

Women in aquaculture and fisheries sectors of the Blue Economy

Introduction

The Blue Economy comprises marine-based or marine-related activities that depend on the natural environment. It aims to promote the sustainable use of ocean resources for economic growth, improved livelihoods, and job creation while ensuring the health of ocean ecosystems. Current perspectives suggest expanding the scope of the Blue Economy to include all aquatic ecosystems connected with marines and oceans. This extended definition encompasses activities such as sustainable marine energy, fisheries and aquaculture, maritime transport, waste management, climate change, tourism, and related industries and supporting activities. The Blue Economy, encompassing all economic activities relating to oceans and seas, directly employs over 4 million people in the EU and accounts for 1.3 % of the EU GDP¹. The overall production of the European fisheries and aquaculture products exceeded almost 3 million tonnes of catches and the production of another one million tonnes of aquaculture products (Source: EUMOFA). Employment (measured in full-time equivalents, FTE) in fisheries was 82.270 FTE (2020), in aquaculture 37.634 FTE (2018), and 90.299 FTE in the processing industry (2019) considering the EU-26 Member States². These numbers clearly show that the Blue Economy industry has the potential to revolutionise the current economic model of the European Union³ while also promoting gender equity and building a more sustainable future. However, there is a lack of comprehensive gender data across Blue Economy sectors worldwide, including Europe and the EU countries as well in some aspects. Fishing and fish processing are male-dominated activities, which is also true in Europe. Men are the main workforce, they own the majority of fishing boats and aquaculture farms or processing companies. However, in most fishing communities, women play a key role and contribute significantly to the sector. Due to the economic crisis and the impact of the COVID-19 pandemic, more and more women are entering the fisheries sector to supplement or secure their family income⁴.

Women's labour in the Blue Economy is often undocumented, they remain largely invisible and their role is not recognised, unequally compensated, and more vulnerable to climate shocks. For example, in fisheries, only the formally employed and remunerated women are recorded and appear in statistics, but the majority of women workers are not appearing (e.g. spouses, life partners, or other relatives), who play an active role in family fishing or aquaculture enterprises. Moreover, workers who are receiving full or partial in-kind payments are not documented and remain unrecognised⁵. Formalising

¹ The blue economy: Overview and EU policy framework. In-Depth Analysis 30-01-2020. European Parliament [https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/646152/EPRS_IDA\(2020\)646152_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2020/646152/EPRS_IDA(2020)646152_EN.pdf)

² European fisheries in figures, Fact Sheets on the European Union; European Parliament <https://www.europarl.europa.eu/factsheets/en/sheet/122/european-fisheries-in-figures>

³ European Commission (2023). The EU Blue Economy Report. 2023. <https://op.europa.eu/en/publication-detail/-/publication/9a345396-f9e9-11ed-a05c-01aa75ed71a1>

⁴ Gender in maritime affairs and fisheries. The European Institute for Gender Equality; https://eige.europa.eu/sites/default/files/documents/ti_pubpdf_mh0116805enn_pdfweb_20170124160441.pdf

⁵ Gender and Fisheries (special issue) Gender, Technology and Development, Volume 24, Issue 1 (2020) <https://www.tandfonline.com/toc/rgtd20/24/1?nav=toClist>



women's employment and investing in their education can help improve gender equity and sustainable development outcomes.

The importance of the Blue Economy to poverty alleviation, employment creation, and sustainable development is gaining increasing scholarly and policy attention across the globe. The World Bank defines the Blue Economy as 'comprising the range of economic sectors and related policies that determine whether the use of oceanic resources is sustainable'. Although tourism is an integral part of the Blue Economy and makes up most of the workforce of coastal and maritime regions, we will focus in the current document on the **fisheries and aquaculture perspectives**, which are often neglected. For example, a fresh study, analysing climate change and gender inequality context in the agrifood sector identified the lack of gender-related data in fishery and aquaculture activities. This is primarily because the fishery and aquaculture activities are largely disregarded in the data collections available in the agri-food sector⁶.

As such, the importance of women in the Blue Economy sector is overlooked, and their contribution remains marginalised and undervalued. A greater understanding of gendered roles in fisheries is necessary to value the often-hidden roles that women play in fisheries, aquaculture, and households⁷. In many cases, the activity itself, the contribution of individuals, and the decision-making roles of individuals are not properly identifiable. As women are usually responsible for the family's food and nutrition, and in many cases, for family finances too, their contribution to fisheries and aquaculture could strongly help alleviate poverty. Including women in fisheries and the aquaculture farm administration could lead to better fisheries management. Women are more inclined to cooperate in implementing sustainable fisheries management, use climate-smart solutions, and make greater efforts to take ethical considerations into account in stewarding marine ecosystems⁸. In the fisheries industry, genders participate in different yet complementary activities (e.g. the so-called supportive task on farms, on board vessels in port arriving with catches, or in the processing industry), which are heavily influenced by their social, cultural, and economic surroundings. Relationships between them vary significantly based on their economic status, power dynamics, and access to productive resources and services.⁹

As illustrated above, gender-disaggregated fisheries and aquaculture data are still rare, especially in official national-level statistics. Data collection methods are commonly gender-blind or gender-biased. Therefore, it would be very important to develop gender-disaggregated data to get a clearer picture, improve policies, and develop guidelines to reach the ultimate goal of gender equity and equality in this sector as well⁴.

⁶ Lecoutere et al. (2023). Where women in agri-food systems are at highest climate risk: a methodology for mapping climate– agriculture–gender inequality hotspots. *Front. Sustain. Food Syst.* 7:1197809. <https://doi.org/10.3389/fsufs.2023.1197809>

⁷ FAO, Duke University & WorldFish. 2023. *Illuminating Hidden Harvests – The contributions of small-scale fisheries to sustainable development*. Rome. <https://doi.org/10.4060/cc4576en>

⁸ Fauconnier et al. (2018). *Women as change-makers in the governance of shared waters*. Gland, Switzerland: IUCN, <https://doi.org/10.2305/IUCN.CH.2018.22.en>

⁹ <https://www.fao.org/3/i6623e/i6623e.pdf>

Women's inclusion benefits all

The success of the Blue Economy in promoting equitable, inclusive, and sustainable economic growth is, therefore, inextricably linked to the inclusion and participation of women in a way that benefits them and their families and communities.

- Inclusive and transformative policy is crucial alongside local and decentralised approaches.
- Investing in women and girls at every level of the blues economy is vital in preserving the ocean's health¹⁰. A change in mindset is needed, just as changes in policies as well².
- Women and men have different roles in the fisheries and aquaculture sector that should be understood and acknowledged adequately^{2,3}.
- Women have been historically active in ecosystem preservation and maintenance of traditional knowledge, playing a fundamental role in environmental protection and conservation¹¹.

Employment in aquaculture and fisheries

The latest statistics show that women comprise just over 21% of all people directly involved in fisheries and aquaculture. If we look at the two areas separately, about 28% of employees are women in aquaculture while only 18% in fisheries are women employees. Globally, almost 50 percent of all workers in the entire aquatic value chain (including pre-, and post-harvest) are women. Female workers are significantly more likely than male workers to work part-time or in other vulnerable positions¹².

Women have unequal opportunities in these blue industries because of¹³:

- a lack of access¹⁴ to credit, training, and professional bodies that would increase access and improve conditions of traditional and entrepreneurial roles within the sector;
- gender stereotyping, which restricts women to lower-paying or non-commercial tasks, primarily in the domicile or post-harvest;
- exclusion¹⁵ from fisheries' decision-making and governance process across management levels.

¹⁰ <https://unctad.org/news/blue-economy-ocean-opportunity-advance-gender-equality>

¹¹ <https://www.oecd.org/env/GFE-Gender-Issues-Note-Session-7.pdf>

¹² <https://www.fao.org/3/cc0461en/online/sofia/2022/fisheries-aquaculture-employment.html>

¹³ <https://www.sciencedirect.com/science/article/abs/pii/S1877343516300471>

¹⁴ <https://www.sciencedirect.com/science/article/abs/pii/S0308597X12002175#bib39>

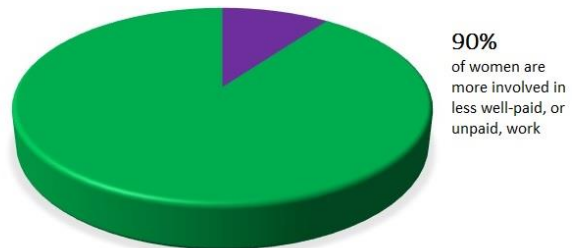
¹⁵ https://www.ksla.se/wp-content/uploads/2011/10/Fisheries_sustainability_and_development.pdf

The following diagrams present some prominent data on their marginalised and undervalued roles in fisheries and aquaculture based on recent publications^{16,17,18}.

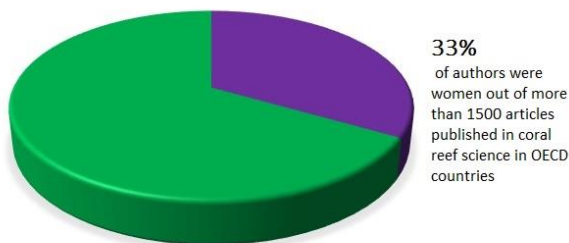
WOMEN ARE DENIED A VOICE IN MANAGEMENT POSITION



IN FISHERIES AND AQUACULTURE



EQUAL REPRESENTATION IN ACADEMIA IS ALSO LACKING



CINEA¹⁹ and DG MARE²⁰ have launched a call to address the challenges related to the knowledge and capacity gap for data and skill-building of Women in Blue Economy. This initiative is in line with the Gender Equality Strategy for 2020-2025²¹, which acknowledges the pressing need for greater gender balance in European organisations and sectors, in particular, the Sustainable Development Goal 5 (SDG5)²² on Gender Equality.

¹⁶ Giakoumi et al. (2021). Persistent gender bias in marine science and conservation calls for action to achieve equity. *Biological Conservation*, 257, 109134. <https://doi.org/10.1016/j.biocon.2021.109134>

¹⁷ Ahmadi et al. (2021). Limited Progress in Improving Gender and Geographic Representation in Coral Reef Science. *Frontiers in Marine Science*, 8, 731037. <https://doi.org/10.3389/fmars.2021.731037>

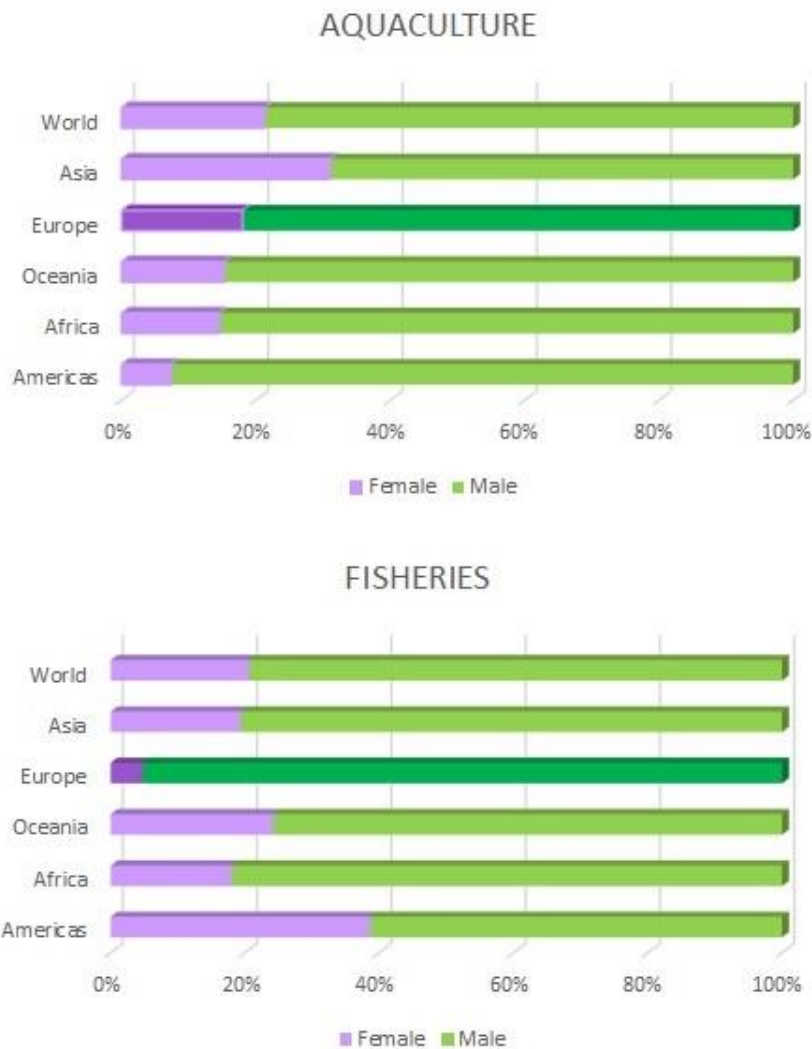
¹⁸ <https://www.weforum.org/friends-of-ocean-action/if-you-want-to-save-the-ocean-make-women-part-of-the-solution/>
¹⁹ https://cinea.ec.europa.eu/index_en

²⁰ https://commission.europa.eu/about-european-commission/departments-and-executive-agencies/maritime-affairs-and-fisheries_en

²¹ https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/gender-equality/gender-equality-strategy_en

²² <https://sdgs.un.org/goals/goal5>

Sex-disaggregated data on employment in the primary sector of fisheries and aquaculture by region (FAO, 2022) ¹¹



Women’s Participation in Inland Fishery Activities to Support Family Welfare

Fisheries are important for human well-being, especially for the poor in developing countries where 97% of fishers live²³. The small-scale fisheries sector has gained international attention through the development of the Voluntary Guidelines for Securing Sustainable Fisheries in the context of Food Security and Poverty Eradication, also known as SSF Guidelines²⁴. However, some small-scale fisheries

²³ Allison and Ellis. (2001). The Livelihoods Approach and Management of Small-Scale Fisheries. *Marine Policy*, 25, 377-388. [http://dx.doi.org/10.1016/S0308-597X\(01\)00023-9](http://dx.doi.org/10.1016/S0308-597X(01)00023-9)

²⁴ FAO 2023: The State of Food Security and Nutrition in the World 2023 <https://www.fao.org/documents/card/en?details=cc3017en>

face extreme pressure from overfishing, poor governance, and new threats due to climate change²⁵. To tackle these challenges effectively, adaptation and innovation among fishing communities are crucial. Women's participation in inland fisheries and aquaculture farms covers a wide range of fishing activities, with women representing almost 35% of the people engaged in global inland fisheries.

Obstacles to Female participation in inland fisheries:

- cultural norm;
- difficulty or fear of travel;
- family care;
- less access to loans;

Benefits of female participation in inland fisheries:

- a significant portion of income contributed to households than male fishers;
- often harvest or farm small, native, nutritious fish;
- more flexibility in dealing with climate change.
- a change in mindset: e.g.: the integration of women could diversify into new areas such as sustainable aquaculture, renewable energy, blue carbon, and marine biotechnology research that would create innovation and technology to restore oceans and coasts. These are often community-driven and women are more proactive²⁶.

The contribution of Women in Small-Scale Fisheries

The small-scale fisheries (SSF) sector – including aquaculture farms - could transform the food system. It contributes to ending poverty and hunger through healthy and sustainable diets and equitable livelihoods, and it ensures that no one is left behind in the fight against hunger and poverty. Therefore, the contribution of women and programs that support their contribution has great importance to meeting our SDGs.

Recent studies have shown that women are underrepresented in fisheries governance, decision-making processes, and management, and their achievements are often overlooked. This highlights a general lack of women’s empowerment in the sector. Globally, over 2.1 million women are estimated to participate in SSF activities. However, women only account for 3% of the European primary sector, including wild capture and aquaculture fisheries. Data on the employment of women in EU fisheries and aquaculture is scarce and gender-biased, often based on two datasets, one from Eurostat focused on fisheries and the other from the Scientific, Technical and Economic Committee for Fisheries (STECF)

²⁵ Allison et al. (2009). Vulnerability of national economies to the impacts of climate change on fisheries. *Fish and Fisheries* 10(2):173-196. <http://dx.doi.org/10.1111/j.1467-2979.2008.00310.x>; Beddington et al. (2007). Current problems in the management of marine fisheries. *Science* 316:1713-1716. <http://dx.doi.org/10.1126/science.1137362>; Coulthard. (2012). Can we be both resilient and well, and what choices do people have? Incorporating agency into the resilience debate from a fisheries perspective. *Ecology and Society* 17(1): 4. <http://dx.doi.org/10.5751/ES-04483-170104>

²⁶ <https://unctad.org/news/blue-economy-ocean-opportunity-advance-gender-equality>

focused on aquaculture and processing. Cross-checking these datasets, women represent approximately 27% of EU fisheries, aquaculture, and processing jobs combined. More recently, the FAO suggests a lower disaggregated figure for fisheries and aquaculture, but this data excludes processing and auxiliary activities.²⁷

The EU supports mapping capacity gaps and improves gender imbalance through targeted activities, for example, a new HE project, WIN-BIG, addressing these needs across Blue Economy sectors in the EU to “*support women joining and climbing their way up the value chain*”. WIN- BIG project will develop tailored capacity-building tools to bridge gender gaps and foster sustainability in European blue industry sectors while collecting relevant and precise data in the sector.²⁸

Blue Skills and Jobs – the role of higher education in the sector

With the rise of new economic challenges, more qualified workers will be needed to work on innovative and technology-based projects in many blue sectors, and these skills will be relevant to attracting investment. This ‘skill gap’ was identified and addressed as an urgent need to be reduced. In this line, attracting women in the sector and providing appropriate training, which can answer the sector’s needs and fill the skill gap at the same time, is still a challenge. Therefore, promoting the Blue Careers program (under EMFAF) is essential, but specific programs must be developed further. Furthermore, advancing gender balance in the maritime professions is still a fundamental imperative.

According to the EU Blue Economy Report, „...the EMFAF and other EU funds, such as the European Social Fund and the Technical Support Instrument, or funding available under the Erasmus+ programme can be harnessed to address training, reskilling and upskilling of workers in the Blue Economy. This falls within the context of the European Skills Agenda and is also in line with the action plan adopted by the Commission to implement the European Pillar of Social Rights across the EU.“

However, until the skill gap exists in different sectors of the Blue Economy, local players such as tertiary education institutions in line with governmental bodies should develop local programs and engage with the sector to meet the needs. These programs could address gender equality and promote inclusion and equity while supporting and strengthening local sectors of the Blue Economy.

²⁷ <https://www.sciencedirect.com/science/article/pii/S0308597X21005182>

²⁸ <https://winbigproject.eu/>

