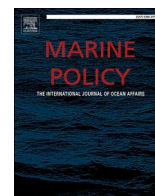




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The impacts of covid-19 on gender dynamics and power relations among men and women involved in cross border fish trade in Zambia and Malawi

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ABSTRACT

This paper explores the impact of the COVID-19 pandemic and the measures to mitigate it on gender dynamics and power relations among men and women involved in cross border fish trade in Zambia and Malawi and the ensuing policy implications to support the fisheries value chain. The paper is based on qualitative and quantitative data collected in Zambia and Malawi in October and November 2021. We conducted quantitative surveys implemented the Cognitive Edge Sensemaker Tool and the Emergency Market Mapping and Analysis toolkit (EMMA) to understand the dynamics of cross border fish trade before and during the COVID-19 pandemic. A social relations approach, focusing on gender relations, was used to analyze the data. Findings suggest that women cross-border fish traders are caught up in a complex web of networks and relationships that are disempowering to them. Some measures put in place to mitigate the impact of the COVID-19 pandemic lacked an understanding of the historical perspective and dynamics of women in fish trading communities further marginalizing men and women cross border fish traders. Some measures exacerbated hidden violence against women and overt forms of violence against men. Since most of the violence occur across state boundaries, there is a need for inter-country coordination to ensure that the rights of women and men cross border fish traders are protected. Policy measures could include educating police officers for even-handedness when enforcing COVID-19 rules and providing mechanisms for reporting abusive practices.

1. Introduction

The fisheries sector contributes significantly to employment and incomes in Malawi and Zambia. The sector provides one of the most traded food commodities (fish) globally and regionally. The fisheries sub-sector supports around 1,000,000 people in Zambia including about 72,000 people who work as fishers [1]. In Malawi, fisheries contribute 4% of GDP and employ 60,000 people; an additional 500,000 are involved along the fisheries value chain [2,3]. However, the fisheries sector in Zambia and Malawi remains vulnerable to shocks and crises. Factors including the lack of investment options [4], high mobility and migration and unequal gender relations [5] contribute to the sector's vulnerability. In addition, most jobs in the sector are mainly in the informal sector the COVID-19 pandemic has hit hard. The informal sector produces legal goods and services but does not 'comply with business or labor market regulations' [6].

In many countries, including Zambia and Malawi, the advent of the COVID-19 resulted in the implementation of various 'special' or 'extraordinary' measures to mitigate its impacts and reduce its spread. In Zambia, when the first COVID-19 cases were reported in March 2020, the country went into a partial lockdown in which bars, cinemas, lodges, hotels, salons and barbershops were closed. The government also introduced a one-time ZK2400 (about US\$107) Covid-19 relief fund for each Social Cash Transfer beneficiary [7]. Tourist visas were suspended, and the border with Tanzania was temporarily closed [8,9]. Gatherings were allowed for fewer than 50 people. The government also restricted non-essential travel, instructed the use of facemasks in public, and issued a stay-at-home general advisory with police officers deployed to ensure compliance [10]. Social distancing and sanitation measures in public places were introduced and encouraged for the general populace. Health inspectors and police, and other authorized officers were deployed to enforce full compliance with the COVID-19 regulations.

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Malawi also implemented similar measures, including partial lockdown in which only essential services were allowed to function and critical businesses to work in shifts, an Emergency Cash Transfer Programme to support small businesses in major urban areas, banning of street vending and public gatherings, including religious gatherings, weddings, and pubs, promoting wearing of masks, washing hands with soap, using sanitizers, reporting to the nearest hospitals if they had any unusual symptoms, a two-week mandatory self-quarantine for people arriving from areas highly affected by coronavirus disease was also observed. In Malawi, however, it was not possible to implement strict lockdown measures due to the risk of widespread economic disruption, hunger, worsened food insecurity, risk of violence and mass political rallies. But, in both countries, measures implemented have profoundly impacted women and men involved in the fisheries sector.

The suspension of cross-border movement significantly affected the sector because fish is mainly traded through informal channels in Southern Africa, including in Malawi and Zambia. For example, Malawi's cross-border fish traders buy fish in Malawi and sell it in Mozambique, while cross-border fish traders in Luangwa, Zambia, buy fish in Mozambique and sell it in Zambia and the Democratic Republic of Congo (see trade routes in Fig. 1). The closure of borders negatively affected small-scale fisheries, particularly seafood systems that relied on informal cross-border trade networks and could not change and adjust to local and regional markets (Bassett et al., 2021). In most southern Africa countries that closed borders, food based agriculture products were allowed to cross borders, and these are often traded formally using long distance haulage trucks, while cross border fish trade is often traded informally by individual small traders. Limited mobility, reduced access to markets and lack of cold storage facilities resulted in higher post-

harvest losses and reduced household income and food (Bassett et al., 2021). In many instances, shutdowns also happened during major holidays which are often periods of high demand, further restricting market access for seafood producers, fish and other agricultural commodities [11-13].

Restrictions which impacted informal fish trade affected women more than they did men. In Africa, 60% of fish traders are women [14]. In both Zambia and Malawi, men dominate actual fishing and own fishing gear, making women traders and processors [2,15]. Thus, women are disproportionately affected by disruptions to trade. Measures to minimize the spread of COVID-19, including restrictions to mobility, led to reconfigurations of the fish trade and negative implications for women's participation, benefits and empowerment (Lukanga, pers comm. November 2020). Empowerment, in this context 'implies secure livelihoods, the ability to enjoy their human rights, a reduction in the unpaid work that hinders the enjoyment of rights, and meaningful participation as actors and leaders in their communities' (EGM 2016, 1 cited in [16]:14). Women's empowerment 'goes beyond the idea that women are empowered when their capabilities are enhanced or when they can compete with men for jobs (EGM for CSW 60).

In addition, the closure of schools meant that children required care in the home during hours women had previously used for paid employment in the fish food system. Caring for out-of-school children and sick household members reduced women's income because they had to reduce their engagement in economic activities [17]. Belton et al., [18] observed a shrinking female workforce in Bangladesh, Egypt, India, Myanmar and Nigeria between February and April 2021. The shrinking female workforce confirms gender-differentiated impacts on men's and

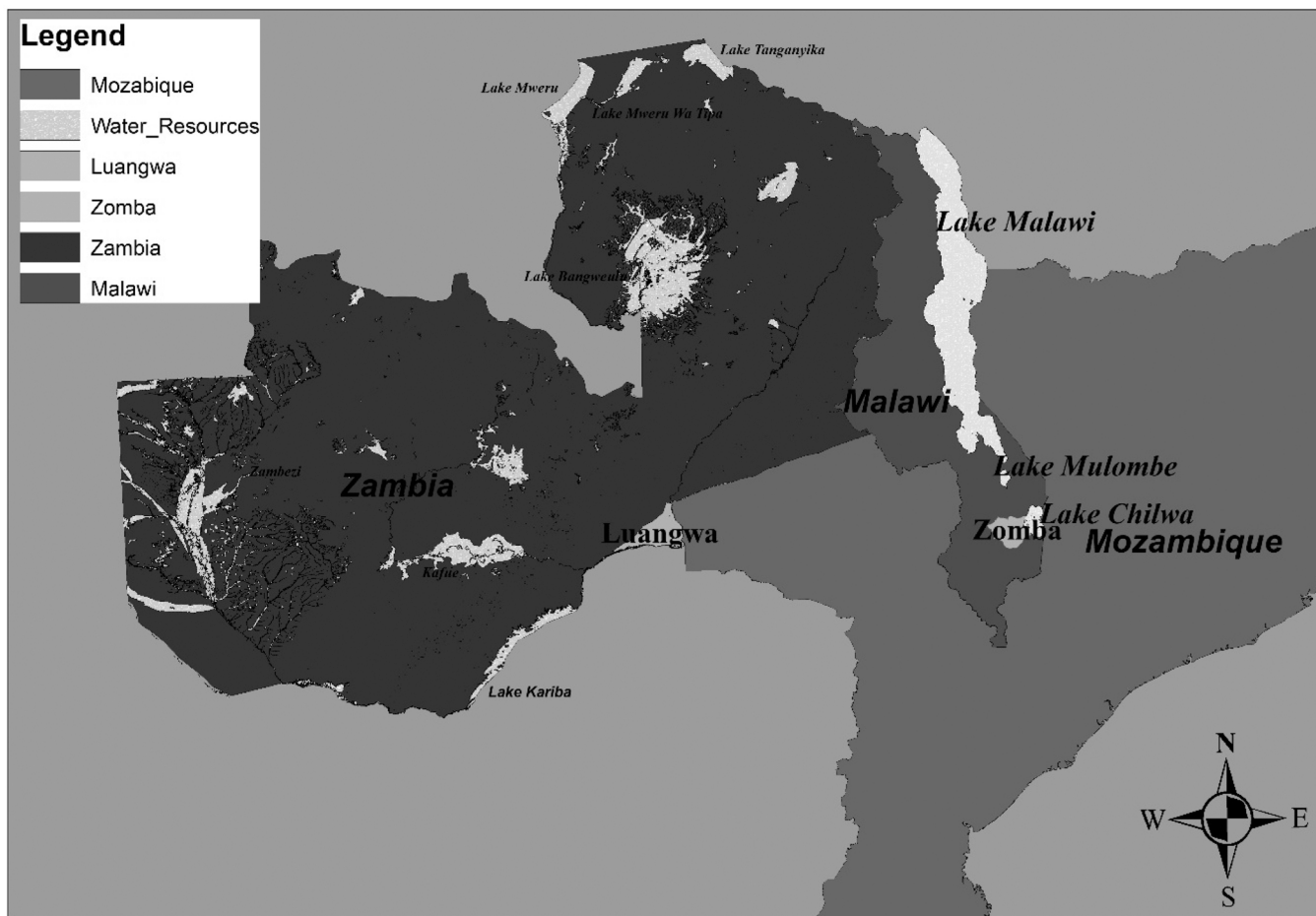


Fig. 1. Location of research areas in Malawi and Zambia.

women's ability to access paid work in aquatic food value chains, with women's employment more severely impacted than men's. Atkins et al., [19] show that the COVID-19 pandemic has disrupted demand, production and labor in the fisheries sector, negatively impacting women processors and fish traders. For example, women fish processors and traders have suffered high fish post-harvest losses due to slowness in selling fish and a consequent loss of income.

The situation of women traders and fisher households was worsened by policies that did not regard the fish trade as essential during COVID-19; thus, fisher households and fish traders were not eligible for aid [11]. This lack of support for the sector has resulted in significant income declines and loss of businesses. Traders, especially women from lower-income marginalized groups, are trapped in the cycle of taking and repaying loans [20]. For example, Bassett et al., (2021) noted that in places like the Andaman and Nicobar Islands recent migrants and women-headed households became food insecure since they had low savings and no government aid. Elsewhere literature has alluded that the decline in fish supply caused by the COVID-19 pandemic has worsened sex-for-fish transactions because women have low bargaining power [12,21,22]. This paper builds on the work of [11] who alludes to women-headed households being affected, by paying particular attention to gender-related implications of the COVID-19 pandemic and the measures put in place to contain it.

Despite such gender-differentiated impacts of covid-19 on the fish supply chain, there is limited literature on how the COVID-19 pandemic has impacted gender dynamics and women's empowerment in the fisheries sector. Using case studies from Luangwa in Zambia and Lake Chilwa in Malawi, this paper contributes to filling this gap by improving the understanding of the gender-differentiated impacts of covid-19 on the fish supply chain, the mechanisms leading to gender-based violence, and how policies designed to reduce the spread of the virus have impacted women's empowerment in the fisheries sector. The paper also explores how the pandemic, lockdowns and mobility restrictions have modified the dynamics and power relationships between men and women engaged in the fish value chain, especially those involved in cross-border fish trade. Of interest is also how the pandemic measures have modified the dynamics and power relationships between men and women within fisherfolk households and communities. There is a critical and time-sensitive gap in both countries on knowledge about the impact of the pandemic on the fish value chain, particularly in relation to the informal trade where women predominate and depend heavily. It is vital to understand the new gender configurations resulting from COVID19 to develop strategies to ensure that women and children are not exploited and abused during and after the COVID19 pandemic.

2. Context

Before the pandemic, women fish traders faced gender-based challenges that affected their businesses and well-being. For instance, a study in Kafue Zambia by [23], noted that the fish trade was a dangerous, demeaning, and challenging business for women. They also noted that women fish traders are exposed to traumatic events and often suffer symptoms of Post-Traumatic Stress Disorder, grief and other forms of anxiety and mental disorders. This finding aligns with Rajaratnam et al. [24], who reported that women are constrained by gender norms and power relations, hampering them from accessing and adequately benefiting from the natural fishery. He also found that there are deep-rooted norms, practices and power relations that influence and shape women's and men's participation in critical nodes of the fish value chain. For instance, women often process and trade fish to meet basic household needs to complement the fishing activities done by men [25, 26]. [27] found the same in Malawi and stated that gender norms restrict women's participation in small-scale fisheries. For example, husbands may prohibit women from participating in specific nodes of the chain. Women who join fishing crews face social exclusion and poor working conditions. In Malawi 'gender-based violence, including sex for

fish, exacerbates women's and youth's vulnerability in the fisheries sector ([28]:30). Sex-for-fish is where fishers coerce women to have sex with them to secure fish supply [25]. Lack of education, early marriages, and gender-based violence further marginalize women in the fisheries sector ([3]:30).

In both Zambia and Malawi, policies and laws also exacerbate gender inequality. A majority of women in Zambia do not own land and do not benefit equally from government programs such as those targeting input subsidies [29]. Additionally, Zambia is governed by traditional and common law systems. While Zambia's constitution supports rights to land and property for all and is against discrimination, it does not explicitly prohibit customary practices that exclude women from ownership of land and property. This anomaly results in gender inequality in land ownership and other resources since a substantial proportion of Zambia's land is under customary law [29]. The lake Chilwa basin is predominantly under a matrilineal system. This system entails that land and other resources are accessed through wives and their brothers and heads of the matrilineage. However, colonial rule disrupted women's control over land and water in the basin [30] such that culturally defined ownership does not automatically translate to control; neither does it automatically influence intra-household bargaining power [31]. For instance, although in matrilineal systems, women can make some decisions over land, the men's clan and maternal uncles often have the final say when big decisions are made [31]. Men also often make most of the decisions involving the use of money [32]. Male heads control decision-making within fish trader households and proceeds from fish trading, although women are engaged in the fish trade, including cross-border trade ([33]:25).

3. Methodological framework

The study adopts a Social Relations Approach (SRA), which regards communities 'mainly in terms of how members relate to each other: what bargains they make, what bargaining power they have' ([34]:23). The SRA acknowledges intersectional identities by emphasizing that other social relations such as class, religion, race, ethnicity may intersect with gender giving rise to specific forms of gender inequality. Diverse social identities characterize the fisheries sector in Malawi and Zambia. For example, there are seasonal migrants from different ethnic groups and nationalities who come to fishing communities and camps during the fishing season and move across national borders to buy and sell fish. In addition, men and women dominate different fisheries value chain nodes, and are thus differentially impacted by the COVID19 pandemic.

SRA is also concerned about power relations and acknowledges that these are dynamic ([35]:382). It captures gender power relations at different institutional locations (Hillenbrand 2014:354). The SRA approach allows us to investigate the social relations and networks that women fish traders explore and use to mitigate the impact of the COVID-19 pandemic and how these have implications for their empowerment. Understanding power dynamics in social networks is important because, as Hillenbrand (2014:354) notes, 'while poor people rely on networks of social relations to survive, social relationships can also reinforce inequality and unequal access to resources'. We use Kabeer's 2010:106 conceptualization of power as 'people's capacity to make strategic life choices and exercise influence'.

3.1. Tools

We used a mixed-methods approach. First, we implemented an adapted version of the Emergency Market Mapping and Analysis toolkit (EMMA) [36] to collect retrospective information on gender and power dynamics before and after the outbreak of the COVID-19 pandemic. Using the toolkit, we hosted two workshops where we mapped value chain activities, gendered opportunities and constraints and the decision matrix before and after COVID-19. We mapped where the changes happened in the market system and what implications they had for

diverse men and women engaged in the cross-border fish trade. We also used the Cognitive Edge Sensemaker tool to understand the dynamics of cross border fish trade during COVID-19. According to Kurtz and Snowden, 2003; Kurtz et al., 2007 the sensemaking approach help understand complex social systems' dynamics. We also collected quantitative survey data. EMMA workshops were conducted in iciBemba in Zambia and Chichewa in Malawi, recorded and transcribed by research team members who were native speakers of the respective languages. The Cognitive Edge Sensemaker data was collected in local languages, and note takers immediately transcribed the text into English on the Cognitive Edge Sensemaker platform. The survey collected data on 1) the effects of the COVID-19 pandemic and associated measures on men and women cross-border fish traders' livelihoods, 2) pre-existing norms and gender dynamics of informal fish trade and how they were affected, 3) the effect of lockdowns and mobility restrictions on power relationships between men and women, 4) input into decision making at the household level, 5) individual coping and adaptation mechanisms, and 6) the impact of program and policy responses. The survey was also conducted in the local language.

All those who responded to the survey instrument also responded to the Sensemaker tool. For these two tools, we had 278 respondents, 40 and 51 men in Zambia and Malawi, and 101 women and 86 women in Zambia and Malawi, respectively. Twenty and ten men in Zambia and Malawi, respectively and 17 women and ten women in Malawi and Zambia participated in these workshops. All the cross-border fish traders in Luangwa and Lake Chilwa in Zambia and Malawi were targeted for interviews. Women dominate the cross-border fish trade in Africa [14], explaining the large numbers of women in the survey compared to men.

3.2. Data Analysis

Data from EMMA workshops were manually coded and analyzed according to different themes. We then compared emerging trends between Malawi and Zambia. We read the Sensemaker stories and coded them according to emerging themes in a word document. Some themes were identified and analyzed based on the word cloud generated by the Sensemaker tool. The researcher used deductive and inductive approaches to code all qualitative data. Deductive means that themes were identified a-priori during the development of the tools based on themes identified in literature and the research framework used to design the study [37]. However, the research PI refined these themes through reading and re-reading all data transcripts and notes from the workshop and identifying recurring patterns for further analysis as themes. Thus, the study combined both deductive coding (driven by apriori codes) and inductive (driven by the data). Other research team members reviewed the codes and verified the selected themes. For the EMMA toolkit workshop data and the Sensemaker data, we looked at the following themes: household decision-making, constraints and opportunities to participate in cross-border trade, impacts of public health measures, power to decide and freedom of mobility. The qualitative data generated by the Sensemaker is also presented in graphs and tables generated from the Sensemaker's data analysis platform.

The survey data were analyzed in STATA 16.1. Descriptive statistics and non-parametric rank correlation tests were performed. The Goodman and Kruskal's gamma test was used to test differences and similarities in attitudes and practices before and after COVID-19 for men and women in Zambia and Malawi. The test expresses the statistical significance of the association between the rankings; before and after COVID-19. The test is recommended when the data has multiple ranks. On attitudes, respondents were asked if they agreed, partially agreed and or disagreed with the statements.

4. Results

Table 1 shows the description of the sample.

Women in Malawi have the highest percentage of young people aged

Table 1
Descriptive of the survey participants.

Variable	Zambia		Malawi	
	Men	Women	Men	Women
Total Number and Percentage	#40 (28.37%)	#101 (71.63%)	#51 (37.23%)	#86 (62.77%)
Age = <35	40%	37.62	39.2	57
Age = >36	60%	62.38	60	43
Education				
Education Never been to school	7.5%	6.93%	23.53	11.63
Some Primary schooling	10%	28	49.02	65.12
Complete Primary School	22.5%	18.81		6.98
Some Secondary	47.5%	31.68	19.61	12.79
Completed Secondary	12.5%	9.9%	7.84	3.49
Tertiary		3.96%		
Marital Status				
Married	85	45.54	98.04	76.74
Widowed		20.79		6.98
Separated/Divorced	2.5	23.76	1.96	11.63
Single Never Married	12.5	9.900	1.96	2.33
Status of Living together / I live with my spouse most of the time	94.44	86.96	96.43	100
Source of start-up capital				
My own savings	80.00%	55.43%	88.89%	57.5%
My spouse	0.00%	19.57%	0.00%	18.75%
My Parents or other relative	11.43%	16.30%	2.22%	3.75%
Friends	0.00%	0.00%	6.67%	2.50%
Village Bank	2.86%	3.26%	2.22%	13.75%
Bank Loan	0.00%	0.00%	0.00%	1.25%
Micro-Finance Institution	5.71%	5.43%	0.00%	2.50%
Other (Specify)	0.00%	0.00%	0.00%	0.00%
Place where fish is sold				
Malawi	0.00%	0.00%	18.52%	13.48%
Zambia	84.62%	76.52%	1.85%	0%
Mozambique	2.56%	3.48%	79.63%	86.52%
DRC	7.69%	11.3%	0.00%	0.00%
Other	5.13%	8.7%	0.00%	0.00%

35 and below compared to other groups. More than half of women in Zambia and more than half of men in Zambia and Malawi are 36 and older. Less than half of women in Zambia are married compared to 76% of women in Malawi. In general, above 85% of men cross-border fish traders are married. 13% of married women in Zambia do not stay with their husbands most of the time compared to 0% of married women in Malawi. 65% of women in Zambia are widowed, divorced/separated or never married. Malawi had relatively less educated women and men than Zambia. These fundamental differences could also explain why women in Malawi were more accepting of women's subordinate role to men as heads of the households, while more women in Zambia perceived that woman should make their own decisions and control the income from fish farming.

Most men and women in Malawi sell their fish in Mozambique, while those in Zambia sell their fish in Zambia. There were several reasons why cross border traders in Malawi preferred to sell their fish in Mozambique compared to other parts of Malawi. They stated the following reasons:

1. The Mozambican currency is stronger than the Malawi currency. They buy fish in Malawi Kwacha and sell it in Metcal, gaining from the exchange rate.
2. To transport their fish to Mozambican markets is cheaper – 20,000 Kwacha compared to the 40,000 kwacha they would pay to transport the same fish to Lilongwe.
3. It takes longer to sell fish in Lilongwe (close to 5 days) and only one day in Mozambique.

The cross-border traders in Zambia preferred cross border fish trade because:

1. There is no fish on the Zambian side of the Luangwa River, so cross border traders buy fish from Mozambique.
2. There is a huge market preference for fish from the Luangwa river because of its perceived better taste than fish from other Zambia areas.
3. Luangwa town is closer to Mozambique; thus easy to cross there to buy
4. Mozambican fish is preserved and tastes better than Zambian processed fish
5. There is plenty of fish in Mozambique, so traders can get the quantities they need quickly compared to if they go to buy fish in other parts of Zambia
6. When they sell fish at Kasumbalesa market (the Democratic Republic of the Congo), they make a huge profit.

5. Gender relations and dynamics within households

Changes in attitudes before and after COVID-19 in Zambia.

Survey participants were asked about specific gender attitudes before and after the COVID-19 outbreak. Results in both Zambia and Malawi show a significant positive association between attitudes before and after COVID, implying no changes. The percentages similarly show that gender attitudes for men and women in Zambia and Malawi have not changed in Zambia and Malawi (see Tables 2 and 3).

54.29% of men in Zambia agreed that it benefits the family when women are involved in the cross-border fish trade before and after the outbreak of the covid-19 pandemic. In comparison, 61.96% and 66.30% of women agreed with the same statement before and after COVID-19. In Malawi, there is also no significant association before and after the outbreak of the COVID-19 pandemic period. 64.44 and 62.22 per cent of men agreed with the statement before and after COVID-19. While for women, there was an increase among women who agreed with the statement, 66.25% before COVID19 and 73.35 after COVID 19.

While gender attitudes have not changed significantly, what is clear are the divergent views of men and women in Zambia on some key parameters. For example, men were more likely to view men whose women are involved in cross-border trade negatively. As evidenced in Table 2, more than half of the men viewed a man as less of a man if his wife was involved in cross-border fish trade. This was an undesirable attitude that undermined gender equality. Malawi has a strong positive association between the various attitudes before and during COVID. Men and women’s views are similar, except after the COVID-19 outbreak, women were more likely than men to disagree that men and not women should be responsible for marketing, evidenced by the increased proportion of women and the reduced proportion of men disagreeing. Women were more likely than men, both before and during the COVID-19 outbreak, to say that men should be responsible for transporting fish to the market. Notably, the proportion of women

disagreeing that men should be responsible for transportation decreased during COVID.

Data from the EMMA workshops also support the view that gender relations within households did not change before and after COVID-19. For example, married women mentioned that their power to decide on many things in the household has not changed since they do not own many resources and depend on their husbands. Some women that relied on their husbands for capital to start the business also alluded to the fact that they had no control over income from fish sales. Instead, they ‘did what the husband wanted’.

Some of us are married. When I return, I do not have much authority to decide how to use that money. I consult my husband. When he says, this is what we should do with the money I comply.

But for me, since I have no husband, I will do as I wish (women EMMA workshop, Luangwa, Zambia).

In the workshops, women mentioned the lack of resources and also the respect women accorded to husbands as heads of household to explain why married women did not have the power to decide many things and that the situation had not changed during the COVID period.

6. Gendered risks for cross border fish traders

Eighty-two per cent of men and 84.78% of women in Zambia, 68.89% of men and 72.50% of women in Malawi stated that cross-border fish trade had become unsafe and riskier during the past year. Men were concerned with being killed by police in Mozambique, while women were concerned about the possibility of rape and other forms of abuse. During the EMMA workshops, it was mentioned that men were more likely to be shot and killed by Mozambican police than women. The situation worsened during the COVID-19 pandemic.

They (Mozambican police) believe men are suspicious and have ill thoughts. Because of that, primarily women go across the border to sell the fish. When men go, they are harassed and killed sometimes. About 15 were killed in Mozambique this year. (Male EMMA workshop participant in Malawi).

In response to this threat, men in Malawi stated that they now send their wives to sell fish in Mozambique because:

‘when women go and sell fish, they are less ill-treated than men. Women will sell the fish and return home without difficulty (EMMA workshop male participant in Malawi).

However, women in the EMMA workshop stated that while women came back with more money from selling their fish in Mozambique, they were exposed to stressful situations. They were exposed to sexual harassment, rape, and abuse and sometimes had sex with police officers to avoid paying cash bribes and other fines. As noted by one woman who stated that police had raped her in Mozambique, ‘My experience in cross border trade was really bad. I do not want to go there (Mozambique) again. Covid was real and it spoilt everything about me and business. Men are

Table 2
Changes in attitudes before and after COVID-19 in Zambia (Survey data).

Attitudes – Disagree with the following statements	Male				Female			
	Before Covid (%)	After Covid (%)	Coeff.	P-Value	Before Covid (%)	After Covid (%)	Coeff.	P-Value
A man is less of a man is involved in his wife is involved in cross-border - Disagree	42.86	42.86	0.956	0.046	90.22	84.78	0.957	0.027
Women who travel to suppliers of inputs or fish buyers or markets deserve to be harassed	92.19	91.43	1.00	0.000	100	100		
Men should primarily be the ones who control the earnings obtained from the fish trade	68.57	68.57	0.9917	0.012	91.30	89.13	1.000	0.000
Women should primarily be the ones who prepare meals (including fish) for the household	31.43	34.29	1.00	0.000	65.22	63.04	0.9873	0.010
Men should be responsible for marketing fish, not women	74.29	82.86	0.976	0.027	95.65	94.57	0.9888	0.014
Men should primarily be the ones who transport fish to a market	71.43	77.14	0.9942	0.008	97.83	94.57	1.00	0.00
<i>Attitudes – Agree with the following statement</i>								
It benefits the family when women are involved in cross-border fish trade	54.29	54.29	1.00	0.000	61.96	66.30	0.913	0.05

Table 3
Changes in attitudes before and after covid in Malawi (Survey data).

Attitudes	Male				Female			
	Before Covid (%)	After Covid (%)	Coeff.	P-Value	Before Covid (%)	After Covid (%)	Coeff.	P-Value
A man is less of a man if his wife is involved in cross-border fish trade	53.33	62.2	0.855	0.089	60.00	53.75	0.843	0.065
Women who travel to suppliers of inputs or fish buyers or markets deserve to be harassed	88.89	91.1	1.00	0.000	97.50	91.25	0.946	0.037
Men should primarily be the ones who control the earnings obtained from the fish trade	68.89	66.7	0.9627	0.035	71.25	67.50	0.8521	0.069
Women should primarily be the ones who prepare meals (including fish) for the household	42.22	37.78	0.9732	0.028	40.00	37.50	0.8776	0.055
Men should be responsible for marketing fish, not women	71.11	68.89	0.9706	0.031	77.50	81.25	0.940	0.037
Men should primarily be the ones who transport fish to a market	64.44	64.44	0.9778	0.024	22.50	17.50	0.9735	0.018
<i>Attitudes – Agree with the following statement</i>								
It benefits the family when women are involved in cross-border fish trade	24.44	26.67	0.8505	0.084	22.50	17.50	0.8710	0.06

advantaged because they cannot be raped. In Malawi, several women mentioned being sexually abused or raped by police in Mozambique. Harassment by police officers in Mozambique was perceived to have increased during COVID-19. In Malawi and Zambia, cross-border fish traders mentioned that they do not have anywhere to report if they have been harassed or abused.

When men and women lost jobs elsewhere, fish traders increased. The enormous demand for fish gave fishers in Mozambique the power to demand sex for fish. *'I know a lady who has been in the camp for six months. She goes to Lusaka for a few days and returns to the camp. You know our friends have to get into a relationship with fishers to buy fish. If she refuses to have a sexual relationship with a fisherman, no one will sell fish to her. She will just suffer. In the end, women give up and have sexual relationships with the fishers'* (Male, Luangwa EMMA workshop). Male respondents in Zambia often mentioned that women could easily get fish because of these relationships. However, a female respondent mentioned that while some young women could more 'easily' access fish than men because of sex for fish, she blamed the young women victims of sex for fish. *'The younger women are a disgrace because the Mozambicans now think that Zambian women are prostitutes and call us names like 'Zambianno mpombo', meaning Zambian prostitutes (Zambian woman, Sensemaker)*. The victims of the sex for fish practice are blamed. Blaming the victims and labelling Zambian cross border fish traders as 'Zambianno mpombo' exposes them to additional risk of sexual harassment, rape and abuse. References to sex for fish were higher among Zambia cross border traders who bought fish in Mozambique than Malawi cross border traders who bought fish in Malawi for sale in Mozambique. In Lake Chilwa in Malawi, respondents mentioned that the closure of borders caused untold hunger and suffering. Some of the communities in our study do not farm and rely on buying maize from Mozambique. Increased hunger led to increasing incidents of young girls being sexually abused or raped by fishers in exchange for fish they could sell to purchase food.

6.1. Closing the border and taking away border passes reduced men and women's power and freedom

While Zambia did not shut its borders, it restricted the issuance of border passes to travel to Mozambique since the Mozambican border was closed. In Malawi, the government closed the border. Women who did not have national identity cards and passports depended on Chiefs to give them passes denoting that they were citizens of Malawi. Women would, in turn, use the passes from the Chiefs to get border passes from immigration officers. When borders were closed, the immigration responded by taking passes away from Chiefs. This meant that women fish traders who wanted to cross did not often have proof of nationality and were often charged exorbitant bribes to cross into Mozambique to stay there and trade. They mentioned also using unsafe routes to cross and travel within Mozambique to avoid police officers.

Women in Zambia also mentioned the high cost of bribes to cross into Mozambique: *'In the past, I would just get a pass and cross into Mozambique. Now I have to leave a lot of money at immigration. They will charge you 200 to enter Mozambique. Before COVID, when I was going for a day trip, I would get a day pass, but I did not need to pay anything. However, our colleagues from Mozambique come here and can sell their fish anywhere they feel like selling.* (Women Luangwa workshop).

7. Gendered adaptation to changes

7.1. Relying on gender-specific norms and values

Men and women relied on gender-specific norms to cope and adapt. Men regarded themselves as strong and able to fight back. For instance, they talked about fighting for fish or against police officers or others in authority for the right to trade. For instance, men in Malawi noted that Mozambican police often harassed Malawi villagers who would 'gang up in anger and fight the Mozambican police: 'Since it is far to go and report to Zomba police, we must handle it on our own' (Malawi EMMA workshop men).

Zambian men mentioned that when they arrived in Mozambique, police chased them, but they persevered and found ways to buy their fish.

Because women are afraid of the police, they remain at home. However, like men, we are ready to fight. We fight for that fish. We gang up and say we will buy this fish no matter what' (Zambia EMMA workshop men).

Such fights put men at added risk of violence and make women hesitate to be involved in the fish trade, depriving them of a viable livelihood.

However, in some cases, women used norms of motherhood to negotiate with border officials to pass and trade their fish. In Zambia, some men noted that while men feared traveling to Mozambique during COVID-19 'women do not fear. They just organize themselves and say we will go and talk to them. We are women'. In Malawi, women mentioned that while men faced harsh punishments, women were given special treatment because they are women and often take care of children. Women negotiated with border officials using their role as mothers to cross the border even when borders were closed.

7.2. Border closure resulted in sex for fish, sex work and sex to cross the border

The social relationships and networks that men and women relied on to survive and continue to trade under conditions where cross-border fish trade became increasingly difficult put them at risk in different ways and eroded their empowerment in the marketplace. For instance, in Malawi, women mentioned that since they now needed more fish to

be able to pay for bribes and other unexpected costs in Mozambique, some fishers coerced women into sex to sell them the quantities of fish they needed. Some women lost their capital because of the pandemic. 'At first, women would think I will endure, they would be selling the few fish they buy at a nearby small markets, but the police distorted these markets. It became better to travel far to sell bigger quantities of fish. That was a reason that escalated the sex business. Before Covid, sex work was limited to women who could not endure. But during Covid, sex work spread even to those enduring women'. (Malawi woman, Sensemaker interview).

7.3. Use of back roads and other undesignated routes and smuggling

Some traders started using unsafe back roads and routes that were not gazetted to avoid police making the fish trade riskier for women.

The difference in power and freedom between men and women during covid is that as men, we can start off with a boat engine. Later we switch the engine off and paddle the boat to cross in silence. However, women fear when they hear that we cross illegally and pay K300 on our way back as a bribe'.

Additionally, women in both Zambia and Malawi mentioned that they were most unsafe when using these ungazetted routes because that is when there were most at risk of sexual assault from officials, transporters and others. As a result, because of the violence, women became marginalized and were also higher among those who said they had temporarily stopped trade after the pandemic outbreak.

Others could go through the border but paid enormous bribes for the privilege to enter Mozambique. For example, in Malawi, it was noted that before COVID-19, traders could pass border points easily. When Mozambique locked its borders, traders paid bribes of up to 18,000 Malawi Kwacha to cross.

7.4. Moving the fish trade from the public to the domestic sphere

Malawi women cross border traders mentioned the restricted market access as a key constraint to selling their fish in Mozambique. Women fish traders mentioned that the markets did not have many customers; if found by Mozambican police in the market, they would be harassed, arrested or asked for bribes because they were not supposed to be in Mozambique under lockdown. Traders resorted to selling fish, hiding in the homes of sympathizers.

'And when the police were tipped that people are selling fish in the bedroom, they would come and find us there. They would break the door and come in. If we were not wearing masks, they would beat us. We would be packed in their cars and taken to the police station. There we would pay a lot of money, sometimes K50,000, to be let free, on the way back we had to use the same unsafe routes... When we were jailed, we were treated with cruelty. Lately, since the Covid cases have reduced, there is little improvement as compared to how things were back then (Woman in an FGD with Key Informants in Malawi).

Malawi men and women trading fish in Mozambique at this time reported trading under a lot of fear and stress of being caught by the police. Eighty per cent of men, 79.35% of women in Zambia and 77.85% of men and 76.25% of women in Malawi perceived that in the past year, harassment from police, border patrol officers or others in authority increased.

8. Gender impacts

Fig. 1 shows how fish traders in both Zambia and Malawi perceived the changes caused to cross-border fish trade by the COVID-19 pandemic: Fig. 2.

It is unclear whether the situation will go back to how it was before the pandemic after the pandemic goes down or is under control. However, when asked about their thoughts regarding the changes in cross-border trade, most respondents in both Zambia and Malawi felt that

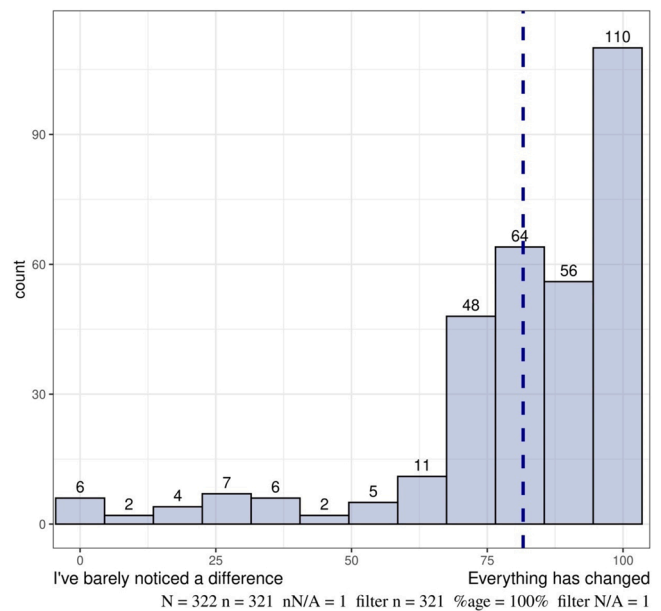


Fig. 2. The effects of the COVID-19 pandemic on cross-border fish trade.

cross border-trade had changed and most feared in ways that could be irreversible.

Tables 4 and 5 show the percentages of male and female respondents who said YES in response to statements meant to assess the ease of doing business before the COVID-19 pandemic and after the pandemic broke out. The results indicate considerable changes in their ability to conduct market activities before and during COVID. In Zambia and Malawi, the responses before and during COVID are not associated (P-value>0.05).

While the COVID-19 pandemic negatively impacted both men and women, the magnitude of changes during COVID-19 is greater for women than men in Zambia and Malawi. For instance, in Zambia, travel to neighboring countries to sell and buy fish affected 5.16 times more women during COVID-19. In Malawi, COVID-19 affected the ease of selling fish at the market to four times more women than men. Only in Malawi the magnitude change for easily negotiating with middlemen was greater for men than women.

Mapping the sites of COVID-19 constraints and their impacts on gender dynamics.

From the changes in perceptions regarding ease of doing cross border fish business, it is clear that mobility has been affected, negotiation, ease of market access, and selling have all been negatively impacted. How do these perceived new challenges impact gender dynamics and power for cross border fish traders in the marketplace? To answer this, we rely on qualitative data collected by the sensemaker and qualitative data from the EMMA workshops.

In Table 6 are several COVID-19 related constraints that distort the value chain for men and women at different nodes.

These constraints shape how men and women respond and the gender and power dynamics of the marketplace. The difference between Zambia's and Malawi's traders is that once they bought the fish from source, the market to sell fish was relatively easy for Zambia cross border traders because Zambia and DRC were not under lockdown.

9. Changes in household decision making

9.1. Power to decide and freedom to move

We asked men and women how much power they had to buy fish and how much freedom of mobility they had before and after the COVID-19 outbreak. We asked both men and women, but the graphs presented below are based on how women perceived their power and freedom and

Table 4
Changes in market indicators after the COVID-19 outbreak in Zambia (Survey data).

	Male		Female			
	Before Covid (%)	During Covid (%)	Magnitude change	Before Covid (%)	During Covid (%)	Magnitude change
Easily travel to neighboring countries to sell and buy fish	94.29	37.14	2.54	72.83	14.13	5.16
Easily negotiate with middlemen and women	68.57	20.00	3.43	52.17	8.70	6.00
Easily access the market without much difficulty	97.14	45.71	2.13	93.48	30.43	3.07
Easily sell my fish stock at the market without much difficulty	94.29	45.71	2.06	94.57	60.87	1.55

Table 5
Changes in market indicators after COVID-19 outbreak Malawi (Survey Data).

	Male			Female		
	Before Covid (%)	During Covid (%)	Magnitude change	Before Covid (%)	During Covid (%)	Magnitude change
Easily travel to neighboring countries to sell and buy fish	95.56	33.33	2.87	93.75	18.75	5.0
Easily negotiate with middlemen and women	51.11	4.44	11.51	53.75	8.75	6.15
Easily access the market without much difficulty	62.22	11.11	5.6	77.5	8.75	8.86
Easily sell my fish stock at the market without much difficulty	51.0	8.89	5.74	71.25	3.75	19.0

Table 6
COVID-19 related market participation constraints for men and women.

	Malawi		Zambia	
	Men	Women	Men	Women
Fishers – Reduced capital and assets	X			
Processors: Limited access to firewood from Mozambique because of border closure	X	X		
Traders - Increased police harassment	X	X	X	X
Being killed by police in Mozambique	X			
Increased sexual harassment, rape and abuse by police in Mozambique		X		
Taking away passes from chiefs in Malawi/ no more passes in Zambia.	X		X	X
Increased corruption and bribery in Mozambique		X	X	X
Closure of borders	X	X	X	X
Family instability	X	X		
Market Place fewer buyers on the market		X		
Increased sex for fish when purchasing fish in Mozambique				X
Limited freedom of mobility on the market		X	X	X
Lack of access to health services in Mozambique	X	X		
Sexual harassment and rape in Mozambique		X		
Limited access to physical markets in Mozambique		X		
Increased incidence of sex for fish in Mozambique				X
Increase in the number of cross-border traders			X	X
Difficulty to access financial support				X

Source data: Value chain mapping EMMA workshops

how they perceived men’s power and freedom. Fig. 3.

While in both Malawi and Zambia, women perceived that before the pandemic, men and women had more power and freedom to decide, after the pandemic, both men and women lost power and freedom. Men mainly mentioned that their power and freedom had been curtailed by overzealous border officials and police officers in Mozambique who demanded high bribes for crossing the border during the lockdown. Men also mentioned the violence perpetrated against them by authorities in Mozambique as curtailing their freedom. ‘Men are the ones who make decisions in acquiring fish rather than women. But when it comes to selling, we assign the women to do the process because of the things that happen in Mozambique. The conditions favour women more than us

men, but the decisions still remain with us’ (Malawi man, Sensemaker). Malawi and Zambia men often mentioned women being ‘favoured’ by police and border officials. A woman from Malawi said, ‘Before COVID-19, men had a lot of power than women, but things changed when covid came because a lot of men got discouraged because of the harassment faced in Mozambique. They would be arrested and have their money confiscated. So it’s women who are still in fish trade’. Some men felt that women had more power and freedom than men after the pandemic broke out because they were being favoured by the migration officers and could have relationships with fishers to acquire fish easily. However, while their freedom was reduced for some men in Malawi, power remained high because ‘According to the bible, men are heads of the family, so men have more power than women. However, freedom is the same when it comes to men and women because women are also able to do any business they want. After COVID-19 came we however saw that the men’s power increased because for example they can make decisions on what their families should vaccinate or not’ (Woman, Malawi Sensemaker). In Zambia, women’s loss of power related to the closing of borders forced fish trade into illegal activity, putting them at very high risk of abuse when caught. Fig. 4.

10. Conclusion

Women cross-border fish traders are caught up in a complex web of networks and relationships that are, in many instances disempowering to them. For example, women being forced into sexual relationships with fishers to access fish disempowered them. Some women not attached to fishers would not be able to get fish in the quantities they need or fast enough to allow for fast turnover in their business. The demand for fish for sex worsened during COVID-19, concentrating power in the hand of fishermen and further reducing women’s ability to negotiate freely. In Malawi, although men started sending women to Mozambique, this did not change the family’s power dynamics and gender-related attitudes and perceptions. Norms designating men as heads of households limit decision-making on income by married cross border female fish traders.

Lack of coordination between countries and lack of recognition of cross border fish trade as an essential trade led to trade distortion and marginalization of traders. Some measures put in place, such as closing the border on the Zambian side while the borders remained on the Mozambican side, lacked an understanding of the historical perspective and dynamics of women in fish trade communities leading to further

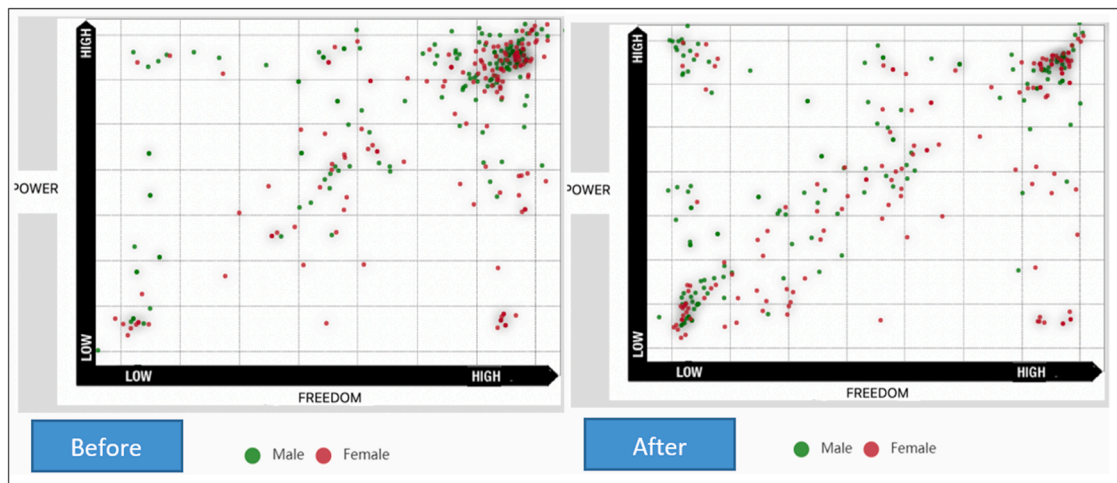


Fig. 3. Power and freedom among cross border fish traders in Malawi before and after the outbreak of COVID 19.

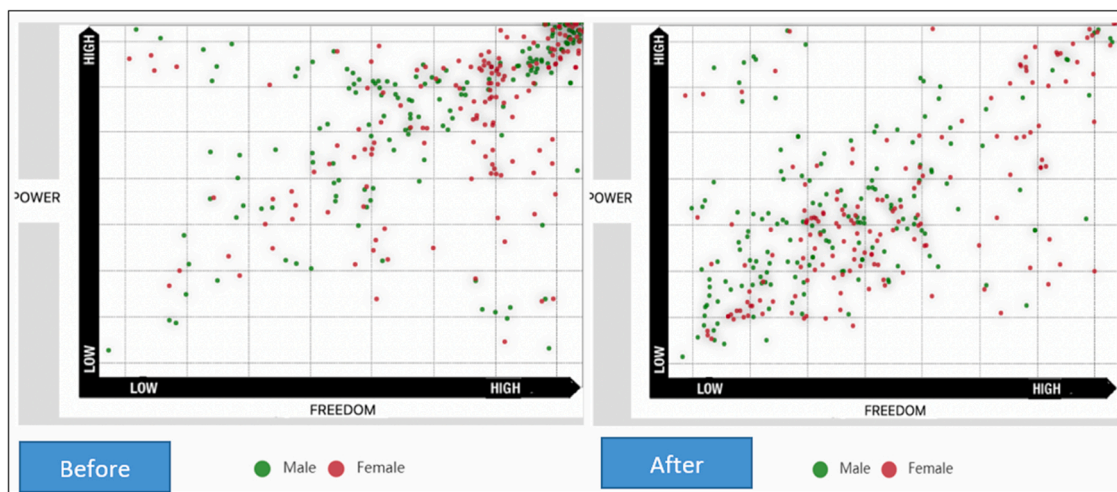


Fig. 4. Power to decide and freedom of mobility for cross border fish traders before and after the outbreak of COVID-19 in Zambia.

marginalization. For instance, while Zambian and Malawian traders could not freely cross into Mozambique when Mozambique was on lockdown, Mozambican fish traders could freely cross into Zambia to trade. This anomaly increased competition for Zambian traders, whose fish became more expensive than that sold by Mozambican traders in Zambia.

The study of cross border fish traders in Luangwa Zambia and Lake Chilwa in Malawi illustrated that participating in trading activities did not always translate to empowerment. But some women, for example, the unmarried women in Zambia, mentioned that they were empowered to decide what to do with the income from cross border fish trading. However, focusing on this ignores other hidden dimensions of power or disempowerment that put women fish traders at risk. For example, men in Malawi stopped going to Mozambique to trade their fish for fear of police violence and sent their wives instead because of the perception that women were treated better. Women were then exposed to sexual violence, rape and other forms of abuse while in Mozambique, and yet men/husbands still controlled the proceeds from trade. Therefore, while the cross border fish trade during COVID-19 allowed women to meet their basic needs such as food and shelter, the trade was not empowering. Women became disempowered as they were forced into exploitative relationships to continue trade. They had their human rights abused as they were arrested, treated cruelly, beaten or raped, and their fish confiscated. Also, their livelihoods are not secure since they depend on

the whims of fishermen that sell them fish or on the mood of the border agent or police they meet on the road. This violence against women was hidden, unlike violence against men was more in the open, such as being killed or other overt forms of violence. These acts of violence against women go unreported since they were being perpetrated by state agencies such as the police in Mozambique.

The policy implications are immense. Since most of the violence occurred across state boundaries, there is a need for inter-country co-ordination to protect the rights of women and men cross border fish traders. The site of cross-border men and women’s disempowerment relates to their engagement with state agencies. Since the fisheries is an important sector for employment and food security in Zambia and Malawi, the government could also declare this sector a critical sector to be afforded the protection given to other food-related industries. Such a declaration could go a long way to ensure that women in the sector are protected from gender-based violence. Beyond the COVID-19 pandemic, programs may be needed to change gender attitudes and perceptions in fishing communities to develop equal and sustainable relationships between men and women in households and communities.

Data Availability

Data will be made available on request.

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References

- [1] WorldFish, WorldFish in Zambia. Penang, Malaysia: WorldFish. Factsheet: 2017-19. https://digitalarchive.worldfishcenter.org/bitstream/handle/20.500.12348/119/4135_2017-19.pdf, 2017. (Accessed 4 October 2022).
- [2] FISH, Fisheries Gender and Youth Analysis in Four Major Lakes in Malawi, USAID/FISH Project, Pact Publication, Lilongwe, Malawi, 2015, p. 32.
- [3] C. Manyungwa-Pasani, E. Torell, D. Bilkecki, I. Gumulira, G. Yiwombe, Gender analysis of the fisheries value chain and fishing communities in around Lake Malawi. USAID/REFRESH Project, Pact Publication, Lilongwe, Malawi, 2020, p. 56. (http://www.malawifisheries.org/bitstream/handle/20.500.12364/1205/REFRESH%20Gender%20Analysis_Final.pdf?sequence=1&isAllowed=y).
- [4] M.M. Musumali, S. Heck, S.M.C. Husken, M. Wishart, Musumali, M. M., Heck, S., Husken, S. M. C., & Wishart, M. (2009). Fisheries in Zambia: An undervalued contributor to poverty reduction. The World-Fish Center policy brief, no. 1913. Washington, DC: World Bank. https://digitalarchive.worldfishcenter.org/bitstream/handle/20.500.12348/1421/WF_2449.pdf?sequence=1&isAllowed=y, 2009. (Accessed 4 October 2022).
- [5] Lentisco, A., Lee, R.U. 2015. A review of women's access to fish in small-scale fisheries. FAO Fisheries and Aquaculture Circular No. 1098. <https://www.fao.org/3/i4884e/i4884e.pdf>. (Accessed 04 October 2022).
- [6] P. Ngumkue, C. Okou, Leveraging digital technologies to boost productivity in the informal sector in Sub-Saharan Africa, Rev. Policy Res. (2021), <https://doi.org/10.1111/ropr.12441>.
- [7] Zambia Covid-19 Poverty Monitor. (2021). 5.
- [8] N. Haider, A.Y. Osman, A. Gadzekpo, G.O. Akipede, D. Asogun, R. Ansumana, R. Lessells, P. Khan, M.M.A. Hamid, D. Yeboah-Manu, L. Mboera, E.H. Shayo, B. T. Mmbaga, M. Urassa, D. Musoke, N. Kapata, R.A. Ferrand, P.-C. Kapata, F. Stigler, D. McCoy, Lockdown measures in response to COVID-19 in nine sub-Saharan African countries, BMJ Glob. Health 5 (10) (2020), e003319, <https://doi.org/10.1136/bmjgh-2020-003319>.
- [9] E.J. Sintema, Effect of COVID-19 on the performance of grade 12 students: implications for STEM education, Eurasia J. Math., Sci. Technol. Educ. 16 (7) (2020), <https://doi.org/10.29333/ejmste/7893>.
- [10] Ferree, K.E., Dulani, B., Harris, A.S., Kao, K., Lust, E., Jansson, C.A., Metheny, E.A. Symptoms and Stereotypes: Perceptions and Responses to Covid-19 in Malawi and Zambia. August, 2021. https://gld.gu.se/media/2304/oct_2020_disease_threat_stereotypes_and_covid_19_an_early_view_from_malawi_and_zambia-3.pdf. (Accessed 04 October 2022).
- [11] H.R. Bassett, J. Lau, C. Giordano, S.K. Suri, S. Advani, S. Sharan, Preliminary lessons from COVID-19 disruptions of small-scale fishery supply chains, World Dev. 143 (2021), 105473, <https://doi.org/10.1016/j.worlddev.2021.105473>.
- [12] N.J. Bennett, E.M. Finkbeiner, N.C. Ban, D. Belhabib, S.D. Jupiter, J.N. Kittinger, S. Mangubhai, J. Scholtens, D. Gill, P. Christie, The COVID-19 pandemic, small-scale fisheries and coastal fishing communities, Coast. Manag. 48 (4) (2020) 336–347, <https://doi.org/10.1080/08920753.2020.1766937>.
- [13] D.C. Love, E.H. Allison, F. Asche, B. Belton, R.S. Cottrell, H.E. Froehlich, J. A. Gephart, C.C. Hicks, D.C. Little, E.M. Nussbaumer, P. Pinto da Silva, F. Poulain, A. Rubio, J.S. Stoll, M.F. Thusty, A.L. Thorne-Lyman, M. Troell, W. Zhang, Emerging COVID-19 impacts, responses, and lessons for building resilience in the seafood system, Glob. Food Secur. 28 (2021), 100494, <https://doi.org/10.1016/j.gfs.2021.100494>.
- [14] A.M. Kaminski, S.M. Cole, R.E. Al Haddad, A.S. Kefi, A.D. Chilala, G. Chisule, K. N. Mukuka, C. Longley, S.J. Teoh, A.R. Ward, Fish Losses for Whom? A Gendered Assessment of Post-Harvest Losses in the Barotse Floodplain Fishery, Zambia, Sustainability 12 (10091) (2020), <https://doi.org/10.3390/su122310091>.
- [15] J. Nagoli, K. Holvoet, M. Remme, HIV and AIDS vulnerability in fishing communities in Mangochi district, Malawi, Afr. J. AIDS Res. 9 (1) (2010) 71–80.
- [16] V. Esquivel, Power and the sustainable development goals: a feminist analysis, Gen. Dev. 24 (1) (2016) 9–23, <https://doi.org/10.1080/13552074.2016.1147872>.
- [17] FAO, Gendered impacts of COVID-19 and equitable policy responses in agriculture, food security and nutrition. <https://doi.org/10.4060/ca9198en>, 2020. (Accessed 19 March 2022).
- [18] B. Belton, L. Rosen, L. Middleton, S. Ghazali, A.-A. Mamun, J. Shieh, H.S. Noronha, G. Dhar, M. Ilyas, C. Price, A. Nasr-Allah, I. Elsirra, B.K. Baliarsingh, A. Padiyar, S. Rajendran, A.B.C. Mohan, R. Babu, M.J. Akester, E.E. Phyo, S.H. Thilsted, COVID-19 impacts and adaptations in Asia and Africa's aquatic food value chains, Mar. Policy 129 (2021), 104523, <https://doi.org/10.1016/j.marpol.2021.104523>.
- [19] M. Atkins, C. McDougall, P.J. Cohen, COVID-19 impacts on women fish processors and traders in sub-Saharan, Afr. Insights Recomm. Build. Forw. Better (2021) 41.
- [20] N. Kabeer, S. Razavi, Y. van der Meulen Rodgers, Feminist economic perspectives on the COVID-19 pandemic, Fem. Econ. 27 (1–2) (2021) 1–29, <https://doi.org/10.1080/13545701.2021.1876906>.
- [21] K.J. Fiorella, C.S. Camlin, C.R. Salmen, R. Omondi, M.D. Hickey, D.O. Omollo, E. M. Milner, E.A. Bukusi, L.C.H. Fernald, J.S. Brashares, Transactional fish-for-sex relationships amid declining fish access in Kenya, World Dev. 74 (2015) 323–332, <https://doi.org/10.1016/j.worlddev.2015.05.015>.
- [22] E.E. MacPherson, J. Sadalaki, M. Njoloma, V. Nyongopa, L. Nkhwazi, V. Mwapasa, D.G. Lalloo, N. Desmond, J. Seeley, S. Theobald, Transactional sex and HIV: Understanding the gendered structural drivers of HIV in fishing communities in Southern Malawi, J. Int. AIDS Soc. 15 (3(Suppl 1)) (2012), <https://doi.org/10.7448/IAS.15.3.17364>.
- [23] L.T.M. Michalopoulos, S.N. Baca-Atlas, S.J. Simona, Life at the river is a living hell: a qualitative study of trauma, mental health, substance use and HIV risk behavior among female fish traders from the Kafue Flatlands in Zambia, BMC Women's Health 17 (15) (2017) 2017, <https://doi.org/10.1186/s12905-017-0369-z>.
- [24] Rajaratnam, S., Cole, S.M., Kruijssen, F., Sarapura, S. (2016). Gender Inequalities in Access to and Benefits Derived from the Natural Fishery in the Barotse Floodplain, Zambia, Southern Africa. 29, 23.
- [25] C. Béné, S. Merten, Women and fish-for-sex: transactional sex, HIV/AIDS and gender in African Fisheries, World Dev. 36 (5) (2008) 875–899, <https://doi.org/10.1016/j.worlddev.2007.05.010>.
- [26] S. Merten, T. Haller, Culture, changing livelihoods, and HIV/AIDS discourse: Reframing the institutionalization of fish-for-sex exchange in the Zambian Kafue Flats, Cult., Health Sex. 9 (1) (2007) 69–83, <https://doi.org/10.1080/13691050600965968>.
- [27] Manyungwa, C.L., Hara, M.M., Chimatiro, S.K. 2019. Women's engagement in and outcomes from small-scale fisheries value chains in Malawi: effects of social relations Maritime Studies volume 18, pages 275–285 (<https://doi.org/10.1007/s40152-019-00156-z>).
- [28] Manyungwa-Pasani, C., Torell, E., Bilkecki, D., Gumulira, I., Yiwombe, G. 2020. Gender analysis of the fisheries value chain and fishing communities in around Lake Malawi. USAID/REFRESH Project, Pact Publication, Lilongwe, Malawi: 56 p. 2020. http://www.malawifisheries.org/bitstream/handle/20.500.12364/1205/REFRESH%20Gender%20Analysis_Final.pdf?sequence=1&isAllowed=y.
- [29] S.M. Cole, R. Puskur, S. Rajaratnam, F. Zulu, Exploring the intricate relationship between poverty, gender inequality and rural masculinity: A case study from an aquatic agricultural system in Zambia, Culture, Society & Masculinities 7 (2) (2015) 154–170.
- [30] B. Nkhoma, G. Kayira, Gender and power contestations over water use in irrigation schemes: lessons from lake Chilwa basin, Phys. Chem. Earth 92 (2016) p79–p84.
- [31] Kathewera-Banda, M., Kamanga-Njikho, V., Malera, G., Mauluka, G., Mazinga, M. K., Ndhlovu, S. (2011) Women's access to land and household bargaining power: a comparative action research project in patrilineal and matrilineal societies in Malawi. (<http://bit.ly/2wr4FRZ>).
- [32] N.N. Mudege, T. Nyekanyeka, E. Kapalasa, T. Chevo, P. Demo, Understanding collective action and women's empowerment in potato farmer groups in Ntcheu and Dedza in Malawi, J. Rural Stud. 42: Pages (2015) 91–101. (<http://www.sciencedirect.com/science/article/pii/S0743016715300188>).
- [33] Manyungwa-Pasani et al. (2017) 'Women's participation in fish value chains and value chain governance in Malawi: A case of Msaka (Lake Malawi) and Kachulu (Lake Chilwa)', Working Paper 45. PLAAS, UWC: Cape Town. (https://media.africaportal.org/documents/WP45.Manyungwa-Pasani_et_al.pdf).
- [34] C.S. March, M. Mukhopadhyay. A Guide to Gender Analysis Frameworks, Oxfam, Oxford, 1999.
- [35] Tripp, M.A. 2014. Towards an Ethics of Care: Response to 'Power, Intersectionality and the Politics of Belonging'
- [36] Albu, M. 2010. Emergency Market Mapping Analysis Toolkit. Oxfam, GB. Practical Action Publishing, Warwickshire. The Emergency Market Mapping and Analysis Toolkit (openrepository.com).
- [37] T. Azungah, Qualitative research: deductive and inductive approaches to data analysis, Qual. Res. J. Vol. 18 (No. 4) (2018) 383–400, <https://doi.org/10.1108/QRJ-D-18-00035>.