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SUSTAINABLE FISHERIES MANAGEMENT PROJECT (SFMP)

Fisheries Supply Chain Disruption Assessment



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THE
UNIVERSITY
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GRADUATE SCHOOL
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Cover photo: Fishers waiting for fish at Mumford Landing Beach

Photo credit: Doris Owusu

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ACRONYMS

AfCFTA	African Continental Free Trade Area
CBFMCs	Community Based Fisheries Management Committees
CRC	Coastal Resources Centre
CSO	Civil Society Organizations
EEZ	Exclusive Economic Zone
FAO	Food and Agriculture Organization
FC	Fisheries Commission
FDA	Foods and Drugs Authority
GoG	Government of Ghana
GSA	Ghana Standards Authority
IUU	Illegal Unreported Unregulated
MMDAs	Metropolitan Municipal and District Assemblies
MOFAD	Ministry of Fisheries and Aquaculture Development
MoH	Ministry of Health
MoI	Ministry of Information
NGOs	Non-Governmental Organization
SFMP	Sustainable Fisheries Management Project
STWG	Science and Technology Working Group
URI	University of Rhode Island
VPF	Virtual Platform for Fishers
WASH	Water Sanitation and Hygiene

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INTRODUCTION

The USAID/Ghana Sustainable Fisheries Management Project (SFMP), a seven-year project (October 2014 – April 2021), aims at rebuilding marine fisheries stocks and catches through adoption of responsible fishing practices. The project contributes to the Government of Ghana's (GoG) fisheries development objectives and the U.S. Government's Feed the Future Initiative. The Coastal Resources Center at the University of Rhode Island's Graduate School of Oceanography (CRC) is the lead implementer of SFMP with a consortium of international and local partners including Resonance who leads partnership development, access to finance, and market development initiatives to improve livelihoods for fisherfolk.

In January 2020, the World Health Organization (WHO) declared the outbreak of a new coronavirus disease (COVID-19) in Hubei Province, China to be a Public Health Emergency of International Concern. This virus has since spread to most countries in the world including Ghana. Fishing activities were declared an essential service in Ghana early in the pandemic and have been allowed to continue, but it is anticipated that restrictions on movement and other activities designed to contain the transmission of the virus may have consequences for the livelihoods of 300,000 households in Ghana's coastal communities.

Given the communal nature of landing fish and related post-harvest activities, there were and are concerns about keeping fishers and fishing communities safe and healthy to sustain seafood supply and distribution, taking into consideration the mode of spread of the virus. If these risks and challenges are not managed, the COVID-19 virus could quickly spread through fishing communities with devastating impacts including loss of lives. The re-imposition of partial area lockdowns or a full lockdown of the country and/or fishing communities could also endanger fisheries value chains, which provide livelihoods for close to ten percent of the population and a vital source of affordable, high-quality protein for Ghanaians.

OVERVIEW

In response to COVID-19, USAID extended SFMP to implement activities to prevent the spread and mitigate the economic effects of COVID-19 among vulnerable households in fishing communities in Ghana. In October 2020, SFMP launched a Supply Chain Disruption Assessment to identify the challenges and opportunities related to any disruptions on fisheries supply chains because of the COVID-19 pandemic. SFMP also assessed impacts of Government of Ghana (GoG) policies and measures to increase social distancing at fish landing sites and domestic seafood markets to prevent the spread of COVID-19 to determine if they reduced fish sales and increased demand for processing or cold storage of fresh fish. Based on the results of the assessment, SFMP would consider new partnerships to tackle supply chain disruptions if significant and feasible within the remaining life of the project.

Objectives

1. Understand the extent of the disruptions in artisanal fisheries supply chains across the four coastal regions of Ghana (Volta, Western, Central and Greater Accra).
2. Identify challenges and opportunities related to supply-chain disruptions.
3. Assess the impacts of policies that manage traffic and social distancing in markets to prevent the spread of COVID-19 to determine if they are reducing fish sales and increasing demand for processing or cold storage of fresh fish.
4. Assess if the GoG's program of providing food aid during the outbreak represents a new potential market for actors in the fisheries supply chain.

Methodology

- Desk research with a review of project documents, secondary reports and publications was undertaken to provide the required in-depth knowledge and understand the key constraints and opportunities on the fisheries supply chain because of the COVID-19 pandemic.
- Interview/questionnaire highlighting key information required to gauge extent of disruption to fisheries supply chain developed and used during field interviews (See Appendix A).
- Key informant interviews with relevant private sector actors (fishers, traders, transporters and storage service providers), leadership of fisheries apex associations and public sector officials.
- Visual assessment of landing beaches, cleanliness of environment and extent of awareness and adherence to COVID-19 prevention protocols were undertaken.

From October 14-21, 2020, the SFMP supply chain consultant conducted 16 key informant interviews involving six apex organizations and 10 private sector actors across the Volta (Adina), Greater Accra (Tema Fishing Harbor), Central (Elmina landing site) and Western (Shama landing site and Sekondi Fishing Harbor) regions.

FISHERIES SECTOR SITUATIONAL ANALYSIS

The Ghana fishery sector plays an important role meeting national economic development objectives relative to employment, livelihoods, foreign exchange earnings, food security and poverty reduction. The sector is estimated to employ about 2.8 million people, roughly 10% of the country's population. It constitutes about 1.2% of Ghana's \$59 billion Gross Domestic Product (GDP), and roughly 5.6% of the country's agriculture GDP.¹

The last two decades have seen a drastic decline in the volume of fish landings due to over-exploitation of the marine fishery, exacerbated by an open access regime, poor governance, weak enforcement of rules, and provision of subsidized fuel to fishers. As a result, thousands of fishery livelihoods are at risk, with women making up over 60% of those potentially impacted. On top of these challenges, the COVID-19 pandemic represents an additional shock to vulnerable fishing communities that lack viable non-fisheries livelihood options and access to social safety nets.

Fisher Livelihoods and Welfare

Canoe-fishing communities are among the poorest communities in Ghana and rely almost entirely on fishing for income and as a source of food. More than 200 coastal villages rely on fisheries as their primary source of income and have limited alternative sources of livelihood or employment. The persistent decline in capture fisheries due to over-exploitation is causing diminishing economic returns to fishers. Over the past 10 to 15 years, average annual income per artisanal canoe has dropped by as much as 40%. The increased income insecurity negatively impacts poverty alleviation efforts and dims the quality of life for fisher communities. These negative impacts on fisher communities are likely to be accentuated due to the COVID-19 pandemic.

Government COVID-19 Response

Initial COVID-19 safety measures were announced by the GoG on March 15, 2020. On midnight of March 22, 2020 the country's borders were closed initially for 2 weeks

¹ Ghana Statistical Service (April 2018)

(subsequently extended) and a partial lockdown and restriction of the movement of people within Greater Accra and Kumasi was imposed from March 30 to April 19, 2020. During this period, the GoG provided fisherfolk with an exemption to these restrictions, as they were viewed as essential workers, but not all actors in the supply chain (e.g. traders) were consistently granted similar exemptions. Though the initial partial lockdown and restrictions imposed on Accra and Kumasi have been eased, other restrictions remain including the closure of the country's land borders.

In response to COVID-19, the GoG have implemented several economic support programs to assist businesses including providing Ghana Cedi (GHS) 600 million in funding at 3% interest rates for eligible small and medium enterprises (SMEs) through the National Board of Small-Scale Industries. MOFAD and the FC have outlined the following measures to mitigate the negative impact of COVID-19 on the fisheries sector:

- Intensified sensitization of fishers and fishing communities on the dangers of COVID-19
- Private sector engagement and partnerships
- Provision of sanitary items to fishing communities
- Ensure continuous supply of fishing inputs such as premix fuels, nets to support fishers
- Provide incentive packages for frontline field technical officers who interface with fishers
- Improve hygienic conditions at fish market centers

Markets and Value Addition

Though currently impacted by the COVID-19 pandemic, anecdotal evidence suggests the demand for artisanal processed (smoked and salted) fish within Ghana and regional markets is high and will grow in the foreseeable future. However, the bulk of small pelagic fish is processed by small-scale artisanal processors with poor processing technology and techniques, which results in low quality and value fish products. Domestic and regional markets for higher quality fish products remains largely unexplored by artisanal fish processors and supply chains. Anecdotal evidence suggests that with the increasing disposal income coupled with the health and quality consciousness among growing middle- and upper-class consumers in Ghana and neighboring countries, the demand for higher quality fish products exists and may grow over the coming years.

The marketing of fish and other foods through various social marketing channels such as Instagram and WhatsApp have seen a significant surge since the imposition of COVID-19 restrictive and preventive measures. Though a positive development, it is important for the FDA, MOFAD and other regulatory agencies to ensure online marketing companies are duly registered, trained and monitored to guarantee safe sourcing of products from accredited sources, investment in requisite storage facilities and packaging machinery following approved standards.

OVERALL SUPPLY CHAIN DISRUPTIONS

SFMP interviewed 16 individuals and entities comprising different parts of the supply chain across the four coastal regions of Ghana, including traders/processors, fishers, transporters, and apex organizations. The full list of interviews is included in Appendix A. Table 1 below provides a breakdown of respondents by region and supply chain segment.

Table 1 Distribution of Respondents by Region and Supply Chain Segment

Respondents	Region				Total
	Greater Accra	Volta	Central	Western	
Fishers	1	1	1	2	5
Traders		1	1	2	4
Transporters				1	1
Apex organizations	5		1		6
Total	6	2	3	5	16

Respondents were divided on their response to the main assessment question *-if the government's COVID-19 mitigation measures had negatively impacted their business or operations* (See Table 2). The difference in responses correspond with the supply chain segment the interviewee represented, and their geographical area. For example, 75% of traders confirmed COVID-related disruptions to their businesses compared with only 20% of fishers. Notably, only fishers operating in the Greater Accra region felt their business had been disrupted, while traders across the Volta, Central and Western regions noted disruptions to their businesses. All but two apex fishing organizations confirmed COVID-19 initially caused disruptions to the businesses of their members. The associations noted that these disruptions were temporary, but that demand for fish from the artisanal fishery has not rebounded to pre-COVID-19 levels and prices for fish remain low due to the decreased purchasing power of consumers. Fish traders have been more impacted than fishers or transporters.

Table 2 Responses to the Main Assessment Question

Key Assessment Question ²	Number/ Percentage Response	
	Yes	No
Has government's COVID-19 mitigation measures negatively impacted your business	No. of respondents: 9 Percentage: 56% <i>Fisher-1</i> <i>Trader- 3</i> <i>Apex organization</i> ³ - 4 <i>Transporter (headporter)- 1</i>	No. of respondents: 7 Percentage: 44% <i>Fisher- 4</i> <i>Trader- 1</i> <i>Apex organization</i> ⁴ - 2 <i>Transporter (headporter)- 0</i>

Although the fisheries sector was classified as an essential service during the peak of the pandemic in March – April 2020, travel restrictions to major market centers in Accra and closure of land borders with Togo, Burkina Faso and Cote d'Ivoire negatively impacted traders. Some reported postharvest losses due to initial COVID-19 containment measures,

² Detailed assessment questionnaire can be found in Appendix 5.

³ National Fish Processors and Traders Association, Inshore Canoe Fishermen Council and Inland Canoe Fishermen Council.

⁴ National Fisheries Association of Ghana (NAFAG), Ghana Tuna Association and Ghana National Canoe Fishermen Council.

and increased debts as a direct result of the pandemic, though these impacts were not sustained. Lower prices and demand for fish have proven lingering challenges, and traders have tried to adapt by finding alternative marketing channels and in some cases diversifying into the sale of non-fisheries commodities. In some cases, canoe owners and traders reported hiring fewer casual employees and reducing the frequency of fishing expeditions as temporary coping measures, although this can more likely be attributed to ongoing low catches that necessitate cost-cutting measures within the sector. The daily activities of fishers have generally been spared major disruptions, and regular fishing expeditions continue, albeit with the institution of loosely enforced COVID- 19 preventive measures.

Interviewees indicated that some disruptions persist, but acute impacts persisted only from March to May 2020. Most disruptions were short-term during the peak of the pandemic when travel restrictions were imposed by the government. Though supply chain activities have returned to normal for most actors, the continued closure of borders and low demand from certain institutional buyers, like boarding schools and universities, continues to impact fish traders and processors.

Though outbreaks in fishing communities have been minimal, the consultant observed poor hygiene at the four fish landing sites visited and a lack of adherence to COVID-19 safety protocols, which could lead to future issues. Given the close-quarter nature of much work in the fisheries sector, fishing communities will face high risks if there is a resurgence of COVID-19 unless steps are taken to improve hygiene conditions at landing sites.⁵

DISRUPTIONS BY SUPPLY CHAIN SEGMENT

As noted above, COVID-19 prevention measures created disruptions to the artisanal fisheries supply chain that varied in extent and duration by segment. This section presents more detailed information on the impacts experienced by fishers, traders/processors, and transporters both during the early stages of the pandemic and in October 2020. Major disruptions by segment are presented in Table 3 on the next page.

Fishers

Fishers experienced some COVID-19 induced disruptions to their operations albeit on a small scale and mostly for a short timeframe, beginning mid-March 2020 and easing by the second quarter of 2020. Examples of these disruptions include:

- Poor access to and increased prices of key inputs such as fishing nets and premix fuel
- Glut and postharvest loss of landed fish due to travel restrictions preventing buyers coming from outside the immediate area, especially in Greater Accra
- Defaults on loans and input credit extended prior to COVID-19 pandemic

Although COVID-19 preventive measures were implemented during the peak of pandemic at the major fish landing sites, unenforced has weakened due in part to the belief of fishers in their immunity to COVID-19 as well as cultural practices surrounding fish sale and distribution. The former belief, though not backed by science, has diffused profusely within fisher communities fueling their reluctance to adhere to COVID-19 preventive measures.⁶

⁵ <https://news.harvard.edu/gazette/story/2020/03/preventing-the-spread-of-coronavirus-starts-with-basic-hygiene/>

⁶ Wearing of masks, washing of hands with soap, use of hand sanitizers, social distancing and avoiding handshakes

Table 3 Main Disruptions by Supply Segment

Segment	Initial Disruptions (March-April 2020)	Current situation (October 2020)
Fishers	<ul style="list-style-type: none"> • Poor access and increase in prices of key inputs (fishing nets and premix fuel) • Glut in landed fish due to low demand • Defaults in debt repayment 	<ul style="list-style-type: none"> • Input access has improved, though prices remain high • Fishing expeditions ongoing at pre-COVID-19 levels • Debts remain outstanding or terms renegotiated
Traders	<ul style="list-style-type: none"> • Poor sales due to low demand for fish from institutional and traditional markets such as schools, hotels, restaurants, and local eateries • Travel restrictions to major markets in Togo, Burkina Faso and Cote d'Ivoire due to border closures 	<ul style="list-style-type: none"> • Demand still low compared to pre-COVID-19 period • Border closure remains in full force
Transporters	<ul style="list-style-type: none"> • Low demand for services • Unhealthy competition among transporters (including head porters⁷) 	<ul style="list-style-type: none"> • Rebound in demand for services but not yet at pre-COVID levels

Fishers located at Tema New Town within Greater Accra region reported the most disruption given the restricted movements imposed as part of initial measures to contain the spread of the COVID-19 pandemic. Other fishers across the Volta, Western and Central regions did not report significant disruptions to their operations. Access to key inputs has improved following government's easing of initial restrictive measures. Prices of some of these inputs such as nets remain high compared to pre-COVID-19 prices. The initial panic among fishing communities has eased and fishers have reported restructuring debt repayments and regularizing expeditions.

Traders/Processors

Fish processing provides the primary economic activity for women living in coastal areas of Ghana. Fish traders and processors continue to endure the negative impacts of the loss of demand from some traditional markets that remain closed (e.g., schools and key hospitality businesses), intermittent closure of some local markets, and restricted access to key regional markets. Though some regional trading of fish is on-going, restrictions at official border crossings have resulted in fish being transported through illegal, unapproved border routes. Per the account of traders participating in the assessment, illegal cross-border trading may be unprofitable and only serve as means to preserve longstanding business relationships, ensure recovery of outstanding credit, and forestall the loss of their customer base in these major regional markets.

Though domestic demand has improved beyond its low point during the imposition of COVID-19 restrictions, it has yet to rebound to pre COVID-19 level. Traders and processors play a key role in financing other supply chain actors, and the loss of key institutional and regional markets could result in the erosion of capital base if traders cannot find new buyers and markets. This presents a wider risk to the fisheries sector, as traders and processors

⁷ Transporters who manually carry fish in bowls from landing sites to motor vehicles, storage or processing points.

provide a key source of financing for inputs needed for fishing expeditions. As a risk mitigation measure, traders mentioned they are seeking out new clients in major local market centers such as Ho and Asamankese to offset loss of demand from their traditional market base. Other traders mentioned they have diversified their income streams by establishing grocery shops and venturing into the sale of maize and maize dough, fruits, and vegetables.

Transporters

Initial disruptions experienced by transporters during the peak of COVID-19 mitigation measures included significantly reduced demand for services due to poor demand for fish and competition among transporters (including head porters) for available clients. However, like fishers, transporters working in the fisheries sector were granted an exemption to GoG restrictions on movement, and so impacts because of COVID-19 were limited. The disruptions for transporters only existed during the initial lockdown, and at present, transporters' work is not affected by COVID-19, though for some head porters, it is impacted by low catch levels.

RECOMMENDATIONS

Given the short-term nature of disruptions as result of COVID-19, SFMP did not identify any new initiatives and partnerships to tackle supply chain disruptions. Despite the initial disruptions to fisheries supply chain activities in March 2020, the fisheries sector has returned to status like pre-pandemic levels of operations with optimism among fishery stakeholders for a post COVID-19 recovery. While the optimism among fisherfolks remains high, the rate of recovery from COVID-19 prevention measures has varied with traders being the hardest hit and the small pelagic fish stocks are still overexploited. To strengthen supply chain resilience to COVID-19 and other future shocks, SFMP recommends the following for USAID, other development partners, APEX fishery organizations and GoG programs to support:

1. Initiatives and partnerships to increase awareness on safe sanitation and hygiene practices at landing sites, processing facilities and markets to improve COVID-19 prevention measures among fishing communities.
2. Reopening borders and schools would stimulate demand and address lingering issues impacting supply chains, but local demand for fish is high and significant efforts need to be undertaken to rebuild fish stocks and ensure resilient supply chains.
3. Initiatives and partnerships to assess, build capacity and facilitate diversified livelihood options for fishers and fishing households to reduce fishing effort and build resilient households in fishing communities.
4. Facilitate increased access and awareness on financial services such as credit and savings, insurance and pensions schemes targeted at fisheries supply chain actors.

The above recommendations complement GoG measures to ease the challenges faced by the fisheries supply chain because of the COVID-19 prevention measures, and the new National Marine Fisheries Management Plan to put the fishery on a pathway to recovery.

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APPENDIX A: LIST OF RESPONDENTS

#	Name of Respondent	Nature of Business	Location	Region
1	Nii Ashithey Odamithey	Chief Fisherman	Tema Newtown	Greater Accra
2	Nana Enu Bassawu (Nana Kwasi Arkun)	Chief Fisherman	Shama	Western
3	Nana Petsi	Landing Beach Committee	Shama	Western
4	Agya Abeka	Landing Beach Committee	Shama	Western
5	Kwaku Asefua	Landing Beach Committee	Shama	Western
6	Akua Mansa	Trader/ Processor	Shama	Western
7	Margaret Otu	Trader/ Processor	Shama	Western
8	Sarah Eshun	Trader/ Processor	Shama	Western
9	Mary Asare	Trader/ Processor	Shama	Western
10	Nana Appiah Mensah (Nana Prah)	Chief Fisherman	Sekondi	Western
11	John Coffie	Landing Beach Committee (linguist)	Sekondi	Western
12	Alberta Dapaah	Trader	Sekondi	Western
13	Victoria Bentil	Trader	Sekondi	Western
14	Elizabeth Awotwi	Transporter (Headporter)	Sekondi	Western
15	Nana Adwoa Mansa	Trader (Fish Mummy/ Konknehema)	Elmina	Central
16	Akua Bosomefie	Trader	Elmina	Central
17	Misre Nyame	Trader	Elmina	Central
18	Nana Kwame Badu (Nana Atufuhen)	Chief Fisherman	Elmina	Central
19	Kofi Susu	Landing Beach Committee	Elmina	Central
20	J.K Ekow Bentum	Landing Beach Committee	Elmina	Central
21	Nana Kwabena Gyan	Landing Beach Committee	Elmina	Central

#	Name of Respondent	Nature of Business	Location	Region
22	Elephant Ansah	Landing Beach Committee	Elmina	Central
23	Seth Abotsi	Chief Fisherman	Adina	Volta
24	Akpene Galley	Treder/ Processor	Adina	Volta
25	Simon Argah	National President- National Fisheries Association of Ghana (NAFAG)	Tema	Greater- Accra
26	Nii Richester	Ghana Tuna Association (GTA)	Tema	Greater- Accra
27	Nana Jojo Solomon	Ag. President- Ghana National Canoe Fishermen Council	Elmina	Central
28	Regina Solomon	National President- National Fish Processors and Traders Association (NAFPTA)	Accra	Greater Accra
29	Nii Armah Quaye	President- Inshore Canoe Fishermen Council	Accra	Greater Accra
30	Jacob Agbeke	President- Inland Canoe Fishermen Council	Accra	Greater Accra
31	Samuel Manu	Director/ Head of Postharvest Unit- Fisheries Commission	Accra	Greater Accra

APPENDIX B: INTERVIEW QUESTIONNAIRE

Name:

Age:

Sex:

Location:

District:

Region:

Nature of Business: _____

(Fisher/ Trader/ Processor/ Transporter/ Apex Organization/ Service provider/ others)

1. Which areas of the supply chain in your industry have been disrupted due to COVID-19 restrictions? Select all that apply.
 - a. Daily/weekly fishing operations
 - b. Landings
 - c. Processing
 - d. Transportation
 - e. Markets/sales
 - f. Other (please specify)
2. Has government's COVID-19 mitigation measures/ policies negatively impacted your business? Yes/ No.
3. If No, do you believe your business would be negatively impacted in the near future (6- 12 months)?
4. If No, what resilience measures did you deploy to mitigate the impact of COVID- 19 restrictive measures?
5. If yes, to what extent has your business been impacted? Select all that apply, and kindly explain _____
 - a) Significant reduction in volume of either goods or services supplied over the last 7 months (i.e. quantity of fish processed, sold or transported etc.)
 - b) Increased cost (i.e. increase per unit cost) of fish products or services supplied or sold due to increases in underlining costs
 - c) Credit period for goods or services sold have been reduced or ended due to cash flow constraints
 - d) Suppliers credit has been limited or ended
 - e) Limited availability of raw materials (fish etc.) for processing/ value addition
 - f) Investment in new marketing channels or quality assurance measures (e.g. storage/ cold chain facilities, processing equipment etc.)
 - g) Access and cost of formal and informal credit is either low or high
 - h) Productivity has declined due to economies of scale
 - i) Trained, skilled workers have been laid off due to unutilized capacity
6. If yes, do you feel confident that your operation will be able to return to "business as usual" when COVID-19 restrictions are lessened or removed? If yes, how long will it take to return "business as usual"?
 - a. Immediately (<1 month)
 - b. Near-term (1-6 months)
 - c. Long term (6+ months)
 - d. No confident that operation will be return to usual
7. Has demand for your products or services increased as a result of COVID- 19 restrictive measures? Yes/ No
8. If Yes, kindly explain _____
9. Has your business model changed due to COVID-19 pandemic and government's mitigation measures? Yes/ No.
10. If yes, kindly explain changes to your business model.
11. What are the sustainability drivers for above new business model?