

# WHY GENDER MATTERS IN FISH LOSS AND WASTE REDUCTION

By Julia Nana Heyl

**Globally, about 27 percent of landed fish is lost or wasted between landing and consumption. While women make up around 50 percent of all actors involved in the value chain, traditional loss assessments have tended to exclude the socio-cultural structures and gender relations that influence the distribution of power and rights, i.e., the so-called gender-based constraints (GBCs) which lead to an underperformance of the chain, including fish losses. Gender-responsive loss assessment and solution development look at analysing these gender inequalities in order to empower women to contribute to, and benefit from, value chain activities more equally and consequently help reduce losses.**



*Traditional loss assessments have tended to focus on direct causes for losses like poor processing facilities, without looking at the socio-cultural structures and gender relations under which value chain actors operate, and that influence the distribution of power and rights as well as the associated decision-making processes.*

Fisheries play a crucial role in global nutrition, providing over three billion people with at least around 20% of their animal protein (FAO, 2022a)<sup>1</sup>. Yet, an estimated 30–40% of fish caught worldwide is lost or wasted each year, exacerbating food insecurity, economic losses, and environmental harm (FAO, 2020)<sup>2</sup>. Addressing this issue is critical for both sustainability and ensuring that fisheries continue to meet the nutritional needs of growing populations.

A key factor in addressing fish loss and waste is recognising the often-overlooked role of women in fisheries. Women are integral to the fisheries and aquaculture value chain, especially in post-harvest activities such as processing, storage, and marketing. In 2020, women made up 21% of the 58.5 million people employed in the primary fisheries and aquaculture sector. When considering the entire aquatic value chain, including pre- and post-harvest stages, women account for nearly half of the workforce. When considering the available data for the processing sector only, the numbers are even more impressive: women accounted for just over 50 percent of full-time employment and 71 percent of part-time engagement (FAO, 2022b)<sup>3</sup>.

However, women are disproportionately represented in the informal, low-paid, and unstable segments of the workforce (FAO, 2022b). Despite

their critical role in generating income and ensuring food security for households and communities, their work is often invisible, undervalued, and they face significant barriers to full participation and equal benefit from the fisheries and aquaculture sector.

Women often face gender-based constraints that prevent them from fully exploring and benefiting from their roles in the sector (FAO, 2022b). This marginalisation can hinder efforts to improve the efficiency and sustainability of aquatic and fish value chains; and resulting inefficiencies will increase the losses suffered in the sector (FAO, 2018). By integrating a gender-sensitive approach into fish loss and waste assessment and reduction strategies, we can address existing inefficiencies, empower women, and build more resilient food systems. This approach will not only help reduce global fish loss but also enhance the livelihoods of millions of people who rely on fisheries for their income and sustenance.

## The link between gender equality and losses along value chains

The causes of food loss and waste are multifaceted and interconnected, stemming from a combination of factors at various stages of the food supply chain. In recent years, a paradigm shift has been notable, looking beyond the symptoms and aiming to identify and tackle the underlying reasons for food and fish losses (FAO, 2019)<sup>4</sup>.

<sup>1</sup>FAO. 2022a. *The State of Food Security and Nutrition in the World 2022*. Food and Agriculture Organization of the United Nations.

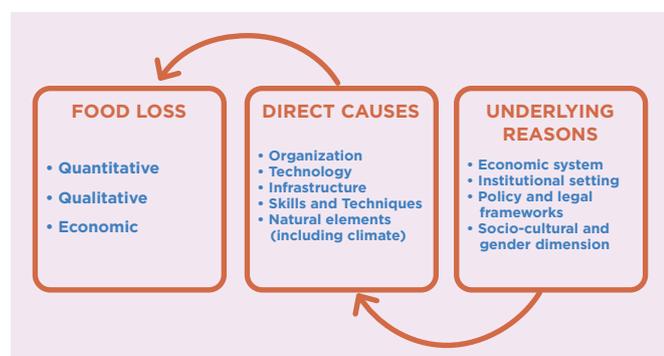
<sup>2</sup>FAO. 2020. *The State of World Fisheries and Aquaculture 2020: Sustainability in Action*. Food and Agriculture Organization of the United Nations.

<sup>3</sup>FAO. 2022b. *The State of World Fisheries and Aquaculture 2022. Towards Blue Transformation*. Rome, FAO.

<sup>4</sup>FAO. 2019. *The State of Food and Agriculture 2019: Moving Forward on Food Loss and Waste*. Rome, FAO.

This approach acknowledges the multidimensionality of causes of losses and the importance of looking at the underlying sociocultural, institutional, and economic structures under which value chain actors operate. These multifaceted structures influence the levels of technology, resources, knowledge, and infrastructure that the value chain actors have access to, and control over. Gender relations are a key sociocultural factor that shapes the functioning of value chains. These relations influence the division of labour, roles, and responsibilities along the value chain, determining how men and women participate in various activities and in decision-making processes (FAO, 2018)<sup>5</sup>.

**Figure 1. Underlying reasons and direct causes of losses**



Source: Adapted from FAO, 2018a. *Gender and food loss in sustainable food value chains - A guiding note*. Rome.

Women in aquatic value chains face numerous limitations and constraints due to their gender, and cannot realise their full potential. Their tasks are often tedious and time-consuming, hardly profitable, and done manually with minimal technological support. They often lack access to finance to upscale their operations or invest in better tools and equipment. They might not be aware of techniques and practices that could increase their productivity. They work while simultaneously taking care of children. They are often less mobile due to social norms, limited resources, or safety concerns. They are not equally represented in local decision-making bodies, and their needs are often not made a priority. Their level of organisation tends to be low, and they cannot profit from the advantages of cooperatives or women's groups (Randrianantoandro, Safa Barraza & Ward, 2022)<sup>6</sup>.

These so-called gender-based constraints that women face limit their access to knowledge and information, participation and decision-making, finance, inputs and resources. They suffer from high work burden and time-poverty. These gender-specific limitations keep them from unveiling their full potential, which negatively impacts the productivity and efficiency of the value chain. As a consequence, this results in underperformance of the chain and eventually, increased losses. This link between levels of losses and gender equality is called the Food Loss-Gender Nexus (FAO, 2018).

According to FAO's guiding note on the food loss and gender nexus (FAO, 2018), gender-based constraints can affect both the supply and the demand side. For example, they may limit women's ability to access

support services (demand side) and undermine the ability of service providers to reach women (supply side). The causes of gender-based constraints are often multiple and multidimensional. Addressing these causes usually entails looking at several inequalities at the same time. According to FAO's framework on gender-sensitive value chains (FAO, 2016)<sup>7</sup>, the inequalities that lead to gender-based constraints can be grouped into two dimensions:

### **Access to productive resources**

Productive resources are necessary to conduct activities along the entire food value chain and can be grouped into three categories:

- **Assets:** In the context of fisheries, assets include the ecological assets (i.e., marine and aquaculture resources in the contexts considered), the equipment and technologies used along the fish value chain (from fishing to processing and marketing activities), and the capital used in activities related to fisheries.
- **Agricultural services:** In the context of fisheries, these services include those provided in landing sites, cold storage infrastructure, markets (including market information, infrastructure, and organisations), transport equipment and infrastructure, electricity, processing units, and extension services including training and insurance when available.
- **Financial services:** In fisheries, these refer to financial services involved in fish value chains.

The concept of access to productive resources is key to understanding rural women's and men's constraints in reducing food losses. For example, limited access to financial services can prevent women from upgrading techniques and practices, as well as storage and cooling facilities that both improve processes and reduce food losses.

### **Power and agency**

These concepts refer respectively to the control over resources and profits and the ability to make autonomous decisions on their use. Gender-based constraints in this area affect women's and men's capabilities, self-confidence, and decision-making power.

### **Box 1. Gender-based constraints**

Gender-based constraints can be defined as "restrictions on men's or women's access to resources or opportunities that are based on their gender roles or responsibilities" (USAID, 2009)<sup>8</sup>. Identifying and analysing gender-based constraints enables the value chain practitioner to understand and address the root causes underlying value chain inefficiencies related to gender inequalities and discrimination, thus enhancing the sustainability of interventions (FAO, 2016). The inequalities that lead to gender-based constraints can be grouped into two dimensions: (i) *access to productive resources* (assets, agricultural services and financial services); and (ii) *power and agency* which refers respectively to the control over resources and profits, and the ability to make autonomous decisions on their use. Gender-based constraints in this area affect women's and men's capabilities, self-confidence and decision-making power (FAO, 2018).

<sup>5</sup> FAO, 2018. *Gender and food loss in sustainable food value chains - A guiding note*. Rome.

<sup>6</sup> Randrianantoandro, A., Safa Barraza, A., Ward, A. (2022): *Gender and food loss in sustainable fish value chains in Africa*, Rome.

<sup>7</sup> FAO, 2016. *Developing gender-sensitive value chains. A guiding framework*. Rome.

<sup>8</sup> USAID (2009). *Promoting Gender Equitable Opportunities in Agricultural Value Chains*. Washington, DC.

**Table 1. Examples of gender-based constraints in fish value chains**

Burden of household chores and limited mobility	Burden of household chores (related to equality of division of labour between men and women and cultural norms) and long distances from the fish landing sites can delay women from arriving early enough to purchase the first sale or auction fish, which are the best quality fish from suppliers and fishers
Quality loss of raw material	Women are likely to accumulate quality loss as they previously bought deteriorated fish, especially if they and their suppliers do not use ice
Shift in species distribution and additional costs	Shifts in species distribution due to climate change and artificial activities may require changes in technologies, which imply additional costs that women may not be able to cover
Combining household chores with smoking	Combining household chores with fish smoking exposes the fish to partial or complete burning especially where there are no helpers and/or a childcare facility
Household chores, childcare, longer distances to markets	Household chores and childcare influence women's ability to access outlying markets that may be more remunerative. This is acute during bumper harvests and requires the targeting of alternative markets to the oversupplied local channels
Sociocultural barriers	Where sociocultural barriers restrict their movement, especially to outlying markets beyond their site of operation, women's access to the best and most suitable marketing outlets is made impossible

Source: FAO, 2015b. Strengthening the performance of post-harvest systems and regional trade in small-scale fisheries. Case study of post-harvest loss reduction in the Volta Basin Riparian Countries. FAO Fisheries and Aquaculture Circular No. 1105.

## Gender in loss assessments and solution development

A gender-responsive analysis of food losses (for instance by applying the Gender-responsive Fish Loss Assessment Methodology GRFLAM, in Heyl & Totobesola 2024<sup>9</sup>) seeks to identify and capture the sociocultural, economic, and gender relations that influence the position and roles of men and women involved in the value chain, which impact their participation and ability to function efficiently. It serves to acknowledge the important role women play along the fish value chain and to make their work visible through gender-sensitive value chain mapping. Through identifying limitations women are facing due to gender-based constraints, particularly at nodes of the chain where women are highly involved, it provides a deeper insight into the issues that the actors are facing that might eventually be gender-based. The organisational level of the actors should also be described, as membership of producers' organisations is often a precondition to access technologies, training, and infrastructure for processing and post-harvest activities. With this information at hand, gender-responsive multi-dimensional solutions can be developed.



A gender-responsive analysis of food losses serves to acknowledge the important role women play along the fish value chain and to make their work visible through gender-sensitive value chain mapping.

<sup>9</sup> Heyl, J., Totobesola, M. (2024). A gender-responsive methodology for fish loss assessment in the small-scale fisheries sector.

Implementation of gender-sensitive value chain and food loss analyses implies the following three main approaches:

- Create a gender-sensitive map of the aquatic value chain, identifying actors, linkages, and gender distribution;
- Identify stages with high food losses and key actors involved; and
- Assess the constraints and opportunities that affect women's and men's participation.

To address the underlying reasons for the losses that can be attributed to the sociocultural and gender dimension, entry points for actions have to be identified and translated into suggestions that are adapted to the researched locality and address the particular needs and preferences, supporting the economic empowerment of women.

### **Box 2. Food loss and gender nexus**

Sociocultural and gender relations are significant underlying reasons for food value chain inefficiencies, which in turn directly cause food loss.

The different productive and social roles of men and women affect their access to, and control over assets, knowledge and services and their participation in productive activities and decision-making. This impacts the efficiency of the food value chain and hence is an underlying reason for food loss.

Women and men have different needs, constraints and preferences when carrying out their activities along the value chain. These gender concerns are particularly relevant in determining the response of a specific food value chain to food loss reduction policies and interventions and consequently determine their effectiveness and impact.



Credit: Julia Nana Heyl

Source: FAO (2018)

Multi-dimensional solutions to loss and waste often look at capacity building, strengthening of institutions, and technological support. It goes without saying that these should take into consideration the special needs and preferences of women, and support women in their activities along the aquatic value chain.

Institutionalising and professionalising women's groups and cooperatives is crucial for reducing losses in aquatic value chains by fostering collaboration and knowledge-sharing. These groups provide women with a platform to access training on best practices in fish handling, preservation, and storage, which can improve the quality and shelf life of fish products. By pooling resources and negotiating collectively, women can also access better market prices and reduce post-harvest losses. Additionally, membership in organisations can strengthen women's bargaining power, promote access to credit, and facilitate networking, all of which contribute to greater economic resilience and sustainability in the fish value chain.

Introducing technologies that are affordable and user-friendly (such as fish preservation tools) can reduce losses by improving efficiency, extending shelf life, and enhancing product quality. The acceptability and uptake of these solutions are further strengthened when they are grounded in local knowledge and traditional practices, ensuring they resonate with women's cultural, economic, and practical realities in the sector.

Moreover, the provision of appropriate infrastructure, such as cold storage facilities or improved processing equipment, should go hand-in-hand with comprehensive maintenance and management plans to ensure their continued acceptance and effective use. These plans not only help sustain the functionality of the facilities but also empower women by involving them in decision-making processes regarding the upkeep and operation of the infrastructure. By ensuring that the infrastructure is well-maintained and aligned with the evolving needs of the community, these solutions stay relevant, fostering long-term commitment and enhancing the resilience of women in the fish value chain.

The positive impact of any proposed solution is likely to be even greater when it acknowledges how gender inequalities can manifest on a personal level, often through low self-confidence and limited aspirations. Approaches that incorporate mechanisms to build self-worth and unlock confidence can strengthen women's agency, enhance self-efficacy, and elevate their aspirations. This, in turn, fosters greater adoption of new skills and techniques, drives higher efficiency, and ultimately reduces losses and waste in the value chain. 🌱



**Julia Nana Heyl** (PhD) is a sociologist and gender expert with a decade of experience working on food and fish loss and waste issues at FAO. As a social scientist, her work is centering around the "human dimension" of food loss and waste, working on education programs for children and students, bringing in the behavioural dimension into loss and waste assessments and solution development and - most importantly for her - looking at women as value chain actors from production to consumption, and their needs, abilities and preferences, so they can unveil their full potential and help reduce losses. She holds a PhD in sociology from University of Passau, Germany.