Food and Agriculture Organization of the United Nations

INTERNATIONAL MARITIME ORGANIZATION

GloLitter partnerships

Women's roles in reducing marine plastic litter

Insights from pilot projects in Côte d'Ivoire, Senegal and Togo

Women's roles in reducing marine plastic litter

Insights from pilot projects in Côte d'Ivoire, Senegal and Togo

By

Rachel Matheson

and

Matteo Luzzi

Food and Agriculture Organization of the United Nations
and
International Maritime Organization
Rome, 2025

Required citation:
Matheson, R. & Luzzi, M. 2025. *Women's roles in reducing marine plastic litter – Insights from pilot projects in Côte d'Ivoire, Senegal and Togo*. Rome, FAO. https://doi.org/10.4060/cd5958en

ISBN 978-92-5-139933-0 [FAO]

Contents

Abbreviations

ALDFG	abandoned, lost or otherwise discarded fishing gear
CFI-WA	Coastal Fisheries Initiative – West Africa
CRO	Oceanological Research Centre
DGEFM	Direction de la Gestion et de l'Exploitation des Fonds Marins [Department of seabed management and exploitation], Senegal
FAO	Food and Agriculture Organization of the United Nations
FENUCOOPETO	Fédération Nationale des Unions des coopératives de Pêche du Togo [National Federation of the Fishery Cooperative Unions of Togo]
GTA	gender-transformative approach
MIRAH	Ministère des Ressources Animales et Halieutiques [Ministry of Animal and Fisheries Resources], Côte d'Ivoire
MPEM	Ministère des Pêches et de l'Économie Maritime [Ministry of Fisheries and the Maritime Economy], Senegal
MPL	marine plastic litter
SDG	Sustainable Development Goal
SONAGED	Société Nationale de Gestion Intégrée des Déchets [National Integrated Waste Management Company of Senegal]
UTRADER	Usine de Transformation des Déchets en Richesse [Waste-to-Wealth factory], Togo

Executive summary

Marine plastic litter (MPL) presents a global threat to ecosystems, biodiversity, and livelihoods across a variety of sectors. Like most urgent environmental challenges, the creation and management of MPL in fisheries is a gendered issue, by virtue of the different roles, responsibilities and constraints that women and men undertake in fisheries and waste management. However, very little information is available on the gendered aspects of MPL management in fisheries, which in turn prevents the action plans and strategies that tackle this issue from being equitable, holistic, and gender-responsive. In order to address this gap, as part of the OceanLitter Programme the GloLitter Partnerships Project launched pilot activities in Côte d'Ivoire, Senegal, and Togo. These activities included a gender study conducted in the three countries to better understand the role gender plays in the creation and management of MPL from small-scale fisheries, in addition to the implementation of pilot projects to support women's economic empowerment in the MPL management sector.

The findings from the studies in all three pilot countries highlight the importance of applying a gender lens to MPL management in the fisheries sector. While offshore fishing is commonly considered a male domain, these studies underlined the important role(s) that women play in fisheries, particularly in the post-harvest sector, as well as their contributions to the creation and management of MPL. The studies identified differences in the types of plastic litter created by women and men's fishing activities, with men responsible for most sea-based plastic litter – including abandoned, lost, or otherwise discarded fishing gear – while women used and discarded plastic to process and market fish. The studies also revealed that women and men generally play different roles in the collection and disposal of plastic: women are primarily responsible for cleaning landing sites, while men are responsible for discarding fishing gear and for more physically demanding tasks such as burying or burning waste.

Following the studies, pilot activities were implemented in each of the three countries. These consisted of providing MPL management training to women's fishery cooperatives to support remunerative opportunities in the collection, sale, or transformation of plastic litter from the fishery. Participants in all three countries expressed interest in engaging in marine plastic litter management, while noting that there are currently limited opportunities to earn an income from collecting and selling plastic. Additionally, participants highlighted a lack of equipment, infrastructure, and a limited desire within the community to change behaviours relating to the use and disposal of plastic

in the fishery. While participants expressed satisfaction with the training and a commitment to continuing the MPL management activities, broader and more long-term engagements with local authorities, communities and fishers are required to target MPL with an authentically gender-responsive approach.

Recommendations for next steps include conducting further research on the gendered aspects of MPL, paying particular attention to the pre-harvest and harvest nodes, as well as developing guidance on adopting a gender lens in national MPL strategies and action plans. Finally, the studies and pilot projects identified key gender-based constraints that could be addressed through a gender-transformative approach that supported women's economic opportunities in the MPL management sector, while acknowledging that the creation and responsible disposal of plastic waste ultimately remained a community responsibility.

Background

Coastal and marine litter is a gender issue: the gendered division of labour and is consequent inequalities shape different exposures to litter production in fisheries. Often, women are more easily engaged in the gleaning and fishing of shellfish or smaller fish, as well as in pre- and post-harvest activities, while men are more involved in offshore fishing and commercial fishing. These differences support a further dichotomy whereby offshore habitats are the domain of male fishers, while women are considered the principal actors in nearshore habitats like mangroves, estuaries and intertidal areas.[1]

These spatial divisions carry over to the production and management of plastic litter. For example, the production of marine plastic litter (MPL) as a result of abandoned, lost, or otherwise discarded fishing gear (ALDFG) is mostly related to offshore fishing activities, from which women are excluded.[2] Female-dominated activities such as shellfish gleaning typically have a lower impact in terms of sea-based litter production as they involve no or minimal fishing gear – which, when lost, can entangle marine biota and cause the degradation of marine environments.[3]

However, while ALDFG is often caused by male-dominated activities, women are more involved in the creation of other, land-based sources of MPL during the post-harvest segments of auctions, processing, and marketing, and the resulting plastic can end up being washed out to sea.

Although men and women produce marine plastic litter in different ways, by virtue of their gender roles, everyone is impacted by the degradation of marine habitats, which threatens the livelihoods provided by the fisheries sector and exposes communities to food and income insecurity. A decrease in the quantity and quality of fish as a result of habitat and biodiversity loss, as well as phenomena such as ghost fishing, has gendered risks and impacts. For example, people involved in offshore fishing, often men, may be forced to fish further and further from shore, increasing food and fuel expenses and the duration of fishing trips; they may also potentially turn to harmful measures to decrease costs and increase catch, such as child labour,[4, 5] and illegal fishing.[6, 7] Nearshore fishing, as well as the pre- and post-harvest activities in which women often participate, may also have to contend with a decreased access to fish as a result of lower catches and ecosystem degradation. Such circumstances in turn reduce women's incomes as well as their access to nutritious food, and potentially push them into risky scenarios such as sex-for-fish relationships.[8, 9]

At the same time, the presence and management of marine plastic litter (MPL) in fisheries poses an increased labour burden, particularly on women, who are often responsible for community and household clean-up activities, and who are also in charge of providing safe and healthy food for their families. When women collect the litter as part of their community care responsibilities, they are exposed to health risks such as waterborne diseases and wounds from sharp edges. Moreover, women involved in the fisheries post-harvest sector may be exposed to the health risks associated with microplastics, which are increasingly found in fish.[10]

Despite their contributions to the fisheries and waste-management value chains, women are often relegated to less remunerative activities (including pre-harvest work such as making nets and setting gear; harvest and post-harvest activities like processing, marketing, or net-mending), and they therefore have insecure access to resources and formal employment. One of the informal sectors where women are crucial is the informal waste sector: in many cases, more women are involved in informal waste valorization than in the formal valorization sector. Women tend to be involved as pickers, sorters, and traders of materials at the level of family-owned junk shops, or as initiators of community-based enterprises. In fishery value chains, women tend to be concentrated in lower-earning activities such as fish trading and processing, and therefore have a lower average income. [11]

As a result of these gender-based norms and constraints, it is crucial to recognize the social – and gender – implications of plastic litter management. By building women's capacity and encouraging greater reflection and awareness of discriminatory gender norms and their impacts on communities, women and their organizations can be mobilized and empowered to act as catalysts for the more sustainable management of marine plastic litter.

1. Introduction

Gender mainstreaming in the projects and programmes of the FAO Fisheries and Aquaculture Division (NFI) is a basic requirement for ensuring that all of the division's normative and technical work can drive targeted and contextualized actions that consider the perspectives and needs of women and men in each initiative. The objective of this strategic approach is for the fisheries and aquaculture sectors to benefit from the effects of gender equality over the longer term and support the establishment of more equitable and sustainable value chains.

Within the aforementioned framing, the GloLitter Partnerships Project (GloLitter) seeks to protect marine ecosystems by addressing sea-based sources of marine plastic litter, thereby safeguarding the human livelihoods provided by the oceans. As part of this project, GloLitter is implementing pilot projects to support women's economic empowerment in MPL management and identify opportunities for gender-transformative approaches that can address the underlying root causes of MPL, ALDFG, and gender inequality. The empowerment of women is central to the project, fostering the active and remunerative engagement of women as contributors to the reduction of plastic litter in the oceans. This is achieved by focusing on the management of plastic waste and raising awareness within communities. These activities also provide an opportunity to collect information that will promote the gender-transformative approach (GTA) in future projects.

Although the GloLitter Partnerships Project is directly aligned with Sustainable Development Goal 14: (SDG 14 – Life below Water), several other SDGs are relevant to the proposed programme, including SDG 5 – Gender Equality. The activities and objectives of the gender component of the GloLitter project therefore support the project's alignment with SDG 5, advocating the empowerment of women's organizations and striving for gender equality across the entire project framework.

The GloLitter Partnerships Project is fully aligned with other Norwegian Agency for Development Cooperation (Norad), International Maritime Organization (IMO), and FAO efforts to enhance women's participation and benefit from fisheries, including previous initiatives such as IMO's "Women in Maritime" programme and FAO-NORAD's "Empowering women in small-scale fisheries for sustainable food systems."

2. Objectives

The objectives of the gender component of the GloLitter Partnerships project are:

- to identify the specific needs, capacities, constraints and opportunities for women and men and their specific roles in the management of MPL from fisheries in the three selected countries;
- to promote the direct engagement of women in addressing MPL from the fisheries sector, including plastic which comes from abandoned, lost or otherwise discarded fishing gear (ALDFG);
- to strengthen partnerships with women's organizations in fisheries and plastic management;
- to build the capacity of local women to reduce the use of plastic in fisheries, including fish processing/marketing and the collection of plastics for recycling; and
- to identify one or more gender-transformative approaches (GTAs) to be implemented in the event of funding for a second phase of activity (Phase II).

3. Participants

Three countries were selected to participate in the pilot activities: Côte d'Ivoire, Senegal, and Togo. Côte d'Ivoire is a Lead Partner Country within the GloLitter Partnerships Project, while Senegal and Togo are Partner Countries.

Preliminary research during the project conception phase identified some ongoing MPL management initiatives in the selected countries, although these did not necessarily include the fisheries sector. The existence of organizations that were already active on these issues, as well as the presence of recycling centres in the region, provided a sound basis for sharing and adapting these practices when consulting with women's fishery organizations to create opportunities for economic empowerment.

The three countries were also selected on a regional and linguistic basis. Their geographical proximity and the fact the French is an official language in all three countries facilitated the sharing of research and knowledge during the activities. In the event that Phase II of the project is given the go-ahead, a regional approach could be adopted to develop a network of women's organizations, bringing together existing regional initiatives and other leaders in the MPL management sector to share learning and best practice.

4. Activities

The output and activity description for the GloLitter gender activities led by FAO are the following:

5.3.2 Organize seed funding pilot initiatives in selected countries to encourage women to get engaged in MPL from fisheries with support from local women NGOs (FAO).	In close collaboration with the Small-scale fisheries umbrella programme of FAO, pilot initiatives will be started with women's organizations active in fisheries to reduce the use of plastic in fisheries and fish processing/marketing and collect plastic for recycling. At least 3 small pilot projects with fisherwomen associations or organizations in developing countries are foreseen.[12]

Tasked with designing activities aligned with the project output and workplan, the FAO Fisheries and Aquaculture Division Gender team (NFISG) put forward a set of three pilot activities to be implemented in each of the three participating countries:

- a gender study to understand women's and men's roles and engagement in the management of MPL from fisheries, as well as gender-based constraints preventing equitable engagement in MPL management and opportunities for remuneration in the MPL management sector;
- community-level awareness-raising regarding the risks from MPL, as well as the emerging opportunities from the prevention or recycling of plastic waste and capacity-building activities to encourage women's economic empowerment in the MPL management sector; and
- a final report consolidating the findings from the gender study, capacity-building, and awareness-raising activities to identify best practice, and to provide recommendations for gender-transformative approaches (GTAs) that could be implemented in future projects.

Following discussions with each of the FAO Country Offices and the development of country-level budgets, the actual activities were revised to align with the country-level costs, capacities, and priorities.

A description of the activities conducted in the three participating countries is provided below.

4.1 Overview of the GloLitter gender pilot activities in Côte d'Ivoire

4.1.1 Gender study

In collaboration with the Coastal Fisheries Initiative – West Africa (CFI-WA), GloLitter conducted a gender study in Abidjan to analyse key aspects of the use of plastic litter in the fisheries sector and the differentiated role of men and women. This study aimed to provide an in-depth understanding of the current situation, challenges, and opportunities for a more sustainable management of plastic litter in the fisheries sector, while considering the gender dimensions and constraints that limit women's

Methodology

To this end, the project initiated a mixed-methods study on three landings sites in Abidjan: Locodjro, Vridi 3 (colloquially referred to as Zimbabwe), and Abobo Doumé. The sites were selected for their proximity to Abidjan as well as their engagement with the CFI-WA project, which enabled easier access to the sites and to participants. Data collection took place between 14 September and 11 October 2023, led by a national gender consultant.

Qualitative data collection methods included semi-structured interviews as well as focus group discussions with women and men in the fishing sector, as well as key actors in the recycling sector and in fisheries management.

Quantitative data collection involved a structured survey for stakeholders in the fishing value chain. In total, this study reached 156 people (120 women and 36 men): 54 people in the surveys (46 women and 8 men), 84 people in the focus groups (68 women and 16 men), and 18 people in the interviews with institutions and key contact persons (6 women and 12 men). The study disproportionately involved women in the post-harvest node given that men, who do most of the harvest work, were less available during the survey and interview period.

Results

The study found that both women and men use plastic products in their fishery activities. While only men use plastic nets and ropes for fishing gear, both women and men use and dispose of plastic bags, ice bags, water sachets and plastic baskets during the course of their activities in the fishery. For example, women use ice bags and plastic baskets to transport, clean, and

process fish. Men, on the other hand, use ice bags to transport fish on vessels and take plastic water sachets with them out to sea.

In terms of plastic management, waste is either thrown into rubbish bins, disposed of on the ground or in the ocean, or burned. Only one of the landing sites (Locodjro) has rubbish bins installed, so waste at the other two was disposed of either on the ground, in the ocean, or burnt. However, respondents noted that while fishing activities both at sea and at landing sites contribute to MPL, there are also other sources. The latter include waste dumped by large boats, waste carried by water currents, waste left behind by visitors and customers, and waste run-off after storms – all of which testify to the complexity of the issue of both marine and land-based plastic litter.

At the landing sites, women are more involved in the management of plastic litter than men. Most women collect plastic waste from the beaches and landing sites, and some even participate in waste sorting and clean-up initiatives, as well as awareness-raising. This being said, a majority of men also reported collecting plastic waste from beaches or landing sites, albeit to a lesser extent than women. Nevertheless, men's overall involvement in other organized initiatives was less frequent. Respondents in the focus groups clarified that in general, waste disposed of at sea and during fishing activities was considered men's responsibility, while waste left on the beaches during processing and trading, and in communities, was considered women's domain.

Most participants are aware of the problems associated with plastic pollution in their environment. They are also concerned about the impact of plastic litter on their activities, particularly with regards to reduced income, health risks, and the increased costs associated with recycling plastic. Both women and men are impacted by reduced incomes as a result of lower fish catches, which are in part caused by ecosystem degradation from MPL. The study shows that post-capture workers – the majority of whom are women – are the most vulnerable category, as that most exposed to the risks of plastic litter.

The results of the survey highlight another important reality: among the stakeholders in the Côte d'Ivoire fishing value chain, women predominate in post-harvest activities while men dominate in the harvest node. Women in the post-harvest node are particularly vulnerable to the harmful effects of plastic litter as they are exposed to health risks including injuries from rough or damaged plastic, water- and vector-borne diseases and pathogens, and the proliferation of mosquitoes, which pose health risks and slow their work.

Women respondents also noted that the presence of large amounts of plastic litter on the landing site is unattractive to customers, potentially limiting the incomes of women selling fish in these areas. This highlights the need for specific measures to protect women and improve their working conditions, first of all by reducing the impact of plastic waste on their activities and the marine environment within the fishing value chain.

Challenges to waste management include the lack of rubbish bins on landing sites, the ready availability of cheap single-use plastics, and a widespread resistance to changing practices. Participants also noted a lack of paid employment opportunities and the low remuneration for plastic waste collection and sorting.

In addition to the problems presented by MPL, women in the value chain reported other challenges associated with their fishery activities. These included a lack of access to resources including preservation equipment, ice makers, and ovens. Moreover, since fishing is a seasonal activity, women also have unstable access their primary resource – fish – which results in volatile incomes.

Stakeholders in the fisheries value chain are interested in transforming plastic waste into economic opportunities, thus supporting the notion of a circular economy. The main ideas suggested were:

- recycling to make recycled plastic products;
- selling collected plastic litter as a raw material for the recycling industry; and
- setting up local collection and sorting companies.

The survey also revealed that the majority of participants are interested in attending training or workshops on how to turn plastic litter into useful products with economic value. This underlines the fact that there is a desire to acquire skills to manage plastic waste more effectively, as well as an interest in additional income-generating opportunities that could supplement incomes, particularly during the fishing low season.

4.1.2 Awareness-raising and capacity building

Awareness-raising workshop

On 28 November 2023 the GloLitter project, in collaboration with CFI-WA, held an awareness-raising workshop to endorse the findings from the gender

study; raise awareness among fishery stakeholders about the impacts of marine plastic litter on their communities; and discuss strategies to promote women's remunerative engagement in marine plastic litter management.
The objectives of the workshop were to:

- present the GloLitter Partnerships Project and the motivations behind the gender study;
- share and endorse the results of the study;
- make participants aware of the extent and impacts of MPL in the fishery value chains;
- identify opportunities to generate financial value from plastic litter in Côte d'Ivoire; and
- identify strategies to make remunerative opportunities available and accessible to women in the fisheries sector.

In total, 26 participants attended the workshop (11 women, 15 men). Participants included representatives from fishing, fish trading, and fish processing cooperatives, government officials, researchers, and recycling experts.

Feedback from participants demonstrated a keen interest in the gender dimensions of marine plastic litter, and opportunities to address MPL in a gender-sensitive manner. Participating organizations indicated an intention to build on these activities, while the recycling companies expressed interest in working with women's fishery groups to collect plastic litter.

At the end of the workshop, participants also developed a set of recommendations for diverse actors, women and men, to address MPL with a gender lens:

N°	Recomendations	Target audience
1	Strengthen and disseminate regulations on marine plastic litter	State
2	Organize gender-sensitive public awareness campaigns on the risks of plastic polution	State
3	Draw up gender-sensitive national policy for the recovery of marine plastic litter	State
4	Draw up gender-sensitive national strategy for the recovery of marine plastic litter	State/private sector
5	Develop gender-sensitive public-private partnerships for the recovery of plastic litter	State/private sector
6	Support the implementation of a gender-sensitive national strategy for the recovery of marine plastic litter	Fishing organizations
7	Strengthen the organization and formalization of stakeholder associations	State
8	Set up a sorting centre and target businiesses according to their needs	State/private sector
9	Equio landing zones and fishing villages with marine plastic litter cellection units	State/private sector
10	Set up and oversight committee in areas where fishers are concentrated to strengthen compliance with waset management producers	Private sector/fishing stakeholders
11	Involve local authorities in plastic waste management	Private sector/fishing stakeholders

By the end of the awareness-raising workshop, the following results had been achieved:

- the GloLitter Partnerships project was better known and its activities in Côte d'Ivoire were of interest to participants;
- the results of the data collection process had been shared;
- participants were aware of the extent and impact of marine litter;
- observations and additional information had been gathered to enrich the study report;
- concrete experiences of plastic waste recovery in Côte d'Ivoire had been shared; and
- a series of recommendations had been identified, offering courses of action or strategies and partnerships that could create economic opportunities for women to valorize plastic litter from the fishing sector.

Overall, the workshop was successful in validating and enriching the study results. Participants engaged with the findings, discussed the different

gender roles and opportunities for women and men in plastic litter management, and identified concrete steps that different stakeholders could take to ensure gender is mainstreamed across efforts to address MPL.

Capacity-building activities

Following the gender study and the awareness-raising workshop, the GloLitter project in Abidjan, Côte d'Ivoire, initiated a pilot capacity-building activity to contribute to women's economic empowerment in the management of MPL from fisheries. This training activity aimed to reduce the amount of waste created in the fishing industry and encourage plastic recycling. More specifically, the objectives of the training were to:

- raise awareness of the institutional and legal context of waste management in Côte d'Ivoire and in the fishing sector;
- raise participants' awareness of the impact of plastic litter and the need to engage in its proper management;
- introduce participants to the different types of plastic, as well as to plastic sorting and management methods; and
- visit a functional unit for sorting, collecting and compacting plastic litter in order to show how the management of plastic litter could become a profitable entrepreneurial endeavour.

On 15 and 16 April 2024, GloLitter hosted a training session in Abidjan, Côte d'Ivoire, for 27 participants (22 women, 5 men). The women participants came from four cooperatives operating at the Locodjoro landing site:

- cooperative with a board of directors of fishmongers and processors of fish products in Côte d'Ivoire, United women (COOP CA CMATPHA CI FEMMES UNIES);
- cooperative of fishmongers and processors of fish products in Abidjan (CMATHA);
- cooperative of fishmongers and fish processors in Abidjan (COMATPPA); and
- cooperative of fishmongers and processors of fish products in Côte d'Ivoire;

The five male participants represented institutions that had participated in the study: the Ministry of Animal and Fisheries Resources (MIRAH), the

Oceanological Research Centre (CRO), the Department of Maritime and Port Affairs of the Ministry of Transport, Recyplast, and the Food and Agriculture Organization of the United Nations (FAO).

Day 1 – Opening session and training on marine plastic litter

The opening session of the training workshop consisted of three presentations. The national gender consultant presented on the status of marine plastic litter in Côte d'Ivoire and the results of the GloLitter gender study, highlighting how this training was a result of recommendations made during the latter. Thereafter, a technical advisor and gender focal point from MIRAH presented on the Ministry's efforts to address marine plastic pollution and emphasized how important this training was to improve the environment and health of fishery actors. Finally, the GloLitter national focal point confirmed the alignment of the GloLitter initiative with the government's strategy to combat plastic pollution.

Following the opening session, the GloLitter national focal point presented on Côte d'Ivoire's national action plan to combat sea-based marine plastic litter, the development of which was coordinated by the Ministry of Maritime Affairs. The national focal point discussed the contribution of both the shipping and fishing industries to this problem, and identified the government's priorities:

- institutional capacity and legal, policy and enforcement reforms;
- education, awareness-raising and knowledge management;
- operational planning;
- private sector engagement; and
- regional and global cooperation.

Finally, the GloLitter national focal point linked the government priorities to the objectives of the training, emphasizing the importance of engaging women in the fight against marine plastic litter, and of organizing and training women leaders in the fishery sector to support this initiative.

Following these opening presentations, the technical training began, led by Recyplast, a recycling company based in Abidjan. The topics covered in the training included:

- different types of plastic and their life cycle;

- threats (macro, micro, nano) posed by plastic pollution;
- alternatives to plastics and the choice of alternatives in the fishing environment;
- solutions to plastic pollution; and
- international recommendations against plastic.

During these technical sessions, participants reflected on how they feel about plastic pollution in the fishery. Some key responses include:

- "Plastic pollution is very dangerous…I feel bad";
- "We need to increase awareness campaigns…";
- "There is hope: since we are the ones responsible, we are also the ones involved in the fight against plastic pollution…".

Participants were also asked to suggest some potential solutions to address plastic pollution in fisheries:

- ask customers to bring aluminium or stainless-steel bowls (for prepared meals);
- inform everyone that plastic wrapping is no longer permitted on the landing site;
- ensure that a committee composed of leaders from the four cooperatives contributes to decisions;
- collect and sort plastic litter, rather than throwing it into nature; and
- gather support from MIRAH and the local municipalities to expand options other than plastic at the landing site.

Finally, the participants were divided into four groups and asked to reflect on the training and their resolutions for the future. Some key points from their reflections are detailed below:

Group 1

- "After this training, we have resolved to stop mixing waste; to sort it and to collect the plastic to sell it to Recyplast;
- we will inform people and neighbours of the economic opportunities offered by plastic waste;
- we don't know that we are our own graveyard."

Group 2

- "Offer glass water instead of plastic;
- place garbage cans and encourage local people to dispose of plastic litter in them;
- I've already started collecting plastic and I'm going to encourage others at home and at work to collect plastic waste."

Group 3

- "We need to raise awareness and develop alternatives to plastic. We are aware that we are jointly responsible for plastic pollution."

Group 4

- "We learned a lot during the course. Plastic waste is dangerous;
- we mustn't throw it away. We can make money by collecting plastic waste. Not only can we make our environment cleaner, but we can also earn money. We need to raise awareness around us."

These reflections show a commitment to action by the participants.

Day 2 – Visit to a functional unit for sorting, collecting, and compacting plastic litter

Participants visited an existing plastic sorting and compacting facility provided by Recyplast. During this visit, participants had the opportunity to ask users questions about the practicalities of collecting and selling plastic litter and managing their revenues.

Following this site visit, workshop participants drafted an action plan to address the topics discussed. the issues they identified, and the recommended next steps, are outlined below:

key challenges

- lack of post-training support;
- inadequate infrastructure;
- sociocultural and behavioural constraints, such as the resistance or reluctance of men and women to use garbage cans; gender stereotypes; the strong involvement of women in the use of plastic in food preparation; and
- communication problems, insufficient awareness-raising;

- lack of training (low participation of women in training, or a low capacity to manage household waste);
- difficulties disposing of plastic litter;
- women's organizations (informal legal status; poor integration of women in the governing bodies of plastic litter management organizations; etc.); and
- financing problems.

Recommendations for next steps:

- ensure post-training follow-up for participants;
- provide material and financial assistance to participants;
- support participants to find effective strategies for collecting and sorting plastic waste;
- organize internal training sessions within cooperatives; and
- continue training community leaders.

After the training participants were presented with certificates as proof of participation.

Training follow-ups and next steps

The next step of the capacity-building activity is for Recyplast to install a compactor unit on the Locodjro landing site and purchase plastic from the cooperatives. To move this forward, the gender consultant organized four meetings, with the following goals:

- meeting 1 – Follow up on training feedback;
- meeting 2 – Initiate discussions on the organization and status of the cooperatives;
- meeting 3 – Confirm the choice of site; and
- meeting 4 – Initiate discussions to draw up a memorandum of understanding between the participating group(s) and Recyplast.

During Meeting 1 on 18 April, training participants discussed what they had learned during the training as well as their plans to begin selling plastic from the landing site. They requested additional training as well as equipment

and materials and suggested other strategies for awareness-raising such as through the rural radio programmes. Finally, participants shared the actions they had already taken to address plastic litter from the fisheries and landing site, including:

- choosing to take a plastic bottle home for disposal instead of throwing it into the water;
- collecting plastic litter from the landing site; and
- informing others on the landing site about the risks of plastic, including the health risks.

Members from all four cooperatives confirmed that they had or would share their learnings with the rest of of their groups, following the "Training of Trainers" model.

A subsequent meeting was held on 19 April with the cooperatives to understand how they had shared the learnings with their groups as well as what additional support was needed. Participants expressed the need for garbage cans on the landing sites and recommended other follow-up activities including awareness-raising in other parts of the community (for example, in church), using rural radio, and involving local authorities.

A third meeting took place on 22 April to initiate discussions between the cooperatives and Recyplast on the process and protocol for working with the company, and how to use the compactor unit. Following this meeting, on 25 April a site visit was organized to visit the location that the landing site coordinator had chosen for the compactor unit.

At the time of reporting, discussions are ongoing between local authorities and Recyplast regarding the processes and approvals for installation.

4.2 Overview of the GloLitter gender pilot activities in Senegal

4.2.1 Gender study

In collaboration with the Department of Seabed Management and Exploitation (DGEFM) of the Ministry of Fisheries and Maritime Economy (MPEM), the FAO Senegal office conducted a study to understand the gendered aspects of marine plastic litter management at Pointe Sarène, a coastal fishing community about 70 km south of Dakar. The study was designed to explore gender-based constraints in MPL management in order to identify key instances where awareness-raising and capacity-building could build women's economic opportunities in the sector

Methodology

A brief literature review was carried out prior to the fieldwork, notably to understand the national strategy and approach to addressing MPL, as well as to review the status of gender mainstreaming in fisheries in Senegal. The gender strategy of the Coastal Fisheries Initiative in West Africa has provided concrete guidance on gender mainstreaming in coastal communities. Additionally, Senegal has developed a National Action Plan to combat abandoned, lost, or otherwise discarded fishing gear (ALDFG), which serves as the basis for action.

Following this review, questionnaires were developed by FAO and checked with the DGEFM.

Data collection took place from 18 to 23 September 2023 in Pointe Sarène, Senegal. Data collection was led by a gender expert from the FAO Senegal office and supported by members of the IPC project in Senegal as well as by a fisheries and gender technician from the DGEFM. A variety of key stakeholder groups were involved in data collection, including traders, fishmongers, fish processors and fishers, in addition to local community members such as teachers and youth representatives with an interest in reducing plastic waste in their communities. In total, the study reached 69 participants, of whom 28 were women and 41 were men. This included 24 fishmongers, fish traders, and fish processors (20 women, 4 men), 22 fishers (all men), and 23 community members (8 women, 15 men). Participants were selected through in collaboration with local fisheries department representatives.

Qualitative data was collected through focus group discussions as well as informal, semi-structured interviews. The breakdown of data collection is as follows:

- three focus group discussions with fishmongers, fish traders, and fish processors;
- twenty individual interviews with fishmongers, fish traders, and fish processors;
- three focus group discussions with fishers;
- twenty-one individual interviews with fishers; and
- three focus groups with community members.

Results

Both women and men use plastic over the course of their activities in the fishery. Processors and traders use plastic bags to transport, process, and sell fish. Plastic water sachets and bottles are used for water consumption (both on land and at sea), and plastic oil cans are also taken out to sea. Fishing gear used by fishers, most of whom are men, is also often made of plastic.

Plastic waste is similarly generated by most actors. While fish processing uses a minimal amount of plastic and does not generate much waste, fish trading creates significant amounts since most fish is sold and transported in plastic bags. Fishers take plastic bags and bottles with water and food out when fishing, and these are often discarded at sea. Stakeholders noted that it is common to dump all forms of waste on the beach, and this is often washed out to sea. Waste from fishing gear is also generally burnt or left on the beach, although it is occasionally deposited into a municipal landfill site, or repurposed into new products such as netting to fence gardens, or put in sacks to be used as armchairs. These repurposing activities are done by men, as they are considered too arduous for women.

Overall, this study found that women in the fishing sector play a large role in waste management on landing sites and in their communities. The study revealed a spatial division of labour in which men are responsible for waste in the ocean, while women are responsible for waste on the beach and landing site. While men and boys do participate in large-scale, organized community clean-up events and are generally responsible for removing large gear and flotsam that washes up onshore, women are more likely to take the initiative to organize clean-up activities, including at a smaller informal scale, and on a more regular basis. Women are also more active in clean-up committees, particularly during the waste collection and deposit stages. Women also own and manage the few materials available for cleaning the beach and the neighbourhoods. Men become more involved during the waste disposal phase, which often involves burning or burying waste, because these tasks are considered too physically demanding for women.

Women and men's participation in waste management at different nodes also exposes them to different risks and hazards. Women who participate in waste collection often lack the proper protective equipment, which can expose them to injury (when collecting sharp fragments of plastic, for example), to infection (as a result of the dirt and bacteria that accumulates on plastic waste), and to disease (such as water- and vector-borne diseases that accumulate in the build-up of stagnant water in discarded plastic). Men, on the other hand, may be more exposed to respiratory and other health risks

associated with breathing in burning plastic waste, since they are normally lead on these tasks. Burning plastic waste is also a hazard for the whole community, given that it creates toxic fumes that can have severe health impacts, with distinct health risks affect the different sexes.[13]

Both women and men participants have noticed changes in the availability of fish, including a reduction in quantity and quality. Although only mentioned twice, some participants have noticed plastic residue on fish during the cleaning process.

Study participants expressed a number of barriers to improving MPL management in the fisheries, including a lack of sufficient funding, a lack of equipment for waste collection and management, a lack of training, and health risks. Suggestions for strategies to address these barriers included: awareness-raising activities and training on topics including hygiene, plastic waste recycling, and responsible waste management; the provision of physical resources for waste management such as rakes and shovels, rubbish bins and gear disposal services on landing sites; and vehicles to transport waste.

4.2.2 Awareness-raising and capacity building

The GloLitter project ran a three-day "Training of Trainers" programme on the management and recycling of plastic waste from fisheries in Pointe Sarène, Senegal from 11 to 13 March 2024. This training programme was organized in response to requests made by stakeholders in the artisanal fisheries who participated in the gender study and who expressed the need for additional information and training on how to transform plastic waste into economic opportunities. The objective of the training was to build capacity among artisanal fisheries stakeholders to undertake plastic recycling to support income generation, with a focus on reaching female stakeholders to increase their economic empowerment.

The training sessions were led by a gender expert from the FAO Senegal office as well as by an expert consultant on plastic waste management. The training reached 25 participants, including 20 women and 5 men. Target participants were identified and invited in collaboration with fishery department representatives. The majority of participants were fish traders and fish processors, with some representatives from other stakeholder groups: teachers, students, and local committee members.

The training focused on building participants' capacity to collect and sell plastic waste to the plastic recycling industry.

Day 1 – Introduction to plastic waste management

The first session was opened by a town councilwoman from Malicounda, the regional municipality where Pointe Sarène is located. Following these opening remarks, a representative from DGEFM presented the National Action Plan for Seabed Cleanup, and FAO presented the results from the GloLitter gender study in Senegal.

The recycling consultant then began the technical training, starting with a general overview of waste management principles and the phases: collecting, transport, storage, reuse, and landfill. Following this introduction, participants were invited to reflect on their goals for the training, which included:

- to learn about waste management in order to bring these learnings to their communities;
- to gain additional tools and materials for the responsible management of waste in their communities; and
- to receive support and ongoing guidance to use waste management techniques as an additional source of revenue.

Participants then engaged in a facilitated discussion centred on the current challenges that prevent effective waste management in their communities. These problems include:

- the lack of appropriate waste storage sites (most Pointe Sarène neighbourhoods take their waste to the garbage dump);
- burning of waste, which is a widespread practice in the area; and
- the limited collections made by the National Integrated Waste Management Company of Senegal (SONAGED) trucks, the frequency of which is highly irregular.

Participants then worked in groups to identify all types of waste present on the landing sites as well as the source of this waste. The results of this brainstorming are included below:

Waste	Source
Plastic basins	Households + fishing
Plastic sachets	Households + fishing
Chairs	Households
Cans	Households + fishing
Fishing nets	Fishing
Cosmetics	Households
Shoes	Households
Water pots	Households
Diapers	Households
Fish waste	Fishing
Ashtrays	Households
Used canoes	Fishing

Day 2 – Waste recovery and reuse

The second day of the training focused on different types of plastic waste recovery and recycling. The consultant explained the different ways to recycle and reuse plastic litter into energy, chemicals, and materials.

Discussions following this presentation identified material recycling as the most suitable model for Pointe Sarène. In the context of this training, this primarily focused on collecting and selling plastic litter to recycling supply chains. Participants also expressed an interest in learning how to transform plastic litter from the landing site into reusable objects such as bags and chairs, though this was beyond the scope of the training.

This second day of training also explored ways to reduce the use of plastic on the landing site and in fisheries. The main suggestions from participants included:

- the use of alternative bags made from tailors' fabric scraps;
- refusing to use single-use plastic bags;
- advocacy for the effective application of the law banning the use of thin plastic bags; and
- stock used fishing nets in a container as a temporary measure.

Participants also noted the necessity of engaging and mobilizing fishers in these actions in order to meaningfully address the issue of MPL from the fishing sector.

Day 3 – Waste recovery value chains

The third and final day of training was dedicated to the collection and reuse of plastic waste, and the economic opportunities this can create. Participants discussed how to put in place a supply chain for plastic waste collection. Specifically, they were given training on the two waste recovery models that predominate in Senegal: the bulk sale of plastic waste, and primary processing of plastic waste.

The first model – bulk sale – requires minimal upfront investment. Waste needs to be sorted by density, then weighed and stored while awaiting sale. The average price in Senegal for this waste is 100 CFA (USD 0.16) per kilogram. The second model, which involves the pre-treatment of plastic before sale, is more complicated but is significantly more profitable, at 700 CFA (USD 1.14) per kilogram. In this model, participants need equipment to shred the MPL, as well as extruders if seeking to granulate the plastic. Given this high investment requirement, participants elected to proceed with the first model initially, with the goal of potentially expanding to plastic processing once their activities are more established.
Interested in pursuing these opportunities, the participants identified several steps that need to be taken in order to facilitate these value chains, including:

- setting up a waste collection and transportation system at Pointe Sarène;
- identifying and securing a site for waste sorting and storage;
- setting up an organized waste management and recovery system; and
- training stakeholders in administrative and financial management.

While there is interest in MPL management as an opportunity to improve their livelihoods, their health, and the environment, participants also identified a number of constraints, as follows:

- the organization is still in its infancy and would need a delegated structure capable of organizing and monitoring waste management on a daily basis;

- there is a lack of infrastructure and equipment for waste management (sorting and transfer centre, collation point, storage boxes, vehicles, bins, etc.); and
- behavioural change is still needed for people to adopt new attitudes and practices with regard to waste management.

Similarly, participants highlighted a number of needs that would need to be put in place to facilitate the success of MPL management in their fisheries, including:

- a stable market – potential buyers need to be identified and engaged;
- a storage site for sorted litter, to prevent degradation;
- means of collecting and transporting litter;
- garbage bins;
- storage facilities for used and discarded fishing gear to prevent it being discarded at sea;
- cleaning equipment for the landing site (rakes, brooms, etc.);
- an organized waste management system; and
- synergy between local waste management initiatives.

Finally, at the end of the training, participants provided the following recommendations for future activities and support:

- expand the waste management approach to all households, not limited to fishing;
- support the establishment and sustainability of a market so as to ensure that women are remunerated for their work;
- support the establishment of a waste management organization led by women;
- provide training to more groups (women's groups, local authorities, etc.);
- support coaching to set up waste management programmes; and
- set up a specific awareness-raising programme for fishers.

4.3 Overview of the GloLitter gender pilot activities in Togo

4.3.1 Gender study

GloLitter conducted a gender study in Togo to understand the gender dimensions of MPL and ALDFG in selected fishing communities near Lome. The goal of the study was to understand the roles and responsibilities of women and men in the creation, management, and disposal of MPL from the fishing sector, as well as to identify opportunities to build women's economic empowerment by supporting remunerative activities in MPL management.

Methodology

Prior to beginning the study, a meeting was organized between the national gender consultant, representatives from the FAO Togo office, and members of NFISG at FAO to confirm the scope and objectives of the study. Following this meeting, the consultant submitted a technical proposal outlining their proposed methodology. Once confirmed, the consultant proceeded to develop the data collection tools to be used in the study.

The tools were developed for each target group: fish processors and traders, fishers, local officials, and technical agencies. The questionnaires were drafted by the national consultant and endorsed by the FAO team. Questionnaires were developed for individual surveys and focus groups with fishers, fish traders and fish processors. In addition, individual interview questionnaires were developed for the other stakeholders involved, i.e. local officials and technical experts.

Once finalized, the surveys for fishers, fish traders, and fish processors were digitized using Kobotoolbox to facilitate data collection in the field. The individual interview questionnaires were not digitized.

Data collection occurred at six landing sites in Lomé between 9 and 15 June 2023. The sites were selected for their proximity to the city and previous engagement with FAO: Ablogamé, Adissem, Aného, Gbetsogbe, Kodjoviakopé, and Kpémé.

The study collected both quantitative and qualitative data.

Quantitative data was collected through individual surveys with fish traders, fish processors, and fishers. A total of 30 fish processors and fish traders (all women), and 30 fishers (all men), participated in the individual surveys.

Qualitative data was collected through focus groups with fish traders, processors and fishers, as well as through the individual, semi-structured interviews with local officials and technical experts. A total of six focus groups were conducted: 2 focus groups of women traders and processors; 3 mixed focus groups and 1 focus group of male fishers. Overall, these reached a total of 159 participants, 68 women and 91 men. The individual interviews were conducted with 14 other key stakeholders (all men), in order to reinforce or supplement the information received from the direct stakeholders.

Participants were selected in collaboration with local officials and through referrals from fishing communities.

Results

The study found that both women and men produce plastic waste over the course of their activities in the fishery, though the types of plastic waste they create are different. Men were found to be solely responsible for waste created by used fishing gear, while women use plastic bags in their fish trading activities. Fishers also mentioned taking plastic bags and plastic bottles out to sea to transport food and water, and often disposed of these at sea.

Similarly, the options for managing the waste created during their fishing activities differed between women and men. The study found that men had more opportunities to sell their used fishing gear for reuse or recycling. Fishing gear made of iron is sold to be reused for spare parts, while fishing nets are repurposed into sponges. Both women and men noted that other, non-fishing gear waste was harder to sell and less lucrative. Most of this waste is therefore thrown away, either on land, on the beach, or at sea; only a minimal amount is sent to landfill or for recycling.

Women bear a greater responsibility for cleaning the landing site and for collecting, sorting, and disposing of waste than men. This division of labour is tied to gender norms, which dictate that women are responsible for cleaning and caring for their homes and communities. However, despite this division of tasks, men are generally in charge of selling the used fishing gear, although some women reported selling nets to traders to be made into sponges.

Some women at the landing sites reported taking part in organized clean-up activities and attempting to collect plastic litter to sell it to recycling companies. However, they did not pursue this activity as it was not sufficiently profitable. Other barriers to addressing plastic litter from the fishing sector included the time constraints, a lack of equipment, a lack of waste disposal

infrastructure, and health concerns. Study respondents expressed an interest in attending awareness-raising and training sessions to address MPL.

4.3.2 Awareness-raising and capacity building

Following the gender study, the GloLitter project conducted awareness-raising sessions on MPL for the participating fishing communities and ran a capacity-building workshop for a select cooperative of women fish traders and processors to support economic opportunities in MPL management. The objectives of the capacity-building and awareness-raising activities were to:

- Share the results of the gender study on marine plastic litter with fishing communities;
- raise awareness among members of selected fishing communities of the environmental, social and economic impacts of marine plastic litter;
- raise awareness among members of selected fishing communities of the need to reduce the use of plastics as much as possible;
- train a women's cooperative on: the gender dimensions of the creation, management and disposal of plastic waste; the GloLitter project and marine plastic litter; as well as technical plastic recycling skills; and
- identify opportunities to provide women with additional support in the reduction and management of marine plastic litter, including gender-transformative approaches.

Awareness-raising workshops

The GloLitter project in Togo ran six awareness-raising sessions on MPL, reaching the six communities that participated in the study. These sessions took place from 26 to 28 October 2023. A total of 157 people from the fishing sector participated in the awareness-raising sessions, including 67 women and 90 men.

During the awareness-raising sessions, the national consultant discussed the following topics:

- the definition and different types of plastic litter;
- the origin of this plastic litter, i.e. human activities (on land and at sea);
- the impact of plastic litter; and
- ways of reducing or managing litter.

Most participants expressed interest in the topic and were aware of the risks of MPL for the environment and their livelihoods. However, participants stressed that they need additional support to manage the plastic waste created through the fishing industry properly. For instance, they needed equipment and infrastructure as well as training on plastic waste recycling.

During the sessions, the consultant and participants also discussed the need for collaboration between countries, as the ocean is a common resource.

Participants committed to raising awareness among their peers of the need to reduce or eliminate the use of plastic in their fishery activities wherever possible; to reuse plastic or repair equipment; to clean up beaches; to collect and dispose of waste and fishing gear properly; and to reuse or recycle plastic waste wherever possible.

After the awareness-raising sessions, the project also distributed equipment to fishing communities to support the collection and disposal of plastic litter. This included stakes, brooms, rakes, wheelbarrows, garbage bins, and garbage bags.

Capacity-building workshop

In addition to the awareness-raising workshops, the GloLitter project also ran capacity-building activities for a women's fishery cooperative, ALOWODO, to create income-generating opportunities through the management of plastic litter in the fisheries sector. The capacity-building involved training the cooperative on transforming the plastic litter commonly created in the fishery into new products that could be sold for income.

The training took place from 23 to 25 October 2023 at an ECO VILLAGE in Davié, a town approximately 30 km from Lomé. The training was run by GloLitter in partnership with UTRADER, a waste recycling company. The training brought together a total of 25 participants (18 women and 7 men): 20 members of the ALOWODO group, a representative of FENUCOOPETO, a representative of the Director of the Fishing Port, a representative from the Fisheries And Aquaculture Department of the Ministry of the Maritime Economy, Fisheries, and Coastal Protection, an FAO animal and fisheries sector specialist and the FAO-TOGO national gender consultant.

The first day of training was devoted to discussions on the GloLitter project, the results of the survey on MPL in fishing communities, and gender equality. The last two days were devoted to practical training on transforming plastic litter.

The training opened with speeches from a FAO Togo representative, a representative of the Director of the Fishing Port, and a representative of the Director of Fisheries and Aquaculture. In their speeches, these representatives emphasized the scope of the litter and MPL problem, as well as the importance of addressing this issue in order to protect the ocean and the livelihoods that depend upon it.

Following the opening ceremony, the national gender consultant made a presentation on MPL, gender, and waste management. During the MPL section, participants were divided into groups and asked to brainstorm responses to three themed questions:

- education – How can you share this information with your neighbours?;
- prevention – How can you reduce the use of plastic in your activities?; and
- management – What systems could be implemented at the landing site to reduce the quantities of plastic entering the ocean?

In response to question 1, participants noted that they could share their knowledge with other stakeholders in the fishery, particularly those who regularly use or sell plastic products. To reduce the use of plastic in their activities, participants stated that they could bring reusable bags to the market to transport fish and encourage customers to do the same. With regards to the management of plastic at the landing site, participants emphasized that this is a structural issue which requires additional support and attention. Some potential solutions could include putting rubbish bins on landing sites, providing fishers with garbage bags to take with them to sea to bring back plastic waste, organizing waste collection activities in the community, and training young people on plastic waste management.

During the presentation on gender equality, participants engaged in a discussion about gender norms in their communities. They noted that women and girls are responsible for most household chores, including waste disposal. As identified during the study, participants also stated that women are more involved with the management of plastic waste specifically, while men participate in reselling iron waste (which is more lucrative).

The waste transformation training followed the presentations. By way of introduction, the Director of the ECO VILLAGE gave a presentation on leadership skills and entrepreneurship. The activities subsequently turned to practical skills relating to the transformation of litter. Participants were trained on how to transform plastic water sachets – a common source of plastic litter in the fishery used by all stakeholders – into reusable bags,

using sewing machines. They were also taught how to make plastic stools using plastic water bottles.

The transformation of plastic litter into these different products not only helps to reduce plastic waste in the oceans by reducing the amount of waste generated in the fishery, but also offers an income-generating activity for women. The women can easily make these bags and sell them to their customers while selling fish, as a replacement for single-use plastic bags. Most customers come to buy fish in plastic bags, which are thrown away once they have been used. Reusable bags, on the other hand, can be used several times, also offer a means of raising public awareness of plastic waste recycling. This training also gives women a second income-generating activity, which they can develop during the low season.

Finally, the training ended with closing remarks from the president of ALOWODO, a national gender consultant, a representative from UTRADER, and a speech by the FAO Togo representative.

Following the training, the GloLitter project distributed sewing machines to ALOWODO to ensure that they can continue these activities.

5. Limitations

The three pilot studies were largely successful and uncovered important information regarding the role of women and men in plastic litter management in the small-scale fisheries sector in the three countries. However, the project also revealed some limitations, notably because of its small, pilot nature.
First, the three countries used slightly different methodologies to conduct the studies, which limits the ability to compare their respective results.
Second, the limited budget meant that the studies were constrained in terms of time and scope, which prevented follow-ups with participants.
Similarly, and again because of time and budget constraints, the project was not able to pilot the questionnaires with a small sample of stakeholders prior to finalizing them. As a result, key follow-up questions that have emerged subsequently were not identified prior to data collection, leaving some data gaps in the gender analysis.

Finally, given the limited scope of the pilot studies there was no formal monitoring and evaluation strategy. While many participants provided anecdotal evidence of the impact of the interventions, the lack of a consistent indicator framework to measure them hindered a holistic assessment of the project's impacts.

6. Key findings

Findings from the studies in all three pilot countries highlight the importance of applying a gender lens to MPL management and ALDFG from the fisheries sector. While offshore fishing is commonly considered a male domain, the studies demonstrated the important roles that women play in fisheries, particularly in the post-harvest sector, as well as their contributions to the creation and management of MPL.

Participants in all three countries were generally aware of the risks and impact of MPL and had noticed an increase in plastic litter in fisheries and at landing sites. As a result, most participants were interested in learning more about MPL and in participating in capacity-building activities to create remunerative activities from plastic litter management, while also reducing the amount of MPL.

Reflecting the common division of labour in fisheries, the studies also found that most sea-based MPL from fisheries is created by men, since they are largely responsible for going out on vessels to fish. This includes ALDFG, which can be left at sea for a variety of reasons including dangerous weather conditions, environmental snags preventing recovery, and damaged gear that has been abandoned on purpose. The studies in all three countries also revealed that there are many other types of MPL created during fishing in addition to ALDFG. These include plastic sachets and bags used to transport food and water on fishing trips, and plastic cannisters used to transport oil, all of which are commonly thrown into the ocean when no longer needed.

In addition to the sea-based sources of MPL, the study also identified land-based sources of MPL from fisheries caused by both women and men during their post-harvest activities. These primarily include plastic bottles, plastic bags, and plastic sachets disposed of on the beach and washed out to sea. Plastic bags in particular are used by fish processors and traders, many of whom are women, to transport and sell their fish products.

Beyond the gender differences in the types of plastic used, the studies also revealed key gender differences in terms of the management of plastic litter. Participants in all three studies and across stakeholder groups noted that landing sites often lack the proper infrastructure to dispose of plastic litter responsibly, such as garbage bins or recycling facilities. The people involved in the fishery therefore resort to other disposal methods, such as burning or burying litter, throwing it on the ground or into the ocean. One overall finding common to all the studies was that the gendered spatial division in fisheries

was mirrored in the division of responsibility for waste management. In other words, men were generally considered to be responsible for disposing of waste at sea, while women were seen as responsible for cleaning and managing waste at the landing sites. These roles also reflect gender norms, in which women are considered to be more responsible for protecting and preserving their communities, as an extension of their domestic work.

Similarly, men are generally responsible for disposing of fishing gear, while women often lead cleaning up efforts for other types of plastic. In some cases men are also involved in the final disposal of litter, particularly if it involves burning or burying the waste, tasks which are considered too physically demanding for women. Both women and men noted there were minimal opportunities to collect and sell plastic litter as a secondary source of revenue. While some women had attempted to sell plastic to generate extra income, they had not continued the activity due to low profits. Some men reported selling their used fishing gear for reuse, and this activity was generally done by the men themselves or by young boys, though some participants in Senegal also suggested that some fishers' wives took part in selling gear.

Finally, an interesting finding that emerged in all three pilot countries was the health concerns associated with cleaning, sorting, and otherwise managing plastic litter on the landing sites. All respondents, especially women, expressed concern about the health risks associated with these activities. Health problems can include the risk of cuts and infections, as well as exposure to the diseases and viruses associated with stagnant water. These risks are particularly pertinent for women since they tend to be in charge of cleaning activities. Other health consequences such as respiratory issues resulting from breathing in the fumes of burning plastic were also raised. Although impacts of this kind may be felt by the community as a whole, men may be more at risk since they are responsible for burning the waste.

7. Discussion and lessons learned

Participants in all three pilot countries expressed a keen interest in participating in awareness-raising and capacity-building activities to learn about plastic litter management and the associated income-generating opportunities this may provide. However, numerous barriers were identified which have prevented participants, particularly women, from actively engaging in MPL management.

First and perhaps most importantly, there are limited opportunities for remuneration in the collection and management of plastic litter, including MPL, at landing sites. Participants in all three countries noted that remuneration from plastic waste management was very low, so they had little motivation to participate in these activities in the current context. In the Senegal study remunerative opportunities were virtually non-existent, as there are no value chains that engage in the purchase, reuse, or recycling of plastic litter in the Pointe Sarène area. The lack of opportunities generate additional income is a significant constraint for people in the fishing sector, who have limited free time and may not have the capacity to dedicate time to additional non-remunerative activities. In addition to training fishery stakeholders in techniques to collect, sort, and even transform plastic litter, infrastructure and value chains to purchase these products must be built so as to ensure the long-term sustainability of these livelihoods.

Similarly, participants in all three pilot countries highlighted a significant lack of waste management infrastructure and equipment, which prevents fishery stakeholders from disposing responsibly of the plastic used in their activities. Without official infrastructure and waste management systems, women and men at the landing sites have taken on different roles to collect plastic litter and clean their environments. The burden of managing land-based plastic litter often falls on women, while men are largely responsible for sea-based litter as well as for burning or burying the waste. This division of roles also exposes women and men to different hazards. As noted, women may be more at risk of contracting water-borne diseases as well as injury and infection from collecting broken scraps. Men, on the other hand, may be exposed to dangerous fumes when burning plastic waste. These divisions of labour and their associated risks demonstrate the importance of applying a gender lens to waste management systems in order to address the roles and needs of different groups effectively.

Given the prevalence of plastic water sachets and bottles as a source of both land- and sea-based MPL from artisanal fisheries in the three pilot countries, it is worth exploring ways to minimize the use of these plastics and facilitate their proper disposal in waste or recycling facilities. Any interventions should be designed and implemented with a gender lens in order to recognize women and men's roles and responsibilities in the creation of this plastic waste. As mentioned above, men are more directly responsible for sea-based sources of plastic litter by virtue of their role as fishers, while both women and men contribute to the land-based use and disposal of plastic sachets. In light of these gender differences, participants in Senegal and Togo in particular emphasized the need to engage with fishers directly to address sea-based sources of MPL, including ALDFG but also plastic sachets, plastic bottles,

plastic cannisters, and other types. More data is needed to understand the sources of these plastics to understand the gendered, livelihood implications of reducing the use of these goods. For example, women play a largely unrecognized role in the pre-harvest sector in some fisheries, preparing and provisioning fishers for fishing trips,[14] which means they may be a useful entry point to address these sources of MPL.

Finally, it is important to underline the awareness and passion that the study and capacity-building participants demonstrated for this topic. Participants in all three countries were keenly aware of the propagation of plastic litter in the marine environment and at landing sites, and of the associated impacts on the environment as well as on their livelihoods. Both women and men in the fishery value chain stand to be impacted by the effects of marine plastic litter and are willing to engage in activities to mitigate this risk. The women trained in Togo, for example, expressed excitement and determination to share their learnings with other members of their community; while the women who took part in training in Côte d'Ivoire acknowledged a responsibility to share these learnings with others at the landing site. Building the capacity of women as well as men to act as ambassadors and leaders for the responsible disposal of plastic in fisheries could help ensure that women's needs are acknowledged and addressed in plastic litter management plans.

8. Recommendations for Phase II

Based on the findings from the gender studies, as well as the successful outcomes from the capacity-building activities, the GloLitter gender pilot project has shown the importance of mainstreaming gender in initiatives that combat marine plastic litter. However, despite the importance of a gender approach, there is limited guidance and evidence of how to meaningfully achieve this in marine plastic litter management, particularly in relation to MPL from fisheries. The pilot project has therefore uncovered key next steps and recommendations for future activities, both to support the communities already involved as well as to expand the uptake of gender mainstreaming within the MPL management sector. These recommendations are included below.

It is important to note that the resource allocation needed to implement these recommendations varies. For example, developing additional guidance would require lower resourcing than implementing a gender-transformative project; these recommendations should therefore be adapted as appropriate, based on the resources available.

Recommendations for next steps on gender in the GloLitter Partnerships Project

Areas for further research

The studies conducted under the GloLitter project are among the first initiatives to examine the gendered dimensions of marine plastic litter from fisheries explicitly. While these studies contribute important insights into women and men's roles in the production and management of marine plastic litter in fisheries in Côte d'Ivoire, Senegal and Togo, further research is needed to broaden the scope of the evidence as well as to uncover further details about gender and MPL in these fisheries.

Based on the findings from the pilot activities, NFISG has the following recommendations for areas of future study:

- conduct gender studies in MPL management in fisheries in other regions globally, particularly Asia, in order to facilitate comparison as well as context-specific strategies to address this issue;
- conduct studies that examine the role of women fishing gear owners in MPL management, particularly ALDFG, so as to understand the differences in behaviour – and constraints faced – between women and men gear owners with respect to the sustainable use and disposal of fishing gear; and
- conduct studies to understand the role of women and men in the pre-harvest sector as it relates to the creation of sea-based marine plastic litter (for example, the provisioning of fishing trips with plastic water and food sachets) in order to develop targeted gender-responsive interventions.

Additional guidance to develop

No doubt as a result of a dearth of knowledge about the gendered dimensions of MPL management in fisheries, as well as the general perception that fishing is a male-dominated activity, there is a lack of practical guidance and frameworks for mainstreaming gender in strategies and action plans to address MPL and ALDFG. To address this gap, there are numerous documents that it would be helpful for GloLitter or similar projects to produce in subsequent phases, including:

- a factsheet on the gendered dimensions of MPL from fisheries, including ALDFG;

- a guide for integrating gender indicators in research studies and project results frameworks that address MPL and ALDFG; and
- a guide to mainstreaming gender in the national strategies and action plans that address MPL and ALDFG.

Projects to address gender-based constraints in marine plastic litter management

The pilot gender studies and capacity-building activities conducted under Phase I of the GloLitter Partnerships Project identified numerous gender-based constraints. Subsequent phases of the project could therefore seek to reduce these constraints directly by way of targeted gender-transformative programmes. While there are numerous starting points for such projects, some recommended next steps include:

- implement a sustained, long-term gender-transformative programme to build a value chain for plastic recovered from fisheries. Such a programme could include the provision of equipment, the creation of market linkages, and a connection with relevant authorities. A gender-transformative approach would be needed to ensure women's control over their income and time in this new value chain;
- develop a programme to address gender norms in community care responsibilities and promote positive masculinities, with the goal of raising awareness around the roles of fishers (predominantly men) in protecting and caring for the environment by reducing MPL and ALDFG;
- design a programme to build remunerative opportunities for reducing MPL and ALDFG by facilitating collaboration between fishers (predominantly men) and post-harvest actors (many of whom are women) to collect MPL at sea and then sell or transform it into new products. While the design of this programme could vary, adopting a gender-transformative approach would be essential to ensuring that the collaboration was rooted in equity and mutual benefit, and that women and other vulnerable groups were not exploited; and
- facilitate engagement between fishery groups (including women and men) and government actors at multiple levels to identify and address infrastructure needs for effective MPL and ALDFG management collaboratively. These engagements should be designed with a gender lens to ensure the needs and concerns of all groups are addressed;

9. Notes

[1] **Kleiber, D., Harris, L.M. & Vincent, A.C.J**. 2014. Gender and small-scale fisheries: A case for counting women and beyond. *Fish and Fisheries*, 16(4): 547-562. doi: 10.1111/faf.12075.

[2] **Lynn, H., Rech, S., Samwel-Martingh, M.** 2017. *Plastics, Gender and the Environment Findings of a literature study on the lifecycle of plastics and its impacts on women and men, from production to litter.* WECF – Women Engage for a Common Future. https://www.wecf.org/wp-content/uploads/2018/11/PlasticsgenderandtheenvironmentHighRes-min.pdf.

[3] **Gregory, M.R.** 2009. Environmental implications of plastic debris in marine settings--entanglement, ingestion, smothering, hangers-on, hitch-hiking and alien invasions. *Philosophical transactions of the Royal Society of London, Series B, Biological sciences*, 364(1526): 2013-2025. doi: 10.1098/rstb.2008.0265.

[4] **Golo, H.K.** 2012. The Interface of Poverty, Livelihoods, Coping/Survival Strategies and Child Trafficking in Rural Coastal Fishing Communities of Ghana. University of Vienna. PhD dissertation.

[5] **Brashares, J.S., Abrahms, B., Fiorella, K.J., *et al.*** 2014. Wildlife decline and social conflict. *Science, Science*, 345(6195): 376–378. doi:10.1126/science.1256734.

[6] **Merem, E.C. *et al.*** 2019. Analyzing the Tragedy of Illegal Fishing on the West African Coastal Region. *International Journal of Food Science and Nutrition Engineering*, 9(1): 1–15. doi: 10.5923/j.food.20190901.01.

[7] **Sparks, Jessica L.** 2018. "Social Conflict on the Seas: Links Between Overfishing-Induced Marine Fish Stock Declines and Forced Labor Slavery". Electronic Theses and Dissertations. 1473. https://digitalcommons.du.edu/etd/1473

[8] **Oswald, G.** 2024. Baiting the hook: Fish scarcity, gendered division of labour, and the fish-for-sex trade. *Social Science & Medicine*, 345. doi: 10.1016/j.socscimed.2024.116594.

[9] **Fiorella, K.J. *et al.*** 2015. Transactional Fish-for-Sex Relationships Amid Declining Fish Access in Kenya. *World Development*, 74: 323–332. doi: 10.1016/j.worlddev.2015.05.015.

[10] **Oza, J., Rabari, V., Yadav, V.K., Sahoo, D.K., Patel, A. & Trivedi, J.** *2024.* A Systematic Review on Microplastic Contamination in Fishes of Asia: Polymeric Risk Assessment and Future Prospectives. *Environmental Toxicology and Chemistry,* 43(4): 671–685. https://doi.org/10.1002/etc.5821

[11] **Monfort, M.C.** 2015. *The role of women in the seafood industry.* GLOBEFISH Research Programme, 119. Rome, FAO. https://openknowledge.fao.org/handle/20.500.14283/bc014e.

[12] **FAO.** 2019. Glolitter Partnerships: FAO component of phase I project (UNJP/GLO/051/IMO).

[13] **Pathak, G., Nichter, M., Hardon, A. & Moyer, E.** 2024. The Open Burning of Plastic Wastes is an Urgent Global Health Issue. *Ann Glob Health*, 90(1), 3, doi: 10.5334/aogh.4232.

[14] **FAO, Duke University & WorldFish.** 2023. Illuminating Hidden Harvests – The contributions of small-scale fisheries to sustainable development. Rome. https://doi.org/10.4060/cc4576en.

GloLitter partnerships

This document is part of the GloLitter Partnerships Phase I Knowledge Products Series. The GloLitter Partnerships project is implemented by the International Maritime Organization (IMO) and the Food and Agriculture Organization of the United Nations (FAO). GloLitter assists developing countries in reducing marine plastic litter from the maritime transport and fisheries sectors.

Fisheries and Aquaculture Division - Natural Resources and Sustainable Production
https://www.fao.org/fishery-divisional-structure/en/
@FAOFish

www.imo.org
www.fao.org

ISBN 978-92-5-139933-0
9 789251 399330
CD5958EN/1/08.25