwide, fisheries and aquaculture systems have contended with disruptions to demand, distribution, production and labor (Bennett et al. 2020; FAO 2020; Bassett et al. 2021; Belton et al. 2021; Campbell et al. 2021; Love et al. 2021). The disruptions brought about by COVID-19 and associated containment measures have severely impacted women fish processors and traders, who play a critical role in the food systems of sub-Saharan Africa. Recent estimates suggest that more than two and a half million women are employed in fish processing and trading across Africa (FAO et al. in prep). Yet, COVID-related data and responses have tended to be gender-blind or overly representative of men's experiences and needs in the sector—thus risking policy and investments that *compound* COVID-19's noted exacerbation of inequalities. This report aims to address this risk and help orient the recovery process toward success.

The report synthesizes the experiences of women fish processors and traders from 13 sub-Saharan African countries. It then presents 10 recommendations for government, intergovernmental, funding and NGO actors working at the national and regional levels in the region. Engaging with these recommendations will enable governance and investment responses to be more inclusive, equitable and effective. This approach will be essential for effective recoveries as well as for regional and national actors to reverse current trends and instead deliver on preexisting gender commitments. As per the UN's COVID-19 response framework and the African Union's Guidelines on Gender-Responsive Responses to COVID-19, women are a priority group in society experiencing the highest degree of socioeconomic marginalization and thus require specific attention in COVID-19 responses. Moreover, in addition to global commitments toward gender equality (SDG 5), the African Union has specific commitments to advance gender equality. These include the framework for socioeconomic development (commonly known as Agenda 2063) (UN Women 2017) and the Strategy on Gender Equality and Women's Empowerment 2018-228 (AU 2019). These commit the African Union, regional intergovernmental bodies and national governments to legislate, finance and implement programs to address gender inequality, strengthen women's agency and amplify women's voices. As such, to be effective and inclusive, the policy, governance and programming strategies of governments, regional organizations and NGOs must respond to the lived experiences and needs of diverse women *and* ensure that women's voices are included in plans to build forward better after COVID-19.

2. Background, concepts and methods

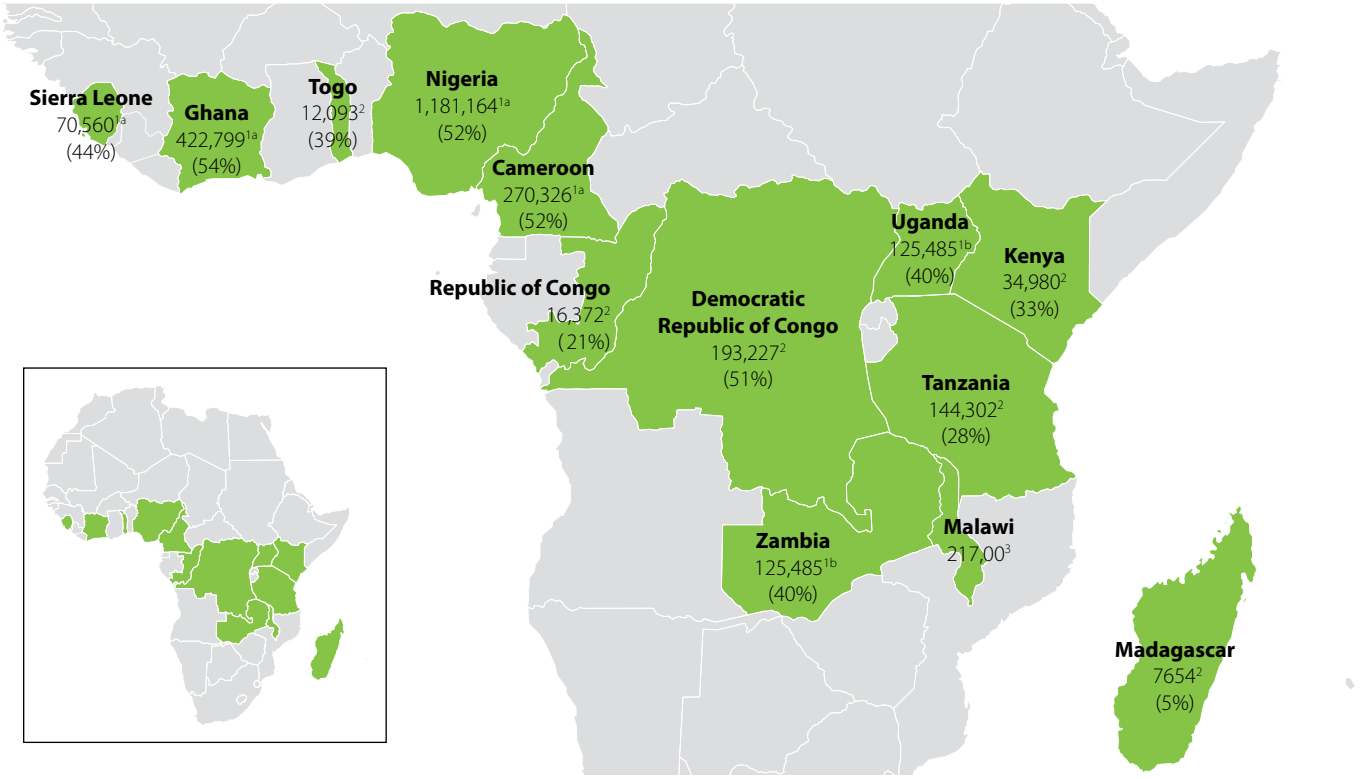
2.1. Women in fisheries systems: Key contributors yet disadvantaged

Globally, an estimated 47% of those employed in fisheries and aquaculture systems are women (World Bank 2012; FAO et al. In prep). In Africa, women account for approximately 43% of the workforce in marine industrial fisheries, 27% in inland fisheries, 24% in marine artisanal fisheries and 5% in aquaculture (de Graaf and Garibaldi 2014). The proportion of women working in fisheries and aquaculture systems, relative to the total workforce, varies substantially among African nations (Figure 1).

While women participate in all parts of the food system, they are most visible in post-harvest processing and trade of fish. In Africa, more than 90% of women in the fisheries and aquaculture sector are employed in post-harvest activities (Box 2) (de Graaf and Garibaldi 2014). In this role, in terms of food and nutrition security, women's labor in fish food systems is critical in shepherding quality fish in all forms from the source of production to ultimately reach local, national or international consumers (Harper et al. 2013).

Box 1. The post-harvest sector

The post-harvest sector employment includes fish sorting, cleaning, processing, trading, transporting, marketing and selling. Fish processing can involve drying, salting, smoking and the production of secondary food products. Traders and processors may buy fish from the market or directly from landing sites (Lentisco and Lee 2015). The seafood industry, in many countries, depends on women to provide temporary, part-time and low-cost processing labor (Harper et al. 2013).



[1] Source: de Graaf and Garibaldi 2013. Notes: [1a] total includes marine and inland fisheries. [1b] Total derived from inland fisheries only.
[2] Source: de Graaf and Garibaldi 2014.
[3] Source: Simmance et al. 2021.

Note: For countries where data are available, the percentage of women employed in pre-harvest, harvest and post-harvest portions of the capture fisheries and aquaculture sectors is indicated, alongside the total number of women employed in the fisheries and aquaculture sector. These figures are likely underestimates given women's labour is commonly underrepresented in fisheries data.

Figure 1. The 13 countries covered in this study and women in the fisheries and aquaculture sector.

As fish processors, traders and retailers, women's work generates important economic values in the fisheries and aquaculture systems. Women finance, lead and participate in a variety of fish-based enterprises and generate substantial economic returns for households, communities and nations (Lentisco and Lee 2015). According to the International Labour Organization, for example, women's work, both paid and unpaid, is often the single-most important poverty-reducing factor in many countries (Heintz 2006). Despite this, however, women's labor and contributions to fish food systems have gone unacknowledged, uncounted and unrecognized generally as well as in data and policy (Box 2) (FAO 2017; Kleiber et al. In press).

Box 2. Gender "cycle of invisibility"

Women's roles, labor and contributions to fisheries systems are systematically under-counted and under-recognized because of a lack of evidence, specifically gender-disaggregated data. Women's participation rates are likely underestimated as a result of gender-blind data collection methods. These commonly overlook unpaid and informal forms of direct engagement in fish supply chains, where many women are concentrated (Harper et al. 2017; Kleiber et al. In press). Combined with norms that frame fisheries as men's domain, this creates a "cycle of invisibility" of women in the sector (FAO 2017), with policies and programs being under-responsive to women's needs and undervaluing their voice and agency.

2.2. Gender as a driver shaping impacts of shocks

Gender plays a key role in determining the different experiences that women and men have when it comes to accessing and benefitting from fisheries, aquaculture and food systems (Box 3).

Box 3. What is gender?

Gender is a social construct; it refers to the behaviors, norms, rules and roles that societies and people expect of, and associate with, what it is to be "a man" or "a woman." It is different from "sex," which refers to the biological differences between men and women.

For both women and men, informal social expectations, as well as formal rules and laws, relating to gender shape their experiences, opportunities, benefits, burdens and risks relating to all spheres of their lives. These include domestic responsibilities and unpaid work, voice and agency in decisions at all scales, and opportunities and barriers in markets and trade, as well as personal safety and gender-based violence (Williams 2008; Weeratunge 2010; Matsue et al. 2014; Thorpe et al. 2014; Bradford and Katikiro 2019; Ameyaw et al. 2020). These are also crosscut and mediated by "intersectional" aspects of identity, including wealth, age, ethnicity, (dis)ability or other dimensions.

Gender inequalities existed in fish food systems before the COVID-19 pandemic. Women have more unpaid domestic and caring responsibilities than their male counterparts, which limit the time they have available for paid employment and make it difficult to build market networks and accumulate capital for entrepreneurial activities (Ameyaw et al. 2020). Women fish traders in sub-Saharan Africa experience poorer access than men to social and economic resources as well as to profitable markets, and as a result they receive lower incomes and fewer economic opportunities (Fröcklin et al. 2013; Manyungwa et al. 2019; Nagoli 2019). In some contexts, women experience physical or verbal harassment and also sexual exploitation in relation to their fish supply chain work, with consequences on returns as well as on health and well-being (Ratner et al. 2014; Finkbeiner et al. 2021). As a result of these gender inequalities, women are more vulnerable than men to environmental, economic, food and political shocks, such as the COVID-19 pandemic (UN 2020b).

2.3. Data gathering methods

Data for this report were gathered from December 2020 to June 2021. The primary data comes from the combination of three qualitative methods: FGDs, KIIs and participatory community reporting. Between the three methods, the study assessed the experiences of diverse women fish processors and traders in countries throughout West, Central, Southern and East Africa: Sierra Leone, Ghana, Togo, Nigeria, Cameroon, the Republic of Congo, the Democratic Republic of Congo, Zambia, Malawi, Madagascar, Tanzania, Kenya and Uganda (Figure 1).

The FGDs and KIIs were conducted with national representatives of the African Women Fish Processors and Traders Network (AWFishNet). This pan-African network works with women fish processors and traders across 28 countries within the African Union (Box 4). The respondents in the study (n=9) represent nine countries and have leadership roles within the AWFishNet Bureau. The FGDs and KIIs were conducted virtually and electronically using Zoom, WhatsApp and email. The five FGDs were conducted on Zoom at intervals from the start to the end of data gathering to collect, check, correct and validate information and interpretation. The interviews took the form of asynchronous instant messaging interviews with the same nine individuals using WhatsApp and email to probe specific points raised during the FGDs and to better understand personal experiences, the experiences of members and country-level contexts. The experiences and observations that the AWFishNet Bureau shared in these interviews were their own, and they also conveyed experiences relayed to them by women fish processors and traders they networked with at a national level.

Box 4. AWFishNet

AWFishNet is a non-profit continental network of women fish workers. The platform seeks to strengthen the position of women fish workers as key stakeholders in the African fisheries sector and to facilitate collaboration and cooperation among national member networks from 28 countries with the African Union (AWFishNet 2020 and 2021).

The third branch of data comprised direct accounts from women fish processors and traders whose experiences were documented through a participatory reporting methodology (OOR 2021a and 2021b). This involved 11 community reporters across seven countries. They documented their own experience as well as the experience of others in their communities through written summaries, audio, photos and video. These data were used in this report to triangulate and enrich the insights from the KIIs and FGDs; it is also available as its own rich output in video stories.

Fish processor and trader at the Makoko landing site ready to get back home after purchasing fish to process at the site.

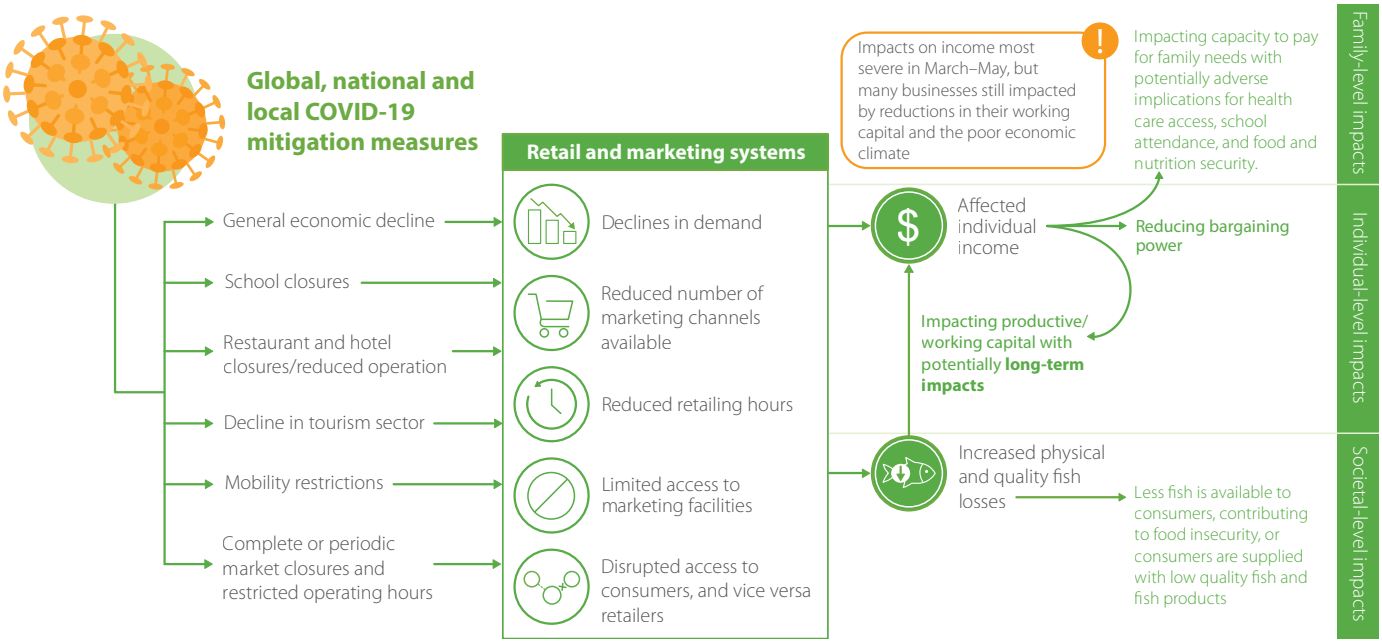
3. Findings: COVID-19 as experienced by women fish processors and traders

3.1. COVID-19 disruptions: A fish food systems perspective

Here we begin by presenting an overview of the disruptions COVID-19 caused to fish food systems and the impacts of the pandemic on the women that work within them. These findings illustrate the dynamic, different and far-reaching impacts women fish processors and traders have experienced—and continue to experience—with ripple effects on their households and the wider community. Interviewees reported that the impacts of COVID-19 were particularly severe when containment measures were at their strictest between March and May 2020. Yet, these impacts continued into 2021 even as the pandemic itself starts to be contained. Unless effective and gender-responsive measures are taken, the impacts will likely continue or even compound as the effects of the pandemic evolve.

Disruptions have occurred in multiple aspects of the fish food system, from production and harvesting through to chain disruptions and declines in demand for fish products. Impacts at different points have reverberated through the fish food system to affect diverse women and men, who manage, harvest, process, sell and consume fish, and the households and communities who depend on them. These ripple effects are often unexpected, difficult to anticipate or predict and are not clearly visible to food systems governance actors. These disruptions and effects, as reported by respondents, are shown in Figure 2.

Unpacking this further, the ripple effects on women in particular were many, layered, intense and interconnected. For example, closing schools meant that children required care in the home in hours that women had previously used for paid employment in the fish food system. Given that gender norms generally ascribe to women the responsibility for unpaid care work, women disproportionally carried the time burdens of this increased childcare (section 3.3). In turn, women's incomes declined because they had to reduce their engagement in economic activities. Not only did this affect women's working capital and bargaining power, it also had wider implications for households as women tend to spend a large proportion of their income on basic household needs. As a result, reductions in women's income adversely affected school attendance and household food



Source: data from FGDs and KIIs.

Figure 2. The reverberation of impacts from COVID-19 containment measures through the fish food system.

and nutrition security; in turn, these consequences tend to most affect girls and women because of preexisting inequitable gender dynamics.

3.2. Impacts on women fish processors and traders

Production, distribution, retail and market disruptions have all affected both men and women in fisheries systems (as presented in section 3.1). For example, men working in the harvesting and post-harvest sectors have reportedly experienced a decline in their income, especially those who depend on export markets. Before COVID-19, however, women were *already* experiencing more limited access and control over social and economic resources than men. These limitations, and the underlying factors of gender inequities in division of labor, time, mobility and agency, intensified COVID-related hardships and challenges women faced, and they presented real limits to their capacity to adapt to the social and economic changes in lifestyle, work, and food systems.

The study found that women fish traders and processors experienced impacts of COVID-19 within and across the following areas and scales of their lives and businesses (Table 1):

- Disruptions to fish food system functions on which they rely: increased challenges relating to production, storage and distribution, retail and markets
- Impacts on individual well-being: declines in economic well-being, increases in unpaid care work, and risks or worsening of health, safety and social relation-related issues
- Knock-on implications in terms of own and household-level basic needs: food and nutrition and education.

(See Annex 1 for more information and firsthand accounts (from respondents).

3.3. Gender, identity and context in shaping COVID-19 experiences

This section further explores the above disruptions and impacts in relation to key gender factors (including labor, power, norms and work), intersectional identities (age, type of work and so forth) and context (i.e. differences across the region).

Gendered labor and markets: The gendered implications of post-harvest fish losses

"I ended up with a stock of fish at home, but the customers couldn't come to my home because of a lack of means of transportation. And as our storage facilities are limited, I lost a part of the goods [fish]. The demand was there, but I did not have the possibility to go and make deliveries. The customers cannot come either, and many women have been in my situation, who had their goods, their fish rejected."

– key informant, Republic of Congo

Fish is a highly perishable commodity. In Africa, it is estimated to experience loss and wastage of about 30% between harvesting and consumption (FAO 2011). Post-harvest losses in quantity and quality of fish occur because of a multitude of technical factors, including inadequate storage facilities, lack of processing technologies and inadequate transportation infrastructure. The challenges presented by technical limits are exacerbated by finance and information access issues generally; moreover, they are particularly compounded by gender inequalities, including women's time constraints, limited access to efficient technologies and their required financing, and knowledge about current best practices (Tindall and Holvoet 2008; Cole et al. 2018; Kaminski et al. 2020; Torell et al. 2020). In Africa, women account for between 60% (de Graaf and Garibaldi 2014) and 90% (FAO et al. in prep) of post-harvest workers, so women disproportionately experience fish losses because of their labor roles. Moreover, among post-harvest workers, women are reported, in some cases, to experience greater losses than their male counterparts (Tindall and Holvoet 2008; Kaminski et al. 2020).

Periodic market closures, border closures, and other limits to transportation resulting from COVID-19 containment measures have exacerbated the existing technical and gender constraints that lead to post-harvest fish losses. Specifically, access to cold storage facilities became more restricted, transportation reduced or ceased, and processing infrastructure became inaccessible. While this affected both men and women, the preexisting gendered involvement and barriers, as well amplifications of these barriers (such as women's increasing time burdens related to childcare), meant that women traders were hit hardest. Subsequently, women traders—who

Domains affected		Impacts
Fish food system functions	Production disruptions	• COVID-19 restrictions meant fewer fishers were able to access vessels and landing sites, thus there was less catch and fewer fish landed. • Some countries closed their borders, which limited imports of fish feeds (such as into Malawi). • Surges in the cost of imported fish feed have increased the cost of farmed fish production. • These factors have resulted in declines in the availability and accessibility of fish. • The scarcity of fish has increased competition and bargaining among post-harvest fish workers.
	Storage and distribution disruptions	• COVID-19 restrictions disrupted transportation to landing sites, urban markets and trading routes across borders. This negatively affected traders' access to customers and, vice versa, customers and consumers' access to fish. • Transportation costs increased. • Changes to market dynamics increased storage requirements to avoid losses on unsold fish. Where access to processing and storage infrastructure (e.g. cold-storage facilities, warehouses and ice) is poor, this resulted in significant fish physical and quality losses.
	Retail and market disruptions	• School closures, market closures, and disruptions to the restaurant, hotel and tourism sector significantly reduced market demand, retailing hours and marketing avenues. • Changing market dynamics, delays in selling and poor purchasing power of buyers and consumers contributed to increased fish quality losses.
Individual well-being	Economic well-being	• Women fish processers and traders have experienced significant reductions in income as a result of the above disruptions. This includes the combination of quality losses and rises in costs of storage and of marketing, leading to reduced profit margins. • Loss of revenue and a lack of capital has caused business failures. • Consequential loss of capital has affected women's bargaining power. • Economic instability has led to increased debt levels. • Reduced profit margins have resulted in women not being able to pay back loans. They have not been able to negotiate any restructuring of their loan-repayments and/or have had to take out new loans to repay existing ones.
	Unpaid care work	• COVID-19 containment measures (e.g. school closures) have intensified women's unpaid domestic work burden, and in turn constraints on women's time. • Women have shouldered the brunt of increased childcare responsibilities, including physical care, cleaning, feeding and at-home learning responsibilities.
	Health	• Women are routinely exposed to the virus and its physical health impacts through their reliance on work in crowded markets and landing sites. • Food intake has been reduced (see food and nutrition below). • Declines in economic well-being and increases in unpaid care work have negatively affected women's mental health and have manifested symptoms of psychological distress, particularly stress and anxiety.
	Safety and relations	• Scarcity of fisheries resources has intensified already unequal bargaining and power relations in the food system, and it has increased incidences of sex-for-fish transactions (which in turn create additional risks and potential harm, including HIV). • COVID-19 restrictions have increased police presence around fish landing sites and along transportation routes, with women experiencing harassment and exploitation by police. • Household economic insecurity and distress have increased gender-based violence.
Basic needs	Food and nutrition security	• Economic insecurity and declines in the availability and accessibility of fish and other food products have altered and reduced household food consumption. Some women resorted to eating only one meal per day.
	Education	• Economic insecurity has adversely affected children's attendance at school. • School closures and economic insecurity risk knock-on effects of potential dropout especially by girls, reduction in children's nutrition due to loss of access to school feeding programs, and additional time and economic costs of having children at home. • There may also be educational setbacks during children's time out of school, especially for families with illiterate parents, who may not be able to play the role of teacher at home during school closures.

Source: FGDs, KIIs and community reporting data.

Table 1. Summary of COVID-19 impacts on women fish processors and traders in sub-Saharan Africa.

in general already had fewer financial assets and reserves than men traders—sustained considerable economic losses as they were forced either to sell fish at lower prices or discard them altogether because of quality deterioration.

Women in the study underscored that it is critical to address post-harvest losses and these gendered barriers in order to maintain the flows of quality fish through Africa's food systems. In particular, they flagged the need for national government and other programs to increase their commitment to addressing the gender and technical constraints to fish losses experienced by both women and men in fish chains, particularly informal fish traders.

Gendered power relations: Bargaining power and dependency relations

"There are very few fish from the farms in Africa. Most of our fish comes from the wild, and women do not own any boats. The men do. In this COVID-19 season, we have seen decline in catches, which has resulted in fish-for-sex trade."

– key informant, Uganda

Women fish processors and traders remain dependent on fish supplies, which rely predominantly on fishers' ability to access and harvest fish (Lentisco and Lee 2015). Changes to the availability and accessibility of fish due to COVID-19 restrictions have meant fewer fishers were able to access vessels and landing sites. As a result, catches and fish landings were low. This in turn has limited the supply of fish, creating scarcity in the marketplace.

Respondents indicated that this scarcity in fish, along with tougher market conditions that resulted from COVID-19 containment measures, exacerbated sex-for-fish transactions in (at least) Uganda, Kenya and Tanzania. This was similarly surfaced in the UN Food Systems Summit consultations in Malawi (Chimatiro, personal communication, 2021). These practices have persisted for decades because of women's relatively low bargaining power, in part, determined by their economic hardship (Béné and Merten 2008; Kambewa 2009; MacPherson 2012; Fiorella 2015). Women's economic impoverishment has worsened (section 3.2) as a result of the pandemic, and evidence suggests that the poorer women are, the more likely they are to engage in these power-laden practices as a necessity to participate in the market (Béné and Merten 2008). As well as perverse consequences to women's mental health, the prevalence of HIV/AIDs among fishing communities in sub-Saharan Africa (four to 14 times higher than the national average) (Michalopoulos et al. 2017) makes both men and women engaging in sex-for-fish exposed to this and other sexually transmitted diseases, with concerning individual and societal costs (Kambewa et al. 2009).

As noted in sections 2.2 and 3.2, COVID-19 is worsening what was already challenging because of gender barriers. Even before the pandemic, women fish traders faced gender-based challenges that affected not only their businesses but also their well-being. As noted in a Zambia study, women's fish trading business may be dangerous, demeaning and difficult: "The findings indicate that female fish traders in Zambia are at risk of multiple and ongoing traumatic events and daily stressors" (Michalopoulos et al. 2017, 1). To address these challenges, respondents identified the need for policy and program innovations that increase women's direct access and control over fish. For example, where aquaculture is a source of fish, respondents identified the value of strategies to enable women's individual or collective ownership of ponds. During the recent UN Food Systems Summit consultations in Malawi, women called for specific policy interventions to protect them from sex-for-fish transactions, which in some cases are perpetrated by male fishers and "middlemen" collusion (Chimatiro, personal communication, 2021).

Gendered responsibilities: Disproportionate unpaid work and time-conflicts

"We [women] are spending so much time taking care of babies, being teachers, instead of us doing [the paid] work. We have added another task of being teachers because schools are closed. This is something we could not foresee or plan for, and it is really taking much of our time, in as far as time budgeting is concerned."

– key informant, Uganda

For many women, COVID-19 containment measures have increased their time poverty (UN Women 2020). Even before the pandemic, in low- and middle-income countries, about 75% of the care workload fell on women (Kenny

and Yang 2021). With the pandemic, women and girls in many contexts around the world have experienced increases in unpaid care and domestic work burdens as a result of quarantine measures that close schools and keep children and teachers at home (UN Women 2020; De Paz 2021). Women fish processors and traders said this was common among their networks.

Moreover, this is experienced as part of a compounding set of challenges: respondents indicated that many women fish processors and traders have experienced expanding unpaid domestic workloads *on top of* demands of full-time employment, *as well as* increased household expenditure (particularly on food, as children have spent more time at home), *while at the same time* contending with reduced income for the same labor input. The combination of reduced income and increased household spending on childcare due to COVID-19 containment measures has caused women serious economic distress. This aligns with the global assessment that "this staggeringly large and unequal childcare workload may have been one factor behind the disproportionate fall in women's employment and closure of women-owned firms during the pandemic … That suggests many families, and in particular sisters, aunts, and mothers, were left trying to juggle work and child-care simultaneously. The consequences will surely outlive school re-openings" (Kenny and Yang 2021, 3).

Some women fish processors and traders' businesses have collapsed entirely as a result of these multiple compounding pressures. Women reported that reduced income and business failure led to significant impacts on their stress and mental health. In some cases, women reported that elevated economic and emotional stressors had led to increased tension within the household, which contributed to increased incidences of violence against women.

Many more women in fish food systems are likely to experience long-term income and employment setbacks if these gendered challenges, constraints and costs are not adequately addressed or considered in the design and implementation of pandemic responses. As such, addressing inequities and gendered impacts in relation to informal labor, care work, mental health and domestic environments must be considered legitimate areas of immediate concern in need of government and programming support (UN Women 2020). Similarly, gender-responsive social protection measures in the form of cash transfers, debt forgiveness within COVID-19 recovery strategies, as well as labor interventions for women are urgently needed to stop and reverse income and asset loss as well as loss of businesses. These urgent actions will lay the foundation for longer term structural improvements.

Intersectional experiences: How different women are affected differently

"There are some women who are very strong in business and they have the power, the bargaining power. They have the power to buy and assemble … Those who are really, really poor are the ones who have been affected more when it comes to access to the resources … Those that have financial stability, they can maneuver better than those who don't have the capacity."

– key informant, Tanzania

In combination with gender, intersecting aspects of identity such as socioeconomic status, age, ethnicity, marital status, migration status and education play a key role in determining access, benefits, risks, vulnerabilities and resilience in food systems (Kleiber et al. In press) and, in turn, individual experiences of COVID-19 and other shocks. For example, in relation to the compounding economic hardships identified in section 3.2, respondents indicated that the implications have been particularly devastating for widowed, divorced and single women. These women experience an especially high burden of responsibility, because they bear the position of "breadwinner" as the main or exclusive income earner in a household or family.

Considering differences in occupation, in general, women who are wholesalers (who sell fish in large quantities, often for resale and at comparatively lower prices) have greater access to social and economic resources. As a result, they have coped with the disruptions better than other women retailers (who sell fish in smaller quantities, primarily for consumption). While wholesalers have lost capital, they are generally less indebted and have strong working relations with male fishers

who have continued to provide them with large quantities of fish on credit. (In many instances these are informal agreements to purchase fish on a next-day payment.) As such, women wholesalers have a chance to reconstitute their capital.

In contrast, respondents explained that poorer retailers have found it very difficult to recover or develop their businesses, as they find themselves in a cycle of taking out loans to keep up with repayments for existing ones. This underscores the urgent need for COVID-19 recovery to focus on and address the financial dimension of the crisis for poor women in order to protect and rebuild their businesses. Policy implications include (i) financial relief, such as debt forgiveness or social protection cash transfers, targeted and responding specifically to the needs of poor women retailers, and (ii) new or adapted financial instruments to build back the businesses of diverse, including low income, women.

In terms of other differentiating factors, two enablers surfaced in the study: social networks and digital capacities (Box 5). In terms of the former, women fish processors and traders with strong social support networks, including women organized within formal and informal women's groups or savings groups, have been able to access affordable loans to rebuild their capital, resume their business activities and provide for family expenses. In terms of digital capacities as a factor, overall many respondents reported that the use and importance of mobile phone technology and connectivity increased during COVID-19 containment measures as a way of coping and adapting. For example, some women traders have been able to stay in contact by phone with their network of trusted and loyal customers and have been able to organize the sale, delivery and payment of fish using mobile transactions. From an intersectional lens, however, the study showed that this was not evenly experienced. Younger and more educated women fish processors and traders with skills in, and access to, information and communications technology have also fared better by adapting their retailing activities to online platforms, including Instagram and Facebook. Information communication technology (ICT) strategies thus will need to factor in and navigate differing levels of literacy. For example, illiteracy rates among cross-border fish traders range from 35% in Ghana (Ayilu et al. 2016) to 40% in Mozambique (Hoguane 2018) and 55% in Côte d'Ivoire (Anoh 2016).

Box 5. Social networks and digital capacities as enablers

Using a multidimensional livelihood vulnerability index, on average 56% of women processors and traders in coastal districts of Ghana were considered multidimensionally vulnerable because of deprivation in social capital indicators, such as social networks and ICT extension service access (Appiah 2017). Conversely, a recent study in Kenya and Uganda found that belonging to a fish traders organization significantly promoted participation in formal cross-border fish trade, because traders were able to leverage their shared voice to bargain for fair taxes and trade facilitation policies (Kawala 2018).

In a recent study in West Africa, connecting to ICT was the main socioeconomic determinant of profit in cross-border fish trade. The use of radio as a source of market information, as well as access to a mobile phone as a communication accessory, allowed traders to communicate directly with customers across borders; it also raised their knowledge of prices and exchange rates, increasing the likelihood of making profits and gains (Ayilu et al. 2018).

These insights imply that policy and program interventions will need to be more effective in these areas to sustain and enhance the livelihoods of women in the fisheries sector. To do so, they must include more explicit and evidence-based best practice investments in strengthening social capital (e.g. social networks) and building human and institutional capacity (including access to information) by, for example, leveraging ICT (see Appiah 2017).

More broadly, the illustrations in this section underscore the significance of all COVID-19 responses, taking into account different experiences and needs of different women and, in particular, ensuring that the needs of women most at risk—such as poorer, widowed, divorced and single women—are addressed

effectively. It also signals the need to invest in social networks and in building digital capabilities of all women fish processors and traders as a foundation for adaptive business capabilities. This includes access to phones, internet and digital business skills—all tailored to different educational and preexisting skills.

Regional experiences: Differences as influenced by country context

Across multiple countries in sub-Saharan Africa, women fish processors and traders reported a range of similar experiences, including economic losses, increased distribution costs and restricted retailing opportunities. At the same time, experiences also differed to some degree depending on the severity of COVID-19 containment measures and the context.

The severity and scope of measures varied substantially between countries. For example, in Tanzania the national government did not impose a lockdown, whereas in Kenya citizens in urban regions (in particular) faced multiple lockdowns and curfews.

Experiences were also subject to the context and vulnerability of the fishery with which the women worked. Women working in countries, regions or sectors where the fishery and markets were export oriented were particularly affected. These include contexts where women work in informal trade across borders with neighboring countries (Chimatiro et al. 2018). For example, WorldFish and partner studies found that in West Africa, women make up 40% of the traders between Nigeria and Benin (Falaye et al. 2018) and 56% of the cross-border traders among Nigeria, Cameroon and Niger (Ajani et al. 2018). Similarly, as noted in sections 3.2 and 3.3, reflecting policy and social contexts as well as reductions in supply, respondents reported exacerbation of transactional sex-for-fish in several contexts (Uganda, Kenya and Tanzania).

The commonalities across such a diversity of country contexts underscores the systematic nature of gender inequalities and structural barriers embedded in food systems in sub-Saharan Africa. At the same time, while a deeper dive into each context is required, the differences signal that policy and other actors will need to engage women's networks in each specific context to understand, lead and contribute to gender-responsive recovery that is fit-for-context. This aligns with evidence from a recent study of 112 countries that "policy response strategies to the crisis by women leaders have contributed to more favourable outcomes compared to outcomes in countries led by men" (Kabeer et al. 2021, 1).

Photo credit: Christina Hicks/Lancaster University

Three entrepreneurs carrying buckets of recently processed fish in Bargny, Senegal. Bargny is a settlement 15 km east of Dakar, where more than a thousand women work processing fish for domestic sale and for export to neighboring African countries.

4. Recommendations

4.1. Overview of the recommendations

COVID-19 has brought about direct and indirect costs to human well-being and health. The impacts have been far reaching, and many reports suggest that those already experiencing vulnerabilities and marginalization are hit hardest. Nonetheless, recovering from the COVID-19 crisis is also a window of opportunity to build a more inclusive, sustainable and resilient food system (IFPRI 2021) and to address some of society's most concerning inequities. To date, however, COVID-19-related data, responses and recovery plans have continued to struggle with weak gender-sensitivity and with overrepresentation of men's experiences and in leadership (Global Health 50/50 2021; UNDP 2021). Male-dominated samples in studies and gender-blind evidence of the impacts of COVID-19 run the risk of leading to policy and investments that overlook, compound, amplify and exacerbate gender and other social inequalities, including in fish food systems. Investments, strategies and policy prescriptions to build forward better need to be gender-sensitive and gender-inclusive if they are to be effective and to make progress on equity and inclusivity (de Paz Nieves 2021). This is required for food security and for progressing the commitment made in Sustainable Development Goal 5 on Gender Equality, as well as the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) and provisions of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines). The experiences and the recommendations in this report—developed with and for women fish processors and traders across sub-Saharan Africa—provide an opportunity to create these more equitable and effective responses.

The 10 recommendations that emerged from this research are for use by national government agencies, funders of national response strategies and NGOs seeking to improve gender equity in fisheries and aquaculture, transform food systems toward greater resilience and equality, and "build forward better" after COVID-19. These recommendations are oriented to the immediate hardships women fish processors and traders and their families are experiencing and to enabling women's adaptive capacity for the short and longer term, while also recognizing the preexisting gender barriers in fish food systems, as well as human rights and food loss concerns.

The 10 recommendations:

1. **Apply well-designed gender-responsive social protection mechanisms**, such as cash and in-kind transfers as well as employment schemes. These must reach, benefit and empower low-income women in fish supply chains to prevent further asset loss and nutritional declines and spark local economic recoveries.

2. **Extend affordable and flexible financial services and remove barriers to women's economic recovery and empowerment**. These measures include savings mechanisms, loans, and debt forgiveness for COVID-19 recovery, as well as overcoming technosocial and financial barriers through enhanced access to digital financial services as well as lowered conditions and interest rates. In combination, these will promote financial inclusion and greater economic resilience of women fish processors and traders, and the supply chains they support.

3. **Increase gender-equitable access and availability of affordable fit-for-user processing and storage technologies and improve processing, storage and transportation infrastructure**. Design more sustainable technologies, such as solar driers and biogas kilns, to meet women processors' evolving requirements. Improve affordability and expand capacities of infrastructure, and create safer, more hygienic facilities that are responsive to women's needs. These are required to enable businesses to grow and to reduce economic and food quality and quantity losses.

4. **Increase investments in sustainable management of fisheries and aquaculture and in equitable, safe and dignified access to fish** to secure sustained flow of fish in supply chains. This includes enhancing

women's direct access to and control over physical fisheries resources (fish, boats and gear, lakes and ponds) as well as fit-for-context strategies addressing transactional sex-for-fish.

5. **Improve accessibility of formal and peer-to-peer business capacity development for women**, especially women from low-income groups. Include a short-to-medium term focus on business recovery and resilience. This is a foundation for women fish processors and traders' economic empowerment, which is in turn vital for resilience of families and communities.

6. **Address the digital gender gap by empowering women equitably through information and communication technologies**. Improving women entrepreneurs' market connectivity and digital capabilities will help ensure that women are not left behind, but rather thrive, in the digital transformation. This requires investment in gender-equitable "last mile" access to devices, reliable electricity and internet, and accessible digital skills training for women.

7. **Enable women to realize their right to information**. Removing obstacles to information access and building and supporting the capability of women's networks leads to more effective translation of policy into practice and of lessons from practice into policy.

8. **Enable gender-inclusive fisheries and aquaculture governance, and transition rapidly to women's full participation and leadership in policymaking**. The former includes recognizing and counting (data on) women as key actors in the sector. The latter involves rapidly removing context-specific social and institutional barriers to women's full engagement—including as leaders—at all levels and in all areas of policymaking that affect women fish processors and traders.

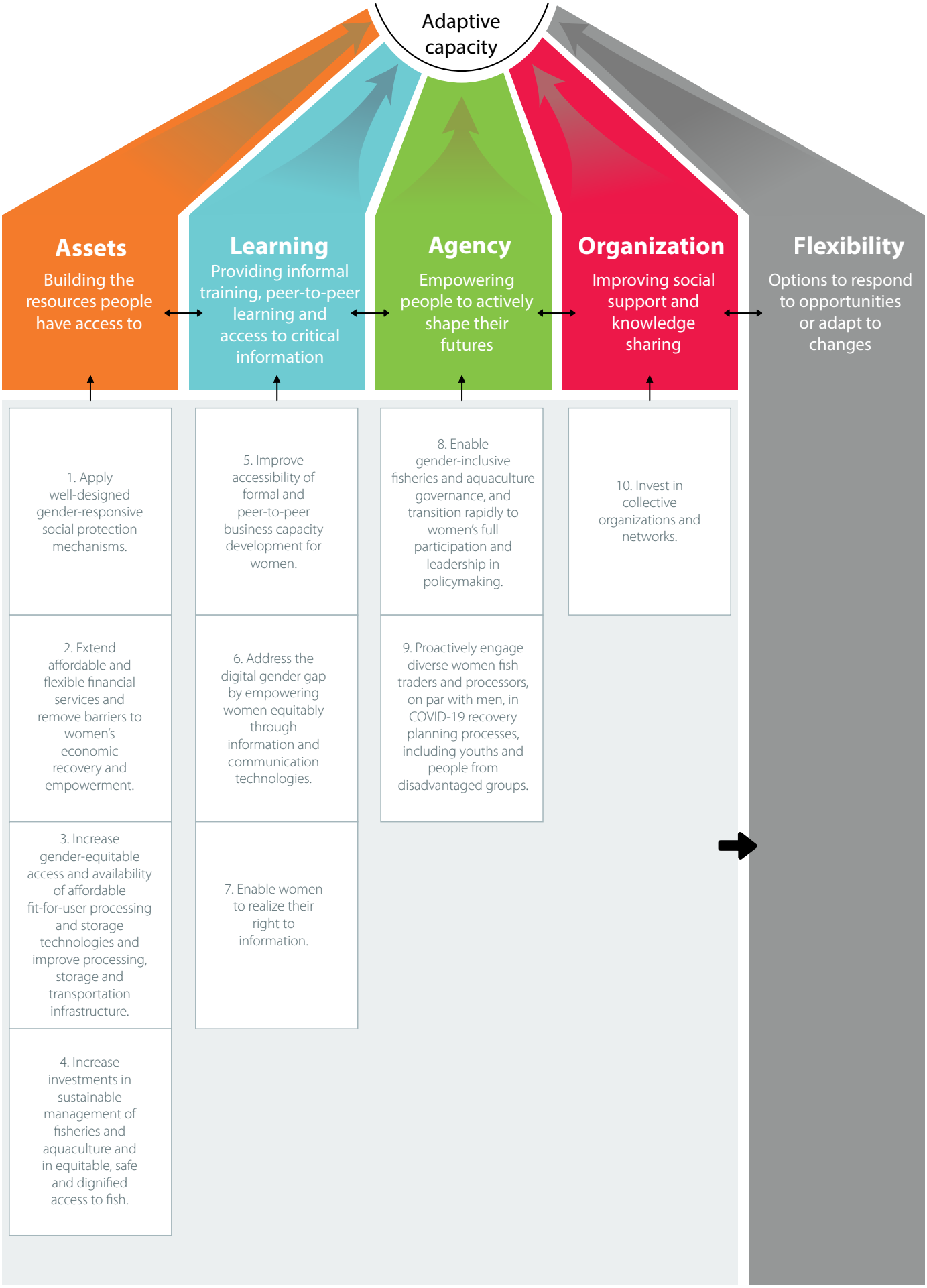
9. **Proactively engage diverse women fish processors and traders, on par with men, in COVID-19 recovery planning processes**, including youths and people from disadvantaged groups. It is critical for recovery processes to recognize that the agency of women fish processors and traders is essential to effective and just recovery planning. Enabling women's agency in this will require developing and applying processes and arrangements that allow diverse women fish processors and traders to contribute and be heard in shaping the design, development and implementation of COVID-19 recovery plans.

10. **Invest in collective organizations and networks**. Financially resource and strengthen the networking and governing capabilities and voice of regional and national networks of women fish processors and traders, and build accountability and responsiveness of governance bodies to the experiences and leadership of women fish processors and traders. These institutions will also help expose malpractices such as sex-for-fish transactions as well as officials who extract bribes from women traders (Chimatiro et al. 2018).

4.2. Recommendations in relation to adaptive capacity as a foundation for recovery

COVID-19 disruptions, responses and recovery outcomes and how they will evolve are all shaped, in part, by adaptive capacities (Bassett et al. 2021). Adaptive capacity refers to the capacity of individuals, communities or systems to adapt to change, and it includes the conditions that enable or constrain responses and recovery from change. The findings of this study highlight both examples of adaptive capacity facilitating innovative coping strategies (e.g. digital access and skills to retail fish online) and of a lack of adaptive capacity hindering responses to COVID-19 and thus limiting food security and livelihood outcomes (e.g. poor access to affordable, fit-for-user storage and processing facilities).

Given the centrality of adaptive capacity to COVID-19 recovery (Bassett et al. 2021), Figure 3 presents the 10 recommendations in relation to building the adaptive capacity of women fish traders and processors and, as such, the resilience of the overall food systems. The framework we use draws on Cinner et al. (2018) and describes five domains or conditions that need to be met to enable adaptive capacity: assets, learning, agency, organization and flexibility. The recommendations, in sum, contribute to all of these domains.



Source: adapted from Cinner et al. 2018, merged here with recommendations from this study.

Figure 3. Recommendations and their contributions to five domains of adaptive capacity.

4.3. The 10 recommendations: Why, what, for whom, and expected outcomes

RECOMMENDATION 1: Apply well-designed gender-responsive social protection mechanisms, such as cash and in-kind transfers as well as employment schemes. These must reach, benefit and empower low-income women in fish supply chains to prevent further asset loss and nutritional declines and spark local economic recoveries.

What is the issue or opportunity and why is it important?	COVID-19 impacts addressed	Recommended actions	Key partners, priority locations and users	Expected outcomes
• Social protection programs have emerged as a critical response to COVID-19. • However, many small-scale fisheries actors, including post-harvest fish workers, are not yet able to access social protection. • Moreover, to date social protection systems—though urgently needed by women—are often not gender sensitive. • Shock-responsive social protection is critical in helping African nations to build back better and achieve the SDGs.	**Economic well-being and the fulfillment of basic household needs:** Social protection systems address the impacts of loss of income, including the knock-on implications for women's assets as well as household food and nutrition security, through the provision of cash and/or food.	1. Develop rapid gender-responsive cash and in-kind transfers that meet the needs of women fish processors and traders (immediate/short term). 2. Develop gender-responsive labor market interventions to stimulate employment opportunities for women fish processors and traders who have lost work and income in this period (short and medium term). 3. Develop gender-inclusive contributory insurance programs that meet the needs of women fish processors and traders and enable them to cope with future shocks, including job losses as well as livelihood disruptions (e.g. maternity leave) (medium and longer term).	• International and regional bodies (e.g. the African Union, New Partnership for African Development, World Food Programme and UNICEF). • Specialists (e.g. Socialprotection.org, Community of Practice of Cash Transfers in Africa, and the Africa Platform for Social Protection). • Collaborate with regional and national networks of women fish workers (e.g. AWFishNet) to ensure reach.	• Prevention and recovery from asset losses and associated loss of businesses are prioritized. • Nutritional insecurities are addressed. • Women's capacities to manage risks (e.g. unemployment and sickness) are enhanced. • Spin-off effects are addressed in community-wide economic recovery.

RECOMMENDATION 2: Extend affordable and flexible financial services and remove barriers to women's economic recovery and empowerment. These measures include savings mechanisms, loans, and debt forgiveness for COVID-19 recovery, as well as overcoming technosocial and financial barriers through enhanced access to digital financial services as well as lowered conditions and interest rates. In combination, these will promote financial inclusion and greater economic resilience of women fish processors and traders, and the supply chains they support.

What is the issue or opportunity and why is it important?	COVID-19 impacts addressed	Recommended actions	Key partners, priority locations and users	Expected outcomes
• Women lack access to formal financial services (loans, savings and digital payments). • Social, cultural, legal barriers and a lack of financial education constrain women's participation in the financial system. • Many women do not have the collateral assets required by formal lenders. • Lack of access to finance is a major barrier facing women entrepreneurs. • States have an obligation to support the development and access to financial services (section 6.4. in the SSF Guidelines (FAO 2018)). • Women lack power and pathways to bargain for restructuring of loans that have been affected by COVID-19 (many formal businesses have managed this).	**Economic well-being:** As a result of COVID-19, women fish processors and traders have either had their income and working capital decline significantly or have lost it entirely. Access to finance is paramount to individual recovery.	1. Rapidly develop well-targeted financial relief to women business owners, such as debt forgiveness or renegotiation on terms that will enable women entrepreneurs to recover fully. 2. Develop or adapt financial instruments that can build back women's businesses, particularly low-income women. These may include providing loans and other financial services (e.g. access to savings and bank accounts) to increase or improve financial support for women fish processors and traders to develop their business activities. 3. Improve women's access to finance by easing loan conditions (i.e. collateral requirements) and reducing interest rates. 4. Address social barriers to women's expanding economic empowerment. For example, incorporate gender-transformative approaches into programming (see in relation to savings groups: Promundo-US and WorldFish 2018; more broadly, Vossenberg et al. 2018). These approaches engage men (together with women) as change agents in reducing imbalances in gendered control over finances and women's control over their own income. 5. Effectively communicate the availability of funds, especially hard-to-reach ("last mile") women.	• Financial institutions (e.g. the World Bank and the African Union) and development agencies (e.g. Agence Française de Développement (AFD) and the Japan International Cooperation Agency (JICA) in the Republic of Congo). • Women who want to expand their business operations. • Women who require capital to revive their business activities after COVID-19.	• Women entrepreneurs have greater access to financial services to establish or grow their businesses.

RECOMMENDATION 3: Increase gender-equitable access and availability of affordable fit-for-user processing and storage technologies and improve processing, storage and transportation infrastructure. Design more sustainable technologies, such as solar driers and biogas kilns, to meet women processors' evolving requirements. Improve affordability and expand capacities of infrastructure, and create safer, more hygienic facilities that are responsive to women's needs. These are required to enable businesses to grow and to reduce economic and food quality and quantity losses.

What is the issue or opportunity and why is it important?	COVID-19 impacts addressed	Recommended actions	Key partners, priority locations and users	Expected outcomes
• Fish processing, storage and transportation infrastructure is inefficient. • Spaces lack sanitation as well as care facilities (e.g. changerooms). • Post-harvest fish losses are prevalent, with nutritional as well as economic consequences. • Fish losses disproportionately burden post-harvest fish workers, a large percentage of whom women. • Technical and social gender barriers influence losses. • Women, particularly low-income women, have limited access to extension services. • Current processing practices rely heavily on the unsustainable and unhealthy practice of burning charcoal.	**Storage and distribution disruptions:** Changes to market dynamics increased storage requirements to avoid losses on unsold fish. Where access to processing and storage infrastructure is poor, this resulted in significant fish losses and poor quality.	1. Facilitate the development and use of fit-for-users and fit-for-context and affordable technology, such as fuel-efficient biogas, fueled smoking kilns or solar driers, in particular ensuring responsiveness to the needs of women processors. 2. Improve the affordability of infrastructure, with appropriate energy-efficient technology and financing mechanisms. 3. Expand physical capacities of processing and storage infrastructure to enable post-harvest fish workers to scale up their businesses. 4. Increase the number of facilities around beach landing sites. 5. Enable collective spaces for processing activities and equipment sharing and to encourage peer-to-peer information exchange and mutual learning among women. 6. In conjunction with the above, assess gender-related barriers in context (such as care burdens on women and unequal ownership of assets) and integrate bespoke strategies to address those, such as gender-transformative approaches that engage men as change agents for equality. (See, for example, Cole et al. 2020.) 7. Improve the physical spaces of processing and trading, in particular taking into account the needs of women processors and traders (e.g. modern wash and changeroom facilities with separate spaces for women fishmongers and processors). These can (i) improve sanitation, (ii) allow women to bring their babies, as they have a space to change nappies, and (iii) increase overall processing efficiency.	• Users themselves; developments should be community-led to ensure the technology is contextually appropriate. • Processing facilities should be located near beach landing sites. • Areas with poor transportation infrastructure should be prioritized (e.g. landlocked countries such as the DRC).	• Impact of fish processing activities on the natural environment is reduced. • Post-capture fish quality losses drop through improved access and capacities of processing and storage facilities. • More fish is available to consumers, and therefore improved food security. • Fish products for consumers are of better quality.

RECOMMENDATION 4: Increase investments in sustainable management of fisheries and aquaculture and in equitable, safe and dignified access to fish to secure sustained flow of fish in supply chains. This includes enhancing women's direct access to and control over physical fisheries resources (fish, boats and gear, lakes and ponds) as well as fit-for-context strategies addressing transactional sex-for-fish.

What is the issue or opportunity and why is it important?	COVID-19 impacts addressed	Recommended actions	Key partners, priority locations and users	Expected outcomes
• Although capture fisheries in Africa are the critical foundation of fish supply and livelihoods, the sector faces combined challenges from under-recognition (and thus under-investment in policy as well as a diversion of resources to aquaculture), infrastructural development, climate change, declining fish populations and overfishing. • These challenges constrain availability and accessibility (affordability) of fish for women fish processors and traders. • Scarcity of resources increases competition among actors, further reducing women's (already lower) bargaining power as secondary resource users dependent upon primary users (i.e. fishers, mostly men) and given gender hierarchies and dynamics. • Countries have an obligation to adopt measures for long-term conservation and sustainable use of fisheries resources and to secure the ecological foundation for food production (section 5.13 of the SSF Guidelines). • Women have limited access or ownership of land on which to build fishponds or a water zone over which to build aquaculture cages.	**Production disruptions, bargaining and power relations**: • COVID-19 has exacerbated many of these challenges facing capture fisheries. • COVID-19 has exposed some of the vulnerabilities in the aquaculture sector (e.g. dependence on imported fish feed and the knock-on implications for actors along the fish food system). • Women report that COVID-19-related declines in the availability of fish have exacerbated sex-for-fish transactions and exposed women to exploitation.	1. Invest in the conservation and enhancement of wild fish populations through the following: • Pursue sustainable and contextually appropriate management approaches (e.g. managed areas or other management tools, such as fish aggregation devices). • Strengthen and scale community-based approaches to fisheries management. • Commit to and implement the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries. 2. Conduct a thorough assessment of fit-for-context fish supply options, and invest in aquaculture only in contexts that are appropriate and in ways that do not undermine capture fisheries as an essential source of fish supply and livelihoods. Where appropriate, do the following: • Support developments in fish farming by investing in breeding programs and exploring national opportunities for more environmentally sustainable fish feed production. • Explore opportunities for nutrient-rich small fish species in aquaculture. • Collaborate with regional and national networks as well as development partners to avoid emerging risks of non-inclusive sector development. Instead, ensure women and smallholders are effectively involved in fish farming developments and engaged in future research. 3. Facilitate women's equal and direct access and control over fish as a resource in any mode of production. For example, enable legal ownership of land and ponds, provide finance to allow women to buy assets, enhance women's safe mobility, and assess collective enterprises. 4. Address underlying gender dynamics through a combination of the following: i) specific gender-based data and policy interventions to ensure that harmful gender-transactions are identified and prevented, and ii) multi-actor programming with women and men in communities as well as enforcement officers to surface and identify context-appropriate means of addressing sex-for-fish or other harmful dynamics. 5. Expand (re-establish) the viability of women's fish businesses through policy measures, such as governments (i) expanding agriculture commodity trade opportunities relating to fish and fish products and engaging women traders in these opportunities, and (ii) assessing and easing policy barriers that limit women's cross-border fish trade.	• Fisheries, aquaculture and development specialists, including FAO and other organizations operating nationally (e.g. WorldFish in Nigeria, Tanzania, Malawi and Zambia).	• Fisheries are stronger and sustainable for future generations. • Access to fish is improved for women fish processors and traders' business activities. • Unequal power relations between women post-harvest fish workers and fishermen as well as interrelated exploitative relationships (e.g. sex-for-fish) are both addressed.

RECOMMENDATION 5: Improve accessibility of formal and peer-to-peer business capacity development for women, especially women from low-income groups. Include a short-to-medium term focus on business recovery and resilience. This is a foundation for women fish processors and traders' economic empowerment, which is in turn vital for resilience of families and recovery of communities.

What is the issue or opportunity and why is it important?	COVID-19 impacts addressed	Recommended actions	Key partners, priority locations and users	Expected outcomes
• To date, women have experienced poor access to capacity development in business literacy. • This needs improving, particularly skills development and strategies for business resilience. • A lack of access to education, training, business support and mentors makes entrepreneurship a challenge, especially during rapidly changing periods, such as COVID-19. • Constraining gender norms (including those that position men as decision-makers, breadwinners, innovators and public sphere actors versus women as caretakers, followers and domestic sphere actors) limit women's potential as entrepreneurs.	**Retail and market disruptions and economic well-being:** • COVID-19 has gravely impacted the economic viability of many women's businesses. • It became evident that an ability to use digital technology as a means to access market information, buyers and retailers was critical to sustain businesses during COVID-19 when physical connectivity was diminished.	1. Expand well-tailored business management and develop capacity development opportunities for women fish entrepreneurs, including training and formal coaching programs such as those with private sector actors. 2. Include digital literacy and digital business skills in capacity development programming, in conjunction with strategies to close the gap in women's access to devices and internet. 3. Include a short- to medium-term focus on business resilience and recovery. 4. Ensure capacity development is relevant and accessible for women with low literacy levels. 5. Engage men in processes to reduce male resistance to or takeover of women's entrepreneurship and businesses. (For how to engage men, see, for example, Promundo-US and AAS 2016 and CARE International 2016.) 6. Effectively communicate the availability of training and capacity development opportunities. 7. Support and enable peer-to-peer knowledge sharing (e.g. "mentoring" by successful women entrepreneurs). 8. Collaborate with national and regional networks of women fish processors and traders to organize and implement training and mentoring programs, including those that use experiential learning models.	• AFD, JICA, New Partnership for African Development, FAO, WorldFish. • Women who want to expand their business operations. • Women small business owners or prospective business owners.	• Diverse women, including from low-income groups, have greater capacity to design, finance and manage their own businesses and expand their activities if desired. Self-efficacy and agency of women entrepreneurs are enhanced, and greater connectivity (social capital) is made among women in business in the sector.

RECOMMENDATION 6: Address the digital gender gap by empowering women equitably through information and communication technologies. Improving women entrepreneurs' market connectivity and digital capabilities will help ensure that women are not left behind, but rather thrive, in the digital transformation. This requires investment in gender-equitable "last mile" access to devices, reliable electricity and internet, and accessible digital skills training for women.

What is the issue or opportunity and why is it important?	COVID-19 impacts addressed	Recommended actions	Key partners, priority locations and users	Expected outcomes
• Many women lack ICT skills and knowledge. • Moreover, many women (as well as men) in rural areas, especially remote areas that depend on fisheries, do not have devices and have insufficient and/or unreliable electricity and internet.	**Retail, market and distribution disruptions:** Virtual marketing enabled some women fish processors and traders to continue their income-earning activities during periods of COVID-19-related mobility restrictions.	1. Develop rapid and effective partnerships to provide reliable access to devices, power and internet. 2. These should be fit-for-client technologies and models, including small, flexible, solar options for power as well as flexible payment schemes. 3. Provide ICT skills training to women, whilst also working with men to reduce male resistance. 4. Collaborate with national and regional networks of women fish workers to design and deliver ICT training materials 5. Encourage youth involvement and innovation by, for example, offering financial incentives and competitive small innovation grants, innovative ICT-related products and solutions. 6. Promote knowledge sharing among women, with leadership from young people, on ICT skills for business. 7. In conjunction with the above, assess gender-related barriers in context (such as unequal access to phones or internet, online safety and harassment) and integrate bespoke strategies to address those, including gender-transformative approaches that engage men as change agents for equality.	• Digitally related youth associations. • Public sector electricity and telecommunications agencies. • Private sector actors, such as mobile phone and telecommunications companies and solar power companies, including women-led and women-targeted companies. • National and regional networks of women fish workers (AWFishNet) and other women's NGOs and civil society networks (e.g. Dimitra Clubs and Women in Tech Africa).	• Flexibility of women fish processing and retailing activities is increased. • Marketing opportunities are expanded, and profit gaps are reduced (via better market links and information). • Several spinoff effects occur: increased access to critical information (including to health and gender-based violence resources and to climate information); access to digital financial resources; ability for children to follow school remotely during shocks; lower drop-out rates; and greater social connectivity, including among rural girls.

RECOMMENDATION 7: Enable women to realize their right to information. Removing obstacles to information access and building and supporting the capability of women's networks leads to more effective translation of policy into practice and of lessons from practice into policy.

What is the issue or opportunity and why is it important?	COVID-19 impacts addressed	Recommended actions	Key partners, priority locations and users	Expected outcomes
• The right of access to information is a fundamental and universal right, necessary for economic empowerment and the fulfillment of other rights. • Evidence suggests that women are not able to exercise this right with the same frequency, ease and rate of success as men. • In particular, women fish processors and traders lack access to information regarding policy, programs, markets, and financial and social services, particularly poor women and women living in rural areas. As a result these women do not benefit from the power of information.	• All impacts were addressed, as women who were networked were reported to fare better.	1. Improve the transfer of information from policy to practice to ensure all women fish workers are comprehensively informed of existing and changing policies and strategies that impact or provide them opportunities. 2. As one example and potential pilot, invest in women-targeted information dissemination about the soon to be implemented African Continental Free Trade Area and associated food standards requirements for cross-border trade among women entrepreneurs. 3. Improve accessibility of information for women, including those with low literacy, to ensure the information is accurately understood (for example, in written and visual form and nondominant languages).	• Partner with and financially resource national and regional networks of women fish processors and traders to disseminate information and coordinate awareness-raising campaigns.	• Women fish processors and traders have improved access to educational resources, financial services, new technologies, accurate and timely market and trade information for capacity development. • Women can exercise their voice and enter informed dialogue about decisions and policies that affect their lives. • Spinoff effects are addressed, including greater policy compliance and food safety outcomes.

RECOMMENDATION 8: Enable gender-inclusive fisheries and aquaculture governance, and transition rapidly to women's full participation and leadership in policymaking. The former includes recognizing and counting (data on) women as key actors in the sector. The latter involves rapidly removing context-specific social and institutional barriers to women's full engagement—including as leaders—at all levels and in all areas of policymaking that affect women fish processors and traders.

What is the issue or opportunity and why is it important?	COVID-19 impacts addressed	Recommended actions	Key partners, priority locations and users	Expected outcomes
• Women fish processors and traders are frequently marginalized from decision-making processes that impact fish food systems, from local through to national and regional scales. • Gender norms and unequal gender dynamics limit the recognition of women's contributions (and needs) in the sector. • This manifests in and is perpetuated by gender-blind monitoring and evaluation data in the sector. As a result, governance and policymaking can be gender blind (Kleiber et al. In press). • Enforcement of fisheries policies can vary by context and quality, including that women retailers experience harassment from enforcement officers.	**Fish food system functions:** • Many African nations are investing in improved (including more gender-equitable) governance through alignment with the SSF Guidelines (FAO 2018), but such commitments are at risk with attention turned to COVID-19 responses. • To be effective, COVID-19 recovery efforts and broader sector policy development and implementation and monitoring must be explicitly gender-inclusive from design, through implementation to data collection.	1. Fisheries and other relevant government agencies engage national and regional networks of women fish processors and traders in monitoring fish food systems and developing local to national responses to COVID-19 and in meeting the preexisting commitment to the SSF Guidelines. National guidelines need local input to design, implement and monitor well. 2. National fisheries departments, in collaboration with/including extension and statistics units, and nongovernmental partners (extension NGOs) should challenge existing views of fish food systems as men's domains, by gathering, analyzing and reporting gender-balanced data (on women and men in both pre-production and along all post-production supply chain nodes) and extension services that employ, reach and benefit women and men equally (Kleiber et al. In press). 3. During COVID-19 recovery, increase attention to the *rule of law* and accountability, especially anti-corruption, bribery and anti-harassment monitoring and strategies at the local scale in relation to fish trade. 4. Consider piloting cameras and (safe, inclusive) reporting mechanisms in fish transaction spaces or locally developed strategies to ensure safety and stop harassment. Assess and apply lessons from contexts that have made progress in this area, including strategies to engage men in co-creating safe and dignified environments. 5. Convenors and facilitators of local fisheries governance can enhance gender equity by applying best practices in setup and/or facilitation of and support to local governance organizations as outlined in the SSF Guidelines (point 8 on gender equality in particular [FAO 2018] and current resources (e.g. see Kleiber et al. 2019). 6. Fisheries extension processes can incorporate gender-transformative strategies to address sociocultural barriers (e.g. women's domestic care burden's, behavioral stereotypes and mobility constraints) (Cole et al. 2018).	• Men also need to be engaged when addressing sociocultural barriers to women's participation in local governance. • National departments, including those concerned with extension (e.g. Department of Agriculture, Forestry & Fisheries, Ministry of Fisheries Development) and statistics (e.g. National Bureau of Statistics). • Public and private monitoring, control and surveillance agencies. • National departments (e.g. Department of Women, Youth and Persons with Disabilities) and civil society groups (such as Dimitra Clubs, and networks of women fish workers, e.g. AWFishNet) to identify what has worked and potential strategies to reduce harassment, local corruption and transactional fish-for-sex.	• Quality fisheries governance from local to national scales is improved, in line with the SSF Guidelines. • Rule of law and accountability are improved in fisheries spaces and markets. • Fisheries policies, from local to national levels, better reflect women's and men's needs, and safer and more dignified work becomes available for both women and men in fisheries supply chains.

RECOMMENDATION 9: Proactively engage diverse women fish traders and processors, on par with men, in COVID-19 recovery planning processes, including youths and people from disadvantaged groups. It is critical for recovery processes to recognize that the agency of women fish processors and traders is essential to effective and just recovery planning. Enabling women's agency in this will require developing and applying processes and arrangements that allow diverse women fish traders and processors to contribute and be heard in shaping the design, development and implementation of COVID-19 recovery plans.

What is the issue or opportunity and why is it important?	COVID-19 impacts addressed	Recommended actions	Key partners, priority locations and users	Expected outcomes
• Evidence from other shocks and disaster recovery processes and outcomes show that outcomes are likely to lack effectiveness unless women are part of the response leadership and decision-making (Criado Perez 2019). • Without women's equal leadership and participation, COVID-19 responses will not meet the needs of women and girls. • There is a notable absence of women COVID-19 response teams and plans. (Global Health 50/50 2021).	• All impacts were noted.	1. Invest in multiple and gender-balanced perspectives on response plans and effective solutions. 2. Ensure women's voices are equally included and heard in the decision-making spaces and processes where responses are formed. 3. Increase women's leadership at all levels of COVID-19 response structures. 4. Support women's participation by addressing gender-specific barriers to decision-making spaces.	• National and regional networks of women fish workers, specifically AWFishNet. • Engagement should extend to men and women, both adults and youths, from disadvantaged groups.	• Women fish processors and traders' agency is enhanced and recognized as vital to just, relevant and efficient COVID-19 recovery plans. • Responses address the disproportionate impact of COVID-19 on women and girls through funding or policy commitments for eliminating gender-based violence and providing sexual and reproductive health services or women-specific economic assistance.

RECOMMENDATION 10: Invest in collective organizations and networks. Financially resource and strengthen the networking and governing capabilities and voice of regional and national networks of women fish processors and traders, and build accountability and responsiveness of governance bodies to the experiences and leadership of women fish processors and traders.

What is the issue or opportunity and why is it important?	COVID-19 impacts addressed	Recommended actions	Key partners, priority locations and users	Expected outcomes
• Gender inequalities at all scales prevent women from participating in crucial decisions pertaining to fisheries management, fish processing and cross-border trade. • Collective organizations enable and leverage the voice and agency of women, as well as their capacities and opportunities. • This leads to greater outcomes for individuals, their households and communities and the sector. • The scope can include collective input to policy processes as well as women learning from each other by sharing best practices, experiences and technologies and facilitating effective policy through strategic and efficient inputs from a wide set of stakeholders. • Networks and associations can also overcome market barriers by enabling links through economies of scale (inputs and outputs).	• Collectives can enhance resilience and recovery: during the pandemic, women organized within cooperatives or associations and have been able to access affordable loans from group savings to rebuild their capital, resume their business activities and provide for family expenses.	1. Financially resource national and regional networks, collectives, organizations. 2. Strengthen the organizational capacities of women fish workers organizations (national associations). 3. Help create or maintain shared/collective spaces (e.g. processing facilities, storage facilities and retailing spaces). 4. Identify "champions" who raise the debate about gender equality in the sector and underscore women's contributions in fisheries and aquaculture, as well as cross-border fish trade. These champions could work within the framework of African Union priorities, linking to the UN Food Systems Summit.	• National and regional networks of women fish workers, specifically AWFishNet. • Regional agencies, such as the SADC, the African Union Inter-African Bureau for Animal Resources (AU-IBAR), international funders, FAO.	• Reach and representative voice of women entrepreneurs' national level networks are expanded. • Social learning opportunities are increased. • Capacity of national-level networks of women entrepreneurs is increased to respond to the needs and ideas of diverse members effectively and rapidly. • Resilience and adaptive capacity of women entrepreneurs in fish food systems are enhanced.

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Annex. Direct accounts from key informants or community reporters about the impacts of COVID-19 across each of the five domains of adaptive capacity

Domains affected		Impacts	Direct accounts from key informants and community reporters across sub-Saharan Africa
Fish food system functions	Production disruptions	• COVID-19 restrictions meant fewer fishers were able to access vessels and landing sites and catch and land fish. • Surges in the cost of imported fish feed have increased the cost of farmed fish production. • These factors have resulted in changes to the availability and accessibility of fisheries resources. • The scarcity of fish has increased competition and bargaining among post-harvest fish workers.	*"Due to COVID-19, there have been less fishing due to many logistical challenges like access to enough capital to be able to go fishing and the men are actually not bringing enough [fish] for everyone."* *– key informant, Uganda* *"When the fishermen only fished two times a week, when they arrive the demand [for fish] is too high. All of this also impacts the prices of the fish … And the processor even lacks … [fish] to process because she cannot access the material. And then it is a problem, as she is exposed to having to use the capital, all the buffer money she had."* *– key informant, DRC* *"I have two artisanal canoes which supply fish to me. During this time, I could not finance them for their operational activities. The impacts of the COVID-19 pandemic hit these fishers very hard that they could not buy fuel for fishing. They were left stranded most times."* *– community reporter, Ghana* *"Fish prices have more than doubled since March 2020 from approximately CFA 2500 (USD 3.6) to CFA 4800 (USD 8.7) per kilo."* *– key informant, Cameroon*
	Storage and distribution disruptions	• COVID-19 restrictions disrupted transportation to landing sites, urban markets and trading routes across borders, negatively affecting traders' access to customers and, vice versa, customers and consumers' access to fish. • Transportation costs increased. • Changes to market dynamics increased storage requirements to avoid losses on unsold fish. Where access to processing and storage infrastructure (e.g. cold-storage facilities, warehouses and ice) is poor, this resulted in significant fish physical and quality losses.	*"As the number of passengers in public transport are reduced … carriers try to compensate for this by increasing the cost of transportation … and this affects the women's budget."* *– key informant, Republic of Congo* *"I ended up with a stock of fish at home, but the customers couldn't come/reach my home because of a lack of means of transportation. And as our storage facilities are limited, I lost a part of the goods [fish]."* *– key informant, Republic of Congo* *"Due to the pandemic, production was very low, hence difficulty in exporting fish since most countries were under lockdowns or quarantines. This resulted to price dropping as well as altering of the quality of fish since they had to be refrigerated for a longer time whereas the storage fee was also high. For those who had their own refrigerators, [they] ended up spending so much on electricity."* *– community reporter, Tanzania* *"Electricity supply is inconsistent in my area, and this has led to huge losses for many fish traders."* *– community reporter, Kenya* *"The cold storage facilities are not well manned. Suffering from staff shortages and a host of other issues."* *– community reporter, Kenya* *"Trouble sorting fish in cold facilities was faced as well because the prices of renting cold rooms for fish bought in bulk started hiking. The space also became a problem due to lockdowns and quarantines. The seafood demand became low, and thus people were keeping their food only in cold storage rooms until market is found. So the cold rooms could only be rented on a first come, first serve basis."* *– community reporter, Zambia*

Domains affected		Impacts	Direct accounts from key informants and community reporters across sub-Saharan Africa
Fish food system functions	Retail and market disruptions	• School closures, disruptions to the restaurant, hotel and tourism sector and market closures significantly reduced market demand, retail hours and marketing avenues. • Changing market dynamics, delays in selling and poor purchasing power of buyers and consumers contributed to increased fish quality losses.	*"Big international companies did not place orders for fish since some countries had their boundaries [borders] closed."* *– community reporter, Tanzania* *"We have experienced a significant drop in the local people in our community buying fish. This has been occasioned by a significant drop in disposable incomes. Many locals have lost their jobs."* *– community reporter, Kenya* *"Many urban dwellers rely on cooked fish from the restaurants and fishmongers. Many restaurants sell fish to office workers, who are now mostly working from home. Additionally, curfew means that people do not meet in restaurants after work, and this has caused a significant drop in restaurant fish consumption."* *– community reporter, Kenya*
Individual well-being	Economic well-being	• Women fish processers and traders have experienced significant reductions in income. • Loss of revenue and a lack of capital have caused business failures. • Consequential loss of capital has affected women's bargaining power. • Economic instability has led to increased debt levels.	*"The main challenges have been the closure of schools, education institutions and higher learning institutions. That affected the women who have been supplying fish and food into these institutions … They were affected … Some closed their businesses, some lost [their businesses], because they had already processed [their fish-based food products] with no market. So they lost their capital, and they are impacted because they couldn't do repayments of their loans with the banks."* *– key informant, Tanzania* *"Retailer women who do not have enough capital, not enough money. Who go every morning, with their basins to the landing docks, to wait for the fishermen to come back so that they can buy fish. For example, the equivalent of 20 dollars that she will sell and maybe get 5 or 6 dollars of profits that will sustain her needs and do the same thing all over again the next day … In case of a lockdown or a crisis, they have to consume all their capital and start over."* *– key informant, DRC* *"Whilst the [COVID-19 containment] measures today [December 2020] are alleviated … we now see that we have to pay off a lot of the debts, the credits that women have acquired during the confinement period."* *– key informant, Republic of Congo*
	Unpaid care work	• COVID-19 containment measures (e.g. school closures) have intensified women's unpaid domestic work burden and, in turn, constraints on women's time. • Women have shouldered the brunt of increased childcare responsibilities, including physical care, cleaning, feeding and at-home learning responsibilities.	*"We [women] are spending so much time taking care of babies, being teachers, instead of us doing work. We have added another task of being teachers because schools are closed. This is something we could not foresee or plan for, and it is really taking much of our time, in as far as time budgeting is concerned."* *– key informant, Uganda*

Domains affected		Impacts	Direct accounts from key informants and community reporters across sub-Saharan Africa
Individual well-being	Health	• Women are routinely exposed to the virus and its physical health impacts through their work in crowded markets and landing sites. • Declines in economic well-being and increases in unpaid care work have negatively affected women's mental health, particularly symptoms of psychological distress (e.g. stress and anxiety).	**Exposure to the virus**: *"In relation to our work we do [as fish processors and traders], we still have difficulties in complying with these health measures which have been put in place by the authorities. Why cannot we respect them? Because our work, for example, when we have to go to the landing docks, even now when we are not completely in lockdown, when we have to go there, it's the hustling, and there the measures are not respected, nor social distancing is respected. There is also the wearing of masks too, which is not too respected … But in the market too, there is a problem of compliance with preventive measures and sanitary measures. This complicates even more. So, here too, women are exposed to diseases in relating to their work, because women who are in the processing and trading of fish, it's hard to get this done at home."* *– key informant, DRC* **Economic well-being and its implications for mental health**: *"Women in Uganda … we are seeing the negative effects of coronavirus … If we don't take care of our economic well-being, then it really it will trickle down to health effects like mental issues, because people will now get mental stress, the fact that they cannot meet their obligations."* *– key informant, Uganda*
	Safety and relations	• Scarcity of fisheries resources has intensified bargaining and power relations in the food system and increased incidences of sex-for-fish transactions. • COVID-19 restrictions have increased police presence around fish landing sites and along transportation routes, and this has encouraged harassment and exploitation by police. • Household economic insecurity and distress have increased gender-based violence.	**Increased competition for scarce resources**: *"When fish are landed, the demand is high, increasing competition among buyers, and increasing fish prices."* *– key informant, DRC* *"There are very few fish from the farms in Africa. Most of our fish comes from the wild and women do not own any boats. The men do. In this COVID-19 season we have seen decline in catches, which has resulted in sex-for-fish trade."* *– key informant, Uganda* **Evidence of police harassment:** *"The police [at landing sites] impose women to provide fish to them. This is not legal. At the national level, we have tried to complain to the authorities, but we have not been given any answers. We [women fish workers] find ourselves having to buy expensive fish, and the police are forcing us to give it to them for free. They are even imposing a quantity that we need to provide to them."* *– key informant, Republic of Congo* *"Along the way [from landing sites to markets], there are so many roadblocks by the police. They look for faults, and even though you have paid all that's necessary, when you stop at the roadblock, they still harass you and find little faults just to frustrate you so that you either give them fish or money. This has been quite a challenge, especially now because of COVID the money situation is really bad. Many women get so frustrated they actually stop doing their business, because they are experiencing so many losses."* *– key informant, Zambia* Heavy-handed police controls have also further exacerbated labor shortages in some regions, as laborers have a "*fear of being assaulted by the police, who often assault first then confirm authorization to be out during curfew hours later.*" *– community reporter, Kenya*

Domains affected		Impacts	Direct accounts from key informants and community reporters across sub-Saharan Africa
The fulfillment of basic household needs	Food and nutrition security	• Economic insecurity and declines in the availability and accessibility of fish and other food products have altered and reduced household food consumption.	*"Whatever a woman gets is for the family. The money that is gotten, however small, the woman invested back to the family by buying ugali, by buying rice, contributing to the school fees, you know, health, etc., etc. And tomorrow, with what is remaining in the capital, she goes back to the beach to buy more fish. So … whatever happens to this woman, the whole family is impacted … It is not just a single person who is affected, but, you know, behind that woman, there are like six even 10 people that are affected together with that woman."* *– key informant, Tanzania* *"In my community, mostly all fish processors lost their business and eat once daily because they … have to manage their foodstuffs they have."* *– community reporter, Ghana*
	Education	• Economic insecurity has adversely affected school attendance.	*"There is not enough business of fish, which has [made] more students to fail to go to secondary school due to fees."* *– community reporter, Malawi*

Source: data from interviews and community reporters..

Table 2. Direct accounts of COVID-19 impacts on women fish processors and traders in sub-Saharan Africa.

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RESEARCH PROGRAM ON Fish

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About FISH

The CGIAR Research Program on Fish Agri-Food Systems (FISH) is a multidisciplinary research program. Designed in collaboration with research partners, beneficiaries and stakeholders, FISH develops and implements research innovations that optimize the individual and joint contributions of aquaculture and small-scale fisheries to reducing poverty, improving food and nutrition security and sustaining the underlying natural resources and ecosystems services upon which both depend. The program is led by WorldFish, a member of the CGIAR Consortium. CGIAR is a global research partnership for a food secure future.

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