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## SUSTAINABLE FISHERIES MANAGEMENT PROJECT (SFMP)



NATIONAL GENDER MAINSTREAMING STRATEGY FOR THE FISHERIES SECTOR

TOWARDS EQUAL RIGHTS FOR WOMEN AND MEN IN ALL ASPECTS OF NATIONAL GROWTH AND DEVELOPMENT



## Lessons Learned: 2014 – 2021 Volume 2

THE UNIVERSITY OF RHODE ISLAND GRADUATE SCHOOL OF OCEANOGRAPHY



COASTAL RESOURCES CENTER



Hen Mpoano



Development Action Association



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**Cover photos (Credits):** UPPER LEFT: Using a new drying rack for fish (DAA); UPPER RIGHT: Officials training to incorporate anti-CLaT measures in Mid-Term Development Plans (FON); LOWER LEFT: National Gender Mainstreaming Strategy (MOFAD); LOWER CENTER: Ahotor Stove (DAA); LOWER RIGHT: hygienic handling of dried fish (DAA).

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## ACRONYMS

ACECoR	African Center of Excellence Program
AOR	Administrative Officer Representative
CDA	Coastal Development Authority
CEWEFIA	Central and Western Region Fishmongers Improvement Association
CIC	Canoe Identification Card
CLaT	Child Labor and Trafficking
COVID-19	Coronavirus Disease 2019
CRC	Coastal Resources Center
CSIR	Council for Scientific and Industrial Research
CSO	Civil Society Organization
DAA	Development Action Association
DCPC	District Child Protection Committee
DFAS	Department of Fisheries and Aquatic Sciences
DOPA	Densu Oyster Pickers Association
FAO	Food and Agricultural Organization of the United Nations
FC	Fisheries Commission
FDA	Food and Drugs Authority
FEU	Fisheries Enforcement Unit
FON	Friends of the Nation
FSSD	Fisheries Statistical Survey Division
FTT	FAO Thiaroye Processing Technique
FWV	Fisheries Watch Volunteers
GHS	Ghana Cedis
GIFA	Ghana Inshore Fishermen's Association
GITA	Ghana Industrial Trawlers Association
GIS	Geographic Information System
GNCFC	Ghana National Canoe Fishermen's Council
GOG	Government of Ghana
GPS	Geographic Positioning System
HFIAS	Household Food Insecurity and Access Score
HM	Hen Mpoano
ICFG	USAID/Ghana's Integrated Coastal and Fisheries Governance Project
IEC	Information, Education and Communication
IR	Intermediate Results
IUU	Illegal Unreported Unregulated
LABEC	Landing Beach Enforcement Committee
LEAP	Livelihood Empowerment Against Poverty
MASLOC	Microfinance and Small Loans Center
MDDS-W	Minimum Dietary Diversity for Women Score

MMDA	Metropolitan, Municipal and District Assemblies
MOFAD	Ministry of Fisheries and Aquaculture Development
MOGCSF	Ministry of Gender, Children and Social Protection
MOH	Ministry of Health
MOI	Ministry of Information
MPU	Marine Police Unit
MSMEs	Micro, Small and Medium-scale Enterprises
MTDP	Medium Term Development Plan
NAFAG	National Fisheries Association of Ghana
NAFPTA	National Fish Processors and Traders Association
NCCE	National Commission for Civic Education
NDPC	National Development Planning Commission
NGO	Non-Governmental Organization
NICFC	National Inland Canoe Fishermen’s Council
NTS	National Targeting System
OCA	Organizational Capacity Assessment
PAHs	Polycyclic Aromatic Hydrocarbons
PHE	Population Health Environment
PPI	Poverty Probability Index
SBCC	Social and Behavior Change Communication
SFMP	Sustainable Fisheries Management Program
SNV	Netherlands Development Organization
STWG	Scientific and Technical Working Group
UAV	Unmanned Aerial Vehicle
UCC	University of Cape Coast
URI	University of Rhode Island
USAID	United States Agency for International Development
VPF	Virtual Platform for Fishers
VSLAs	Village Savings and Loans Associations
WARFP	West Africa Regional Fisheries Program

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# LESSONS LEARNED AND THE LEGACY COLLECTION OF DOCUMENTS FROM THE USAID GHANA SUSTAINABLE FISHERIES MANAGEMENT PROJECT

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*This report, referred to as “Legacy Set Document”, is a collection of relevant policy and management documents and short essays on thematic areas/issues covered during the implementation of the USAID/Ghana Sustainable Fisheries Management Project (SFMP). The short essays describe the context at the start of the project, the project implementation approach, results, accomplishments, lessons learned and recommendations for the way forward. The report is organized into three Volumes. Volume 1 covers: legal and policy reform; co-management and constituencies; science for management and institutional strengthening. Volume 2 covers; post-harvest improvements; gender mainstreaming, and combatting child labor and trafficking. Volume 3 covers the SFMP efforts to prevent the spread and mitigate the economic effects of COVID-19 among vulnerable households in fishing communities in Ghana.*

## INTRODUCTION

The goal of the five-year USAID/Ghana Sustainable Fisheries Management Project (SFMP) was to contribute to rebuilding of Ghana’s important marine fish stocks through adoption of responsible fishing practices. The project contributed to the U.S. Government’s Feed the Future Initiative (see [Fisheries and Food Security Brief](#)) and the Government of Ghana’s fisheries development objectives. Funded by USAID/Ghana with matching support from the University of Rhode Island and other implementing partners, the inception of the project in October 2014, coincided with the implementation of a regional investment initiative in the fisheries sector by the World Bank of which Ghana was one of the beneficiary countries, the West Africa Regional Fisheries Program (WARFP). SFMP started just as Ghana’s National Fisheries Management Plan (included in this legacy document collection) was being revised for adoption and implementation. The efforts of the project generated intense spotlight on the multiple challenges facing fisheries governance in Ghana and advocated for sustainability principles to be included in the National Fisheries Management Plan. The project was given a no-cost extension from the original completion date of October 2019 to September 2020, and further extended to April 2021 with a supplemental budget to address COVID-19 related challenges within the marine fisheries sector, following the outbreak of the disease in Ghana.

The SFMP was led by the University of Rhode Island’s Coastal Resources Center at the Graduate School of Oceanography (CRC/URI), leveraging its experiences in the successful stewardship of a previous project, USAID/Ghana’s Integrated Coastal and Fisheries



Governance Project ([ICFG Lessons Learned, 2013](#)) which focused on both fisheries and coastal management concerns in the Western Region of Ghana from 2009 to 2014.

The SFMP worked with a number of international and local implementing partners that were sub-recipients under the CRC/URI led banner. These included: Hen Mpoano and Friends of the Nation, both local advocacy and environmental Non-Governmental Organizations; Development Action Association and the Central and Western Region Fishmongers Improvement Association, both of which are membership based Civil Society Organizations focusing on capacity development for women fish processors and traders, and farmers; Daasgift Quality Foundation, a micro-finance NGO serving mostly a clientele of women in the Western Region, Spatial Solutions, a local consulting firm involved in coastal spatial planning; and two international groups – Resonance which led the public-private partnership activities focused on demonstrating mobile phone-based micro-insurance and savings plans in Ghana, and SNV Netherlands Development Organisation which supported post-harvest improvement, capacity development and gender mainstreaming strategies. For the COVID initiative, the University of Cape Coast’s Centre for Coastal Management was added as an additional sub-recipient for assistance on monitoring and evaluation.

The SFMP team was committed to making the results of its efforts available to the public, by publishing plans and policies, technical studies and reports on the implementation of the project at several online sites and electronic platforms including: The [CRC webpage for the SFMP](#), [Ghanalinks](#), and [The USAID Development Experience Clearinghouse](#).

An online [SFMP Activity Tracker](#) was created linking together the key SFMP thematic areas and related project activities, their location along the coast of Ghana, information on performance indicators, the extent to which project targets have been met and links to key documents, providing additional details on project activities and outcomes. The Activity Tracker serves as a useful tool for quickly accessing specific information about the project now, and in the future. The SFMP Activity Tracker is being upgraded into a Mapper to integrate spatial information on all SFMP COVID Response activities in addition to spatial information on all key original SFMP activities.

Finally, three video documentaries were produced that summarize SFMP accomplishments, lessons learned and the way forward for the marine artisanal fisheries sector in Ghana. These video documentaries which cover the same topics as the three volumes contained in this legacy set can be found on the CRC YouTube channel (<https://www.youtube.com/user/URICRC>).

Many members of the ICFG team transitioned to the SFMP project, building on their previous experiences with the Coastal Resources Center which places a strong emphasis on documentation and learning from experiences through an action-oriented learning approach. Good documentation provided a solid foundation and facilitated cross portfolio learning and knowledge sharing. Eighty-six documents were completed and posted online at the [CRC ICFG Project webpage](#). The same philosophy of placing importance on documentation, learning and knowledge sharing was adopted in the implementation of the SFMP as evidenced by this legacy set document and associated outreach materials on the SFMP. The project implementation approach is based on the philosophy and perspective that building from past experiences has higher inclination towards avoidance and duplication of the same missteps, failures, and mistakes, and increases the potential of achieving desired outcomes, and subsequently advancing lessons captured and knowledge sharing.

In January of 2021, USAID/ Ghana requested proposals for a new project --- Feed The Future Ghana Fisheries Recovery Activity (GFRA) --- “to mitigate the near-collapse of the small

pelagic fisheries sector in Ghana and establish a durable basis for its recovery.” It builds directly on the SFMP, noting that the

“SFMP helped the Government of Ghana to implement its first fishing closed season, which reduced fishing efforts significantly and tested the conditions for future efforts to more closely align a closed season with the peak spawning period. USAID/Ghana helped to achieve the closed season by encouraging fisher-to-fisher dialogue (a platform to engage fishers and regulators to discuss sector issues); and collaboration with academia, civil society organizations, and industry to develop scientific evidence for MOFAD’s decision-making. SFMP contributed to the National Fisheries Co-management Policy, introduced a canoe registry and identification cards, and piloted post-harvest value chain technologies to improve the hygienic processing and trading of fish. (GFRA Statement of Objectives)”

The specific lessons learned that could influence the design and implementation of future projects, just as ICFG provided inputs towards the design and implementation of the SFMP are as follows:

#### ***Understanding governance structures and building interlinkages and networks***

The SFMP aligned with and, to the extent possible, integrated project support with the priorities and functions of the Ministry of Fisheries and Aquaculture Development and the Fisheries Commission, the institutions with the mandate to manage the fisheries resources. The primary activity of SFMP’s engagements in this process was support for implementation of the National Marine Fisheries Management Plan. In addition, the SFMP opened new approaches for working with national fisheries membership organizations and associations representing the entire fisheries resource value chain including: The Ghana Industrial Trawlers Association (GITA), Ghana National Canoe Fishermen’s Council (GNCF), the National Fish Processors and Traders Association (NAFPTA), and the Ghana Inshore Fisheries Association.

#### ***Developing leadership and a shared vision***

SFMP supported international study tours to the Philippines, Senegal, Gambia, Benin and the US for leaders and key players within the fisheries sector for them to see successful examples of fisheries management and value chain improvements, and to facilitate dialogue and adoption of improved management interventions within the fisheries sector in Ghana. The SFMP conducted regular fisheries leadership workshops, provided organizational capacity assessments for its implementing partners, national fisheries groups and the Fisheries Commission. Stakeholder events involving thousands of fishers and post-harvest workers were hosted or co-led by local or national organization leaders trained by SFMP.

#### ***Building greater capacity to facilitate stakeholder engagement in planning, policy, conflict resolution, and mediation***

SFMP created and sustained support for the Fisheries Commission to formulate and carry out greater public engagement related to revision of fisheries policy and regulations. The strategic approach was to consciously model these engagements in the form that co-management was envisioned to be implemented following approval of the national co-management policy (drafted with assistance from SFMP). In this way, stakeholders; resource users and managers were involved in an action-oriented co-management learning process, focusing on such topics as; implementation of the national fisheries management plan,

amendments to the National Fisheries Act, gender mainstreaming, anti-child labor and trafficking, and fisheries co-management.

As ground-level demonstration efforts began to yield results, and policy and legal reform efforts progressed, SFMP worked with MOFAD and the Fisheries Commission to intensify outreach and communications activities in support of policy reform efforts. Staff were enlisted to write articles for publication in various media, television, and national and local media outlets. SFMP supported regular ‘media soirees’ (all day discussion meetings) in which Fisheries Commission and MOFAD staff met directly with the media to highlight and explain the importance of various issues within the marine fisheries sector. To support this effort, SFMP engaged a media relations specialist with deep knowledge of how editors and journalist chose stories to follow and publish and hired a media tracking firm to provide real time feedback on whether messages were reaching intended audiences. As these activities progressed, MOFAD and the Fisheries Commission took over leadership of media outreach.

An integrated program of capacity building and field visits were carried out with stakeholders in several pilot community-based management communities. These programs included leadership training, conflict resolution, formation of village savings and loans associations, small business development and accounting. Cross-site field visits enabled community members from different sites to share their experiences to enhance further capacity building.

### ***Developing a knowledge base of ecosystem dynamics and routinely assessing associated changes***

The project recognized the centrality of trust and science-based discourse on successful management interventions in order to limit the adverse impacts of the existing polarizing dialogue within the political realm. The SFMP-supported the setting up of the Science and Technical Working Group (STWG). The STWG subsequently provided leadership, advise and expert opinion on a number of issues in connection with application of science and research to policy and management, captured under the SFMP Intermediate Result 2. In the implementation of policy and legal reform initiatives such as the closed season and registration of all artisanal vessels with the intention of transitioning from an open access resource regime to regulated access, the STWG was the most cited and trusted source of information supporting these actions. SFMP developed the capacity of the Fisheries Scientific Survey Division (FSSD) to conduct its own stock assessments for the small pelagic fishery and also supported efforts by partners to prepare scientifically sound fisheries co-management plans for the Densu, Ankobra and Pra River estuaries. In the Densu estuary, local women from the Densu Oyster Pickers Association (DOPA) were assisted in the recording and collection of ecological and scientific data including pH, turbidity, salinity, and other pieces of information that informed improved management decision making and interventions.

### ***Using effective monitoring and evaluation strategies***

Results-oriented program management strategies supported by a robust monitoring and evaluation system was a core element of the SFMP design. Stemming from the theory of change in the project proposal, the use of Feed the Future standardized and custom indicators formed the basis of a Monitoring, Evaluation, and Learning Plan. The staff of SFMP conducted research to establish baseline conditions for fisheries as well as social and economic parameters in fishing communities, tracked stakeholder engagement and participation, conducted regular performance and impact assessments of project activities, deployed new technologies such as use of tablets and cloud databases for data consolidation and analysis, and piloted the use of unmanned aerial drones for documenting and assessing

changes in bio-physical and human settlement conditions in coastal landscapes and ecosystems. Monitoring and evaluation results were regularly compared with resource expenditures to ensure that financial and asset resources were deployed in a way that ensured achievement of desired outcomes.

### ***A Strategic Approach to Build on Emerging Opportunities***

The call for proposals for USAID’s Ghana Fisheries Recovery Activity (GFRA) released in early 2021 set out five objectives that draw in large part upon the most promising approaches and advances made during the SFMP, seeking to “establish a durable basis for its recovery” given that “fish provides 60% of animal protein in the diets of coastal and far inland communities.” (GFRA Attachment J-1, P.1)

The GFRA sets out five inter-related objectives:

- Align fisheries capacity with ecological carrying capacity of the small pelagic fisheries while enhancing the socio-economic well-being and resilience of artisanal fisherfolk.
- Increase the quality and value of artisanal fishers’ products in order to better maintain household income and enhance availability of nutritious foods for local and regional markets.
- Strengthen transparency, accountability and co-management in government practices for fisheries policy-making, regulation, and enforcement.
- Strengthen constituencies to promote and implement sustainable fisheries management.
- Improve use of science and research for policy and management decisions.

The problems and their consequences described above are known by government and fisherfolk. The opportunities and a roadmap to recovery for stock rebuilding and economic recovery have been articulated recently in the [Communique of the 2nd National Conference on Fisheries Management Conference in 2019](#), and are addressed to some extent in the [previous Fisheries Management Plan \(2015-2019\)](#) and current draft (April, 2021) National Marine Fisheries Management Plan. The recent approval of the [Co-Management Policy for the Fisheries Sector](#) offers hope that improved participatory governance can be achieved and institutionalized through formal co-management structures and institutions. The approved Co-Management Policy is applicable to the small pelagic fishery and provides for the establishment of an institutional framework for effective stakeholder participation in fisheries management decision-making. It builds on successful local community-based management experiences in the Pra, Ankobra and Densu estuaries.

When the new USAID Ghana Fisheries Recovery Activity gets started, a suggested strategic approach should focus on the implementation of recently adopted policies and plans of the Ministry of Fisheries and Aquaculture Development (MOFAD) and the [Fisheries Commission \(FC\)](#), especially the [National Co-management Policy](#), and the draft National Marine Fisheries Management Plan (NMFMP). Those aspects related to the small pelagic stocks, the canoe fishery, and the cessation of trawler fleet incursions into areas exclusively reserved for the small pelagic fishery are especially important. The draft NMFMP is likely to be approved as policy on or about the planned start of the GFRA in 2021. The 2021-2025 plan includes an integrated set of actions emphasized during the SFMP such as a closed season on all fleets, a cap on the number of canoes, and reducing IUU fishing. The Fisheries Commission will need to promote development of alternative livelihoods for fisherfolk, and post-harvest improvements to relieve the social and economic effects of fishing restrictions as well as to create a sustained constituency to support better management towards realization of

the objectives in the GFRA. In addition, The [Gender Mainstreaming](#) and [Anti-Child Labor and Trafficking \(CLaT\)](#) strategies for the fisheries sector, developed through past USAID sector investments by the SFMP, also need better implementation to counter child labor and human trafficking in the sector and broaden the constituency for reform.

A focus on implementation of existing laws and policies will need to be accompanied by additional management measures to address existing gaps and ways to reduce barriers to action. For instance, even if the NMFMP is fully implemented, its outputs and or impacts may not be sufficient for full stock recovery. The 2021 draft plan still does not address canoe fleet reduction or input subsidies. While the efforts of SFMP on the legal reform front did not produce a new Fisheries Act as result inertia and inability of the Ministry to secure the necessary Cabinet approval, the project facilitated a comprehensive review of the existing Fisheries Act through extensive stakeholder engagement processes. The development of a new Fisheries Act therefore remains an outstanding issue to be taken up by a new project if there is expressed interest from the Ministry of Fisheries and Aquaculture Development (MOFAD) and the window of opportunity exists to do so. In this regard, the GFRA can educate stakeholders and increase awareness to facilitate demand for action.

Policy reform will be needed to address the persistent problem of political influence within the fisheries sector which compromises enforcement, compliance and prosecution of illegal fishing activities, both within the industrial trawl fishery sub sector with emphasis on the “saiko” problem, and illegal fishing practices in the artisanal fleet, particularly, the illegal use of light for fishing and fine mesh nets that have driven the small pelagic fishery to collapse. These issues are very difficult and challenging to address and require more than simple technical fixes. Behavior change by fishery stakeholder institutions and individuals is essential for a durable basis for recovery leading to long-term socio-economic improvements associated with a healthy and sustainable fishery, anchored on local ownership of initiatives.

An adaptive management approach that carefully prioritizes areas of action in the context of the problems in each fisheries sub sector stands the best chance of leveraging the transformational change in institutional and individual behaviors, and enabling environment needed for fishery recovery. The choice of actions must take into account the issues within the Fishery Commission’s area of control and influence as well as the strategies, capacity and capabilities of projects carried out under the USAID Global Food Security Strategy Country Plan for Ghana, the Ghana Country Development Cooperation Strategy, and other relevant US Government policies on biodiversity, as well as the policies and projects under other development partners including the World Bank, the European Union etc.

## **THE SFMP LEGACY DOCUMENT COLLECTION**

A detailed record of the unfolding of the SFMP over the 26 quarters of its implementation is available on [CRC’s SFMP webpage](#) through quarterly and annual reports that highlight accomplishments, challenges and adjustments over the course of each project year since 2014. These reports capture both daily management issues of the project, and the annual review and project work plan preparation cycles. The executive summaries of the annual reports provide the best chronological overview of the project process in terms of the four main intermediate results areas (policy, science, communications, and applied management) and the three cross-cutting results areas (gender, public-private partnerships, and capacity development). The narratives on the complexity of the project reveals how many of the challenges encountered in the first two years of project implementation were resolved.

The aim of this Legacy Document Collection (lessons learned essays) and a hyperlinks to a collection of key SFMP reports is to highlight some of the most important lessons and

accomplishments organized loosely around project intermediate results (IRs) areas. Most of the documents provided as links in the essays and in this introduction give more context and background to the specific work and were chosen because they represented key actions, insights, scientific findings, results or unique approaches adopted by the SFMP to accomplish, and in some cases, exceed project targets, objectives and outcomes. In its simplest form, the SFMP project implemented activities to strengthen the legal and policy enabling conditions (IR1), develop the scientific basis for decision-making (IR 2) and built constituencies (IR 3), to facilitate and create broad-based support for more effective and sustainable fisheries management. Central to the success of the project was the application of improved fisheries management and post-harvest value chain improvement initiatives (IR 4) in a way that demonstrated tangible and sustained benefits from the adoption of better fishing practices that can translate into recovery of fish stocks, increased yields, and increased household income in fishing communities. The ongoing efforts of the Fisheries Commission have been enhanced by expanding the role of women in policy advocacy and value chain improvements (IR 5), the creation of public-private partnerships (IR 6), a previously missing element in fisheries improvement initiatives, and addressing the need for individual and organizational capacity building (IR7), accomplished partly through collaboration with the University of Cape Coast. The final 11 months of the project focused on the COVID-19 interventions which sought to prevent infection and spread of the virus among fishers and also piloted Economic Safety Net Assistance to poor and vulnerable fisheries dependent households and diversification of livelihood options for fishing households.

Throughout the implementation of the USAID/Ghana Sustainable Fisheries Management Project (2014 to 2021) a variety of information, education and communication materials were produced. [A Compilation of USAID/Ghana Sustainable Fisheries Management Project Success Stories: 2014- 2021](#) captures 43 “success stories” and “Telling Our Story” materials submitted to USAID as part of quarterly and annual reports as well as on topics of special interest. These stories are organized by the key themes of the project, as described in detail in this Lessons Learned report.

## **LEGACY THEMATIC AREAS**

The thematic areas in the legacy set do not exactly match the USAID theory of change intermediate result area constructs but reflect key highlights of the project implementation and achievements. While these thematic areas do not necessarily represent all the details of activities carried out by SFMP over its seven year implementation period, they focus on what the project team, stakeholders and executive editors considered as important within the context of the existing situation. Where possible, recommendations were made at the end of each essay with some suggestions of the way forward for Ghana post-SFMP and could guide the choice of operational actions and decisions under the Ghana Fisheries Recovery Activity (GFRA). These thematic areas are summarized below.

### **Legal and Policy Reform**

The SFMP supported the Ministry and the Fisheries Commission on several fronts and levels to improve the legal and policy environment. Although not all of the activities on the legal and policy reform front translated into concrete results, enough momentum was generated for continued impact that can translate into improved fisheries management in the future, well after the project ends. Several activities including a study tour to the Philippines served as an eye opener for policy makers who were introduced to the practical realities of delegating fisheries management to municipalities, public-private partnerships and the value of information technology to management and value-chain enhancement ([Study Tour to the](#)

[Philippines](#)). A policy review was conducted on the adverse effects of fuel subsidies on over-exploitation of Ghana fish stocks that included an assessment of potentially beneficial alternatives to aiding the fisheries sector ([Subsidies in Ghana's Marine Artisanal Fisheries Sector](#)). Support was provided to advance the preparation of a new Fisheries Management Legislation, and training programs offered to improve the competence of fisheries law enforcement agents ([Selection of Key Competencies for a Ghana Marine Police Fisheries Law Enforcement Induction Curriculum](#)). The SFMP also helped design and initiated a pilot Fisheries Watch Volunteer program for a number of coastal communities including training ([FWC Volunteer Training Manual](#), [Supporting the Fisheries Commission's Community Watchdog Committees: Design Document](#)). However, this initiative faced a number of challenges during the official program launch and the effort was suspended. The Fisheries Watch Volunteer program has been reactivated under the EU supported 'Sustaining Fisheries Livelihoods' (*Far Dwuma Nkodo* or *FDN*), and now called Landing Beach Enforcement Committee (LaBEC). Updates on this activity is included in the legacy collection. The SFMP also helped the Fisheries Commission to complete the process of registering marine artisanal fishing canoes ([Canoes Authorization Cards and Control of New Entrants of Canoes\[now called Canoe Identification Cards\]](#)). The SFMP in collaboration with the Fisheries Commission has developed an application (software) to link the Canoe Identification Card (CIC) with the Canoe Register to facilitate various management functions including Monitoring, Control and Surveillance (MCS) activities and the sales and distribution of subsidized fuel through an interface (module) provided for access by the National Premix Committee to reduce corruption and slippage in the system. The Fisheries Commission with support from Government has extended the CIC program to the freshwater fisheries in the Volta Lake region. The SFMP has so far supported the printing of 10,000 cards with embedded Quick Response (QR) codes that can be read in the field by authorized enforcement personnel using the application developed with support of the SFMP.

The Fisheries Commission "Board" consists of a body of individuals that represent government agencies and fishing industry stakeholders that can be considered a form of a national co-management institution as it has the power and authority to make decisions on fisheries access and use, as well as determine management measures necessary to achieve national fisheries policy objectives. The Fisheries Commission has started implementation of the National [Policy Framework on Fisheries Co-Management](#) prepared with the assistance of the SFMP as one of its major policy instruments, setting the stage for approval of the first three co-management plans for coastal estuaries, as described in the next section. The Policy Framework provides for some delegation of authority to resource users and other stakeholders in the decision-making processes. There is no unique or specific right way for implementing co-management policies and the approach taken in Ghana considers the unique ecological, socio-economic and cultural characteristics of the fisheries industry. This Policy also provides an overview of Ghana's experience to date and lessons learned concerning fisheries co-management including assessment of the current policy and legal regime. It lays out the definition for co-management, the policy goal and objectives as well as the guiding principles for the Policy and its implementation. The Policy further provides the implementation arrangements including institutional roles and responsibilities to ensure a flexible framework, that can be adapted to suit the co-management system required, based on the unique nature of the various fisheries under the nation's jurisdiction.

## **Co-Management and Constituencies**

In addition to publishing an edited and illustrated version of the National [Fisheries Management Plan of Ghana](#) to encourage broader readership and support, the SFMP aided

the Fisheries Commission in elaborating a fisheries co-management policy (mentioned above) that simultaneously provided the framework for SFMP partners Hen Mpoano, Friends of the Nation and the Development Action Association (DAA) to work with local stakeholders to formulate Ghana's second generation of coastal fisheries co-management pilots plans in the Pra and Ankobra rivers and Densu estuaries. One high point in the efforts of SFMP partners to engage fisheries stakeholders was the series of Fisher-to-Fisher dialogues ([Fishermen to Fishermen Dialogues Supporting the Directive Actions of the National Fisheries Management Plan](#)) led by the Ghana National Canoe Fishermen Council. Other important elements contributing to advances in fishery policies are the role of traditional leaders in fisheries governance ([Uplifting the Role of Traditional Authorities in Fisheries Governance](#)), working with the media ([Media Outreach Event](#)), addressing the broader concern of Illegal, Unreported and Unregulated fishing (IUU) ([Lessons Learned Report on IUU Video Screening](#)). Towards the final stage of the project, the first closed season for the small pelagics fishery was instituted by MOFAD in 2019, backed by information and proposals from the SFMP ([Closed Season Brief](#)). A proposed closed season in 2020 was suspended due to COVID-19 with expressions to reactivate this measure once the pandemic has ended.

Ghana's Fisheries Commission approved the first three local fisheries co-management plans in 2020. The efforts leading to the development of these Community Based Fisheries Management Plans provided learning experience for community participants, Fisheries Commission staff and the local partners who carried out technical work and guided these unique local plans. The approved plans provide for the first time in Ghana, use rights for specific fisheries in delineated geographic areas to local associations of fisherfolks.

The [Ankobra Estuary Community-Based Fisheries Management Plan, Western Region, Ghana](#) was prepared with the guidance of Hen Mpoano, a non-governmental organization based in Takoradi. The objective of this community-based fisheries management plan is to ensure sustainable management of the Ankobra River Estuarine fishery for improved food security and livelihood benefits, especially for participating estuarine fishing communities as well as those involved in the fishery value chain.

The [Pra Estuary Community-Based Fisheries Management Plan, Western Region, Ghana](#) was guided by the Friends of the Nation. This co-management plan is designed for management of the fishery in the Pra Estuary located in the Shama District of the Western Region of Ghana. The Pra estuary is approximately 100m wide at the point of entry into the sea and is an area of high landscape value covering a biologically rich and diverse ecosystem comprising mangrove forests, salt marshes and swamps. It falls within the geographic space lying to the South-South East border of Shama District.

The [Densu Estuary Community-Based Fisheries Management Plan, Greater Accra Region, Ghana](#) is a community-based Oyster Fishery Management Plan for the Densu Delta, guided by the Development Action Association along with help from the University of Cape Coast. It builds on the best practices and lessons learned from the 10-day Regional Study Tour on Women's Empowerment and Post-Harvest Improvements in the Gambia and Senegal in 2016 involving 11 members of five women-led Civil Society Organizations (CSOs) and the Fisheries Commission and supported by the Sustainable Fisheries Management Project (SFMP). The successes of TRY Oyster Group, a peer woman-based organization in the Gambia that developed successful community-based strategies for sustainable oyster and cockle fisheries management and value chain improvements, led to a realization that similar management practices could be implemented for the oyster fishery in the Densu estuary. The Densu estuary was designated as a RAMSAR site in 1992, recognizing it as a protected



wetland of international importance under the International Convention on Wetlands. A management plan for the estuary was developed in 1999 but did not make reference to oyster harvesting activities. The objective of this Community-Based Management Plan is to ensure sustainable management of the Densu oyster fishery for improved food security and other benefits, especially for women oyster harvesters and other participating estuarine communities who depend on this fishery resource for their livelihood. Unique to this plan and fishery is that it is predominantly women harvesters, and the Densu Oyster Pickers Association have been provided use rights to this fishery representing a great leap forward for empowering women in resource management.

## Science for Management

SFMP drew upon its Science and Technical Working Group and collaboration with the Fisheries Scientific Survey Division (FSSD) to build Ghana's capacity for conducting fish stock assessments and improved data collection methods ([Baseline Assessment of the Demersal Fish Stocks of the Western Region](#), [Training Course Curriculum on Fish Stock Assessment Methods](#), [Terms of Reference: Science and Technical Working Group](#)). The project supported documentation and a specific analysis of the current crisis in the small pelagics fishery ([Status of the small pelagic fish stocks in Ghana and recommendations to achieve sustainable fishing](#)) and provided recommendations for using measures such as closed seasons for fishing to rebuild the collapsed fish stocks ([Rebuilding Depleted Small Pelagic Fish Stocks in Ghana: A Closed Fishing Season Proposal](#)). The SFMP sponsored international peer-reviews of previous stock assessment studies and updated its approach and applied standard fish stock modeling approaches to new data as it was released by the FSSD. The SFMP field tested and introduced digital approaches (tablet and computer-based survey techniques) that allowed scientists to remotely check the work of data collectors in real time via frequent cellphone-based data transfers that cut the time from data collection to analysis several fold. Additional scientific contributions included the project's social and economic baseline data ([Report on the Baseline Survey of Small Pelagic Fishing Households along the Ghana Coast](#)), plans to improve resilience of coastal settlements at risk from coastal erosion, flooding and storm events ([Resilience Planning Workshop for the Pra Estuary](#)) and the improvements made to the land use planning and environmental data analysis center in the Central Region ([A Planner's Guide to Integrated Coastal Management in the Central Region](#), [Advanced Training in the Application of GIS](#)) through refurbishment and upgrade of the Land Use and Spatial Planning Authority mapping facility for the Central Region in Cape Coast, and providing digital data and computers running geographic information system software.

The STWG updated the status of the small pelagic fish stocks of Ghana through 2017. ([Status of the small pelagic stocks in Ghana in 2018](#)). The data used in this assessment were provided by Fisheries Commission's Fisheries Scientific and Survey Division (FC/FSSD) and the Fridjof Nansen survey program. Annual landings of *sardinella* have declined from 100,000 tonnes in mid-1990s to 19,000 tonnes in 2017 as fishing effort increased from 8,000 in 1990 to 13,650 canoes in 2017. The STWG completed an additional status report of the situation in 2019 ([Status of the small pelagic stocks in Ghana in 2019](#)). This report provides an update of the status of the small pelagic fish stocks of Ghana through 2019. It was led by the FSSD, reviewed and validated by the Science and Technical Working Group (STWG). Annual landings of *Sardinella aurita* have declined to 9.9 per cent of their 1992 levels, from 119,515 tonnes in 1992 to 11,834 tonnes in 2019. This drastic decline in landings is caused largely by the artisanal fishing fleet, which operates without proper management controls in an open access regime. In addition, the unit of effort of a canoe is more efficient today than in the past

due to advanced technologies, modern fishing nets, powerful engines and big capital investments. For example, the average size of a purse seine was about 200-300 meters long in the 1970s but today it is 3 times larger - between 600-1000 meters in length and the average crew members on a canoe doubled from 10 to 20 fishermen. Canoe gross tonnage and capacity increased by 2.5-fold (from 2 to 5 metric tons) while the Catch per Unit Effort (CPUE) declined dramatically and the cost and timing of a fishing trip increased as fishermen spend more time searching for fish offshore.

These stock assessment reports are based on recorded landings of the canoe fleet and of industrial trawlers. Unaddressed in these reports is the volume of unrecorded catch that is landed as “saiko” in various ports along the coast. Some [reports by EJF and Hen Mpoano](#) provided very high estimates of saiko landings. As a result, systematic survey and analysis of these saiko landings in the future, even though illegal catch and landings, would help to improve the accuracy of these stock assessments. Nevertheless, the STWG findings of severe overfishing and overfished stocks of small pelagics would not change and could show even greater overfishing occurring than is currently estimated.

The Ministry of Fisheries and Aquaculture Development (MOFAD) implemented a one-month fishing ban for artisanal and semi-industrial fisheries from May 15 to June 15, 2019 to protect the spawning brood stock of small pelagic species, mainly *Sardinella aurita*, *Sardinella maderensis*, *Engraulis encrasicolus* and *Scomber colias* and reduce fishing effort on these stocks. Following the closed season declaration, the Fisheries Scientific Survey Division of the Fisheries Commission (FC/FSSD) in coordination with the STWG and with the support of the SFMP, established a monitoring and evaluation plan to assess the biological and socio-economic effects of the closed season and report the findings back to MOFAD. The final Report: [Assessing the Biological Effects of the Closed Fishing Season Implemented for the Artisanal and Semi-Industrial Fisheries in Ghana, 2019](#), described the biological effects of the closed season. One of the key conclusions of the assessment was that the timing of the closure was not appropriate, and as result, the exercise likely had little effect on stocks recovery. In addition, the SFMP assessed the short-term socio-economic impacts - positive, neutral or negative of the closure on artisanal sector and the canoe fishing households ([Assessment of the Socio-Economic, Food Security and Nutrition Impacts of the 2019 Canoe Fishery Closed Fishing Season in Ghana](#)) The main methodology adopted for the study involved administration of a survey questionnaire by trained enumerators on a mobile network (paperless) KoBoToolbox Kit in eleven (11) communities during three designated phases relevant to the closed season: pre-closed, closed and post-closed seasons.

About 240 scientists and experts from Ghana’s universities and research institutions, civil society, private sector, fishermen and fishmongers, government ministries and agencies, representatives from the USAID Sustainable Fisheries Management Project (SFMP) of the University of Rhode Island, convened in Accra for the first Conference on Fisheries and Coastal Environment ([Conference on Fisheries and Coastal Environment, Accra, 2017, Book of Abstracts](#)). The participants issued a statement on recommendations to improve the sector. ([COMMUNIQUE from the Conference on Fisheries and Coastal Environment, Accra, 2017](#)).

An even more successful and influential conference was held two years later, attracting 282 participants. ([Conference on Fisheries and Coastal Environment, Accra, 2019, Book of Abstracts](#)) It was jointly organized by the Centre for Coastal Management (CCM) of the Department of Fisheries and Aquatic Sciences of the University of Cape Coast (UCC), the Sustainable Fisheries Management Project of the Coastal Resources Center (CRC) - University of Rhode Island (URI), and the Ministry of Fisheries and Aquaculture Development (MOFAD) Ghana. The Conference was designed to strengthen policy linkages

and enable researchers, journalists, and think tanks connect their voices to the sustainable fisheries and coastal development agenda of Ghana. During the 2019 edition of the Conference, an expanded opportunity was given to industry and projects within the sector to showcase key products and milestones as well as emerging technologies for the sustainable management of fisheries and coastal resources. The resulting statement ([Communique from the Conference on Fisheries and Coastal Environment, Accra 2019](#)) sought to once again draw national attention to the urgency of the fisheries management challenges. The conference recognized the national importance of marine and coastal ecosystems and fisheries to the people of Ghana, emphasized that the fish stocks were at an alarming stage of decline and on the verge of collapse, and argued for the need for more inclusive decision making for better fisheries and coastal management. Twelve specific recommendations were made to address these concerns.

### **Institutional Strengthening**

Strengthening civil society organizations, including SFMP's implementing partners, national industry membership associations, Government of Ghana organizations and the University of Cape Coast was woven throughout activities carried out under each IR work stream. Organizational capacity assessments were carried out with key groups at the outset of the SFMP, and at the mid-point of the project ([Government of Ghana and Public University Units Mid-Term Assessment](#)). An additional combined assessment for civil society and government organizations was prepared in 2018 ([CSO and GOG Organizational Capacity Development Outcomes: Qualitative Snapshot](#)) followed by a final version of the civil society assessment completed in 2019 (Synthesis Report: Final Civil Society Organizations (CSO) Organizational Capacity Assessment (OCA)). The SFMP staff and its senior partners worked to improve civil society organization business and governance systems and engaged national level groups such as the Ghana National Canoe and Fishermen Council (GNCFC) and NAFPTA in leading stakeholder engagement activities. One of the highlights of this cross-cutting activity, which also had a strong gender element, was the 2016 regional study tour on women's empowerment and post-harvest improvements to Senegal and the Gambia ([Regional Study Tour on Women's Empowerment and Post-Harvest Improvements](#)). Lessons learned from that exchange led to further exchange of expertise within Ghana and strengthened local enthusiasm to work towards post-harvest value chain improvements. A key outcome of the OCA process was to ensure that local partners of the project have robust systems and structures to enable them improve on their capacity to provide quality and sustainable services to their constituents by implementing and sustaining the fisheries sector results that SFMP supports, and also to improve their readiness and capacity to receive funding from donors, an increasingly important need, as donor strategies shift to more direct local project implementation.

### **Post-Harvest Improvements**

Under SFMP, learning and leading by doing (action learning) underpinned the cluster of activities aimed at testing and putting into practice innovations in the fisheries sector of Ghana. Linked to various co-management policy ideas being tested in the Densu estuary, and Pra and Ankobra River estuaries, SFMP linked-in District and National level authorities and expertise to foster improvements in the post-harvest fisheries value chain ([Sardinella and other small pelagics value and supply chain of the fishery sector, Market Segmentation Study Report](#)). Through this effort, SFMP engaged thousands of women and built their skills as small business entrepreneurs and provided orientation on how they could make significant improvements on the cleanliness and safety of their products ([Training on Hygienic Handling](#)

[of Fish: Class 1 Certification Guidelines](#)). The skill development was based upon a comprehensive training manual ([Class 1 Recognition Scheme \(Operational Guidance\)](#)) serving both processors who wanted to enroll on the scheme and government officials to serve as auditors of the scheme. These activities were the subject of careful monitoring and impact assessment ([Adoption of Improved Smoking Technology among Fish Processors in Ghana](#)). The identification of a major adverse effect associated with a fish smoking technology slated for adoption and support (the “Morrison” fish smoker) at the initial phase of the SFMP post-harvest value chain improvement program, was in fact a blessing in disguise. When it was discovered that the “Morrison fish Smoker” produced unsafe levels of polycyclic aromatic hydrocarbons (PAH), the project embarked on the search for a better technology, and financing options. Although this search for the appropriate technology for fish smoking took close to two years as a result of the need for a new engineering design and testing, the resulting new technology, the *Ahotor (comfort)* stove, proved to be safer, more efficient, and more acceptable to many fish processors. ([Ahotor Oven Construction Manual](#), [Ahotor Oven Users Guide](#)). Even so, uptake has been slower than expected for several reasons, as explained in the post-harvest theme essay. SFMP and the Fisheries Commission under the WARFP constructed ahotor ovens for some fish processors. The assessment with respect to the uptake of the technology has been undertaken and the challenges outlined in two reports; the analysis of the market side challenges ([Final Report on Ahotor Oven Market Development and Financing Outcomes and Lessons Learned](#)) and the technology side challenges ([Documentation of the Pains and Gains of the Ahotor Oven Improvement Process](#)).

The SFMP facilitated credit for fish processors by the government backed Microfinance and Small Loans Centre (MASLOC) and the setting up of Village Savings and Loan Associations (VSLAs).

The innovative Fishers Future Plan is an affordable life insurance package for fisherfolk that is enabled on a mobile money platform for premium payments and a voluntary micro-savings plan. Once established, claims were made, and payments received on benefits owed to fishers. ([Fisheries Future Plan: Lessons Learned Report](#)). The micro-insurance and savings plans are now completely owned and driven by the private sector and continue to benefit fishers and fish processors in the post-harvest value chain.

### **Gender Mainstreaming: A Cross-Cutting Theme**

In the face of declining fish catches and stocks in the artisanal sector, much still can be done to improve the quality of the fish that caught, reduce inefficiencies in the processing and trade of smoked fish. This put the spotlight on women who operate small- and medium-sized businesses that dominate the artisanal sector. It has long been clear that women who dominate the post-harvest sector bring special insights on what needs to be done in fisheries but these have been overlooked or set aside in the past. The SFMP [Gender Mainstreaming Strategy](#) building upon gender assessments ([Gender Needs Assessment](#), [Ghana Fisheries Gender Analysis](#)) has shaped how the SFMP, the Fisheries Commission, and its implementing partners set priorities to ensure not only participation but also capacity building and improved livelihood outcomes for women ([Gender Mainstreaming in Fisheries Management: a Training Manual](#)) and made a real change in the agency of women in the fisheries sector. Women’s advocacy and leadership training ([Advocacy and Leadership Training for Kokohenes in the Western Region](#)) included the emergence of a new approach, the “Hownam Dialogue” ([Hownam Dialogue Report: Leadership and Conflict Management Training](#)) and ultimately resulted in a key outcome: the adoption by the Ministry of Fisheries and Aquaculture Development of its own official gender strategy for the fisheries sector

([National Gender Mainstreaming Strategy for the Fisheries Sector](#)). Gender strategy implementation under SFMP emphasized tangible results ([A Formative Assessment of the USAID Ghana SFMP Mainstreaming Strategy](#)). Actions to establish village savings and loans associations ([VSLA Financial Literacy Training](#)) were later assessed in the context of an evaluation of SFMP's gender program ([MSME and VSLAs Formative Evaluation Report](#)).

Other gender related assessments focused on key partners, Development Action Association and SNV Ghana ([Report on Gender Lens Assessment for SNV Ghana](#)). The study recognized the value of deliberate efforts by team members to include men, women and the marginalized in all programs and also make it convenient for nursing mothers and pregnant women to participate in meetings and activities conducted by the project. Reporting on attendance at all activities was segregated by gender. Training continued to target selected leaders from the various fishery associations (DAA, CEWEFIA, NAFPTA) in six SFMP communities in the Central and Western Region of Ghana. The communities included Ankobra, Axim, Shama, Elmina, Apam and Winneba. ([Training of Trainers for Leaders of Fisheries Associations in the Western and Central Region](#)). A broader case study ([Learning Initiative on Women's Empowerment, Access to Finance, and Sustainable Fisheries Ghana Case Study](#)) addressed learning questions on two hypotheses:

- Empowering women through access to finance and other capacity building interventions results in stronger fisheries management outcomes than programs lacking these elements, and
- Engaging women as key stakeholders in fisheries management and improving access to financial tools provides meaningful pathways for women's empowerment.

Interventions implemented through the Learning Initiative in Ghana included:

- Improving access to finance for women fish processors and traders through the establishment of Village Savings and Loan Associations (VSLA).
- Facilitating the acquisition of low interest loans from the Microfinance and Small Loans Center.
- Developing women's leadership skills and promoting gender inclusion in fishery decision-making and benefit sharing.
- Improving businesses of women processors and traders through business, literacy, and improved post-harvest training.

A case study was written based on this experience with several key lessons:

- VSLAs and Microfinance make women more resilient and increase their ability to cope with financial disruptions, especially during closed seasons.
- Banking crisis has increased mistrust of formal financial institutions.
- Grants have helped increase uptake of the Ahotor oven technology.
- Use of mobile money among women fisherfolks in general continues to increase.

## **Combatting Child Labor and Trafficking**

The SFMP project included some activities related to anti-child labor and trafficking (CLaT) in the fisheries sector, with an emphasis on the Central Region, based in part on testimonials from fishers in the port of Elmina, as well as through extensive experience of partners such as the Central and Western Region Fishmongers Association (CEWEFIA) that is based in the area. The SFMP was encouraged by USAID to give additional attention to anti-CLaT activities given Ghana's placement on the Tier 2 [Watch List](#) for two consecutive years

indicating the potential for imminent downgrade to Tier 3 that could have stopped all US assistance to Ghana. Focusing on the situation in the most highly trafficked coastal fishing communities, SFMP built capacity at the local level to address CLaT at its source and among high-risk families and households. Key documents include the Anti-CLaT national strategy for the fisheries sector, adopted by MOFAD ([Strategy on Anti-Child Labor and Trafficking in Fisheries](#)) which is based upon a detailed literature review ([Child Labour and Literature Review and Scoping Study Report](#)) and situation assessment tools ([CLaT Assessment Tool Workshop Report](#)). Much of the work of the SFMP on Anti-CLaT was through partners including CEWEFIA, Friends of the Nation and the Development Action Association and included engagement meetings and drama performances led by Friends of the Nation, ([Community Communication Durbars and Drama Performances on CLaT in the Central Region](#)) regional workshops and training by FoN and SNV ([Training of MOFAD/FISHERIES COMMISSION on Child labor and Trafficking Strategy, Fisheries Child labor Policy Socialization Engagement Workshops with District Assemblies Child Protection Committees](#)), training of District Child Protection Committees and advocates by CEWEFIA ([Refresher Training for Community Child Protection Committee and Anti-CLaT Advocates](#), [Training on Advocacy Skills for CCPCs and Anti-CLaT Advocates](#)) and the production of outreach materials such as the SFMP's Anti-CLaT factsheet ([Reducing Child Labor and Trafficking in Ghana's Fishing Communities](#)). In 2018, Ghana was moved off the Watch List and returned to Tier 2 ranking, indicating an improvement with additional work needed. The SFMP looked to successful examples within Ghana. The SNV Development Organisation guided groups on a tour to Torkor in the Volta Region to see the "Torkor model" ([Report on Learning Tour to Torkor for SFMP Partners and Selected Stakeholders](#)). Led by General Agricultural Workers Union (GAWU) the model involves organizing and mobilizing fish workers (including fishermen and fish processors) and employers (boat/canoe owners) and equipping them with the relevant knowledge, skills and motivation to combat child labor.

SFMP work against CLaT continued into 2019. Friends of the Nation (FoN) organized nine (9) separate District Child Protection Committees (DCPCs) meetings to Provide Support to District Assemblies for planning Anti- CLaT Intervention in MTDPs in March 2019. ([Provide Support to District Assemblies for planning Anti- CLaT Intervention in MTDPs](#)). The meetings were designed to assist the District Assemblies and the DCPCs to synchronize their action plans and community outreach programs for joint action (to increase efficiency, reduce duplication, and pool resources together to maximize efforts/results). In addition, Friends of the Nation organized a National level engagement meeting in collaboration with 10 Coastal Districts of the Central Region, MOFAD and Department of Social Welfare (DSW). ([National High Level Engagement Meetings](#)), to assist the Assemblies to design effective "messages" for their outreach programs on CLaT.

### **COVID-19 Prevent the Spread and Mitigate the Effects Among Vulnerable Households in Fishing Communities in Ghana**

Following the outbreak of the COVID-19 pandemic in Ghana in March 2020, it was considered that this unanticipated development could have dire consequences on the artisanal fisheries sector, which is central to the economy and livelihoods of about 300,000 men and women in over 300 coastal communities given the communal nature of landing fish and the related post-harvest activities. To prevent infection and spread of the pandemic among fishing communities in Ghana, the project adopted a Social and Behavioral Change Communication (SBCC) Strategy. The SBCC strategy was informed by the perceived

susceptibility, severity, benefits, and barriers to action of the fishers. The key elements of the strategy were:

- Fisherfolk believed they were immune to the disease due to their constant contact with salty sea water.
- Fisherfolk believed the disease only affected rich folks.
- Fisherfolk did not believe the disease is fatal.

On the basis of these perceptions the SBCC Strategy employed various development communication, and health communication theories and strategies, especially the theory of planned behavior and the health belief model in the design and implementation of the components of the SBCC Strategy which were:

### **Development and dissemination of Information, Education and Communication (IEC) materials**

The IEC materials were developed in collaboration with USAID Ghana, MoFAD/FC, GHS, MoH, MoI, GNCFC, and NAFPTA. The final materials were pre-tested and approved by all the aforementioned institutions before they were disseminated in the fishing communities. In the end, 10,000 posters were printed. The posters covered 10 different themes on COVID-19. Three animations and jingles covering different themes on COVID-19 were produced and translated into 5 coastal languages. A campaign song with a video by one of Ghana's leading musicians, Kofi Kinaata was also produced. As of March 13, 2021, the music video had 364,826 views on [You-Tube](#). These IEC materials incorporated information on COVID-19, symptoms, safety practices (handwashing, wearing of nose masks and social distancing), precautionary measures for fisherfolk before and after fishing expeditions, breaking the cycle of spread, how to make a hand washing station, disposal of nose mask and care for reusable cloth masks. The messaging was situated in the context of fisher folk's everyday life to help them relate to and understand the messages taking cognizance of their perceived susceptibility, severity, benefits, and barriers to action. The posters, animations and jingles were translated into five of the widely spoken local coastal languages (Ewe, Dangbe, Fante, Ga, and Nzema).

### **Set up of a virtual communication platform on WhatsApp for fisherfolk**

The safety protocols of social distancing and avoiding social gathering as much as possible to limit infection and spread of the virus required the need to adopt innovative approaches to providing information to the fishers. The SFMP therefore replicated its innovative Fisher to Fisher (F2F) dialogue in a virtual form with the formation of social media groups (WhatsApp groups) across the entire coastal fishing communities, linked to a collaborative decision-making center, a **Virtual Platform for Fishers (VPF)**. The approach is in consonance with the vision of the [USAID Digital Strategy](#) of advancing progress in partner countries and communities on their journey to self-reliance through effective, efficient and responsible digital initiatives that enhance security and economic prosperity. A total of 21 WhatsApp groups representing both fishermen and fish processors at various levels were formed. All groups were interconnected or linked to one of the two groups representing the national executives of fishermen, the GNCFC, or fish processors, the NAFPTA, constituting a Virtual Platform for Fishers (VPF). The rest of the groups comprises; 8 groups each for GNCFC and NAFPTA at the district and community levels for the four coastal regions and 1 group each for NAFPTA, CEWEFIA, DAA at the community level. The 21 groups had a total membership of 787. Digital IEC materials such as video campaign song, posters and jingles and animations were disseminated throughout the groups and group members were provided

with data to be able to access the materials and also disseminate same to other community members.

### **A COVID safety competition for landing beaches and processing sites**

The SFMP rolled out a COVID-19 safety practices competition amongst landing beaches in the 26 coastal districts. The competition dubbed “COVID-19 Safety Landing Sites Competition” sought to reward landing sites that best adhered to the COVID-19 safety practices, frequent handwashing, wearing of nose mask, and social distancing. The competition, which ran for three months, was held on a district-by-district basis. 242 landing sites in 26 districts in the 4 coastal regions participated in the competitions. Real time data was gathered by the SFMP through phone polling of site advocates trained to manage the handwashing stations provided by the project at 242 fish landing sites. Every month, these sites advocates were called to answer questions on behavior and practices of fisherfolk at the landing sites. Data provided was validated by routine announced and unannounced visits by the SFMP and its implementing partners and a committee made up of the Fisheries Commission and SFMP’s partners. Each month, the winning landing beach in each district is awarded plastic chairs and a plaque. While the plastic chairs are kept by the winning landing site for the month, the plaque is taken and given to the winner of the competition in the subsequent month. The competition was designed to encourage adoption of, and practice of the approved safety practices.

### **Provision of Handwashing Stations**

A University of Cape Coast team mapped fish landing beaches, processing sites and markets as well as collected baseline data on handwashing facilities, adherence to social distancing and wearing of facemasks in all coastal fishing communities from July to August, 2020, to build a baseline and database that enables monitoring and evaluation of the SFMP’s COVID-19 response ([COVID-19: Mapping and Baseline Survey of Fish Landing Beaches, Processing Sites and Markets](#)). About 98% of the sites surveyed had inadequate hand washing facilities. There was gross disregard for key COVID-19 protocols on hand washing, physical or social distancing and wearing of face masks at most sites, which presented the need for behavior change communication at all sites.

As part of the project activities to provide hand washing equipment at landing beaches, sites advocates were trained to effectively manage the hand washing stations at selected landing beaches in project communities. Selection of site advocates (community volunteers) and their training was provided by SFMP’s implementing partners - CEWEFIA, Hen Mpoano, DAA and Friends of the Nation. ([Training of Handwashing Station Site Advocates From 76 Landing Beaches](#)). The selection of the site advocates was done in collaboration with Chief fishermen from the (GNCFC) based on a set of criteria. Site advocates had the role of managing the use of the hand washing stations and were provided a stipend for their time and effort to maintain supplies of soap.

While the project initially targeted placement of handwashing stations at all artisanal landing sites listed in the FSSD 2016 Canoe frame survey, in the end, handwashing stations were provided for 242 sites. Many of the FSSD sites were either seasonal, abandoned due to construction of shoreline protection works or were not considered for handwashing stations as they were too remote or small, or were in areas with local land conflicts. Over the several months of support by SFMP, challenges included high turnover of volunteers requiring new individuals to be recruited continuously, and initial challenges of sending stipends via mobile money transfers. Whatsapp groups were established that enabled quick communications among the site advocates and implementing partners for troubleshooting issues concerning repairs to stations that broke down periodically or regarding receipt of stipends. Over the

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period from October 2020 to January 2021, phone polling of site advocates showed improvements in adequacy of supplies and handwashing behaviors as well as social distancing and wearing of face masks. Scores for social distancing and wearing masks were lower than handwashing demonstrating more emphasis needed on these behaviors.

### **Provision of Cash Benefits to Vulnerable Fisheries Dependent Households**

Following the outbreak of COVID-19 in Ghana, it was conceptualized that the spread of the virus could have dire consequences for the livelihoods of approximately 300,000 fisheries dependent households most of whom are already vulnerable to economic shocks. Of particular concern was the poor and vulnerable segment of the fisheries dependent households who could be at risk of not meeting basic food needs and who have not benefited from any on-going Government of Ghana social safety net schemes including the COVID-19 economic assistance programs, detailed by the President of Ghana on April 19th.

When the decision was made to target 2000 poor and vulnerable fisheries dependent households with Economic Safety Net Assistance to make it possible for them to avert hunger as a result of the COVID-19 pandemic, it was also thought that the methodologies and procedures for targeting the poor and vulnerable households could also be considered for application to future economic shocks, as well as complement sustainable fisheries management measures such as closed seasons in Ghana's artisanal sector. This is in relation to recommendations emanating from the socioeconomic assessment of the 2019 fisheries closed season for the marine artisanal sector in Ghana ([Ofori-Danson et. al., 2020](#)).

The design, implementation, monitoring and evaluation elements of the SFMP economic safety net intervention were informed by analysis of Ghana's vulnerability and poverty (World Bank, 2016b), and guiding principles espoused by the FAO (Social Protection Framework, FAO, 2017) which include: social inclusion, gender equality and sustainability. The first step in the targeting of the poor and vulnerable households was the development of the criteria for selection of beneficiary households. The criteria were developed by representatives of beneficiaries and was defined around three main themes: a) Health, b) Education, and Standard of Living. To integrate the methodological design principles, the two main groups representing the fisheries dependent households, fishermen represented by the GNCFC and fish processors represented by NAFPTA were tasked to identify the poor and vulnerable households in their respective communities across the entire coastal region of Ghana using the criteria they developed. A quota of 2000 for either group operating independently was to generate a total list of 4000 potential beneficiary households from which the final 2000 was to be selected.

While it was thought that each of the two groups using the same selection criteria to independently select poor and vulnerable households from the same communities would present a high level of overlap representing the truly poor and vulnerable in those communities, this was not the case. At the end of the selection process, 3244 (instead of the 4000) households identified and selected as poor and vulnerable from the two independent selection processes, only 24 households overlapped and could be labelled as truly poor and vulnerable. The rest of the 3,220 households were subjected to a Proxy Means Test (Poverty Probability Index (PPI) to establish their levels of poverty and vulnerability. As a result of the COVID-19, the PPI was administered through phone polling. The choice of administering the Proxy Means Test survey questionnaire via telephone introduced some difficulties as many of the poor and vulnerable households selected did not have telephones and had to be reached through intermediaries. As a result, out of 3,220 only 2,204 were able to participate in the survey. The SFMP Economic Safety Net also considered payment of the Economic Safety Net Benefit through Mobile Money Accounts for the purposes of limiting elite capture and

also reducing the risk of infection and spread of the virus through handling of physical cash. This element of the methodological design also introduced another level of difficulty in the targeting process as many of the poor and vulnerable did not have mobile money accounts. Payment to verified beneficiaries had to proceed in batches as verified beneficiaries were contacted to register mobile money accounts to facilitate payment of their Economic Safety Benefits. Consequently, the total number of beneficiaries who could be processed into the Safety Net Scheme was 1,878 instead of the anticipated 2000.

The lessons learned in this process include the following:

- While it important to consider the mode of payment to beneficiaries at the design stage, it important to note that in most cases the very poor and vulnerable are not likely to be part of the formal financial system or the evolving digital economy and as such extra effort would be required to transition them to be part of the formal economy through any payment process adopted.
- As much as possible, beneficiaries of Economic Safety Net Scheme should be part of the development of the criteria to be used in the selection process, Extensive awareness creation and education should follow the development of the selection criteria. This approach helps in reducing misunderstanding and tension related to why some households get selected and others do not.
- There is the need to make provision for sufficient time for each of the distinct phases along the chain of events involving development of criteria through verification of potential beneficiaries until final payment. At least a year is required for effective engagement with beneficiaries when a target of 2000 or more beneficiaries are required. This is because the poor and vulnerable are usually the segment of the population that is difficult to access and excluded from most social and economic activities.
- In the absence of COVID-19, sufficient in-person engagement is required especially during the administration of Proxy Means Test (PMT) which will allow project staff or staff of administrators of the Economic Safety Net Scheme or their representatives to have a firsthand information about the potential beneficiaries.

### **Piloting Diversified Livelihoods**

The current state of the small pelagic stocks at the point of near collapse urgently requires the need to transition some fishers to other forms of livelihood options if stock rebuilding management measures such as closed season and effort or capacity reduction can be implemented effectively. Over the years, the low levels of education among fishers and their limited access to financial resources has constrained their ability to access livelihood opportunities outside of fisheries, particularly for older generations who have worked in the sector their whole lives.

With limited options to pursue other diversified livelihood opportunities, coastal communities continue to rely on the already overstretched fishery as their primary source of income. As part of its COVID-19 interventions, the SFMP piloted three livelihood options targeted at the youth (18 years -35 years) to encourage them to explore income earning opportunities outside of the fishing. Given the high failure rate of past diversified livelihood activities in capture fisheries communities, the SFMP as part of the COVID19 response, developed a strategy for livelihood diversification with a focus on identifying desirable and marketable non-fisheries livelihoods that requires resources that can be accessed locally. Based on the synthesis of ideas from stakeholder engagements, three livelihood options were deemed suitable for piloting with the capacity to generate immediate income for beneficiaries. These were:

1. production of handwashing soap.
2. baking of confectionary.
3. Installation and repairs of digital television and air condition.

The COVID-19 safety protocol of frequent hand washing has precipitated the demand for handwashing soap. A total of 98 persons (96 females and 2 males) were trained in the production of soap and also given startup kit (chemicals and fragrances) to enable them to produce their first line of products. Some of these beneficiaries have been supplying liquid soap to the hand washing facilities installed by the SFMP.

Following market survey to identify interest and demand for some types of snacks, such as fish nuggets (made with local potatoes and fish), fish/beef pasties, coconut cookies, bread rolls and maize dumpling (locally known as ‘*abolo*’), the project trained 60 women in the production, packaging, labeling and pricing of these items. A total of 12 youth (11 males, 1 female) were also trained on the installation and repairs of digital TV and Air Conditioning.

Diversification of livelihood options, especially on sustainable basis requires adequate resources and time towards partnerships development. There was limited time for partnership formation and development. There were companies such as Zaacoal and Sky Fox Services with innovative and profitable livelihood options that could not be explored due to insufficient time and resources. For the benefit of fishers, there is the need to prioritize activities that yield income in the shortest possible time and also active stakeholder engagement is required throughout the processes of identification of livelihood options, prioritization, skills training, business and financial management skills.

## **ACHIEVEMENTS, LESSONS LEARNED AND THE WAY FORWARD**

The overall goal of the SFMP was to contribute to rebuilding Ghana’s marine fish stocks (see the [Award Document Program Description and Design](#)), with a focus on the small pelagic fishes consisting of anchovies, *sardinella* and chub mackerels. These fish are referred to as “the People’s Fish” because of their critical importance as the most important protein food source for food security (see [the Fisheries and Food Security Brief](#)). They are a low-cost and highly nutritious source of animal protein. Fish provide approximately 50 percent of the animal protein in local diets with the contribution being much higher in some fishing communities. The project also focused on the artisanal canoe sector that provides approximately 80 percent by volume of the national catch, almost all of which is consumed locally and provides livelihoods and direct and indirect employment for approximately 2.2 million Ghanaians.

The project made a significant contribution towards achieving the project goal, but fish stocks in Ghana are still under threat, on the verge of collapse, and have a long path ahead to full recovery. SFMP marked a number of accomplishments that contributed to the enabling conditions and foundations necessary to recover and achieve a sustainable fishery. While the project ends in 2021, the journey has not ended for Ghana’s fishery sector. Much remains to be done to achieve a sustainable and lasting fishery that can provide an abundant, nutritious, and locally sourced food supply, as well as help lift many fishing households out of poverty. The lessons learned essays in each volume of the legacy document collection provides the project story of accomplishments, lessons, and recommendations for Ghana’s way forward.

## POST-HARVEST IMPROVEMENTS

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### BACKGROUND





The USAID/Ghana Sustainable Fisheries Management Project (SFMP) worked closely with the Ministry of Fisheries and Aquaculture Development (MOFAD), the Fisheries Commission and other stakeholders, to improve efficiencies in the fish post-harvest value chain in support of the Government of Ghana's efforts to rebuild marine fisheries stocks and catches through the adoption of responsible fishing practices. More than 33,000 predominantly women fish processors in Ghana employ traditional methods to preserve and process fish for consumption and storage. The processing methods include smoking, drying, salting, frying and fermenting. A baseline survey carried out by SFMP in 2015 indicated that the use of traditional methods by fishmongers to process, preserve and store fish is one of the reasons for high post-harvest losses and low profit margins among traders.

Additionally, there are health concerns for both processor and consumer associated with traditional smoking methods. For processors, continuous exposure to smoke triggers asthma and is a risk factor for cancer. Dependent children who are either carried by their mothers while processing fish or play near processing ovens are at higher risk for early lung damage and upper respiratory problems. For consumers, the Polycyclic Aromatic Hydrocarbons (PAHs), known carcinogens produced in the traditional smoking ovens called *Chorkors*, are at levels in the smoked fish well above those recommended for human health. PAHs are fat soluble (they are readily absorbed and accumulate in fat tissues of the body), nonvolatile (they don't evaporate away after processing), and are extremely persistent (they accumulate in fat tissues over time increasing risks) and develop especially during the inefficient and incomplete burning of organic materials such as wood. Globally, PAH levels in food are monitored by regulatory agencies. Under European Union food standards, the level of PAH in smoked food products should not exceed 12 µg/kg and for benzo[a]pyrene (BaP) 2 µ/kg.

The World Health Organization estimates that about 1.6 million people die prematurely each year due to smoke inhalation. Inhaling carbon monoxide (CO) is particularly dangerous in indoor environments but is dangerous also in high levels in outdoor environments, especially for pregnant women, the elderly, and people with heart or respiratory disease.

In recognition of the health and environmental hazards caused by the use of traditional mud/barrel ovens, the Chorkor oven was developed and introduced in 1969 by the Food and Agriculture Organization of the United Nations (FAO) and the Food Research Institute of the Council of Scientific and Industrial Research (CSIR) (FAO, 1997). An improved version known as the Morrison oven was designed by Morrison Stoves Limited and originally promoted by SNV Netherlands Development Organisation in Ghana to combat deforestation, enhance the viability of agro-processing businesses and improve the working environment for women entrepreneurs (Figure 1). However, following testing in 2015, it became clear that the PAH levels of fish smoked on the Morrison oven did not meet permitted health standards for human consumption.

FAO also devised a cleaner version of the Chorkor called the FTT (FAO Thiaroye Processing Technique). The FTT has an ember furnace, a fat collection tray, an indirect generator system and a hot air distributor. According to the FAO, the FTT has the particular merit of overcoming the challenge linked to PAH given its features, which mainstream the relevant code of practice of the Codex Alimentarius (CAC/RCP 68-2009). It further curbs fuel consumption while reducing the exposure of the fish processor to smoke and heat. The unit cost of the FTT is, however, prohibitively high for most individual small scale fish processors in Ghana at approximately \$800 per unit.

<p><b>Traditional Barrel Oven</b></p>  <p>BaP 15 PAH4 72 Price:\$20 (GHS 100)</p>	<p><b>Chorkor Oven</b></p>  <p>BaP 22 PAH4 84 Price: \$80 (GHS 400)</p>
<p><b>Morrison Oven</b></p>  <p>BaP 30 PAH4 110 Price: \$160 (GHS 800)</p>	<p><b>FTT-Thiaroye</b></p>  <p>Below EU limits of BaP 2 PAH4 12 Price: \$500-\$800 (GHS 4,000)</p>

**Figure 1 Fish smoking oven models used by small-scale processors in Ghana**

Traditionally smoked fish tested by SFMP, also had high microbial levels due to unhygienic fish handling practices such as lack of potable water and sanitation facilities, lack of hand washing, placing of fish on the ground prior to and after processing, cross-contamination by having processed and unprocessed fish handled and stored together, using paper from discarded cement bags to wrap fish, open processing sites without protection from dust and wind, and no exclusion of access by animals or the general public, among others.

## **PROJECT IMPLEMENTATION STRATEGY**

SFMP's post-harvest component aimed to improve efficiencies in the post-harvest value chain and ensure the production and trade of quality, healthy, sustainably harvested fish in Ghana. The principal strategy to achieve this aim was to promote widespread adoption of improved fish smoking technology and practices that could provide economic, environmental and health benefits for processors and consumers compared to existing smoking ovens and,

along with other innovations, could improve on prevailing poor hygiene and handling practices. The project estimated that 20 percent of processors (about 6000 persons), would be needed to reach a critical mass of early adopters for the diffusion of innovation (Rogers, 1962) in the post-harvest processing sector. Project planning initially tried to set that as a five-year diffusion of innovation goal where further scale up would be accomplished through sustained automatic diffusion and adoption through social networks and market forces. The FTT oven provided the desired health and environmental benefits but is cumbersome to use and too costly for a critical mass of early adopters to access and for the majority of small-scale processors to eventually adopt.

The project initially intended to promote the diffusion of the previously developed fuel-efficient Morrison oven until project supported testing revealed unacceptably high PAH levels. At that stage, work on promotion of this oven was halted and an effort was made to develop a new more acceptable alternative that was more fuel efficient, produced less environmental smoke and had lower PAH levels than the most widely used oven type in Ghana, the Chorkor oven.

In collaboration with the Post-Harvest Unit of the Fisheries Commission, the Ghana Food Research Institute of the Council for Scientific and Industrial Research (CSIR), the Ghana Standards Authority, and the Food and Drugs Authority, SFMP undertook further research that resulted in a new acceptable design called the *Ahotor* oven, or ‘comfort oven’ (Figure 2). It is more fuel-efficient, generates less smoke and heat, and produces safer PAH levels than the Chorkor and Morrison ovens and, at a cost less than the FTT oven that signaled the potential for adoption by small- and mid-sized processors that make up the bulk of fish processing in Ghana. Testing of the *Ahotor* oven was done with fish processors who gave continuous feedback on its efficiency and performance. The *Ahotor* oven, although similar in design to the *Chorkor*, saves time, reduces smoke emissions and heat that increases ‘comfort’ for fish processors, contributes to a cleaner environment, and uses 30% less fuel, which is often wood from mangroves. The oven is more complex to build and requires some training to use properly.



**Figure 2 Ahotor Oven with layered fish smoking racks**  
BAP: 2, PAH4: 10.93 $\mu$ g/kg, Price: \$400 (GHS 2,500)

SFMP's strategy for diffusion of the *Ahotor* oven was to work with the Fisheries Commission Post-Harvest Unit and local partners DAA, CEWEFIA and NAFPTA to expose processors to the new *Ahotor* technology through demonstration units. The project then employed a market-based approach for the production of ovens by trained entrepreneur-artisans and encouraged uptake of the technology through purchase by individual owners who were supported by outreach, technical and business skills training. This was to be augmented by SFMP support for improved access to credit through local financial institutions and partial-cost grant support from SFMP. This approach was implemented and continuously adapted over time. The approach included:

- Offering a 30% SFMP grant for the first 200 adopters. To receive the grant, the processor had to pay artisans 70% of the cost of oven construction. To encourage artisan compliance to construction specifications, SFMP would pay the 30% portion directly to artisans only after quality assurance audit confirmed *Ahotor* units were in compliance.
- Providing full grants for *Ahotor* ovens to 16 households highly-vulnerable to child labor and trafficking.
- Introducing processors to financial institutions to access loans for oven construction. Arrangements were made with three financial institutions (Gomoa Rural Bank, Akatakyiman Rural Bank and Microfin Rural Bank) to offer processors credit at 3% interest per month after they saved 20% of the loan amount as cash collateral, payable over 6 to 12 months.
- Arranging with the Microfinance and Small Loans Centre (MASLOC), a quasi-government agency, to support processors with credit for working capital and oven purchase. The initial application was for 194 processors. With the average request coming in at GHS 4,000. MASLOC was only able to provide 1000 GHS due to financial limitations and assessed risk of the prospective borrowers.
- Offering an 88% grant to 141 processors in Ghana's four coastal regions. The subsidy covered construction of a double unit oven base, 1 fat collector, 2 grates and 20 trays at GHS 2,200. Each beneficiary signed an agreement to pay GHS 300 for the second fat collector and received certified training on oven use and maintenance. Further, recipients had to agree to receive training on records keeping and maintain records to document the value to their business of the *Ahotor* oven.
- Conducting promotional activities on TV and radio, in print, and at community durbars. A promotional tour by SFMP partners to the Volta, Central and Western Regions in March 2018 engaged 684 members of the National Fisheries Processors and Traders Association (NAFPTA). Processors received clear, actionable information on how to contact artisans and self-financing options such as use of one's own savings, layaways or loans.
- Collaborating with Adesa Productions Ltd. produced two cookery shows featuring two early adopters of the *Ahotor* oven in Elmina and Winneba on the popular TV3 Edziban show (local cooking program).
- Providing a reliable supply of qualified artisans by providing certified training through 11 stove construction companies, employing 75 artisans, based in the fishing communities and within reach of the local processors.

- Developing a recognition scheme (called the Class 1 Recognition Scheme) for smoked fish, with ownership and use of the *Ahotor* oven as a prerequisite. Through SFMP's partners, CEWEFIA, DAA and NAFPTA, interested processors were given the opportunities to have the *Ahotor* oven constructed for them and receiving assistance to understand requirements and bring their processing sites up to the standards of the Class I Scheme.

In addition to deploying the *Ahotor* technology, SFMP trained fish processors in hygienic fish handling (especially washing fish with clean water before processing and separation of receiving, processing and storage areas to prevent cross-contamination). With government and civil society partners, the project also developed and introduced the Class 1 Recognition Scheme. The objective of the scheme is to promote production and trade of quality fish by auditing and certifying fish processing kitchens/facilities that meet basic food safety standards. It encourages establishment of these standards and provides potentially greater access to higher value markets for processors interested in selling to the formal market such as supermarket chains through a local quality assurance label and certification.

SFMP also constructed fish processing and training centers for its' implementing partners, DAA and CEWEFIA, to train their members and others on how to process higher quality fish, on use of the *Ahotor* smoker, and how to produce, package, and sell fish acceptable to more formal markets such as domestic supermarkets and international export markets. These two food safety-compliant processing centers are an important step towards the promotion and local trade of quality fish in Ghana and combined have the capacity to train 3500 women each year.

## **PROGRESS AND RESULTS**

### **Development and Adoption of Improved Fish Smoking Technology**

The research and development of the *Ahotor* oven took more than two years and was completed in August 2017. As of January 2018, only 113 ovens had been constructed, including 74 built with full cost covered by the project. Three hundred processors were trained on *Ahotor* oven use and maintenance.

At GHS 1768 (US\$ 354) for a double unit and GHS 903 (US\$ 181) for a single unit (without trays), the cost was perceived by fish processors to be expensive relative to the lower cost traditional *Chorkor* oven. The project's market-based approach for scale up was not delivering the expected results. In response, the project developed and implemented additional options for accessing credit and progressively increased its' subsidies, while also dramatically expanding the supply of artisans living directly in fishing communities. Other changes to the approach were made to address feedback on quality from users, particularly in the way processors were trained on *Ahotor* use. Outreach and training was increased, supported by the addition of a market development specialist to the SFMP staff.

As of January 2019, 306 *Ahotor* ovens were constructed with the support of SFMP and 214 with the support of the Fisheries Commission Post-Harvest Unit with funding from the World Bank West Africa Regional Fisheries Project (see Table 1). All of the ovens installed are individually owned, as communal ownership of ovens is not a traditionally acceptable practice. As of December 2019, MASLOC had approved and granted loans to over 100 fish processors, but a GS 1000 per person, the amount was not enough to construct the oven. There is also uncertainty whether scale-up of this loan program will be possible in the future due to perceived risk of financing institutions, placing additional questions in terms of future financing options.



These results represent 5% (or 9% including Fisheries Commission results) achievement of the original target of 6000 improved ovens installed and 30% (or 52%) achievement of the revised target of 1,000 improved ovens installed (the target was adjusted down to a more realistic level in Year 4 based on progress and lessons learned). Despite the clear health and environmental benefits, and the strong economic potential of the *Ahotor* oven, as well as the appropriation and promotion of this new technology by the Fisheries Commission, a critical mass of early adopters required to drive diffusion of the innovation grew at a pace slower than originally anticipated and the cost of scale was greater than expected. Only 15% (76/520) of *Ahotor* ovens were constructed without a subsidy of 88% or more.

**Table 1 Ahotor ovens built as of January 2019 by funding mechanism**

<b>Funding Mechanism</b>	<b>Number Built</b>
Initial R&D, demonstration and training (project covered 100%)	58
Households vulnerable to child labor & trafficking (project covered 100%)	16
30% discount for the first 200 early adopters and/or with credit obtained from one of the three partner financial institutions.	42
MASLOC (GHS 1000 credit)	0
Class 1 Certification scheme (project covered 100%)	15
50% discount to replace Morrison stoves built during the early stages of the project by processors with their own funding and/or credit from financial institutions.	34
SFMP 88% cost covered for double oven (excluding cost of one fat collector)	141
<b>Total SFMP</b>	<b>306</b>
FISHERIES COMMISSION 88% cost covered for double oven (excluding cost of one fat collector)	400
Demand from aquaculture farmers	17
<b>TOTAL</b>	<b>723</b>

The principal factors contributing to this outcome is the cost of the *Ahotor* oven relative to the financial means of most processors. This was the major obstacle of the original concept for rapid market-led adoption, even though one of the key advantages of the *Ahotor* (GHS 3000 for double unit with 20 trays) is that it is less than the cost of the FTT stove (GHS, 8000 for 1 unit with trays) and, over time, more profitable than the traditional *Chorkor* oven. The project targeted mid-level processors for adoption – not the poorest and not the wealthiest - for financing and promotion, but even among this targeted class, the up-front costs still seemed too high.

Facilitating access to micro-finance for processors to address this barrier was more complex and difficult than expected. A viable market-led micro-finance solution to providing a significant number of processors access to sufficient credit for purchase of an *Ahotor* oven (and for working capital) remains a challenge. This is due to reasons such as:

- the mobility of fishers and fish processors during the fishing seasons which makes them hard to track and a greater risk for lenders.
- low overall literacy and financial literacy levels among processors.
- very low levels of existing financial relationships between financial institutions and fish processors, and the unproven market of post-harvest lending to fish processors.
- mistrust of financial institutions by fishers and fish processors.

- lack of available loan collateral by borrowers, such as land.

The decline of small pelagic fishery landings in Ghana also does not favor widespread adoption of a new and significant capital investment for artisanal fish processors already under increasing economic stress. The purchase of local or imported frozen fish for processing is an alternative, but it is more expensive. At the same time, many realize that increasing post-harvest value chain efficiency and providing a higher quality product to higher value markets may be the only way to maintain viable artisanal processing livelihoods in a context of shrinking supply and higher prices for primary product. As fish stocks dwindle, it has become necessary to reduce post-harvest losses and maximize income from the limited catch. Acquiring the capacity and finding the means to make the transition to improved technology is the challenge processors face.

The quality of Ahotor oven construction was an issue for some early adopters who complained of the oven's poor performance. This was attributed to poor construction by local artisans trained by the project and the processors not using the ovens as instructed.

The oven companies and their artisans were re-trained and certified in June 2018, given copies of the Ahotor oven construction manual, and tasked to construct all ovens to the manual's specifications. With SFMP support, the artisans formed a networking and knowledge-sharing platform. To address substandard construction, the project replaced poorly constructed ovens for five processors. The SFMP communication team worked to address user training gaps by revising the *Ahotor* oven user guide and producing it in poster form with pictures and subtitles in four coastal languages (Fante, Ewe, Ga and English). Laminated copies were distributed for the walls of processing facilities as reference for household members.

### **Hygiene and Handling Improvements**

A total of 1195 persons (120 men, 1075 women) were trained in hygienic fish handling practices that reduce microbial contamination during processing. Training emphasized the need to put fish on ice after harvest and using clean/potable water to wash fish before processing. A fiberglass insulated ice box was introduced to fish processors on a pilot provided valuable insight on processors' needs for potential cold chain improvements. The need for individually owned, smaller size, more portable and less costly ice boxes for use with high-value fish rather than lower-value small pelagic was indicated by users.

The pilot Class I certified kitchen scheme resulted in the audit of 32 kitchens, of which 13 were certified while the other 19 who failed the audit were part of 100 processors who were given in-kind grants of GHS 1000 to implement corrective measures and rehabilitate their kitchens. Twenty-two more processors have also been audited with 15 of them certified. This brings the total number of kitchens certified under the scheme to 28 as of January 2021.

The scheme is now being implemented by the Fisheries Commission's Post-Harvest Unit and managed by a committee chaired by the Director of the Fisheries Commission with representatives of the Post-Harvest Unit, the Ghana Standards Authority (GSA), CSIR, NAFPTA, the Food and Drugs Authority (FDA), an Environmental Health Officer (from local government), Consumer Protection Agency, local NGOs, Academia, and the Attorney General's Department. Synergy and interagency cooperation among this committee in serving processors was and will continue to be a key factor of success in the development, roll out and sustainability of this certification scheme.

The DAA (Greater Accra Region) and CEWEFIA (Central Region) training and production centers were inaugurated in 2018. They trained 696 participants, produced 3,313 kg of their own branded fish products, and supported production of 428 kg (Tuna, mackerel, Sardinella,

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shrimp, and oysters) for fee paying users of their facilities. While the volume of production to date is small, it is expected to grow as the business plans developed with project support starts to guide the operations of these centers.

## LESSONS LEARNED

The Ahotor oven technology, developed by SFMP with its government, NGO, and fish processor partners significantly increases the opportunity for stakeholders to transform Ghana's post-harvest value chain and ensure the production and trade of quality, healthy, sustainably harvested fish. The Ahotor oven provides consumers with a healthier low BaP/PAH content product, and processors with a healthier and more fuel-efficient oven than traditional methods at less than half the price of the only other available technology with similar benefits.<sup>1</sup> It creates the potential for widespread adoption because it bridges the gap between the lowest cost, unhealthiest and most environmentally unsustainable traditional fish processing methods used by 70% of processors and the \$1000 FTT-Thiaroye improved oven that is out of reach economically for all but a few.

A market-based approach may be the most effective strategy for sustained and widespread diffusion of the *Ahotor* oven at scale but enabling conditions in Ghana's post-harvest processing sector were not sufficiently well developed to support a market-based approach that could not achieve the critical mass of early adopters needed to catalyze the rapid and sustainable diffusion of this innovation. The cost of the *Ahotor* oven relative to the economic status of most processors meant that payment in full for direct purchase was very difficult for almost all processors. Weak enabling conditions for access to credit from financial institutions and the declining and unpredictable seasonal availability of primary product due to overexploitation of fisheries resources were additional barriers for potential early adopters.

In practice, the *Ahotor* was not accessible to early adopters unless at least 88% of construction cost (including fish smoking trays) was subsidized. Even if early adopters are almost fully subsidized for the initial investment, developing processor capacity and viable credit mechanisms that align processor needs and financial means with the requirements of banks, government agencies and micro-lending institutions in Ghana are key challenges for sustaining the diffusion of the *Ahotor* technology. Recovery and sustainable management of Ghana's primary food protein source, the small pelagic fishes, is also a critical enabling condition for sustained market-based transformation of post-harvest value chain quality and efficiency which, in turn, supports sustainable fisheries management. With SFMP support, post-harvest stakeholders became demonstrably more aware of the powerful role they can play as market actors in this positive feedback loop and that their livelihoods depend on it. This signifies opportunities for additional progress based on the learning of SFMP.

Creation of a locally owned, institutionalized, standardized, nationally recognized and reasonably attainable quality certification scheme for artisanal fish processing units is demonstrating promise as a sustainable approach for incentivizing the adoption of good practices and the production and trade of quality fisheries products. The Class I scheme, with its' Class I recognition label, has the potential to achieve this by developing and increasing processor access to higher value markets. Such markets require consistent, quality products that wholesalers, retailers and consumers can trust. Knowledge among consumers on the existence of the certification scheme and visibility of the label are not yet widespread. Consumer awareness of quality concerns and health risks for processed fish products in Ghana is still low. Price premiums and profit margins based on the value added of

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<sup>1</sup> BaP is a benzo[a]pyrene, a carcinogenic polycyclic aromatic hydrocarbon that is the result of incomplete combustion of organic fuel such as wood.

certification are yet to be documented and moving into higher-value markets will require production of sufficient volumes of Class I certified fish to ensure a reliable supply to higher-value wholesalers and retailers. However, ownership and appropriation of the certification process by a strong consortium of Ghanaian government and non-government organizations combined with the new capacity to train processors at two modern training and processing centers are in place to drive the scheme's development and sustainability.

## **APPLICATIONS AND NEXT STEPS FOR GHANA**

### **Adoption of Improved Fish Smoking Technology**

To reach a critical mass of early adopters that catalyze widespread adoption of the *Ahotor* oven through market forces and social networks, subsidies of up to 88% were needed and may need to be continued to an additional 2000 or more beneficiaries. At the same time, more time and resources are needed to strengthen the enabling conditions for access to finance, quality production and proper use of the technology, and consumer awareness on product quality and health benefits.

Enabling conditions for access to credit are needed and will require building financial relationships and trust between financial institutions, processor associations, and the processors themselves. In addition, more effort is needed to increase overall literacy and financial literacy among processors. Continuing the development of community level micro-savings and loan groups to build financial capacity may help in some regions when combined with additional business development training for processors. For financial institutions, developing reliable mechanisms to track processors moving from site to site and other aspects of risk mitigation and transaction cost reduction schemes for lenders is needed. A multifaceted strategy is needed to address the complex fish processing business ecosystem.

Quality production and proper use of the technology requires further development of training modules and qualified trainers. Construction monitoring and quality control will be an ongoing need that perhaps could be supported by Fisheries Commission zonal officers with the proper training. Incentive systems need to evolve that identify and recognize high-quality local artisans in a way that increases competition that results in reasonable pricing for *Ahotor* oven construction. The network and knowledge-sharing platform established by artisans, processor associations, and NGOs (NAFPTA, DAA, and CEWEFIA) represent opportunities to institutionalize such systems for sustainability.

### **Growing demand for Ahotor oven use among aquaculture farmers**

While the uptake of the ahotor oven among processors of marine fish remain low, there is demand by aquaculture farmers to smoke catfish and tilapia for sale in regional and international markets. Seventeen ahotor ovens were constructed by two certified artisans as of January 2021.

### **Hygiene and Handling Improvements (Institutionalization of the Class I Recognition Scheme)**

Scale-up of the Class I kitchen certification scheme is a realistic opportunity and one important component to the trade and consumption of quality fish in Ghana and for export. The Ministry of Fisheries and Aquaculture Development should collaborate with the agencies represented on the Certification committee especially the Food and Drugs Authority to migrate the Class I recognition scheme on to the newly launched Progressive Licensing Scheme for cottage industries and small-scale food processors.

Participatory research is needed to document price premiums and profit margins that can be made by producing fish under more hygienic conditions, using the *Ahotor* oven, under the

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Class I recognition scheme. Higher profit margins might result from higher market prices for a higher quality product or could result from reduction of post-harvest losses due to improved hygiene and handling, reduced cost of inputs (i.e., using less fuelwood), reduced time requirements from labor savings per kilo processed. Such information would be useful in future nationwide campaigns for promoting the *Ahotor* and the Class I certification scheme and help bridge the knowledge gap of consumers regarding healthy fish production and consumption. Consumer awareness on fish product quality is necessary as Ghanaian consumers are generally not aware of the health and quality issues surrounding traditionally processed fish. This is especially true with regard to PAH and microbial levels. Consumer demand for higher quality fish and willingness to pay a price premium for quality need to be promoted and documented. The information should be shared broadly by processors themselves through their networks and supporting institutions to drive behavior change by consumers and on adoption of improved fish smoking technologies, hygiene and handling practices.

Fish trade associations and groups should be strengthened and supported with capacity building initiatives and improved access to finance as already outlined in the draft National Fisheries Management Plan 2021-2025. Processors who preserve and trade in sun dried fish should be supported to reduce post-harvest losses by using drying racks, mechanisms to exclude animal access (like chickens, birds, etc.) and better packaging to improve on the quality of their product to increase its' market value. With the near collapse of the fisheries sector, the vulnerability of fisher folk, especially the female processors who are heads of household, could be reduced with support to diversify their livelihoods. The recent project effort and scale up on promoting financial resiliency through the development of Village Savings and Loan Associations can help in this regard.

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## **GENDER MAINSTREAMING**

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### **BACKGROUND**

Gender roles in Ghana's fisheries sector are clearly delineated. Men dominate the extractive process while women mainly engage in fish processing and trading. Women account for nearly half of the fisheries workforce and there are an estimated 33,000 women engaged in processing, marketing, and trade of fish along the coast of Ghana. Income generated by women engaged in the fisheries value chain is vital to support the entire fishing industry. Women invest in canoes and other fishing gears, purchase fuel for fishing trips, and finance maintenance of fishing gears. Some women also provide loans to their husbands and other fishermen to run fishing operations. This shows how crucial is the role women play in the fisheries sector (Britwum, 2009). Fishing drives the economy of the coastal communities of Ghana, particularly in the Central and Western Regions. At fish landing sites, fishing is the most important livelihood along with petty trade.

A baseline survey conducted by the SFMP documented low literacy levels among fisher folk, especially women post-harvest processors, limiting their ability to grow and expand their business. The most marginalized groups are women and men who do not own fishing gear and equipment (boats, engines, nets etc.) Women who are economically and socially disadvantaged are also particularly vulnerable to trafficking their children.

The small pelagics species harvested in Ghana are usually fried, sun-dried or smoked. The limited access to cold storage facilities results in a physical post-harvest fish loss of approximately 20%. Fish smokers, mainly women, process fish using inefficient smokers called *Chorkor* ovens. The *chorkor* requires the use of large amounts of wood usually harvested from mangroves or land based forested areas. *Chorkor* ovens emit a lot of smoke during processing which is unhealthy for the workers and their dependent children who are either carried or play around ovens while in operation. Smoke deposited on the fish during processing leads to levels of Polycyclic Aromatic Hydrocarbons (PAHs – known human carcinogens) on fish that is higher than permitted for human consumption. Most fish processors earn low margins on fish produced and sold, accounting for their low savings rate. This in turn limits their ability to interact with formal financial institutions and financial services.

### **PROJECT IMPLEMENTATION STRATEGY**

For the SFMP, a first entry point to strengthen women's role in fisheries was to improve the technical, business management, and financial capacity of post-harvest processors. A major element of the theory of change driving the SFMP was that fisheries management in Ghana could be attained if all user groups and stakeholders are included in management decision-making. Efforts to systematically engage Ghanaian women in coastal fisheries co-management are rare and their participation in decision-making processes, even those that

directly impact their livelihoods, is limited. Hence, another important gender mainstreaming entry point for SFMP was to strengthen the leadership capacity among post-harvest processors as well as women who glean oysters and other bivalves in mangrove areas. A third entry point was to improve the general governance capacity for gender mainstreaming within the Ghana Fisheries Commission and local governments by implementing all activities in collaboration with local extension agents and stakeholders, ([Torell et al., 2019](#)).

The gender integration efforts of SFMP began with a gender analysis (Torell et al 2015) that produced a detailed assessment of the fisheries sector value chain. This involved a literature review, on-the-ground focus group discussions, and key informant interviews to understand the dynamics and roles of men, women, boys and girls in the fisheries sector, and also to describe barriers and bridges to women's participation in fisheries management and value chain improvement. Following the gender analysis, SFMP conducted a needs assessment (Okyerere Nyako et al., 2015a) that identified the specific needs of women, women fish processors, and fishermen engaged in fisheries in the Western and Central regions. Identified needs included the clear need for improved fish smoking technologies that emit less smoke and heat, reduce drudgery and use less fuelwood. Other needs included training on fish handling, techniques to reduce post-harvest fish loss, the need to gain access to additional markets, the need to strengthen associations, and the need to access finance. These two assessments informed the development of a SFMP gender mainstreaming strategy (Okyerere Nyako et al. 2015b) that integrated these and other aspects of gender into all of the project's interventions to maximize empowerment of women and contribute to building broader constituencies for sustainable fisheries management. The SFMP gender mainstreaming strategy has the following vision:

- Fostered changes in fisheries management with both men and women having equal opportunities as co-managers of fisheries resources.
- Strengthened civil society organisations (CSOs), and fishermen and fish processing/trading associations to solve problems through open and transparent communications and shared decision making.
- Increased annual yields of fish supply through improved management that contributes to Ghana's food security with men and women engaged directly and equally in the fisheries.

Implementation of the strategy began in Project Year 2 (2016) and included a number of activities that involved approximately 5,000 individuals in the following areas of work:

- Strengthening fish processor associations to become more effective stakeholders in fisheries management. This was done through:
  - Training-of-trainer events and direct gender leadership, conflict management, and team building trainings included a peer-to-peer post-harvest study tour to Senegal.
  - Organizational development support to post-harvest processing associations to becoming more robust, transparent, and representational.
  - Business development and microfinance support targeting women-owned micro- and small-scale enterprises.
  - Research, development, testing and diffusing an improved fish processing technology called the Ahotor oven (see post-harvest essay for more details on this).
  - Development of a certification scheme in cooperation with the Fisheries Commission Post-Harvest Unit that trained processors on improved handling, processing,

packaging and marketing of processed fish.

- Supporting community-based management and use rights for women oyster harvesters in the Densu Estuary. This involved:
  - Participatory rapid appraisals, documentation of local ecological knowledge, development of an oyster fishery management plan, and supporting early actions such as mangrove replanting and oyster reef restoration.
  - Collaboration with the University of Cape Coast (UCC), Fisheries Commission, and government extension actors.
  - Outreach and training for stakeholder engagement and the formal establishment and capacity development of co-management associations in local communities.
  - Advocacy to the Ministry of Fisheries and Aquaculture Development and the Fisheries Commission for the official approval of a National Co-Management Policy.
  - Collaborating with the Ministry of Fisheries and Aquaculture Development and Fisheries Commission to draft and adopt a national gender mainstreaming strategy for the fisheries sector, and the inclusion of provisions in the national co-management policy requiring women’s participation (Torell et al., 2019).

## **PROGRESS AND RESULTS**

The SFMP carried out its gender mainstreaming strategy to increase the equity and efficiency of sustainable fisheries management. The gender mainstreaming activities were based on the premise that if both men and women demand good fisheries management practices, implementation will be timelier, more enduring, and more effectively diffused (Torell et al., 2019). A gender impact assessment conducted in 2018 found that the SFMP had in fact made important strides towards achieving these goals (Bilecki et al., 2018).

An early accomplishment was the adoption at the national level of the “Gender Mainstreaming Strategy for the Fisheries Sector” (Ministry of Fisheries and Aquaculture Development 2016). This new strategy strives to empower fisherfolk, especially women, by enabling their active participation in fisheries management and decision-making. The next step is allocation of funds to carry out its key provisions. However, as of 2019 The Ministry of Fisheries and Aquaculture Development had yet to receive anticipated funding from the Government of Ghana for its implementation.

Over the life of project, SFMP supported a number of trainings and activities focused on mainstreaming gender.

- 1018 women leaders from three fisheries associations were trained on leadership and advocacy skills to enable women to negotiate and advocate on issues in their communities.
- 3,473 women and 511 men were trained in business skills (record keeping, costing and pricing, and determining profit), hygienic fish handling and how to add value to fish beyond the usual smoking, drying and frying.
- 21 highly vulnerable households particularly prone to offering their children for labor on fishing vessels were identified and supported with single unit *Ahotor* ovens and business skills training to enable them to earn enough income to reduce their vulnerability.
- 56 micro savings entities (Village Savings and Loan Associations) were set up for over



1174 (1103 females, 71 males) beneficiaries to improve their access to finance through their own savings, however small.

- 181 women members of the National Fish Processors and Traders Association (NAFPTA) were offered GHS 1,000 each as credit for working capital and/or construction of an *Ahotor* oven by the Ghana Microfinance and Small Loans Centre (MASLOC), a microfinance company under the office of the president with the mandate to lend 60% of its funds to women. Due to fish processors' limited relationship with the financial institutions in their communities, SFMP facilitated this linkage. MASLOC indicates that if this pilot is successful there could be an expansion of this program. As of mid-2019, 73 female-owned MSMEs in the Central and Volta Regions have received a combined total of approximately GHS 75,000.00 (approximately US\$ 15,000 from MASLOC).
- Over 6,000 men (53%) and women (47%) were trained in various areas of fisheries management and business development.

Trainings and engagement with SFMP local implementing partners contributed to more equitable hiring and increased support for female beneficiaries and employees. SFMP support also directly increased the capacity of female-led institutions (see capacity development essay). As noted in follow-up surveys with government staff, women fish processors are more confident, knowledgeable and empowered to speak up now than before SFMP. Men increasingly acknowledge the role that women play in the fisheries sector. Capacity development related to innovation, conflict management, advocacy, and leadership contributed to women's perception that they have a voice and personal agency in fisheries management decisions. Women in direct contact with the project and those with indirect knowledge of SFMP activities have greater awareness of sustainable fisheries management and report they feel equipped with the knowledge and leadership skills to advocate for good fisheries practices. This is visible in public meetings where women clearly articulate and discuss fisheries management issues alongside men. This was particularly important in the successful 2019 closed season for all artisanal fleets but also in other action. Training in post-harvest processing has helped women handle fish more hygienically and training in business management and financial literacy have provided tools that enabled women to grow their processing enterprises (Bilecki et al., 2019; Torell et al., 2019 ).

An important cross-cutting theme is for mainstreaming gender is organizational capacity development (see essay on this topic). The SFMP supported capacity development in women-led organizations including the Central and Western Region Fishmongers Improvement Association (CEWEFIA), the Development Action Association (DAA), and the National Fish Processors and Traders Association (NAFPTA). An important result of SFMP engagement with these organizations was an increase in their ability to coordinate and mobilize themselves as advocates in the fisheries sector as evidenced by an increase in ad hoc and formal annual meetings now held by these groups with the Minister of Fisheries and Aquaculture Development.

Working through the Development Action Association (DAA), a membership-based organization of women fish processors and farmers, a new fisheries resource user group was formed. The Densu Oyster Pickers Association (DOPA), a community-based group whose membership is mainly women, was officially formed to manage the oyster resources they harvested in the Densu Delta on the outskirts of the capital city of Accra. After receiving technical and leadership training as well as mentoring for one-year DOPA closed their oyster grounds to harvesting for five months to let the oyster populations regrow. One reason why progress on adopting and implementing a fisheries management measure was so significant

and swift is that the Densu estuary oyster harvesters are a relatively small and cohesive group, which made it easier to reach consensus. Another success factor was the participatory management and monitoring approach, which increased scientific knowledge, confidence, leadership, and the ability to advocate on their behalf.<sup>2</sup> Finally, DOPA worked with passionate and engaging extension staff from DAA and the University of Cape Coast Centre for Coastal Management (CCM) whose energy rubbed off on the local stakeholders.

## LESSONS LEARNED

SFMP has learned a number of important lessons in relation to its gender strengthening work in Ghana's fisheries sector.

A quantitative evaluation in 2017 to examine the progress and effectiveness of microfinance and business development support found that microfinance (provided through an F-NGO called Daasgift Quality Foundation), business training, and introduction of Village Savings and Loan Associations (VSLAs) had the potential to fill a critical gap in access to capital. Also, for some the training that came with VSLAs formation was already strengthening some medium- and small-scale enterprises (McNally et al. 2018). In terms of VSLAs, almost all participants (95%) were satisfied with this type of micro-credit intervention and reported that they expected it would help them build their businesses and provide for their families. However, at the time of the survey most participants had yet to see increases in production or net profit. In addition, whether participating in a VSLA or not, a high number of fish processors are illiterate. This poses a significant challenge to scaling up micro-finance through formal institutions and present other more limited challenges related to participation in VSLAs.

To reduce post-harvest losses, in Year 4 (2018), SFMP introduced fish processors to the use of ice as a way of preserving fish between harvesting and processing stages of the supply chain. Fiberglass insulated ice chests were procured from a local manufacturer and given to 12 women's groups on a pilot basis. Months after they were distributed, however, only a few of the boxes were in use. Beneficiaries gave a number of reasons including issues with shared ownership, the high cost of ice which is only used for high-value species and not the more abundant and low-value small pelagic fishes. Early identification of the sharing issue perhaps could have been addressed by building organizational skills and leadership for groups to share assets. Given the inclination of processors to own individual ice chests (boxes), additional research is needed towards producing/procuring smaller personally own ice chests as the more appropriate intervention. Future attempts at promoting icing of fish should be focused on the high-value demersal fish such as groupers, snappers and smaller, less costly, and individually owned ice chests.

There are an estimated 33,000 female processors along the coast of Ghana. While their numbers would indicate the potential for significant influence, historically, avenues for women to engage directly in fisheries management have been limited. Their low education status combined with Ghana's patriarchal culture has inhibited their ability to contribute or make decisions that influence fisheries decision-making on key issues. However, among the 1018 women who were trained on leadership and advocacy skills since the beginning of SFMP, most have made some kind of impact in their communities, especially in terms of support for implementation and benefits of observing the artisanal closed season. Most members of fish processor associations associated with SFMP strongly supported the 2018

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<sup>2</sup> DOPA members were trained to collect their own water quality information that included pH, turbidity, temperature, and salinity, among others, and connect these measurements to requirements for healthy oyster growth.

and 2019 closed season declarations by the Minister of Fisheries and Aquaculture development. While personal and organizational politics played a role, this was less so fishermen's associations.

An SFMP 2018 Snapshot Assessment found that SFMP's training and educational opportunities contributed to women processors' advocacy on the closed season and other key fisheries management issues. The National Fish Processors and Traders Association (NAPTA), a group targeted by SFMP capacity development interventions, even planned to hold a press conference with up to 200 women processors in support of the 2018 closed season until the closed season for the 2018 was postponed by the Ministry.

Estimated at 33,000 persons, the number of fish processors is large and SFMP was only able to reach a fraction of these individuals. Focusing mainly on a selected group of leaders and members of women's associations, much progress was made but there is significant potential for women to become a much larger and organized voice for sustainable fisheries management in Ghana. Providing opportunities for leadership development, business and organizational training at a larger scale is needed.

## **APPLICATIONS AND NEXT STEPS FOR GHANA**

Additional strengthening of the organizational capacity of women processor associations' (e.g. CEWEFIA, DAA, and NAFPTA) should be a priority for the Ministry of Fisheries and Aquaculture Development and the Fisheries Commission. A study by Beran (2018) shows that while most fish processors in Ghana are members of an association, 33 percent of those surveyed were not members of a fisheries related association. Non-members stated that they did not participate as a result of lack of interest, time constraints (the result of household and reproductive responsibilities), poor health, distrust, discouragement with respect to high membership dues, or inability to access loans for their businesses. Even among members, fewer than 70 percent state that they actively participate in meetings and other fisheries association activities. Scaling up the impact of women in fisheries policy, including mobilizing mass support to influence fisheries management decisions, requires all members as well as reaching non-members and those that are inactive and remain invisible (Bilecki et al., 2018; Torell et al. 2019).

One way to increase the extent of gender integration is to work more closely with the traditional leadership. Women's traditional leaders – *konkohemas*– or chief fishmonger/processor could be explicitly engaged and empowered to ensure that they only finance the fishing expeditions that employ responsible methods. A more focused effort to empower the *Konkohemas* and their leadership network might have an impact on their willingness and ability to lead, manage, and mobilize women in their communities to engage in fisheries management (Bilecki et al., 2018; Bilecki 2019). Other lessons learned include:

- Relations between women's groups and Ministry, Fisheries Commission, the Ghana Industrial Trawlers Association (GITA), the Ghana Inshore Fishers Association (GIFA) and the Ghana National Canoe Fishers Council (GNCF) should be improved to ensure stronger cohesion, inclusion, and dialogue between the policy makers, the producers, and processors for better management of the fisheries sector.
- The next level of entrepreneurial development of the fish processors should focus on improving their financial literacy to increase savings rates and access credit, as well as the use of digital financial tools in their businesses.
- The current small core of women leaders and champions should be expanded to involve more women and encourage peer learning to boost the dissemination of information at

all levels.

- More attention should also be focused on getting men to accept the inclusion of women in decision-making.

After 7 years of implementation, SFMP has only started off the process of diffusing gender mainstreaming into the Ghanaian fisheries sector. The next steps for Ghana should be to work toward deeper and far more reaching gender mainstreaming results. This can be accomplished through the following actions:

- Acknowledge the varied roles, capacities, and needs of women, men, and youth that are active in the sector and tailor interventions to reach a diversity of stakeholders.
- Broaden the participation of women in fisheries management by ensuring that non-members and non-active processing association members have opportunities to develop the skills and motivation they need to engage in fisheries management. This will require not only strengthening leadership, organizational, and technical skills, but providing literacy and numeracy training.
- As literacy and numeracy improve, provide savings and credit services for women processors, continue improving business management skills, and introduce digital financial tools.
- Identify and work with local champions and associations to reduce reliance on donor and project-based funding. Continue to strengthen the organizational capacity of key women's organizations such as NAFPTA who represent a broad constituency at the national and decentralized levels.
- Increase the involvement of traditional fisheries leadership structures, including the chief fishmonger/processor (*Konkohema*). These leaders may have an untapped potential to lead, manage, and mobilize their communities.
- Take a "men as partners" approach to increase men's support and reduce the additional burdens that may come about as women engage more in the fisheries sector.
- Replicate the co-management model of the Densu in other ecosystems and communities (Bilecki et al., 2018; Torell et al., 2019).

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# COMBATting CHILD LABOR AND TRAFFICKING

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## BACKGROUND

Child Labor and Trafficking (CLaT) has been a consistent problem in Ghana for decades. Ghana was put on the US State Department Trafficking in Persons (TIP) Tier 2 Watch List for three consecutive years (2015-2017). This had significant implications with the possibility of cutting of US bilateral support and funding for development programs and other legally mandated sanctions should Ghana have progressed to Tier 3. In 2018, Ghana was upgraded from the Tier 2 Watch-List to Tier 2, recognizing Ghana's progress in addressing CLaT and other forms of human trafficking but a signaling that human trafficking still poses socio-economic challenges to the country with dire implications on national development.

Fishing communities in the Central Region serve as a main source of children for trafficking. Children under age 18 are engaged in hazardous fisheries work that is inimical to their welfare, and the socio-economic development aspirations of individuals, families, communities and the nation as a whole. Human trafficking agents come to such families offering relief in the form of payments and promises to care for the children but then force them into hard, physical, illegal and hazardous labor in fishing on the Volta Lake or as household helpers in urban areas and even in other countries.

Although there is no universally accepted definition of "child labor", an operational definition for child labor and trafficking is:

*"Illegal involvement and clandestine migration of a child for the purpose of engaging him/her in exploitative work that deprives that child of his/her childhood, jeopardizing his/her future prospects as a socio-economically productive citizen."*

Human trafficking is universally recognized as "the illegal trade in human beings for the purposes of commercial sexual exploitation or forced labor", a modern-day form of slavery. Child Labor is therefore exploitative and is mentally, physically, emotionally and socially harmful to children and interferes with their schooling or training.

At the start of the Sustainable Fisheries Management Project (SFMP), the project team found widespread denial of the seriousness of the problem. None of the focus groups contacted in the Central Region acknowledged that children were trafficked out of their communities for child labor. People differed in their opinions about children's roles and responsibilities in the household. Some maintained that local children attend school and help out with various tasks after school and during school vacations. Others stated that children as young as six to eight years old can work in the fisheries sector.

Children from migrant families were identified as more likely to help out in the fishing industry full-time than local children. The SFMP subsequently learned, through a survey of selected coastal-fishing communities in the region, that a significant number of children from selected communities were being sent to the Volta Lake region, Liberia, Gambia, Togo, Mauritania, Benin and the Ivory Coast to engage in fishing activities that are very unsafe. These victims are seldom enrolled in school and often endure other physical or sexual abuses. The SFMP baseline study confirmed that many people do not see this practice as wrong, or

aware it is illegal, but acknowledged some level of child labor and trafficking in all coastal regions with the Central Region perceived to have the highest level of prevalence.

In fact, children take an active part in the fisheries sector so it is critical to acknowledge the difference between “child work” and “child labor” – i.e., knowing and appreciating what is legally permissible, and culturally acceptable. Girls help their mothers and aunts with simple tasks related to processing and sales, including cleaning, scaling fish, and arranging fish on platforms for processing. Although the Ghana Children’s Act prohibits children under 18 to go to sea<sup>3</sup>, boys sometimes become crew on fishing boats when they are as young as 12-13 years old. Even younger boys help in cleaning the boats at the end of the day. They also come out on fishing trips, where they help bail water in artisanal boats. By helping their parents and relatives, the children in essence become apprentices, learning the trade as they grow up. Smaller children are not paid for their labor, but they do receive some compensation when they become teenagers and take on more responsibility. It is important to note that girls who drop out of school to work in the fish marketing and processing sector are more vulnerable to early marriage and teenage pregnancy.

As recently as 2014, no District Assembly in the coastal-fishing belt of the Central Region was implementing any programs to stop this practice in fishing communities though some international development organizations (e.g. International Organization for Migration, Free the Slaves and International Labor Organization) and some local non-governmental organizations such as International Needs and Challenging Heights were present and implementing child welfare and anti-slavery initiatives in some communities. These organizations usually collaborate with individual community assemblymen but at the time were not functioning in tandem within the respective operations of District Assemblies.

## **PROJECT IMPLEMENTATION STRATEGY**

The USAID/ Ghana Sustainable Fisheries Management Project engaged Friends of the Nation (FoN) to lead collaboration on an anti-Child Labor and Trafficking effort within ten Metropolitan, Municipal and District Assemblies in the coastal-fishing belt of the Central Region. Other partners including the Central and Western Fishmongers Improvement Association (CEWEFIA), Development Action Association (DAA), Netherlands Development Organisation (SNV) were also engaged to assist at community, district, regional and national engagements. The SFMP team did not act directly to rescue exploited children or intervene in families, leaving this role to entities with the necessary mandate and skills, capacity and legal standing. The focus instead was on institutional strengthening, public outreach, and awareness raising to increase the attention and effort given to addressing CLaT in coastal-fishing areas, especially those in the Central Region. The approach was to prevent this practice from happening in the first place by making it socially unacceptable in fishing communities thorough behavior change communications campaigns and other activities. The project focused these activities in the Central Region as this was considered the area where the problem was most prevalent.

FoN analyzed the nature and extent of problem in the Central Region while SNV developed tools which were used to assess the capacity of partners and local organizations and stakeholders and provided training programs at various levels. Initially, SNV led engagements at the national level but this role was ultimately taken over by FoN. CEWEFIA and DAA identified and trained anti-CLaT advocates in their respective locations, helped

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<sup>3</sup> According to the Ghana Children’s Act the minimum age for light work is 13 years. The minimum age for child labor is 15 years. However, fishing (going to sea) is considered hazardous employment, for which the minimum age is 18.

form child protection committees in highly vulnerable communities, and worked with SFMP to determine how value chain improvements in fish processing could support anti-CLaT efforts, particularly for highly vulnerable households.

Initial steps led to an extensive behavior-change communication initiative and a national advocacy effort including a drive to create an anti-CLaT strategy for the fisheries sector. Apam, Winneba, Moree, and Elmina communities were selected for concentrated training of community advocates backed by a Central Region-wide mass communication program. Capacity building support included training of local implementing partners as well as engaging District Assemblies, Community Child Protection Committees and anti-CLaT advocates on Child Labor and Trafficking Strategy. The teams introduced systematic referral mechanisms and protocols developed under Child Protection Compacts and worked with community groups to develop of Anti-CLaT Community Action Plans.

As awareness on the detrimental impact of child labor and trafficking increased and coupled with women's empowerment and capacity building, the project teams engaged District Assemblies under a post-project sustainability concept. Work with coastal districts included getting CLaT prevention activities specifically identified and included as annual district budget line and incorporated into targeted districts' Five-year Midterm Development Plans for the period 2018-2021. SFMP also actively sought to link the Fisheries Commission and Ministry of Fisheries at the national level directly with the districts' authorities. Faith-based leaders were engaged in campaigns to change behaviors and promote anti-child labor values, norms and practices.

Key in the implementation of the anti-CLaT strategy were the involvement of the Department of Social Welfare, Fisheries Commission, Ghana Police Service (Anti-Human Trafficking Unit and Domestic Violence and Victim Support Unit), Ghana Immigration Service (Anti Human Trafficking Unit), Ghana Education Service (Girl-child Education Unit), and the Ghana Health Service (Sexual and Reproductive Health, and Family Planning Units). These important actors all participated in more than twenty community sensitization programs and intensive radio outreach programs between 2016 and 2018.

Outreach programs were conducted and designed to provide SFMP's partners and community anti-CLaT advocates with a platform for direct interaction with community members. The National Steering Committee against Child Labor and Trafficking initiated support to SFMP-engaged District Assemblies to design key communication messages on cultural/religious-based local pro-child welfare awareness campaigns and actions backed by high-level engagements by the regulatory agencies, traditional leaders, faith-based organizations and community-based actors.

## **PROGRESS AND RESULTS**

A key achievement of the SFMP has been the demonstration of commitment by coastal District Assemblies in the Central Region. While this does not guarantee specific levels of funding, 10 District Assemblies incorporated anti-CLaT actions in their respective Medium Term Development Plans (MTDPs 2018 - 2021).

1. Awutu-Senya East Municipal Assembly.
2. Awutu-Senya District Assembly.
3. Gomoa-East District Assembly.
4. Effutu Municipal Assembly.
5. Gomoa-West District Assembly.



6. Ekumfi District Assembly.
7. Mfantseman Municipal Assembly.
8. Abura-Asebu-Kwamankese District Assembly.
9. Cape-Coast Metropolitan Assembly.
10. Komenda-Edina-Eguafo-Abirem Municipal Assembly.

These coastal-fishing area District Assemblies also recognized the complementary role Civil Society Organizations (CSOs) and Non-Governmental Organizations (NGOs) were already playing with SFMP support and therefore had to themselves demonstrate commitment in combatting CLaT.

In collaboration with the Department of Social Welfare and the 10 District Assemblies' District Child Protection Committees, with additional involvement of the Department of Labor, a Behavioral Change Communication Program was implemented in the 10 project districts which began to increase dialogue, public acknowledgement that these practices were happening in their communities and were socially unacceptable, and began to bring social services interventions to bear efficiently to implement anti-CLaT actions.

Resources from other agencies were brought into augment SFMP efforts. The Ghana Health Service provided information to raise awareness in the communities on family planning services and birth control commodities to improve access to reproductive health services for females of child-bearing age. The Ghana Education Service provided increased attention on improve enrollment and retention of school age children. The Ghana Police Service and Ghana Immigration Service Anti-Human Trafficking Units drew communities' attention to the legal implications for persons involved in CLaT. Through these efforts, the SFMP project became the rallying agent point for district and national programs combatting CLaT in the Central Region.

Since the project focused on "prevention", it strategically teamed up with other initiatives that run complimentary programs in the areas of Rescue, Rehabilitation, Reintegration, Protection and Prosecution of perpetrators by the United Nations Children Educational Fund, International Justice Mission, and International Organization for Migration. As a member of the national Coalition of NGOs against Child Trafficking and active participation in its activities, SFMP and its team members became actors within this national network. USAID, through SFMP, became recognized as a strong presence with mobilizing capability within the District Assemblies and in target communities. Leveraging contacts and resources through the network, a direct link was forged between communities, their District Assembly representatives and other relevant state agencies and organizations resulting in a holistic and successful initiative fostered by SFMP against Child Labor and Trafficking.

With significant traction at the sub-national level, Year-5 of SFMP support increased efforts to link the National Steering Committee against Child Labor and Trafficking to District Assemblies and government line agencies for programmatic collaboration. Both committees stressed the need for all initiatives combatting CLaT and Human Trafficking in the country (from both government and non-government sectors) to contact them for inclusion into their national database. SFMP played an important role in this effort through its collaborations at all levels.

District Assemblies issued a communiqué asking government to seriously tackle issues of fisheries illegalities to reduce poverty in the coastal fishing communities noting categorically that poverty is the driving force behind CLaT. The communiqué was read and presented to the government by the Central Regional Minister, Hon. Kwamena Duncan and by the

Ankobeahene of Gomoa-Akyempim Traditional Area, Nana Otabil IX (a member of the Gomoa-West Community Child Protection Committee and a social worker himself. Mr. Duncan expressed his support with a declaration that coastal-fishing areas face a myriad of issues including CLaT and needed a serious integrated “Marshal Plan” type of intervention. As the government’s highest representative in the region, he gave his administration’s support for the SFMP initiative and beyond.

Outreach programs carried out employed durbars (large community meetings), film shows, drama performances, radio talk shows, commemoration of global programs such as the World Day Against Child Labor, and child protection committee meetings. The highlight of these community programs was organization of the commemoration of the World Day Against Child Labor 2018 in Cape-Coast as the national event in Ghana and addressed by the Minister for Employment and Labor Relations, Honorable Mr. Ignatius Baffour-Awuah, and the Central Regional House of Chiefs led by the Paramount Chief of Oguaa Traditional Area, Osabarima Kwesi Atta II. Also participating in this event were law enforcement service commanders, fisheries trade associations including The Ghana National Canoe Fishermen’s Council, and National Fish Processors and Traders’ Association.

Throughout the program, SFMP worked with the Ghana Fisheries Commission to produce successive drafts of a national “Strategy on Anti-Child Labor and Trafficking in Fisheries”. This final draft was approved as the Ministry of Fisheries and Aquaculture Development’s official strategy in 2018. The National Strategy was jointly launched in October 2018 by the Minister for Fisheries and Aquaculture Development, Hon. Elizabeth Naa Afoley Quaye and the Acting *Charge d’Affaire* of the US Embassy in Ghana, His Excellency Mr. Chistopher Lamora. This “strategy document” has become the main reference for combatting CLaT in fisheries amongst Ministry functionaries and stakeholders. District authorities in the Central Region are using it as a guide in engaging stakeholders in their routine programs. The Fisheries Commission is assisting District Assemblies in capacity enhancement programs for statutory entities such as each district’s Child Protection Committee and Department of Social Welfare.

SFMP facilitated the rejuvenation of a total of ten District Child Protection Committees, which at the outset of the SFMP were non-existent or dormant. The national anti-CLaT strategy now is used to justify and channel new resources to these committees. A total of 9 coastal districts in the Central Region proposed a collective total budget allocation of GHS 1,145,725 for 2018 and GHS 4.5 million over five-years in their Medium-Term Development Plans (MTDP 2018-2021) to address CLaT issues.

Visibility of law enforcement agencies at the district and community levels increased as a result of involving them in designing MTDP interventions, and in community outreach planning and implementation processes. This continues to contribute to making CLaT practices unpopular in engaged communities. However, one result of this is that CLaT recruitment now is mostly carried out clandestinely compared to the open perpetration of the act in the recent past demonstrating the importance of social education and engagement.

The Department of Social Welfare officials in the districts report that due to the project’s efforts there is less political interference in the selection of Livelihood Empowerment Against Poverty (LEAP) program beneficiaries. This contributes towards achieving Objective 4 of the National Plan of Action against Human Trafficking (i.e. - to eliminate “push and pull” factors of trafficking by facilitating sustainable economic empowerment opportunities in high-risk areas. Department of Social Welfare officials also mentioned many times that due to SFMP their work has gained more recognition within the assembly hierarchy causing the top level

officials to more favorably consider their inputs in the general planning processes of local government, including requests for resources.

As part of the National Fisheries Management Plan (2015-2019), Fisheries Commission activities aimed at strengthening co-management mechanisms with local communities for sustainable management of fisheries resources and strengthen Monitoring, Control and Surveillance (MCS) systems for ensuring compliance with laws and regulations in the sector. With the adoption of the National Anti-CLaT Strategy for the fisheries sector, increased attention is being given to including child labor and trafficking into monitoring activities. MOFAD now continues to collaborate with the Child Labour Unit of the Ghana Labour Department and other stakeholders in awareness-raising events held on the annual World Day against Child Labour. SFMP support played an important role in highlighting that the Central Region was an important source area for trafficked children and this was recognized by commemoration of World Day Against Child Labor in Elmina in 2015, Biriwa in 2016, Apam in 2017 and Cape-Coast in 2018.

Though there has not been any active engagement of stakeholders on anti-CLaT activities in 2020 by SFMP, the SFMP IPs have been evolved in knowledge and information sharing amongst networks of organizations working on anti-CLaT in fisheries initiatives in Ghana (the Coalition of NGOs Against Child Trafficking – CNACT) of which the four SFMP IPs are strong members (i.e. CEWEFIA, DAA, FoN and Hen Mpoano) and have been regularly contacted on anti- CLaT in fisheries issues.

CEWEFIA and Hen Mpoano have teamed up with other CNACT members involved in anti-CLaT initiatives and have been assisting the Department of Social Welfare (DSW) and other government agencies to rescue, reintegrate and rehabilitate survivors since January 2020. FoN and CEWEFIA have also participated in sub-regional meetings in Accra designed to address CLaT issues in fisheries sector. Within its operational areas, FoN has been sharing critical information with the Ghana Police Service Anti-Human Trafficking Unit (AHTU) contributing to actions that have increased security for children and vulnerable families. Through its community networks (informants), FoN continued to be a source of information to the police in reducing trafficking of children in the critical period of COVID-19 nationwide lockdown in 2020. It tipped off the police on three occasions to prevent trafficking of children from the coastal-fishing areas of Ekumfi District to the Ivory Coast by sea, and also to the Western Region by road. CEWEFIA and Hen Mpoano also organized a program to commemorate the World Day Against Child Labour 2020, in Cape-Coast, to draw attention to the fact that COVID -19 may have increased the pre-disposition of children to the risk factors of child labour and trafficking given the economic shocks of loss of livelihoods, increase in hunger and poverty associated with the pandemic.

## **LESSONS LEARNED**

Putting the issue of child labor and trafficking into the District Mid-Term Development Plans of coastal districts proved to be a good mainstreaming strategy since it acts as a tangible demonstration of government ownership of anti-CLaT interventions at the national, regional, district and grassroots levels.

More broadly, collaborating with government agencies especially at the district level made the project's efforts relevant to both the authorities and inhabitants of communities. The project unearthed some of the handicaps faced by government agencies early on so they could be addressed through capacity enhancement activities and collaboration for outreach, both inside and outside government. Inter-agency and state-citizen collaborations consonant with

anti-CLaT efforts served to improve the chances of the anti-CLaT campaign success in the fisheries sector.

Capacity building of implementing partners engaged in anti-CLaT programs meant that they were better able to join in and assume leadership for important activities in community, district, Central Regional and national campaigns. Law enforcement agencies chose to involve the SFMP team in their own community outreach activities, a significant sign of a high degree of integration that should be replicated in efforts going forward.

Networking and sharing of relevant information, good communication and trust-building between partners and key stakeholders made the difference between moderate success and the high degree of success seen through SFMP efforts. Improved access to information on CLaT issues, openness and willingness to do things better reinforced the value of SFMP's efforts to update knowledge regularly, regularly update and publish information, adjust information/outreach, education and communication materials for engaging stakeholders and sensitizing the public.

The integrated and highly leveraged network of anti-CLaT and sustainable fisheries management advocates formed a network of community-based functionaries who unofficially now act as conveyers of messages and mobilizers of assistance in community outreach activities. The establishment of linkages between communities, advocates, traditional leaders and opinion leaders was boosted during high profile visits to communities by USAID, the US Embassy (including the US Ambassador) and encouraged national officials to validate and energize local efforts.

## **APPLICATIONS AND NEXT STEPS FOR GHANA**

CLaT in fisheries is not exclusively a fisheries or human trafficking issue and needs increased inter-ministerial attention, funding, and collaboration to speed eradication. The CLaT issue reached from local to national entities responsible for gender, livelihoods, health, culture, education, justice and law enforcement. District authorities feel handicapped and are frustrated that many of the appropriate actions needed to address CLaT issues are outside their jurisdiction (for example, larger scale prosecution of child labor and trafficking rings). Additional work is needed to bring the necessary actors into action and should be strong consideration at the beginning of any subsequent development partner-supported project. In addition, greater effort should be given to synchronize entities with anti-CLaT responsibilities so they can play their roles more effectively.

Future projects seeking to be effective in anti-CLaT activities should leverage more resources from academia, and bilateral and international sources, where modern slavery is currently an urgent topic. Where possible, sister USAID and other development partner-supported projects within the country should be designed to collaborate or meet periodically on the issue of anti-CLaT efforts. Specific suggestions include:

- **Local Government:** – Collaborate with local government as much as possible and in a manner that results in most officials within the Assembly structure becoming conversant with anti-CLaT issues. This should include support from the direct sector ministries.
  - **Gender and Livelihoods:** – Bring issues such exploitation of children for cheap labor, and vulnerable families due to their poverty and single-parent female headed households cross into projects focusing on gender and livelihoods. Bringing these projects to bear would benefit anti-CLaT efforts through wider networking.
  - **Culture:** - Intensify collaboration with the traditional authorities which will contribute
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to implementation of positive traditional norms (e.g. slavery, teenage pregnancy, pedophilia, neglect of children by families, etc.). Traditional leaders could be engaged in in project design to assist fisheries leaders in ensuring that their domains are free of CLaT and Illegal Unreported and Unregulated (IUU) fishing.

- **Health:** - Provide greater access to Sexual and Reproductive Health, Nutritional and Population Health Environment (PHE) programs and intentionally enhance these programs to focus on anti-CLaT efforts, including greater collaboration with the relevant health authorities and service providers (i.e. facilitate a more responsive service provision by the Ghana Health Service Sexual and Reproductive Health and Family Planning Units to improve access to family planning services and utilization of birth control commodities).
- **Education:** - Encourage children of school-going age through appropriate programs and support for deserving families to enroll and keep their children in school.
- **Justice and Attorney General's Department:** - Increase prosecution and conviction rates for those involved CLaT through direct engagement and training of enforcement and judicial sectors.
- **Interior and Defense:** - Ensure that human trafficking and modern slavery issues are recognized as national and global security issues and mandate more effective investigation and enforcement, including providing standardized training for law enforcement officers in CLaT identification and investigation as many are not familiar with the issue.
- **The Parliament of Ghana:** - Bring greater pressure on Parliament through Regional Coordinating Councils, Faith-based Organizations, National House of Chiefs and Security Service Commanders and other to allocate sufficient budgetary resources to fight CLaT in Ghana.
- **Ghana Government Officials:** - Expand the enrollment of all levels of government in anti-CLaT activities (for both CLaT and sustainable fisheries) and engage them in designing and implementing enhanced social intervention programs for CLaT-vulnerable populations in their jurisdictions.
- **Expand Anti-CLaT Activities to New Areas:** - Anti-CLaT projects should be more active in destination communities (e.g., on the Volta Lake) and work to build pressure against perpetrators using slave labor. This could be modelled on similar lines with how the Marine Unit of the Ghana Police Service initially engaged fisher-communities against illegal fishing practices and now has advocates amongst former perpetrators.
- **Expand Livelihood Projects:** - Future projects should implement livelihood enhancement activities to reduce vulnerability to CLaT in fishing communities through collaboration with agencies that implement micro-level businesses activities (e.g. National Board for Small-scale Industries of the Business Advisory Centre, and the Central Region Development Commission to facilitate establishment of diversified livelihood improvements and income generating cottage industries in activities like salt production, fruits processing, value addition to harvested fish etc.
- **Use NGOs/CSO Already Connected to Communities:** - Future projects should collaborate with CSOs/NGOs that are already embedded in communities to pull together a more encompassing program that will take care of Prevention, Rescue, Rehabilitation and Reintegration activities for the vulnerable and victims.

- **Training Volunteers:** - Access the latent supply of volunteers living in communities. The SFMP project strategy of training volunteer community advocates can be early and readily scaled up with networking among volunteers supported, noting that any effective approach must be integrated with community initiatives and narratives, employ mass communications to encourage behavior change, and link to district child protection committees and national level support.

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