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Assessing the Impacts of Gender Integration in Ghana's Fisheries Sector

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ABSTRACT



This article presents the results of an impact assessment of a component of a large scale USAID sustainable fisheries management project initiative aimed at integrating gender and strengthening the role of women in fisheries management in Ghana. The assessment is based on a literature review and qualitative field data collection. It assessed gender integration from three entry points: improving the Ghanaian policy environment for gender in fisheries, empowering women post-harvest processors, and engaging women gleaners in fisheries co-management. The assessment found that an important milestone was the adoption and implementation of the Ghanaian Fisheries Sector's National Gender Mainstreaming Strategy in 2016. Summarizing the impacts on local post-harvest processors and gleaners, the assessment found that female post-harvest processors have increased capacity, confidence, and engagement in fisheries management. Gender mainstreaming efforts have succeeded in challenging cultural norms about women's role in fisheries. Women have been exposed to sustainable fisheries management and are better equipped with the knowledge and leadership skills to advocate for good fisheries practices, which they actively demonstrate.

KEYWORDS

Fisheries governance; gender; Ghana; post-harvest processing

Introduction

West African women provide substantial value to the fisheries sector and play a vital role in its healthy function. Yet they seldom participate in fisheries management. Women who are dependent on fisheries for their livelihoods and families' upkeep are directly impacted by changes in fisheries policies and rules. Hence, there is an incentive for women to be active agents of change in the fisheries sector. However, women working in fisheries face many barriers. Women's participation is often constrained by time (the result of household and reproductive responsibilities), education (literacy), access to capital, cultural rules, mobility due to household responsibilities, and discriminatory laws, among other barriers (Matsue, Daw, and Garrett 2014; FAO 2015). Globally, women

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account for half of the total workforce in the fisheries sector (Pomeroy and Andrew 2001), yet despite this figure, they are mostly invisible contributors with disenfranchised voices (Béné et al. 2016). Cultural norms and traditions perpetuate male-dominated conversations (and shape gender inequities) in which men drive the fisheries sector (Medard et al. 2002). The lack of gender disaggregated data – and data on fish caught by women gleaners – in fisheries globally results in an underestimation of the total fisheries production and of the contribution of fisheries to household income and food security (FAO 2016). This is particularly important because women’s fisheries activities disproportionately contribute to household food security, because seafood harvested by women is more likely to be consumed by their household members. In addition, women’s earned income is more likely used to purchase food and other household expenses. Failure to capture women’s knowledge of fisheries at-sea and on land presents a missed opportunity to incorporate valuable ecological and economic local knowledge and document trends and threats to fisheries biodiversity (Harper et al. 2013; Santos 2015).

In general, men in West Africa control fisheries inputs (boats, engines, nets) and decisions about when, where, and how to fish. Women, on the other hand, control and make decisions regarding post-harvest activities (where to sell, how to market, how to process, etc.). Gleaning of shellfish in coastal wetlands is one exception that is often predominantly done by women who decide how to harvest, process, and market the product. The income generated through women’s production, transformation, and marketing of fish is vital for supporting the entire fishing industry (Britwum, 2009). It is clear that husbands and wives are economically dependent on each other, and a large portion of the return from fish sales is turned back into fisheries inputs such as fuel and fishing equipment. Women’s personal income from fishing is also reinvested into the local economy and household and often, they withhold sales of fish for household consumption (Weertaunge et al. 2010; Harper et al. 2013).

A first entry point to strengthen women’s involvement in fisheries management is to support female leadership among post-harvest processors (*entry point 1*). In many African cultures, traditions and myths exclude women from going to sea to fish, however, they are engaged in every single step in the post-harvest sector. Women marketers and processors start their “careers” as helpers or laborers, working for their mother, aunt, or sometimes someone outside their family. The barriers to entering the fisheries sector as a laborer are minimal, because it requires little education and capital (Matsue, Daw, and Garrett 2014). Women who can save a small amount of capital or have access to credit can buy their own processing equipment whereas women born into poor families, and who do not have husbands who can support them, are the poorest in the fishing communities. Some of the most successful female post-harvest processors own fishing canoes/boats and many finance fishing trips by providing money for fuel (Britwum 2009; Weertaunge et al. 2010; FAO 2015). A study by Walker (2001) revealed that 35% of fish processors surveyed in Ghana owned fishing boats. Although women comprise a minority of boat owners, those that do own boats can dictate when and where a boat fish. The boat owner also decides who should captain and crew the vessel. Some women also pay for maintenance and repairs of boats and nets. These are roles that provide post-harvest processors with some influence and potential leverage over the traditionally male sphere of fisheries management (Weertaunge et al. 2010).

Many post-harvest processors are members of associations which enable them to access microloans, help during times of bereavement, and address other social welfare issues such as their children's health and education. The associations can serve as safety nets since most women have limited, if any, disposable income (Matsue, Daw, and Garrett 2014; Mutimukuru-Maravanyika et al. 2016). However, the post-harvest processing associations also have the potential to become vocal stakeholders in fisheries management because they allow the processors to join forces and advocate with one voice.

A second entry point for integrating gender in fisheries is empowering women who glean seafood in wetlands and near-shore areas to sustainably manage marine resources and increase product value (*entry point 2*). The roles of men and women in African fisheries are more complex than the general view that men fish at-sea and women market and process fish on land. Some women fish in smaller water bodies, at the edges of lagoons, and in estuaries, where they collect invertebrates, or oysters, crabs, and net small fish species or farm seaweed in intertidal zones (Harpet et al. 2013). These women's fisheries are typically not included in government statistics, which means that they are not counted as fishers. Hence, even if it is an important fishery for food security, it is invisible in current statistics and fisheries management efforts. The value chain of these fisheries is often highly vertically integrated, with the same women harvesting, processing, and marketing the product (Njie and Drammeh 2011). This increases opportunity for empowerment of women in management of these fisheries. The significance of women gleaner's activities for biodiversity conservation in coastal wetlands and for the conservation of critical fish habitats linked to marine fisheries productivity is also generally overlooked. Women oyster harvesters in the Gambia and Ghana, who are economically marginalized and socially stigmatized, are evidence of this type of work and resource use (Lau and Scales 2016).

Although most African governments recognize gender as a cross cutting issue, fisheries policies rarely, if ever, include actions to strengthen gender equity and enable women to participate in the fisheries dialogue. Government-led gender integration tends to focus on supporting the post-harvest processing sector by promoting value-chain improvements and covering social needs. Hence, a third entry point for gender integration is to work with the national government to broaden the scope of gender in fisheries policy to include decision-making (*entry point 3*).

The United States Agency for International Development (USAID) Ghana Sustainable Fisheries Management Project (SFMP) (2014–2019) implemented by the University of Rhode Island has worked with local post-harvest processing associations, non-governmental organizations, and the government of Ghana to integrate gender and increase women's voices in fisheries management. This manuscript presents the findings of an assessment conducted to gauge the impacts of SFMP's gender integration work which was one of the seven results areas of the project.

The SFMP theory of change for gender integration

The SFMP developed a theory of change (Figure 1), which outlines how the program intended to enable women to be effective leaders advocating for fisheries management reform. The gender mainstreaming theory of change contributed to a larger overall logical framework and program strategy (Coastal Resources Center 2014). It is built on the premise that engaging women in the fisheries sector is an important aspect of building powerful

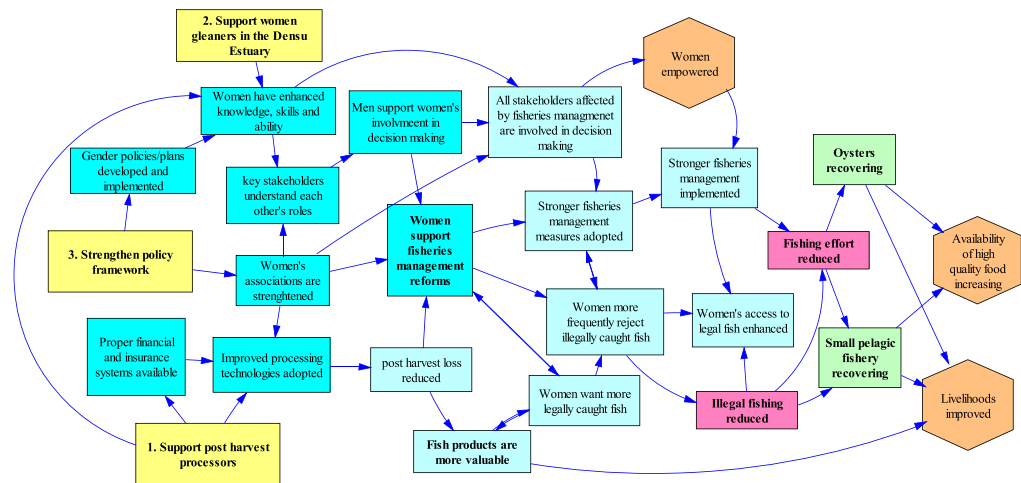


Figure 1. Theory of change for the SFMP gender strategy.

constituencies that demand a well-managed fisheries sector. It utilized all three entry points to gender mainstreaming (shown as yellow boxes in Figure 1) – supporting women in the post-harvest sector (*entry point 1*) and women gleaners (*entry point 2*), while working with the national government to strengthen the policy framework (*entry point 3*) to effect change. Through activities implemented under the three entry points, the SFMP assumed that it would trigger a number of positive perception and behavior changes (blue boxes), behavior and ecosystem outcomes (pink and green boxes), and impacts (orange hexagons).

The SFMP theory of change outlined in Figure 1 can be broken down into a number of if–then statements:

IF men and women understand the importance of each other’s roles in the fisheries sector and men agree and support women’s involvement in decision making

AND women are knowledgeable, capable, and equipped with the policy support, leadership skills, and resources to engage in fisheries management

AND women harvesters and post-harvest processors have the capital and technologies necessary to make a living from available fish

THEN women will support fisheries management reform and reject illegally caught fish, which **WILL THEN** result in the implementation of stronger fisheries management

And **IN TURN** will reduce fishing effort and illegal fishing, which will provide ecosystem services that benefit human well-being and improve resilience.

To realize its theory of change, SFMP supported gender equitable participation in project activities and promoted gender integration and empowerment in the fisheries sector. In the first year, the project conducted a gender analysis and needs assessment, which led to the development of a gender mainstreaming strategy. Implementation of this strategy, which began in Year 2, included a number of activities and involved approximately 5,000 individuals. The activities, which fit within the darker blue boxes in the theory of change diagram, were organized around the three entry points:

1. Strengthen fish processor associations to become more effective stakeholders in fisheries management (*entry point 1*). This was done by implementing the following activities:
 - a. Conduct training of trainer training and direct gender leadership, conflict management, and team building trainings. This included a peer to peer post-harvest organization study tour to Senegal.
 - b. Provide organizational development support to post-harvest processing associations in becoming more robust, transparent, and representational.
 - c. Provide business development and microfinance support targeting women-owned micro and small scale enterprises.
 - d. Research, develop, test, and diffuse an improved processing technology. This includes certification, labeling, and marketing of processed fish.
2. Support community-based management and use rights for women oyster harvesters in the Densu Estuary (*entry point 2*). This included a number of activities:
 - a. Conduct participatory rapid appraisal and collect participatory scientific and local ecological knowledge
 - b. Link university, Fisheries Commission, and other government extension actors into the process.
 - c. Support outreach and training for stakeholder engagement and the formal establishment and capacity development of a co-management association
 - d. Develop and support official approval of a co-management plan
3. Work with the Government of Ghana to develop a strategy for mainstreaming gender into the fisheries sector, include provisions in the co-management policy requiring women's participation, and develop a strategy on anti-child labor and trafficking in the fisheries sector which includes provisions on promoting gender equity and poverty reduction (*entry point 3*).

The SFMP conducted an impact assessment at the end of its fourth year to gauge the impacts of its gender activities. The assessment aimed to identify to what extent the project had made progress toward changing perceptions, increasing capacity, providing capital and tools, and seeing an increased support for fisheries management (i.e. by rejecting illegally caught fish or leading a local management plan) among women. This study presents the results of the SFMP gender impact assessment.

Methods

The gender assessment started with a literature review and in-depth content analysis and summary of documents related to SFMP and gender mainstreaming. These documents included project documents, peer reviewed literature, and written policies both drafted and published. As shown in [Table 1](#), qualitative field data was collected via semi-structured interviews with key informants and focus group guided discussions with fishers and fish processors, fisheries organizations, partner organizations (NGOs, governmental organizations, and educational institutions), and staff of the Ministry of Fisheries and Aquaculture Development (MoFAD).

Table 1. Field data collection methods.

Type	Description	Frequency
Key informant interviews	These painted a picture of how employees of organizations that work with the project feel the gender mainstreaming strategy works, and what impacts it has had on the Ghanaian fisheries sector.	13 people from Implementing Partners 11 people from Client Organizations
Focus groups	These were held with fishers and processors, and demonstrate impacts the gender mainstreaming strategy has had on members of fishing communities.	6 Communities/Groups 210 Individuals
Direct observation	Apart from information obtained from interviewees, direct observation played an important role in confirming what was being discussed as well as identifying other interesting topics to question.	Not Applicable

Gender equality in project activities

Recognizing that gender equal representation in meetings and workshops is an important first step to gender integration, the assessment started by investigating the representation of men and women in SFMP activities. [Figure 2](#) visually represents the data gleaned from SFMP's training database and shows the cumulative number of men (blue) and women (pink) that attended 244 events held by SFMP in the first three years (CRC 2018). A total of 9,942 people participated in the events, out of which 6,177 (62%) were women.

[Table 2](#) shows the number of men and women at different types of SFMP events over the same time period. It shows that women made up 78% of the participants in workshops related to livelihoods. While there were a disproportionately higher number of women in livelihood activities, that was a purposeful strategy of the project as women tend to be less economically empowered than men in the fishery sector. Removing livelihood events, the percentage of women involved in SFMP events drops to 35%. For science and policy-related events, the percentage of women involved drops further to 33%. While percentages of women participating in program management, policy, and science may seem low, one must note this might be since there may be fewer women involved in policy and science to begin with.

SFMP's impacts on women's knowledge, confidence, leadership skills, and advocacy

Following the theory of change, the assessment team investigated to what extent the SFMP had contributed to increasing the confidence, leadership, knowledge, and advocacy among women processors and oyster pickers. Confidence, leadership, knowledge, and advocacy are intertwined facets of empowerment. [Table 3](#) presents quotes from beneficiaries that relate to these effects.

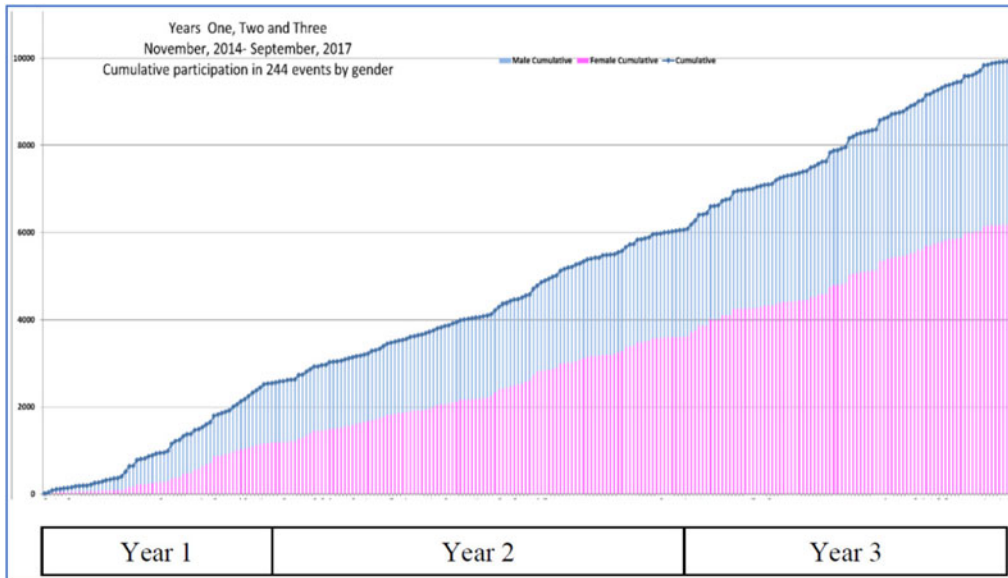


Figure 2. Cumulative number of SFMP participants in 244 events (CRC 2018).

Table 2. Men and women's participation in SFMP events years 1–3 (CRC 2018).

Event type	Number of events	Men	Women	Total
Cumulative total	244	3765 (38%)	6177 (62%)	9942
Livelihoods	131	1352 (22%)	4849 (78%)	6201
Cumulative minus livelihoods	113	2413 (65%)	1328 (35%)	3741
Policy, science, and partnerships	104	2,181 (67%)	1,704 (33%)	3255
Program management		304 (50%)	305 (50%)	609

Knowledge

The fishers and fish processors were asked what kind of trainings they had participated in and what they learned. Table 4 demonstrates the new information female beneficiaries recalled that they had learned. The table shows that the responses were fairly homogenous across the different communities, especially in relation to fish handling and economics (financial literacy). Not everyone interviewed were actively implementing these skills or knowledge, although most people agreed that they perceived changes in women's ability to discuss fisheries management, handle fish more hygienically, and be more prudent with money. Fishers and fish processors also stated that they more fully understood why a closed season for fisheries was important, but many expressed that they were not ready for it.

Confidence

Confidence building is one of the largest impacts SFMP has had on its female beneficiaries. For example, during a focus group meeting in Axim, the participants said that they now understand that the views of women are important in fisheries management. Men now recognize women in fisheries meetings, and many feel that women have been marginalized in fisheries for too long. In Elmina, focus group participants maintained that women are now more active in discussions related to fisheries management. A recent Ph.D. dissertation studying the SFMP supported fish processing associations

Table 3. SFMP gender mainstreaming impacts on beneficiaries – quotes.

	Female beneficiary (Processor)	Implementing partner	Client organization
Knowledge	“From 2014 till now, it has been observed that catches usually consist of juveniles. The project has created awareness that the practice of landing juveniles was detrimental to the fisheries of Ghana.”	<p>“Women now have increased opportunity to understand fisheries management and decisions.”</p> <p>“A zonal fisheries officer told me that she now always makes sure to meet with the women because she will get a whole other side to the information that she would not get otherwise. Also she realizes that she can work through the women to get to the men”</p>	<p>“Women are losing a lot and now understand when [ministry] says “we need closed season to get stocks back,” women say yes. Women agree.”</p> <p>“Women knew that one day the closed season will come because it is happening in other countries. They saw this due to the Senegal/ Gambia study tour.”</p>
Confidence	“We understand that we have the potential to halt IUU fisheries by rejecting bad fish”	<p>“[Before] when men and woman are together, women couldn’t talk until they go in their small corner and talk amongst themselves. Through this empowerment they are able to talk during discussions, share their opinions, and express themselves.”</p> <p>“Traditionally women would make no input into laws and policies. Under the co-management policy, women processors will get to talk and the husbands will not beat them for their contributions because he knows it is the policy that women should speak.”</p>	“The women have become confident and knowledgeable, and so they are putting pressure on me, and question authority. This is a very big impact, especially when you consider their background. These women now have huge followers, and are very influential.”
Leadership	“[When discussing changes experienced as a result of SFMP trainings] women are more active in discussions on issues related to fisheries management”	“In the past, when women attended meetings with the ministers, they would not make contributions. Now, even if they can’t speak English, women are empowered to speak in the local dialect which is translated. They are now able to express themselves at levels we/ they never thought”	“Our women go to meetings with the Fisheries Commission and the minister to speak against illegal fishing. They collectively agree to “say no to bad fish,”

(continued)

Table 3. Continued.

	Female beneficiary (Processor)	Implementing partner	Client organization
Advocacy	“Through the project, some women have met personally with the minister of fisheries and aquaculture development for discussions on fisheries management related issues.”	“They (the women) are now bold. They don’t feel shy to express themselves, instead they talk and interact with others bringing out ideas. They used to just listen, didn’t want to answer questions. Now they are influencing others to refrain from IUU fishing. They are truly empowered.”	“Women are now creating awareness. They are blowing the whistle. People listen.”

Table 4. New knowledge as recalled by female focus group participants.

Community	Knowledge				
	Leadership	Economics	Processing	Fisheries governance	Equality
<i>Axim</i>	Conflict management Innovation Leadership styles Advocacy Team building	Adult literacy Record keeping Financial management	Fish hygiene Fire safety Improved processing	IUU	Gender equality Gender Issues
<i>Ankobra</i>	Conflict Management Innovation Team building Communication	Adult literacy Record keeping Financial management	Fish hygiene Fire safety	IUU Fisheries management	Gender equality Gender issues
<i>Shama</i>	Conflict management Communication	Adult literacy Record keeping Financial management Marketing	Fish hygiene Fire safety	IUU Fisheries management	Gender equality Gender issues
<i>Elmina</i>	CLaT ^a	Financial management Record keeping	Fish hygiene Fire safety Improved processing	IUU Fisheries management	–
<i>Moree</i>	Conflict management Advocacy Communication	Record keeping Financial management Marketing	Fish hygiene Fire and safety IUU/Fisheries management	 Improved processing	– ^b
<i>Densu Delta</i>	CLaT Conflict management Communication CLaT	Adult literacy Financial management Marketing	Fish hygiene IUU/Fisheries management Improved processing Fisheries science		Gender issues

^aChild labor and trafficking information sessions were included in SFMP trainings with women.

^bElmina and Moree were areas where participants were exposed to gender related activities, like the other areas represented here, but did not recall (unprompted) any knowledge learned about equality during the impact assessment interviews.

(Beran 2018) found that 87% of those surveyed were comfortable speaking at fish processors association meetings (primarily attended by other processors), and 81% stated that they feel as though they have influence over other people’s fishing behaviors. The main reason people were not comfortable speaking at meetings was reported as shyness. This

shows the importance of confidence in general. Additionally, due to the increased confidence, women feel more capable of speaking at meetings where men are present. For example, one woman explained that she had the confidence to speak to a group of dignitaries in her local language, and with the aid of a translator was heard and understood by all. These kinds of anecdotes were numerous and repeated by women all along the coast. The majority of respondents in a qualitative assessment of organizational capacity among post-harvest processing groups (Kent 2017) perceived these changes in behavior to be sustainable and likely to continue after the project ends as women's participation and substantive contribution in fisheries forums has become an expected norm.

Leadership

Focus group participants recalled trainings on leadership and were quick to recite things they learned about negotiations and compromise, how to support innovation, managing conflicts peacefully, and teamwork techniques. They also stated that they learned how to take all of this information and communicate their messages accurately to the public and the government. The assessment team had the opportunity to see this leadership in action multiple times. For example, when discussions surrounding the pros and cons of a closed season became contentious, members of the focus group took it upon themselves to lead their fellow participants to a more peaceful communication technique. The assessment also found that fishers and processors understand what makes a good leader. When asked "what can be done" in relation to improved fisheries management, focus group participants in Elmina called for more transparency in the Fisheries Commission, and for important meetings to be held on Tuesdays, when fishers and processors don't work, so they could be present during important decisions. They also said that people appointed to positions in government agencies should have the right technical knowledge. Their new skills in teamwork, conflict management, and public speaking meant they are more likely to be proactive and engage in fisheries management rather than relying on the government. Strong leadership by women in fisheries management emerged in the Densu estuary among oyster pickers as a result of project support for development of a proposed shellfish co-management plan granting use rights to a local women-led co-management association that has a few male members who also harvest oysters. This case demonstrated to stakeholders that, rather than expecting and waiting for government action, they could lead their own participatory process, propose, and implement effective local fisheries governance frameworks and management strategies, while including and requesting support from government actors.

Advocacy

Most focus group members agreed that the women's advocacy for "good fish" has improved. With all of the knowledge about sustainable fisheries, leadership, and public speaking, SFMP's beneficiaries maintained that they have been taught how to communicate their messages accurately to peers and to government agencies. The women interviewed stated that they know how and why to "say no to bad fish,"¹ and some have even become true advocates. Participants reported that these skills have been important since the fight against illegal, unregulated, and unreported (IUU) fishing has been met with

opposition sometimes resulting in heated verbal exchanges between activists and fishermen involved in the IUU practices. Partner organizations agreed that in many instances, women have simply refused to buy “bad fish.” This point was highlighted by a key informant from the Fisheries Commission who stated that “*The National Fish Processors and Traders Association is positioning to be part of the solution to illegal juvenile and chemical fishing by refusing to buy. This has big implications. It will send a bigger message than an arrest.*” Another high-ranking interview participant stated that this was a big trend. This person stated that in instances where men continue to blame each other for bad fish, women “*simply don’t allow the fish. That has come from [SFMP based] trainings, not our traditional women [Konkohemas], because they lack training.*” However, the fish processors made it clear that saying no to bad fish is daunting, because their stances go directly against those of their fisher husbands. Additionally, there are times when deciding to “say no to bad fish” means fishers won’t allow processors to buy *any* fish.

Women processor associations supported a closed season announced by the Minister of Fisheries for August 2018, while fishermen’s associations were not ready to accept it as proposed. The SFMP 2018 Snapshot assessment found that SFMP training and educational opportunities contributed to women processors’ advocacy on this issue. Respondents also explained how the economic interests of women processors can make it easier for them than for fishermen to support such a measure. Processors who have capital and access to storage can stockpile processed fish to sell at a higher price when supply is reduced during a closed season. Furthermore, the fish that would be landed during the proposed closed season period are not of good quality for processing because they are laden with eggs and have higher oil content at that time. They have to be sold fresh and are high in volume, so women don’t make much money. This understanding of gender-based differences in the economic impacts of a closed season supports the project’s theory of change premise that engaging women in the fisheries sector is an important aspect of building powerful constituencies that demand a well-managed fisheries sector.

Addressing gender mainstreaming from the entry point of working with post-harvest processors (*entry point 1*) is very complex as there are hundreds of thousands of people involved in the Ghanaian fisheries value chain; from the fishers to the processors to the consumers. The assessment found that, while SFMP has reached around 5,000 individuals with the gender integration activities, the project has only just begun the diffusion of innovation process as expressed by Rogers (1995). While the SFMP has succeeded in increasing women’s knowledge, confidence, leadership skills, and advocacy, the percentage of men and women within the fisheries sector that have adopted the idea of working toward small pelagic fishery recovery, and therefore changed their fishing and advocacy behaviors have not reached a critical mass. Most of the focus group discussions stressed the need to reach out to people beyond those already reached by SFMP activities. For example, one fish processor stated “*Fishermen now decline to sell fresh wholesome fish to women who initially rejected bad fish previously landed.*”

Impacts related to strengthening women’s associations

Organizational capacity development is a cross-cutting theme of SFMP, which focused on women’s organizations such as the Central and Western Region Fishmongers Improvement

Association (CEWEFIA), the Development Action Association (DAA), and the National Fish Processors and Traders Association (NAFPTA). The gender impact assessment – as well as organizational capacity assessments over time – found that the organizational development support has strengthened the women’s associations. Positive impacts include improved organizational standard operating procedures, financial management, and technical knowledge. As stated by a member of an implementing partner organization “*All we have learned has been laudable. The knowledge SFMP has imparted managerially has been enough to have a great impact on our work. We are very grateful.*” In addition to managerial skills, all the organizations assessed, reported being much savvier to financial management as a result of SFMP trainings. As an example of this, a member of a client organization stated that SFMP introduced “*streamlined procedures that helped us with audits... all our books are now in place.*” This quote is representative of statements from most of the organizations interviewed. In addition to institutionalizing certain managerial techniques, SFMP’s trainings brought attention to the importance of rectifying gender imbalance in the SFMP partners’ hiring practices (Bilecki 2019). This was especially true for the partners that did not work exclusively with fish processors.

Beyond technical and logistic development, one big part of the recent successes of women’s organizations has been their ability to identify, coordinate, and mobilize themselves. As stated by someone who had worked with previous fisheries projects “*In times past we’ve had projects that supported fishermen, these men are still unable to organize themselves to advocate for good fish. Now [after SFMP trainings] the women do their own on the ground organizing, mobilizing.*” Thanks to this new ability to manage themselves, the leaders in these organizations are able to network and feel confident in their abilities to give their constituents beneficial skills, tools, and knowledge. Where there was once no female voice in Ghanaian fisheries management, now women’s organization leaders are invited to participate in events, such as FAO consultative workshops abroad and fisheries decision making meetings at home. From the point of view of one Fisheries Commission respondent in the 2017 mid-term organizational capacity assessment (OCA) assessment, in the artisanal sector the Fisheries Commission does not have the power to control fishing effort and promote sustainable practices as much as for the industrial and semi-industrial sector where they have license leverage. However, through women’s empowerment there can be leverage for responsible management of the resource. A 2018 OCA Snapshot assessment respondent noted that “*NAFPTA with its’ 14,700 members is a force to reckoned with.*” This assessment also highlighted the work still to be done by women’s associations such as NAFPTA to increase their legitimacy as strong, transparent, and accountable organizations that represent and serve their membership with a high value added.

Impacts related to women’s access to Capital and business development

The University of Rhode Island conducted a quantitative evaluation in 2017 to examine the progress and effectiveness of microfinance and business development support (McNally et al. 2018). The evaluation was based on a systematic random sample of 375 project beneficiaries in 13 SFMP communities in the Central and Western regions. The most prevalent types of assistance provided to the survey respondents were training

(61.6%) followed by village savings and loans associations (VSLA) (38.1%), and micro-credit (20%). The survey found that the microfinance, training, and VSLA support filled a critical gap by providing access to capital and training that helped to strengthen the micro, small and medium enterprises (MSMEs). Ninety-five percent of the microcredit respondents, which were primarily women, were satisfied or very satisfied with the microcredit intervention, which helped them purchase fish and other needed business supplies, improve the quality of their products, enhance their production, increase their profits and savings, and better provide for their families. The microfinance and business support provided better access to savings and loans and improved business skills. The interventions also generated modest gains in employment with 11% of microcredit respondents and 13.9% of training respondents increasing their number of employees over the last three years. However, the interventions had not translated into increases in production, monthly sales, or net profit over the past three years for most of the respondents. This is likely due to underlying issues and possibly larger macro-economic factors that should be investigated as part of future research.

Impacts on the policy environment (entry point 3)

SFMP supported the development of a National Gender Mainstreaming Strategy for the Fisheries Sector that was formally adopted and signed by the Honorable Minister Sherry Avithey in December 2016 (MoFAD 2016, Okyere Nyako, Owusu, and Torell 2015). The “Gender Mainstreaming Strategy for the Fisheries Sector” strives to empower fisherfolk, especially women, by enabling their active participation in fisheries management and decision-making. It also facilitates access to, and control of, resources and opportunities in order to enhance individual contributions and promote equitable and sustainable development. The strategy highlights women’s roles in the fisheries sector and provides legitimacy to the Fisheries Commission’s extension support to the post-harvest processing sector, which boosted SFMP’s efforts to strengthen the business management skills among post-harvest processors. A first step toward implementation was to train fisheries zonal officers and partners from the Central, Western, and Volta regions of Ghana. These frontline agents of change developed a gender-mainstreaming action plan, which defined how they planned to address gender issues in the fisheries sector. A small, but important, organizational change that has happened within the Fisheries Commission is that the organization now requires attendance sheets that record the number of men and women attending meetings (Kent 2017). Collecting information about gender is an important awareness raising factor. Another implementation step taken is language included in a proposed co-management policy to require that co-management committees include women. It also specifies that Chief Fishermen are not mandated to be the Chair of co-management committees, as was previously the case, because that excludes women from this leadership position.

Following the gender strategy, MoFAD also approved a strategy on Anti-Child Labor and Trafficking in Fisheries. The strategy contains several guiding principles, including gender equity, poverty reduction, and respect for children’s rights. Child labor in Ghana’s fisheries sector is a pernicious problem. SFMP surveys have shown that both boys and girls suffer the worst forms of child labor, with boys typically trafficked from

coastal fishing villages and forced into dangerous fishing work on Lake Volta. Girls are more likely to wind up as domestic servants in urban centers or forced into prostitution. It is common for boys who remain with their parents to fish along the coast and many girls work in smoking sheds for long hours. This keeps them out of school and is considered illegal child labor by Ghanaian law. SFMP surveys have shown that the most vulnerable households are often single women headed households (Adeborna and Johnson 2015; Friends of the Nation 2015). Hence targeting single and female headed households in support, such as improving access to microfinance, can financially empower them and reduce the pressure to engage in child labor and trafficking.

Impacts related to the adoption and implementation of improved fisheries management for women gleaners (entry point 2)

The assessment found that the most direct example of adoption and implementation of improved fisheries management comes from the Densu Estuary. This estuary is a microcosm of the degradation of Ghana's marine environment. Located southwest of Accra, the growing human populations living in the Densu estuary have contributed to environmental degradation and dwindling fish and shellfish populations. Oysters are an overfished source of protein, the mangroves are overexploited, and the marine habitat is affected by global and local point and non-point sources of pollution. Like many artisanal shellfisheries in the global south, oyster harvesting in the Densu Delta is a vocation traditionally held by women, although some men also engage in this activity. The labor of women oyster pickers in this region has been invisible, underestimated, or not enumerated at all (Bennett 2005; Ogden 2017).

The project supported the Densu Oyster Pickers Association (DOPA) members to develop knowledge, confidence, leadership, and advocacy. After only one year, DOPA decided to close the oyster grounds to harvesting for five months in order to allow for a rebound in oyster populations. One reason why progress on adopting and implementing a fisheries management measure was so significant and swift is that Densu estuary stakeholders are a relatively small and cohesive group – especially when compared with the Ghanaian fisheries sector at large. This makes critical mass and consensus easier to reach. Another reason DOPA was able to successfully, promptly, and harmoniously implement a closed season was that the women of DOPA were empowered through increased scientific knowledge, confidence, leadership, and abilities to advocate. Much of this empowerment can be traced back to decisions made about extension work with the Densu communities.

First, the process was participatory and locally driven. Second, extension agents working with the community integrated themselves whenever they could. When asked whether or not they were seen as outsiders, one extension agent who had worked very closely with DOPA stated: *In community extension work, how you dress and how you speak are all very important. You have to go down and eat with [community members]. You are their class. I feel now that I am a part of them and they accept me. I am their friend. Some of the ladies call me to check up on me.*"

Another important aspect of DOPA's success can be found in DAA's curriculum. Beyond its utilization of successful adult literacy techniques, the curriculum's emphasis

on hands-on science worked well for the Densu estuary, members of DOPA, and especially the DOPA's small group of women data collectors. After the focus group interviews with the members of DOPA at large, the research team had the opportunity to board a canoe with the DOPA data collectors. Out on the canoe, the mostly illiterate women worked together to record data on the Delta's salinity, temperature, turbidity, and pH. "We are scientists" the ladies gleefully proclaimed after recording their last number. Not just understanding the science, but owning the data, or at least playing a part in its collection, seems to have had a profound effect on the data collectors and members of the Densu Community in support of their leadership role as fisheries managers. Peer to peer exchanges and training with shellfish harvesting communities and associations in Ghana and other West African countries was an approach that also contributed to DOPAs empowerment and progress in fisheries management.

Discussion

The assessment presented in this report was conducted to gauge the impacts of SFMP's gender mainstreaming strategy and understand if and how implementing the strategy has led to any changes within the Ghanaian fisheries sector. The results show that SFMP's activities have brought about positive changes in the way its beneficiaries perceive women's role in fisheries, how SFMP's female beneficiaries feel about themselves and their role in the sector (empowered), how partner organizations relate to women in fisheries, and how female client led organizations operate. The results suggest that SFMP has expanded the base of stakeholders advocating for better managed fish. However, although the fish processor networks are large, they do not represent the entire population of fishers and fish processors. In order to reach a critical mass of people advocating for sustainable fisheries management and behavior change, it is important to broaden stakeholder engagement and ensure that associations are guided by democratic norms. Additionally, literature about women's networks and environmental governance shows that in order to successfully change a dominant norm, women's associations must continuously work toward "attracting new recruits" (Bretherton 2003). Increasing the number of members among the existing women processing and trading associations would also be positive because it would expand the associations' reach and increase their legitimacy.

Research on gender and natural resource management states that using women who are already engaged to create and strengthen *new* connections is an important role of women's networks (Bretherton 2003; Moghadam 2005). Movements can do this by opposing existing social orders and formal/hierarchical forms of organization. Bretherton suggests that rather than being bound by their roles as efficient tools of a rigid and formal existing political/patriarchal structure, women's networks are most effective when they display an emphasis of reciprocal relationships, shared values, and an exchange of information and services. While the organizational values are not necessarily in tune with the current customs of Ghanaian associations, research shows that organizations can be effective if women's networks frame their issues in ways that will be widely received and perceived as relevant to the majority, not just the in-group.

SFMP focused on working with active members within fish processing associations and could continue to support them in their organizational development in order to continue to attract more members and increase the engagement of current less active members. However, it may be possible to increase the reach of gender integration by working more closely with the traditional leadership. Each fishing community in Ghana has a venerable tradition of maintaining a chief fisherman, and a chief fishmonger/processor, or *Konkohema*. While the chief fisher holds authority over most of the local fisheries sector, the *Konkohema* is called upon to help find solutions to problems related to traveling, transportation of goods, selling, and debt collection (Odotei 1992). While this female representation is notable, that assessment found that currently, most people believe the *Konkohema* represent “a queen on the ground, but not in true leadership.” While the current status of *Konkohema* is seen as “lesser” in the chief’s council, this group of women represents an influential population that has received less focus than the women processing associations. Hence, a more focused effort to empower the *Konkohemas* and their network might have a profound impact on their abilities to lead, manage, and mobilize women in their communities to engage in fisheries management.

Conclusion and recommendations

SFMP developed its gender mainstreaming strategy as one of seven major result areas of the overall project. It aimed to increase the equity and efficiency of sustainable fisheries management. The gender mainstreaming activities were built on the premise that if both men and women demand good fisheries management practices, implementation will be timelier, more enduring, and more effectively diffused. The gender impact assessment found that the SFMP has made good strides toward these goals and comparing the achievements in relation to the timeframe (3+ years). It is clear that the project has had some success, especially in regards to the expected results shown as darker blue boxes in the theory of change (Figure 1).

As a result of SFMP’s work with processors and oyster gleaners, women active within these groups are more confident, knowledgeable, and empowered to speak up. They have changed their behavior and this change is widely perceived to be sustainable. The assessment found that women’s confidence has grown and that men recognize that it is time to acknowledge the role that women play in the fisheries sector. Capacity development sessions related to innovation, conflict management, advocacy, and leadership have contributed to women’s perception that they have a voice in fisheries management. Women have been exposed to sustainable fisheries management and are better equipped with the knowledge and leadership skills to advocate for good fisheries practices, which they are actively demonstrating. Women are able to discuss fisheries management, including the importance of closed seasons and other fisheries management measures. Trainings in post-harvest processing have helped women handle fish more hygienically whereas trainings in business management and financial literacy have provided tools to enable women to grow their processing enterprises. These findings indicate that SFMP has contributed to establishing the enabling conditions necessary to ensure a broader and more equitable stakeholder engagement in fisheries management.

In order to achieve equitable change, fisheries development projects, such as SFMP, need to take a holistic approach that considers not only how women can become more engaged in fisheries management, but also how men can contribute more to running their households. This would help reduce the general workload of women concurrent to strengthening their role in fisheries management. While this paper focuses mainly on the SFMP work with women's organizations, and women processors and traders, it should also be noted that the project worked to strengthen male dominated fishermen associations such as the National Canoe Fishermen's Council and the Ghana Industrial Trawlers Association. Leadership development and gender mainstreaming trainings included both men and women involved in the fisheries sector. These trainings all had content with messages stressing the need for both men and women to work together toward sustainable fisheries. "Fisher to Fisher" dialogs conducted along the coast to sensitize people to issues in the sector and develop a constituency for a closed season included both fishermen and women. Leaders of the women led associations were given opportunities to speak and the commitments to sustainable practices printed on large sheets included the handprints of both men and women in the fishery. However, more work is needed to ensure that men in fishing communities share household workloads equitably in addition to embracing their participation in fisheries management. Future fisheries development projects should implement a more intersectional perspective and must be sure that their gender analyses, needs assessments, and gender mainstreaming strategies address equity as well as equality.

The Densu Estuary case is a success story within SFMP's broader gender mainstreaming effort. Multiple factors have contributed to the success, including the fact that DOPA is a relatively small and cohesive group, which meant that it was easier to reach a critical mass and consensus. Another success factor was the participatory management and monitoring approach led by DAA, which increased scientific knowledge, confidence, leadership, and the ability to advocate. Finally, DOPA worked with passionate and engaging extension staff, linking both university and government and civil society organization field officers, whose energy rubbed off on the local stakeholders.

After three years of implementation, SFMP is still in the beginning of the process of diffusing gender mainstreaming into the Ghanaian fisheries sector. The next step will be to move to deeper and more far reaching gender mainstreaming results. The gender assessment has provided a number of recommendations for how this can be achieved:

1. Broaden the participation of women in fisheries management by ensuring that non-leaders/elders/dignitaries are invited to and are capable of attending project activities. Put participant selection criteria and recruitment systems in place to make sure that the truly committed, not just the distinguished, are invited and encouraged to attend events.
2. Identify and work with champions, such as processing association leaders that will have the resources and the staff to continue implementation over time to reduce reliance on project-based funding.
3. Be clear that gender mainstreaming requires the involvement of both women and men. Women are involved in almost every step of the fisheries value chain. As stated by a member of the National Fish Processing Association "*Women support fishing inputs. Fishermen only pay back when they land their catch. Women*

need to make money for the men to make money. Women and fishermen have one voice. It is win/win if fish are sustainably managed and thriving.”

4. However, as women take on a larger role in fisheries management, they are still disproportionately burdened with managing household economics. Hence, if men do not increase their role in ensuring that households are healthy and financially secure, while women spend more time on fisheries management and improving post harvesting, the responsibilities between women and men will become more unbalanced. By taking a “men as partners” (Mehta, Peacock, and Bernal 2004) approach, it may be possible to increase men’s support and create a more equitable division of household responsibilities between women and men.
5. Increase the involvement of traditional fisheries leadership structures, including the chief fishmonger/processor, or *Konkohema*. These leaders may have an untapped potential to lead, manage, and mobilize their communities.
6. Continue to strengthen the organizational capacity of key women’s organizations such as NAFPTA, who represent a broad constituency at the national and decentralized level.
7. Replicate the co-management model of the Densu in other ecosystems and communities.

Note

1. “Bad fish” is a slogan used by the Ghanaian fisheries sector, describing fish that should not be caught (juveniles or otherwise illegal fish) or fish that is caught in an illicit manner (with explosives, chemicals, etc.)

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References

- Adeborna, D., and K. Johnson. 2015. Child labour literature review and scoping study report. The USAID/Ghana Sustainable Fisheries Management Project (SFMP). 39 pp. GH2014_POL025_SNV, Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island, Netherlands Development Organization and Friends of the Nation, Narragansett, RI.
- Béné, C., R. Arthur, H. Norbury, E. Allison, M. Beveridge, S. Bush, L. Campling, W. Leschen, D. Little, D. Squires., et al. 2016. Contribution of fisheries and aquaculture to food security and

- poverty reduction: Assessing current evidence. *World Development* 79:177–96. doi: [10.1016/j.worlddev.2015.11.007](https://doi.org/10.1016/j.worlddev.2015.11.007).
- Bennett, E. 2005. Gender, fisheries and development. *Marine Policy* 29(5):451–9. CrossRef. Web. 21 May 2015.
- Beran, K. 2018. Value-chain improvements in small scale fisheries: Case studies from West Africa. Open Access Dissertations. Paper 785. https://digitalcommons.uri.edu/oa_diss/785
- Bilecki, D. 2019. The burden of invisibility: A case study of the fisheries crisis in Ghana, and the USAID/Ghana sustainable fisheries management project’s gender mainstreaming strategy. Dissertations and Master’s Theses (Campus Access). Paper AAI13856168. <https://digitalcommons.uri.edu/dissertations/AAI13856168> (accessed May 20, 2019).
- Bilecki, D., E. Torell, and A. Owusu. 2018. A formative assessment of the USAID/Ghana SFMP Gender Mainstreaming Strategy. The USAID/Ghana Sustainable Fisheries Management Project (SFMP). 66 pp. GH2014_GEN025_CRC, Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island and Hen Mpoano, Narragansett, RI.
- Bretherton, C. 2003. Movements, Networks, Hierarchies: A Gender Perspective on Global Environmental Governance. *Global Environmental Politics* 3(2):103–19. doi: [10.1162/152638003322068245](https://doi.org/10.1162/152638003322068245).
- Britwum, A. O. 2009. The gendered dynamics of production relations in Ghanaian coastal fishing. *African Gender Institute* 1(12):69–85. Print. Feminist Africa 12 Land, *Labour and Gendered Livelihoods*.
- Coastal Resources Center. 2014. Award Document Original Program Description. The USAID/Ghana Sustainable Fisheries Management Project (SFMP). 51 pp. GH2014_PGM001a_CRC, Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island, Narragansett, RI. https://www.crc.uri.edu/download/GH2014_PGM001_FIN508.pdf
- Coastal Resources Center. 2018. Progress report. January 1 to March 31, 2018. USAID/Ghana Sustainable Fisheries Management Project. 65 pp. GH2014_PGM196_CRC, Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island, Narragansett, RI.
- Friends of the Nation. 2015. Anti-child labor and trafficking field survey report. The USAID/Ghana Sustainable Fisheries Management Project (SFMP). 37 pp. GH2014_POL040_FoN, Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island, Narragansett, RI.
- Food and Agriculture Organization of the United Nations. 2015. Voluntary guidelines for securing sustainable small-scale fisheries in the context of food security and poverty eradication. <http://www.fao.org/3/a-i4356en.pdf> (accessed on October 05, 2019).
- Food and Agriculture Organization of the United Nations. 2016. Promoting gender equality and women’s empowerment in fisheries and aquaculture. <http://www.fao.org/3/a-i6623e.pdf> (accessed on October 05, 2019).
- Harper, S., D. Zeller, M. Hauzer, D. Pauly, and U. R. Sumaila. 2013. Women and fisheries: Contribution to food security and local economies. *Marine Policy* 39:56–63. doi: [10.1016/j.marpol.2012.10.018](https://doi.org/10.1016/j.marpol.2012.10.018).
- Kent, K. 2017. Government of Ghana and Public University Units Mid-Term Organizational Capacity Assessment Report. The USAID/Ghana Sustainable Fisheries Management Project (SFMP). 69 pp. GH2014_CAP025_CRC, Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island, Narragansett, RI.
- Lau, J., and I. Scales. 2016. Identity, subjectivity and natural resource use: How ethnicity, gender and class intersect to influence mangrove oyster harvesting in The Gambia. *Geoforum* 69: 136–46. pp doi: [10.1016/j.geoforum.2016.01.002](https://doi.org/10.1016/j.geoforum.2016.01.002).
- Matsue, N., T. Daw, and L. Garrett. 2014. Women fish traders on the Kenyan coast: Livelihoods, bargaining power, and participation in management. *Coastal Management* 42(6):531–54. doi: [10.1080/08920753.2014.964819](https://doi.org/10.1080/08920753.2014.964819).
- McNally, C., B. Crawford, B. Nyari-Hardi, and E. Torell. 2018. MSMEs/VSLAs formative evaluation report. The USAID/Ghana Sustainable Fisheries Management Project (SFMP). 89 pp. GH2014_ACT153_CRC, Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island, Narragansett, RI.

- Medard, M., F. Sobo, T. Ngatunga, and S. Chirwa. 2002. Women and gender participation in the fisheries sector in Lake Victoria. *Global Symposium on Women in Fisheries*. http://pubs.iclarm.net/Pubs/Wif/wifglobal/wifg_africa_victoria.pdf (accessed October 5, 2019).
- Mehta, M., D. Peacock, and L. Bernal. 2004. Men as partners: Lessons learned from engaging men in clinics and communities. In *Gender equality and men: Learning from practice*, ed. S. Ruxton, 89–100. Oxford, UK: Oxfam.
- Ministry of Fisheries and Aquaculture Development (MOFAD). 2016. National gender mainstreaming strategy for the fisheries sector. 47 pp. GH2014_GEN006_MOFAD, Ministry of Fisheries and Aquaculture Development (MOFAD), Accra, Ghana.
- Moghadam, V. M. 2005. *Globalizing women: Transnational feminist networks*. Baltimore, MD: The Johns Hopkins University Press.
- Mutumukuru-Maravanyika, T., D. Mills, C. Asare, and G. Asiedu. 2016. Enhancing women's participation in decision-making in artisanal fisheries in the Anlo Beach fishing community, Ghana. *Water Resources and Rural Development* 10:58–75. doi: [10.1016/j.wrr.2016.04.001](https://doi.org/10.1016/j.wrr.2016.04.001).
- Njie, M., and O. Drammeh. 2011. *Value chain of the artisanal oyster harvesting fishery of the Gambia*, 74 pp. Narragansett, Rhode Island: Coastal Resources Center, University of Rhode Island.
- Odotei, I. 1992. The Migration of Ghanaian Women in the Canoe Fishing Industry. *Maritime Anthropological Studies* 5(3):88–95.
- Ogden, L. E. 2017. Fisherwomen – The uncounted dimension in fisheries management: Shedding light on the invisible gender. *BioScience* 67(2):111–17. [10.1093/biosci/biw165](https://doi.org/10.1093/biosci/biw165)
- Okyere Nyako, A., A. Owusu, and E. Torell. 2015. Gender mainstreaming strategy. The USAID/Ghana Sustainable Fisheries Management Project (SFMP). 16 pp. GH2014_GEN002_CRC, Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island, Hen Mpoano, and SNV Netherlands Development Organization, Narragansett, RI.
- Pomeroy, R.S., and N. Andrew. 2001. *Small-scale fisheries management: Frameworks and approaches for the developing world*. Oxfordshire, UK and Cambridge, MA: Cabidaw.
- Rogers, E. 1995. *Diffusion of innovations*. New York, NY: The Free Press.
- Santos, A. N. 2015. Fisheries as a way of life: Gendered livelihoods, identities and perspectives of artisanal fisheries in eastern Brazil. *Marine Policy* 62:279–88. doi: [10.1016/j.marpol.2015.09.007](https://doi.org/10.1016/j.marpol.2015.09.007).
- Walker, Barbara Louise Endemano. 2001. Sisterhood and seine-nets: Engendering development and conservation in Ghana's marine fishery. *The Professional Geographer* 53(2):160–77. doi: [10.1111/0033-0124.00277](https://doi.org/10.1111/0033-0124.00277).
- Weeratunge, N., K. A. Snyder, and C. P. Sze. 2010. Gleaner, fisher, trader, processor: Understanding gendered employment in fisheries and aquaculture. *Fish and Fisheries* 11(4): 405–20. doi: [10.1111/j.1467-2979.2010.00368.x](https://doi.org/10.1111/j.1467-2979.2010.00368.x).