



GENDER EQUALITY IN THE BLUE ECONOMY: BLACK SEA BASIN REPORT

Sea Basin Report



Co-funded by
the European Union

Project no.	101111985
Project acronym:	WIN-BIG
Project title:	Women in Blue Economy Intelligence Gathering and Capacity Boosting
Call:	EMFAF-2022-PIA-WBE
Start date of project:	01.05.2023
Duration:	36 months
Deliverable title:	D2.2 (<i>Women in EU Blue Economy Reports</i>)
Due date of deliverable:	31.12.2025
Actual date of submission:	30.01.2026
Deliverable Lead Partner:	University of Galway
Dissemination level:	Public
Citation:	WIN-BIG BLACK SEA BASIN BLUE ECONOMY GENDER STATUS REPORT 2025, WIN-BIG D2.2, 59 pp. Available at: https://winbigproject.eu/resources/publications

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Document History			
Version	Date	Note	Revised by
01	08.10.2025	1st Draft of Report made available to coordinator	Hasmik Grigoryan, Edel Doherty, Ingrid Mateo Mantecón and Stephen Hynes
02	17.10.2025	Reviewed Draft by the Coordinator sent to UoG Team	Helena Vieira, Mariana Dias Almeida and Liliana Garrido Silva
03	12.12.2025	UoG/MI team sent back revised Draft2 to coordinator	Hasmik Grigoryan, Edel Doherty, Jenny O'Leary and Stephen Hynes
04	08.01.2026	Reviewed Draft2 by the Coordinator sent to UoG Team	Helena Vieira, Mariana Dias Almeida and Liliana Garrido Silva
05	13.01.2026	Final Version of Report sent to GEO	Helena Vieira, Mariana Dias Almeida Liliana Garrido Silva, Gloria Bevilacqua, Ömer Ceylan
06	28.01.2026	Final Version of Report	All
07	25.02.2026	Revised Final Version (V2)	Hasmik Grigoryan, Edel Doherty and Stephen Hynes, Helena Vieira, Mariana Dias Almeida, Gloria Bevilacqua, Ömer Ceylan
08	24/04/2026	Re-Revised Version (V3) after Project officer comments and suggestions	Hasmik Grigoryan, Edel Doherty and Stephen Hynes, Helena Vieira, Mariana Dias Almeida, Gloria Bevilacqua, Ömer Ceylan

Acknowledgement

This project has received funding from the European Union's EMFAF programme under grant agreement No 101111985.

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Executive Summary

NAVIGATING THE TIDES OF INEQUALITY: Women in the Black Sea Blue Economy



WOMEN IN THE WORKFORCE



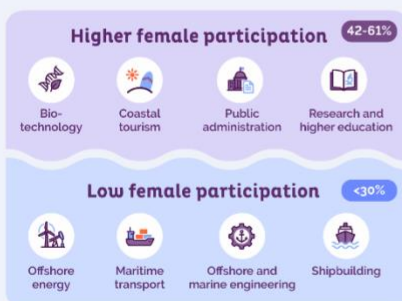
* Bulgaria, Romania

Survey responses from the Black Sea Basin are limited in number. The results reflect a snapshot of perceptions and experiences, not a statistically representative picture of the regional blue economy workforce.

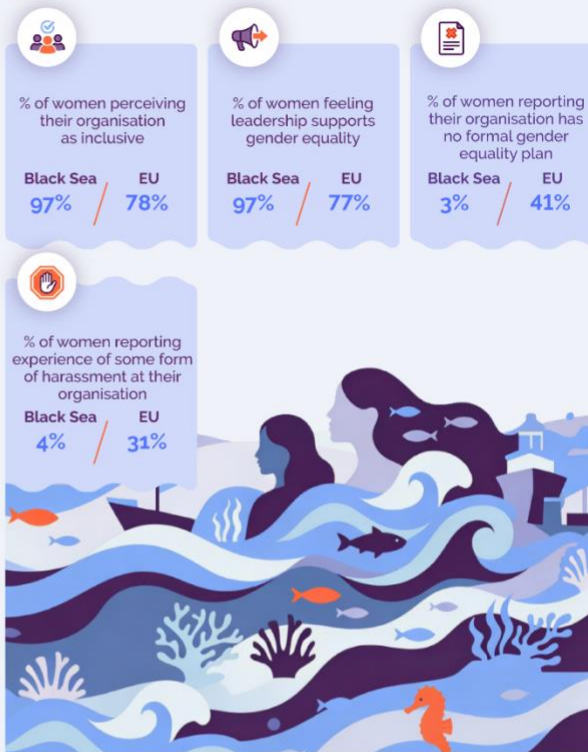
EU BLUE ECONOMY LABOUR FORCE

EU	Black Sea Basin
Female 2,941,850	Female 72,550
Male 4,130,743	Male 93,227
Total 7,072,593	Total 165,777

Sectoral participation is highly polarised



WORKPLACE REALITY FOR WOMEN: BLACK SEA VS EU



KEY INSIGHT

Positive signals, limited evidence: Women in the Black Sea Basin report very high inclusivity and leadership support, but the small sample size means these results should be read as an indicative snapshot rather than a regional benchmark.



CHARTING THE COURSE: POLICY RECOMMENDATIONS FOR EQUALITY

- **Gender-disaggregated data:** Mandate harmonised EU-wide reporting on employment, pay, and career progression by gender across blue economy sectors. Use the data to track progress and inform targeted policy action.
- **Pay and promotion transparency:** Introduce mandatory transparency in pay structures and promotion criteria. Use audits and reporting to address gender pay gaps and unequal advancement.
- **Gender equality plans:** Require organisations to adopt formal gender equality plans with measurable targets, timelines, and accountability mechanisms. Link implementation to monitoring and compliance frameworks.
- **Training and mentorship in STEM and offshore sectors:** Invest in targeted training, upskilling, and mentorship for women in STEM-intensive and offshore industries. Prioritise pathways into technical and leadership roles in high-growth blue sectors.
- **Zero tolerance for harassment:** Enforce zero-tolerance standards through clear reporting channels, independent procedures, and protection for complainants. Make safe workplaces a non-negotiable condition for sector growth.
- **Inclusive education and awareness:** Strengthen education and awareness campaigns highlighting the economic and innovation benefits of gender parity.



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Introduction

The goal of the WIN-BIG project is to advance our understanding of existing gender issues and capacity needs across the EU's blue economy, with a particular focus on emerging and high-tech related industries. Three major challenges have been identified by WIN-BIG: a lack of gender disaggregated statistics, the underrepresentation of women in certain blue economy sectors, and insufficient opportunities for women. Such challenges can act as barriers to female empowerment and limit their access to career advancement and leadership roles.

The WIN-BIG project strives to shed light on gender inequalities in the blue economy sectors within six different Sea Basins in Europe, using data collected from a bespoke survey designed for this project. The survey results are used to identify institutional and industry factors that impact female career advancement. The research also produces estimates of the labour force in the blue economy disaggregated by sex. The following report provides a first set of data on the current gender status for the Black Sea Basin blue economy - comprising Bulgaria and Romania. The project has also produced separate reports for: the Atlantic, Arctic, the Baltic, the North, and the Mediterranean Sea Basin blue economies.

Methodology

The methodology of the WIN-BIG Survey combined both quantitative and qualitative research approaches to assess gender inequalities across the EU blue economy. A multilingual online survey was developed through an iterative process informed by desk research, focus groups, and stakeholder consultations, ensuring cultural and linguistic clarity across seven languages. The final questionnaire included seven sections covering respondents' blue economy industry characteristics, work arrangements, gender culture, career progression, gender policies, and personal demographics, with one section dedicated to female respondents only.

The survey was distributed between March 2024 and November 2025 via email, social media, and events, collecting 1,084 responses (**only 24 from the Black Sea Basin**). To ensure the survey captures issues that affect women differently compared to men, responses from both males and females working in blue economy industries were collected. Data were processed in compliance with GDPR, analysed using Excel and STATA, and weighted post-stratification techniques were applied to adjust for representativeness across industries, countries, and gender. Additionally, official EU data sources were used to estimate total employment and gender distribution across blue economy sectors, with proxy estimates applied when direct data were unavailable.

Given the low number of respondents to the survey from the Black Sea Basin the results reported here should not be taken as representative of blue economy workers across the region. They can only be seen as a snapshot of attitudes towards gender inequalities in the blue economy sectors within the Sea Basin.

Results for the Black Sea Basin

In total, WIN-BIG estimates that 7,072,593 people are working in the EU blue economy sectors, out of which 42% are female. In the Black Sea Basin, a total of 165,777 people work in the blue economy, out of which 72,550 (44%) are women.

EU Blue Economy Labour Force				
	Female	Male	Total	% Female
Blue Economy EU Total	2,941,850	4,130,743	7,072,593	42%
Blue Economy Black Sea Basin	72,550	93,227	165,777	44%

- Females represent **44% of the total blue economy labour force** across Bulgaria and Romania.

Notable sectoral disparities exist, with

- Female participation is highest in **biotechnology, coastal tourism, public administration, and research and higher education** sectors where women comprise **42-61%** of the workforce.
- Female representation is below **30%** in traditionally male-dominated fields such as **offshore energy, maritime transport, offshore/marine engineering, and shipbuilding**.

These patterns mirror global findings from the **World Economic Forum’s 2025 Global Gender Gap Report**, which notes that gender parity remains uneven across STEM-intensive and leadership roles, with Europe still requiring nearly **eight decades to close the gap at current rates**.

WIN-BIG Survey results in the Black Sea Basin:

The findings from the WIN-BIG survey present overall positive responses, albeit from a tiny sample.

- Majority** of female respondents (97%) perceiving their **organisations as inclusive** and only **3%** believing **leadership does not support gender equality**.
- 1%** of female respondents report direct experiences of **gender discrimination** and 4% reported some form of harassment **within their organisations**.
- 2% disagreed they had access to flexible working arrangements, and **17%** of female respondents find it **difficult to achieve work-life balance**.



- 3% of females noted their organisations **lack a formal gender plan or policies and the same percentage** report that their **organisations** do not have **formal gender policies** in hiring processes.

Conclusions

The findings indicate:

- Women are prominently represented in service-oriented and academic sectors; however, they remain **underrepresented in STEM-intensive and offshore industries**, where **advancement opportunities are often limited**.
- Generally, the results are very positive regarding the perceptions of inclusivity and leadership commitment to equality. There were relatively low levels of **reported experience discrimination, harassment** – albeit still higher for female respondents and a small percentage indicated a **lack of gender policies** at their organisations.

These findings suggest that gender equality strategies in the **policy implementation, monitoring, and accountability** are still important to ensure measurable progress, even while the responses are quite positive.

Policy Recommendations

This report also provides guidance on potential policy frameworks aimed at further narrowing the gender gap within the Black Sea Basin blue economy. Suggested policy recommendations at European level call for:

- the **systematic collection of gender-disaggregated data** across blue economy sectors, supported by a harmonised and mandatory EU-wide reporting framework, to track workforce composition and career outcomes more accurately.
- the introduction or strengthening of **formal gender equality plans** in organisations.
- enforcing **zero-tolerance policies toward harassment**.
- enhancing **transparency in pay and promotion criteria**.



- expanding **training initiatives and mentorship programmes for women**, particularly in STEM and **emerging blue sectors** like marine renewable energy and biotechnology, to improve women's access to technical and leadership roles.
- expanding **inclusive education and awareness campaigns** that target both men and women to highlight the economic and innovation benefits of gender parity.

Ultimately, accelerating equality in the blue economy will require sustained political commitment, evidence-based policy design, and coordinated action across EU institutions, member states, and industry partners to close the remaining gender gaps within a generation.



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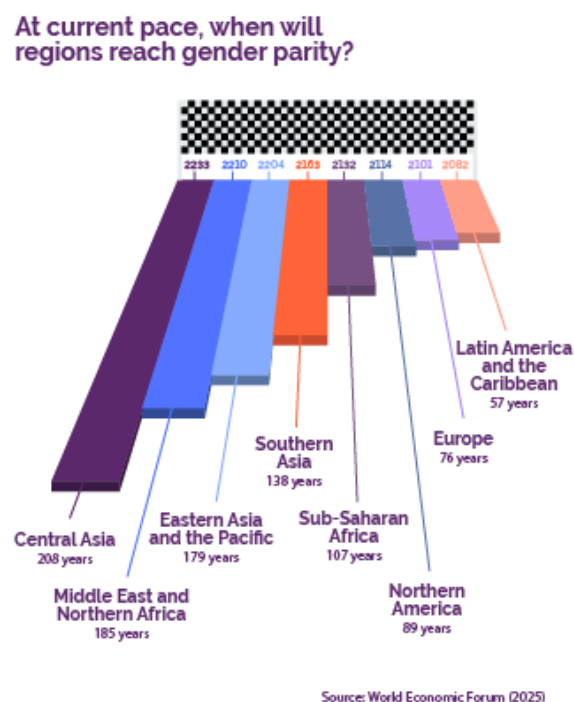
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Introduction

The WIN-BIG project addresses the lack of knowledge on the role women play in the EU Blue Economy sectors. It provides data on women's status and skill gaps that prevent women from entering or progressing up the career ladder. In addition to data gathering, the project provides capacity building, focusing on the EU three emergent sectors, blue bioeconomy, blue sports and coastal tourism and marine renewable energy and robotics. The WIN-BIG project also champions blue female role models using innovative media format. These objectives are in line with the EU goals.

Gender equality and advancing women's rights are normative values of the EU and have been recognized as economic and strategic investments. (European Commission, 2025; OECD, 2025). Various pieces of legislation have been adopted in recent years, such as the Directives on Work-Life Balance, Pay Transparency, and Gender Balance on Corporate Boards (European Commission, 2024). However, bridging existing gender disparities remains a slow process and data shows that in Europe alone another eight decades are needed at current speed to reach parity (Figure 1). Women are still overrepresented in low-paid jobs, carry a disproportionate share of household duties and care responsibilities, have less opportunities for training in such sectors as science, technology, engineering and mathematics (STEM) and face higher risks of violence (European Commission, 2025).

Figure 1 Current estimate of years needed to close the Gender Gap across the world (from the World Gender Gap Report 2025).



The EU Blue Economy and Gender Inequalities

The EU's blue economy is multisectoral, encompassing a wide range of traditional and emerging sectors - from maritime transport, fisheries to blue biotechnology and marine renewable energy. In 2023, the EU blue economy's gross value added (GVA) reached EUR 263 billion, and it employed 4.89 million people in the EU (European Commission, 2025). It is a segment of economy characterized by continued growth, energy and digital transition, and new job opportunities. The EU Blue Economy observatory estimates that a total of 137,551 people are employed in the Black Sea Basin¹.

Certain sectors of the EU blue economy face not only the challenge of underrepresentation of females, but also a gendered division of labour by occupation. In fisheries, research shows that women are more often in charge of selling or processing the catch, while men are involved in the fishing activities and the preparation of fishing gear (Salmi and Sonck-Rautio (2018). The existing horizontal gender segregation (the concentration of women in certain fields) is paired with vertical gender segregation. Research in areas such as ocean science illustrates this dual gap, noting not only overall lower representation of women but also their significant underrepresentation in senior and decision-making roles (Katsanevakis et al., 2020 and Kamm et al., 2020).

Gender inequalities also manifest in terms of access to opportunities. Studies note that limited access to training and mentorship opportunities hinders women's career advancement and ability to reach managerial positions (Croucher and Økland, 2021; Johannesen et al, 2023; Shellock et al., 2022; Zhao et al. 2013).

WIN-BIG Objectives

The WIN-BIG project, funded by the European Commission, aims to deepen understanding of gender issues in the Blue Economy and support women's career entry and advancement within the sector. Specifically, WIN-BIG is gathering comprehensive data on gender representation, the roles women play, and the barriers they face across all six EU Sea Basins.

The project's three core objectives are:











1. **Establish a comprehensive dataset** detailing the gender status and roles of women across all **six EU Sea Basins** (Atlantic, Mediterranean, Baltic, North, Arctic, and Black Sea) within the Blue Economy (BuE).
2. **Identify critical skill gaps** that hinder women's entry into or progression up the career ladder in BuE sectors.
3. **Implement targeted capacity-building programs**, including female- and sea basin-specific **learning labs, acceleration programs, and networking events**.

¹ Note: The Blue economy sectors of the EU observatory are maritime transport, coastal tourism, living resources, non-living resources, port activities, renewable energy, shipbuilding and repair. Among the sectors the Observatory does not include the workforce in the research related sectors of the blue economy. This report covers both. The EU Blue economy observatory website is available at: https://blue-economy-observatory.ec.europa.eu/blue-economy-indicators_en

For this report, academic and policy research was reviewed to define the EU blue economy industries. For instance, previous studies on blue economy concepts - such as the harvesting of living resources, extraction of non-living resources, and ecosystem protection and management - helped guide the classification adopted in this study (e.g. Smith Godfrey, 2016; Voyer et al, 2018).

Figure 2 presents the blue economy sectors and industries. Final sector and industry grouping were based on the EU Blue Economy sectors specifications with some minor differences².

Figure 2 Blue economy sectors and industries adopted in this study.

SECTOR	INDUSTRY
 Living resources	Aquaculture Sea fisheries Seafood processing
 Blue biotechnology	Blue bioeconomy/biotechnology
 Coastal tourism	Blue sports Coastal tourism Cruise tourism
 Marine renewable energy and offshore exploration (oil and gas)	Marine renewable energy offshore exploration (gas and oil)
 Ports and shipping	Maritime transport Port activities Shipbuilding
 Public administration related to the marine	Public Administration related to the marine
 Engineering and technology	Marine engineering Marine robotics Desalination Maritime defence
 R&D related to the marine	Marine research and development
 Research and marine education (third level)	Marine Education/Training/Research (Third level) Marine Conservation and Advocacy
 Market services	Marine Environmental Consulting Services Marine Retail Services Business and finance

² European Commission, EU Blue Economy Observatory, EU Blue Economy Sectors: https://blue-economy-observatory.ec.europa.eu/eu-blue-economy-sectors_en

EU Sea Basin-Level Analysis

This report is one of six sea basin reports of the WIN-BIG project. The analysis includes EU member states and countries that are part of the European Economic Area, bordering an ocean or sea. The research also covers the United Kingdom, due to the UK-EU Trade and Cooperation Agreement. Table 1 lists the EU Sea Basins and its bordering countries. The EU sea basin countries in each report are defined according to the geographic delineation as established in the EU Baseline studies for the implementation of the lighthouse for the Mission “Restore our Ocean and Waters by 2030” (Chanou Zoulfath et al., 2023; Goba et al., 2023)³.

Table 1 EU Sea Basins (according to the EU Baseline Studies for the Ocean and Waters Mission).

EU Sea Basins	
Arctic Basin	Iceland, Finland, Norway, Sweden
Atlantic Basin	Ireland, United Kingdom, France, Portugal, Spain
Baltic Sea	Germany, Poland, Estonia, Latvia, Lithuania, Denmark, Sweden, Finland
Black Sea	Bulgaria, Romania
Mediterranean Sea	Croatia, Cyprus, France, Greece, Italy, Malta, Slovenia, Spain
North Sea	United Kingdom, Belgium, France, Germany, Netherlands, Denmark, Sweden, Norway

Black Sea Basin Industry and Gender Breakdown

This report presents estimates of total employment in the Blue Economy in the Black Sea Area by industry and gender. To establish a baseline estimate of total employment by Blue Economy industry and gender, WIN-BIG analysed officially published data and statistics.

The analysis estimates that a total of 165,777 people are employed across the EU Blue Economy industries in the Black Sea Basin. **Overall, WIN-BIG estimate women account for approximately 44% of the total workforce in the blue economy in the Black Sea Basin.**

³ Two reports were used to define the EU sea basin countries: Chanou Zoulfath, A. et al. (2023) Baseline study for the implementation of lighthouses of the Mission ‘Restore our ocean and waters by 2030’: Atlantic, Arctic, Danube and Mediterranean lighthouses. Luxembourg: Publications Office of the European Union; Goba, V. et al. (2023) Baseline study for the implementation of the lighthouse in the Baltic and North Sea basins for the Mission ‘Restore our Ocean and Waters by 2030’. Luxembourg: Publications Office of the European Union. Following this approach, countries not bordering an ocean and sea are excluded.

When analysing the gender breakdown of the workforce in each industry⁴ across the Black Sea, Table 2 depicts the results. The majority of females work in the Market & Services (64%), Blue Biotechnology (61%) and Coastal Tourism (59%) sectors.

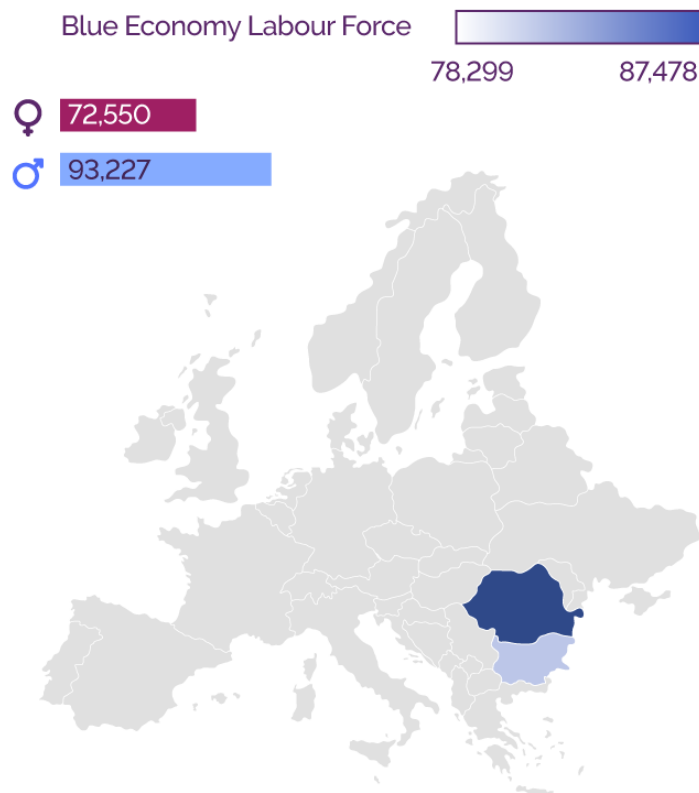
Table 2 Number of employees across the Blue Economy sectors, broken down by gender

Labour force of the Black Sea Basin			
Blue Economy Sector	Female	Male	% Female
Living resources	2,857	6,530	30%
Blue biotechnology	108	68	61%
Coastal tourism	39,403	27,951	59%
Marine renewable energy and offshore exploration (oil and gas)	524	1,902	22%
Engineering and technology	1,148	10,224	10%
Ports and shipping	6,866	30,684	18%
Research and marine education (third level)	338	294	53%
R&D related to the marine	58	60	49%
Public administration related to the marine	4,674	6,369	42%
Market & Services	16,574	9,145	64%
Total	72,550	93,227	44%

Figure 3 illustrates the employment number in the Black Sea Basin countries.

⁴ Data on the total workforce per sector was sourced from the EU Blue economy observatory. The breakdown of gender per sector was established using Eurostat, EU STECF reports, national statistics, national reports and news sources. For further discussion on how these estimates of total employment by industry and gender were derived see [Annex 1](#).

Figure 3 Distribution of the workforce across the Black Sea countries



	Total	Female	Male
Bulgaria	87,478	43,462	44,016
Romania	78,299	29,088	49,211

Methodology

In an attempt to capture the data required for WIN-BIG, a comprehensive survey was designed, tested and data was collected between June 2023 and November 2025. The survey was translated into seven languages to for inclusivity and accessibility for respondents across different countries.

The methodology involved a desk review stage to design the survey sections and its questions. Following the design and testing of the survey, the survey was launched, and data was collected from the employees of the blue economy sectors. Following the data collection, post stratification weights were generated to make the sample representative of the true marine workforce population.

Figure 4 Stepwise methodology followed in this study.



Questionnaire Design

Prior to designing the questionnaire, a focused desk review was undertaken to inform the design. Previous surveys on gender inequalities in the workplace were consulted. For example, surveys related to institutional culture used to inform *Athena Swan* accreditation in higher education were useful to design Likert Scale questionnaire questions on topics related to work culture, promotion and work-life balance⁵. A survey by *Equileap*⁶ on gender representation at the corporate level and its Gender Equality Scorecard were reviewed to understand concepts around equal compensation, gender equality policies and employee protection. Other surveys, such as *Women in Tech*, conducted in 2023⁷ were also utilised to inform relevant topics and questions.

Early versions of the questionnaire were tested using focus groups. Further discussions across the WIN-BIG consortium and at a special session of the conference *1st Mission Ocean Arena: Blue Mission BANOS - Supporting the EU Mission "Restore our Ocean and Waters* in the Baltic and North Sea in November 2023 led to some further refinements of the survey instrument. The focus group

⁵ The Athena Swan Charter is a framework which is used across the globe to support and transform gender equality within higher education (HE) and research, <https://www.advance-he.ac.uk/equality-charters/athena-swallow-charter>

⁶ Equileap, Social Equality Data: <https://equileap.com/data/>

⁷ Women in Tech Survey 2023: <https://www.womenintech.co.uk/wp-content/uploads/2022/12/Women-in-Tech-Survey-2023.pdf>

discussions ensured that the questions were similarly interpreted and understandable across different countries and languages.

The final questionnaire was divided into seven sections described below:

1. Industry and firm: This section collected data on the respondent's blue economy sector, type of organisation, country of operation, number of employees, and the percentage of female employees within the organisation.

2. Working arrangements and culture: This section collected data on respondents' employment level, employment status, and years in their current role. It also included questions about whether respondents had taken any periods of carer's leave, as well as questions on workplace culture and work-life balance.

3. Gender culture and treatment within organisation/firm: This section aimed to assess respondents' perceptions of gender discrimination, whether they had encountered any forms of harassment, and whether the organisation's leadership was committed to gender equality, diversity, and inclusion.

4. Perception of opportunities for career progression: This section collected information on the transparency of internal vacancy applications, access to career growth opportunities, and the challenges respondents have faced in pursuing a career in the blue economy sector.

5. Women in the work force: This section collected data on whether the respondent's firm has gender equality policies, the presence of female managers and role models, and whether there are barriers preventing women from being promoted to senior positions. This section also includes a qualitative question asking why women might not have the opportunity to advance in their industry.

6. Female only section: This section collected information from female respondents only. It collected data on the gender pay gap, their perceptions of whether they are treated equally to men in the workplace, and whether they have the same promotion opportunities as their male counterparts. This section also includes qualitative questions to collect recommendations from females on how to achieve more gender equality.

7. Personal demographics: This section collected demographic data such as respondents' age, country of residence, ethnicity, marital status, caring responsibilities and level of education.

Data collection

The online WIN-BIG survey was launched on March 8th, 2024, and remained open until the 17th of November 2025. It was conducted online via the Qualtrics surveying platform and was available in seven languages: English, Spanish, Portuguese, French, German, Italian, and Irish. A link to the survey was disseminated to various blue economy organisations via email, social media, paid advertising and during national and international events by the Consortium partners. A total of 1,244 responses were collected. Out of this number, 59 responses were from non-European countries and 7 were from European countries that do not have access to ocean or sea. The 59 non-European and 7 non-ocean responses were removed from the analysed sample reducing the number to 1,178 which covered the EU sea basins. Following further cleaning of the dataset, a further 94 responses were removed from the final analysis: 20 responses were completed by students, and 74 respondents completed only section one of the survey which covered basic information about their gender and the sector they belonged to, so they were removed from the main analysis. As a result, 1,084 responses are analysed. **The data sample for Black Sea area includes 24 responses, that albeit very small, is the data used for this report (as a project Deliverable).**

All data was handled in compliance with confidentiality requirements and the General Data Protection Regulation (GDPR). The data was analysed using Microsoft Excel and the statistical software package STATA.

Weighting and analysis

Given this was a voluntary opt-in survey it was important to generate post stratification weights to make the sample representative of the true marine workforce population. The estimated population totals by blue economy industry, country and gender facilitated the creation of a multidimensional weighting scheme. All results presented use the generated post stratification weights, unless otherwise stated.

There is a lack of gendered statistics in the EU blue economy. Furthermore, while the EU blue economy observatory provides information about total workforce in certain sectors (e.g. living resources, coastal tourism, ports and shipping) there is no data about the workforce in such industries as marine robotics, higher education and research related to marine, environment consulting, marine conservation and advocacy. For the blue economy sectors, where no data was available, the number of employees in a broader industry category was collected, followed by an estimate of the marine share. For example, there is not data about the total workforce in the *marine robotics*. To estimate its labour force, several indicators were used. Based on the number of employees in the *Equipment and machinery subcategory* published by the EU Blue Economy Observatory⁸ and the total number of employees in *Manufacturing of machinery and equipment* from

⁸ Note: there were some countries where no data was provided in the Blue Economy Observatory. Individual country reports or other sources were consulted to provide an estimate of the workforce.

Eurostat, the marine share was estimated in engineering. Next, this estimated marine share was applied to the total number of employees in *Science, technology and digital society* category from Eurostat, to estimate the number of employees in marine robotics. In terms of the gender breakdown, data was collected where sector-specific gender information was directly available. This was only available for the living resources and maritime defence. In cases where there was no gender breakdown at the blue economy industry level, gender distribution of the broader sector which the industry was contained in was used as a proxy. For example, while no gender specific information was publicly available for coastal tourism across countries, Eurostat does provide estimates for gender at the national level for NACE industries such as accommodation and restaurant activities. Similarly, *Public administration related to marine* used the parent sector *Public administration* to generate a proxy for gender shares. [Annex 1](#) provides detailed information about the data.



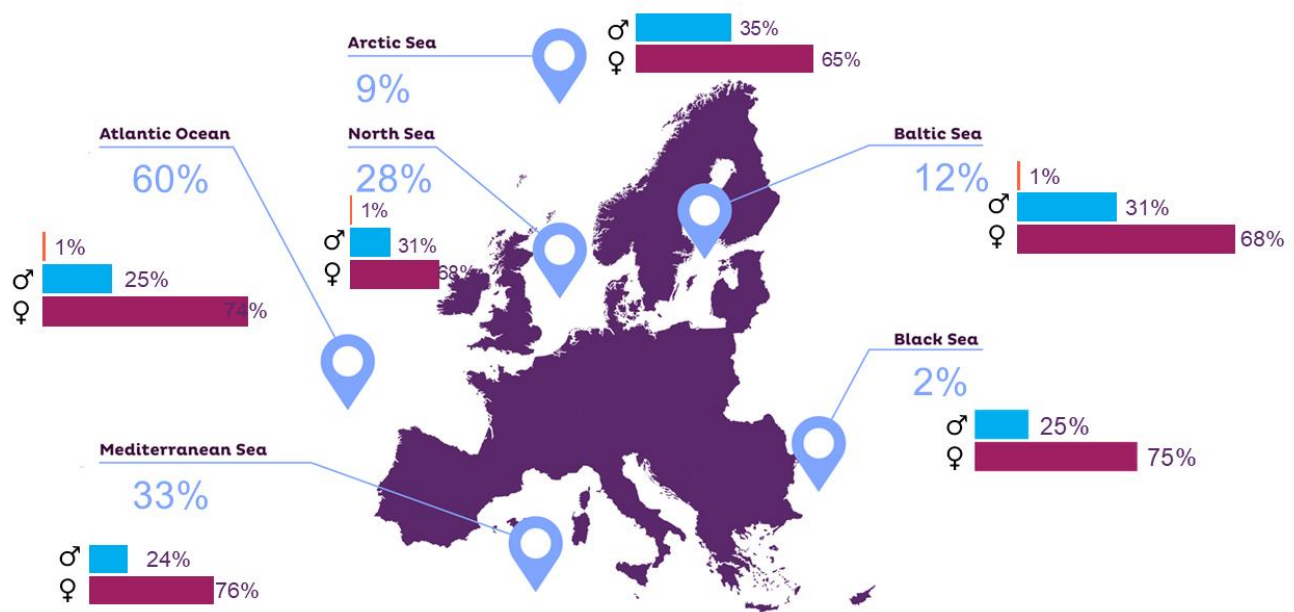
Survey Results

SUMMARY OF WIN-BIG SURVEY RESPONDENTS DEMOGRAPHIC STATISTICS

This next section describes in detail the results and statistics derived from the WIN-BIG survey data.

Figure 5 presents the gender distribution of respondents across the sea basins. The percentages shown are based on the unweighted survey sample. Across all basins, women accounted for more than 68% of the respondents within the Mediterranean, Atlantic, and Black Sea basins showing the highest proportions of female respondents.

Figure 5 Distribution of gender of respondents across the sea basins (unweighted)



Black Sea Basin

As shown in Figure 5, **only 2% of the respondents to the WIN-BIG survey were from the Black Sea Basin** countries, with 75% female respondents and 25% male. **The low response rate means that the results presented here for the Black Sea Basin are not representative of the population.** They provide only a snapshot of possible attitudes towards gender issues in the Black Sea basin blue economy.

Table 3 presents the percentage of respondents by EU Blue Economy sector across all the EU sea basins.

In the Black Sea Basin, the largest shares of respondents are in research and marine education (tertiary level) (29%), marine-related R&D (17%), and engineering and technology (13%).

Table 3 Survey sample per sector (unweighted) across the EU sea basins

Survey sample per sector (unweighted)						
Blue Economy Sector	Arctic Basin	Atlantic Basin	Baltic Sea	Black Sea	Mediterranean Sea	North Sea
Living resources	17%	12%	10%	8%	7%	12%
Blue biotechnology	11%	7%	13%	0%	6%	11%
Coastal tourism	0%	9%	1%	4%	6%	2%
Marine renewable energy and offshore exploration (oil and gas)	2%	5%	4%	0%	2%	6%
Engineering and technology	9%	7%	0%	13%	6%	7%
Ports and shipping	6%	7%	26%	8%	10%	15%
Research and marine education (third level)	21%	18%	16%	29%	21%	17%
R&D related to the marine	20%	15%	23%	17%	16%	15%
Public administration related to the marine	6%	11%	4%	4%	13%	9%
Market & Services	0%	5%	1%	8%	8%	2%
Not specified	8%	4%	2%	8%	5%	4%

Table 4 presents the demographic information for the total sample and Black Sea Basin respondents, with the post-stratification weights assigned. The percentage of female respondents (85%) is higher compared to male respondents in the weighted Black Sea sample.

Table 4 Personal demographic information of respondents the percentage for the total sample and the Black Sea Basin

Background of Respondents		
Gender of respondents	Total Sample %	Black Sea %
Gender female	50%	85%
Gender male	50%	15%
Age	Percent	Percent
18-25	4%	0%
26-35	13%	3%
36-45	22%	20%
46-55	36%	6%
56-65	23%	63%
65 +	2%	8%
Ethnicity	Percent	Percent
White (Caucasian)	95%	99%
Black	<1%	0%
Asian	<1%	0%
Mixed ethnicity	4%	0%
Other	<1%	<1%
Marital status	Percent	Percent
Married	51%	92%
Cohabiting	16%	4%
Single	25%	1%
Separated/Divorced/Widowed	8%	3%
Caring responsibilities (e.g. caregiver to children, child with disability, elderly parents, etc.)	Percent	Percent
Yes	40%	76%
No	59%	24%
Prefer not to say	1%	0%

Education level	Percent	Percent
Primary level, or equivalent	<1%	0%
Secondary level, or equivalent	6%	<1%
Bachelor's, or equivalent third level	15%	1%
Master's, or equivalent third level	60%	79%
Doctoral or equivalent third level	18%	19%
Other industry specific qualification	1%	0%
Prefer not to say	<1%	0%

About 26% of the of the Black Sea Basin sample consists of employees aged between 36–55 and 63% are between 56-65 age. Most of the sample was married or cohabiting and approximately 76% of respondents have some type of caring responsibilities. A high proportion of respondents were also highly educated with 79% of respondents having a Master's degree, and 19% having a Doctoral degree.

GEOGRAPHICAL DISTRIBUTION OF WIN-BIG SURVEYED INDUSTRIES AND FIRMS

To contextualize the respondents' professional settings, this section reports findings on industry and firm characteristics, including the blue economy sector, organizational type, country of operation, firm size, and the share of female employees within organizations.

Table 5 displays the breakdown of the Black Sea Basin respondents' industry and the country they work. Most of the respondents work in Bulgaria (Romanian sample comprises of just 6 responses).

Table 5 Country and Industry where the respondents' work: Black Sea Basin

Respondents Country and Industry: Black Sea Basin	
Country where respondents' organisation is based	Percentage
Bulgaria	68%
Romania	32%
BE sector ⁹	Percentage
Living resources	8%
Blue biotechnology	0%
Coastal tourism	4%
Marine renewable energy and offshore exploration (oil and gas)	0%
Engineering and technology	13%
Ports and shipping	8%
Research and marine education (third level)	29%
R&D related to the marine	17%
Public administration related to the marine	4%
Market & services	8%
Unspecified Blue Economy Industry	8%

In the Black Sea Basin, the largest shares of respondents are in research and marine education (tertiary level) (29%), marine-related R&D (17%), and engineering and technology (13%).

⁹ The percentages for the blue economy sectors are not weighted.



Figure 6 illustrates gender distribution across the Black Sea countries: both, in Romania and Bulgaria the percentage of female respondents is higher.

Figure 6 Gender distribution across the Black Sea countries

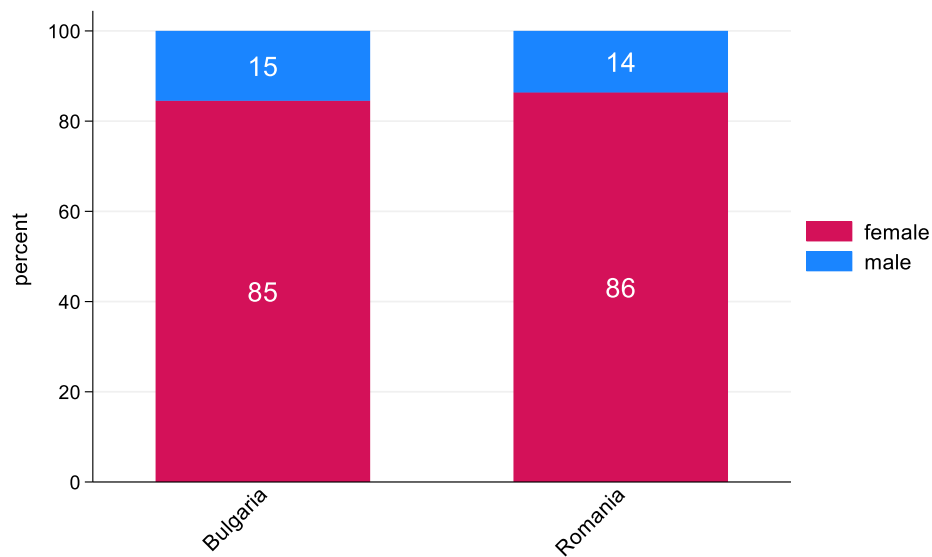


Table 6 displays data about the type of organisation, whether Black Sea Basin respondents work in a public institution, industry or in a non-governmental entity. It also includes information about the size of the organisation given by the total number of employees.

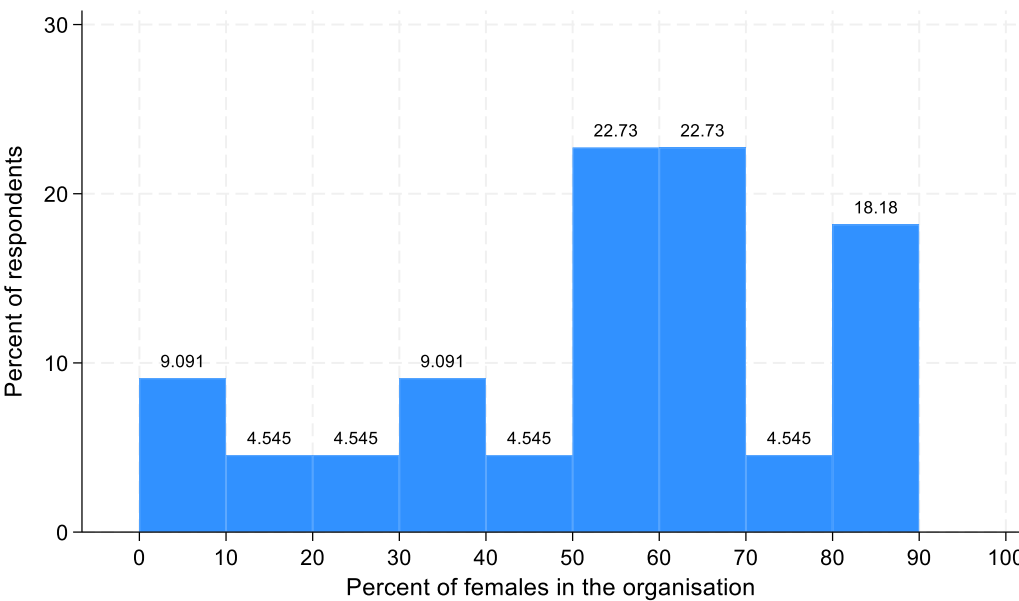
Table 6 Information on the organisation type and size among Black Sea respondents

Type and Size of Organisation	
Type of Organisation	Percentage
Commercial State Company	5%
Government Agency/ Department / Public Body (National)	5%
Government Agency/ Department/ Public Body (International, e.g. EU, OECD)	0%
Higher Education Institution	18%
Local / Regional Government	5%
Industry - Cluster/Network	4%
Industry - Micro Enterprise	9%
Industry - Small Medium Enterprise (SME)	18%
Industry - Multinational Company (MNC)	0%
Industry Representative Organisation	0%
Media & Communications	0%
Non-Government Organisation (NGO)	9%
Not For Profit	4%
Port Authority	0%
Research Institute (Public and Private)	23%
Firm Size (total number of employees)	Percentage
< 10	36%
10 – 25	14%
26 – 50	9%
51 – 100	18%
101 – 200	9%
201 – 500	5%
501 – 1000	0%
> 1000	9%

In terms of the type of organisation, the largest portion of Black Sea Basin respondents work in research institutions (public and private) (23%), higher education institutions (18%) and NGO (9%).

In terms of firm size, 36% work in organisations with less than 10 employees, 14% in firms with 10-25 employees and 18% work in companies with 51-100 employees. A small portion of respondents work in large sized companies.

Figure 7 Black Sea Basin responses to the WIN-BIG Survey question: “Approximately what percentage (0 – 100) of the persons employed are female?”¹⁰



About 50% of the respondents indicated that between 50% to 70% of the employees in their firm are female. About 18% of respondents answered that female employees constitute from 80% to 90% of the employees in the organisation. Another 17% indicated that 0-30% of their workforce is female, and about 14% noted that from 30% to 50% of their employees is female (figure 7).

¹⁰ This histogram is based on the unweighted results.

WORKING ARRANGEMENTS AND CULTURE

The wider literature on gender inequalities refers to the problem of underrepresentation of women in managerial and supervisory positions, especially in male-dominated sectors (Gallo and López, 2023; Macarie and Moldovan, 2012). Studies highlight that flexible work hours and work-life balance are important for females to be able to reach senior positions (Carrasco-Santos et al., 2020; Carvalho, 2018). Furthermore, studies note that gender inequalities can be exacerbated because of taking carer's leave on the promotion to senior positions and on subsequent wage increases (Evertsson, 2016; Matysiak and Cukrowska-Torzewska, 2021).

To investigate some of these issues, this section presents the Black Sea Basin survey responses related to the employment level of the respondents, working arrangements and organisational culture surrounding gender equality.

Table 7 outlines data on respondents' employment characteristics related to the position, contract, and years of experience in current employment.

Table 7 Employment characteristics of respondents (Black Sea Basin respondents)

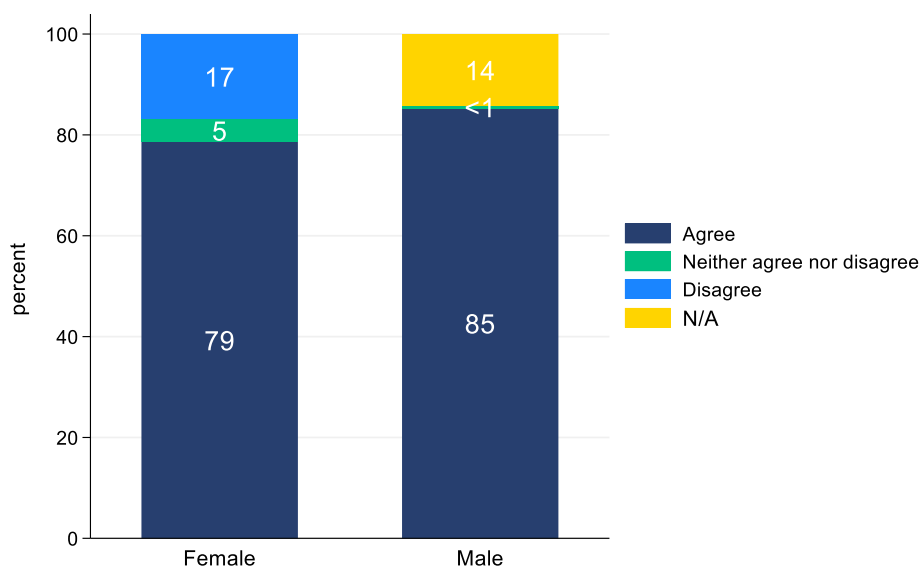
Employment Characteristics of Respondents	
Employment level	Percentage
Executive or senior management	50%
Middle management	18%
First-level management	14%
Intermediate or experienced employee	9%
Entry-level employee	9%
Employment situation	Percentage
Full-time permanent	39%
Full-time contract	50%
Part-time permanent	9%
Part-time contract	2%
Seasonal	0%
Years in current employment	Percentage
Less than 1 year	0%



1-5 years	66%
6-10 years	1%
11-15 years	4%
More than 15 years	29%
Taken periods of leave during current employment	Percentage
Yes	14%
No	86%
Prefer not to say	0%

Most of the respondents in Black Sea Basin occupy senior/executive (50%) and middle management (18%) positions. Majority of respondents (89%) work full time based on permanent or fixed term contract. More than half of respondents (66%) have worked at their current employers from 1-5 years and 29% worked for more than 15 years. In addition, the survey elicited replies regarding periods of extended leave (such as maternity, paternity or carer's leave) and 14% of respondents had taken a period of extended leave at their current employment.

Figure 8 Black Sea Basin responses to the WIN-BIG Survey question: "It is possible to strike an appropriate balance between my work and home life"

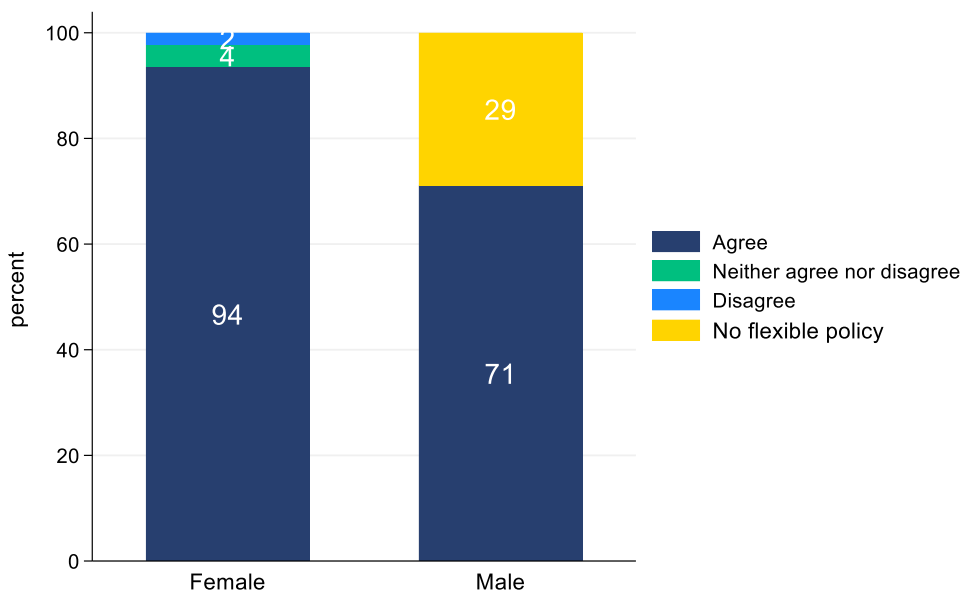


As shows in Figure 8, overall, 80% of respondents indicate that they can strike an appropriate work-life balance, with higher percentage of males (79% female vs 85% male) agreeing with the statement.

While 14% of male respondents chose “not applicable” option, 17% of females disagreed with the statement.

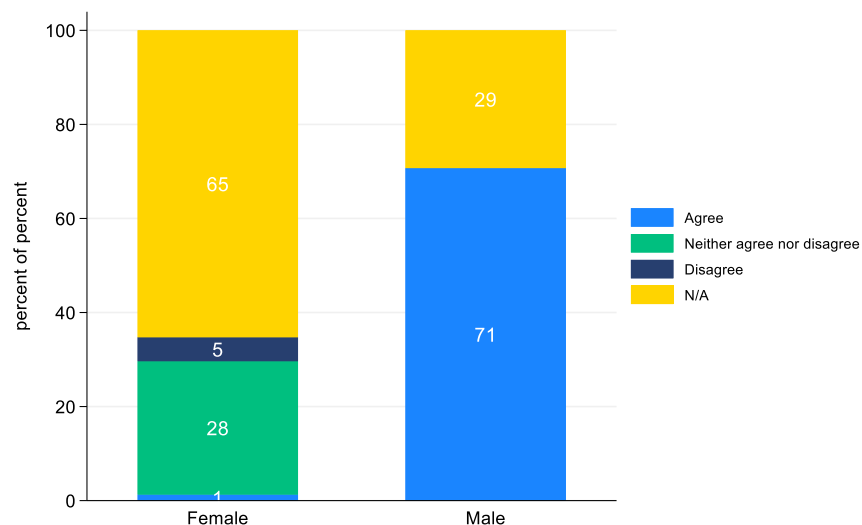
Flexible working arrangements with fully remote or hybrid work options have become more common since the Covid-19 pandemic, to support work-life balance and operational flexibility. The WIN-BIG survey investigated whether these are also present in the EU Blue Economy. Figure 9 depicts responses regarding the accessibility to these flexible working arrangements. Most of female respondents (94% female versus 71% male) work in organisations with flexible working policy.

Figure 9 Black Sea Basin responses to the WIN-BIG Survey question: “At my work, there are flexible working arrangements available that are suitable to my needs.”



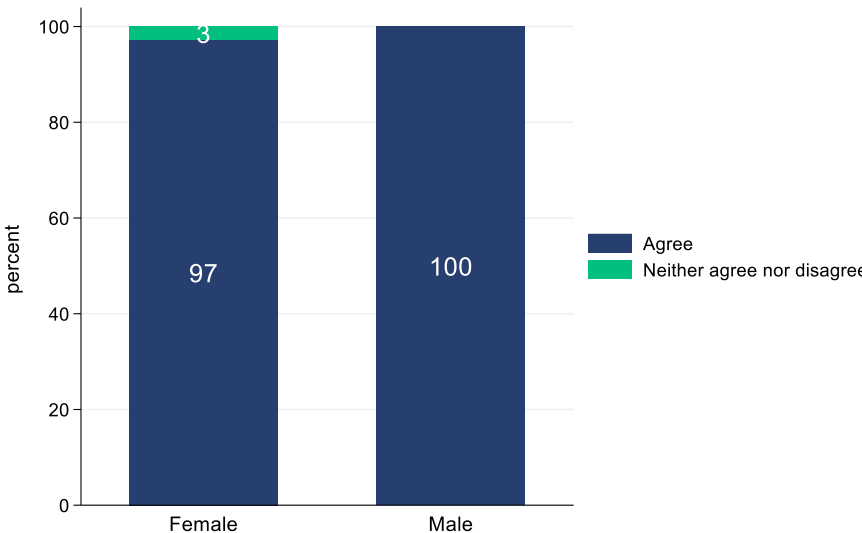
WIN-BIG also investigated the perceived impact of carer’s leave periods on career progression. Of respondents who have taken leave, higher percentage of male respondents (71% male vs. 1% female) think that taking leave had a negative impact on their career progression. However, 28% of female respondents neither agree nor disagree with this statement, which suggests that they may not know the impacts of the carer’s leave on their career progression. Figure 10 highlights these results, illustrating clear differences between female and male responses and a gender biased perception on this matter.

Figure 10 Black Sea Basin responses to the WIN-BIG Survey question: “If you have taken carer’s leave do you believe it has had a negative impact on your career progression?”



When investigating the prevailing Blue Economy organisational culture within the Black Sea Basin the respondents report mainly positive views on the inclusivity of their organisations (97% female and 100% male), as shown in Figure 11.

Figure 11 Black Sea Basin responses to the WIN-BIG Survey question: “The prevailing culture and atmosphere in my organisation/firm is inclusive and friendly to all.”



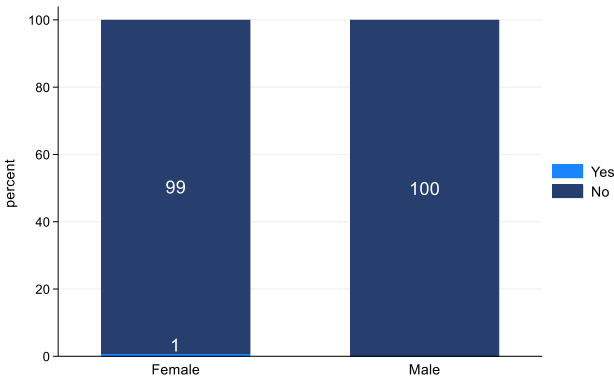
GENDER CULTURE OF THE ORGANISATION

The WIN-BIG survey also assessed the respondents' perceived experiences of gender discrimination and harassment in the industry and sector. The perception of gender discrimination in the workplace is described as a perception of being deprived of opportunities at an employee's workplace and is distinct from sexual harassment (del Carmen Triana *et al.*, 2019). Discrimination refers to any systematic unfair treatment of an individual or group based on personal or social circumstances and characteristics (Ramos Martín, 2014). In addition, studies refer to mobbing, bullying and harassment that need to be tackled at the societal and institutional level as these can negatively affect individual's work performance, and may result in women quitting their jobs (Dogg *et al.*, 2022; Lorient *et al.*, 2020).

Gender-based harassment in maritime transport and seagoing oceanography has also been acknowledged as an issue that acts as a barrier to women's participation in these industries (Dragomir, 2019; European Parliament, 2023; Boström and Österman, 2022; Legg *et al.*, 2023). Studies note that through understanding the value and meaning of diversity, equity and inclusion, leaders of organisations can create an environment where all people feel recognized, have access to resources and opportunities and can create new innovations and solutions (Ashikali and Groeneveld, 2015; Coleman and Taylor, 2023).

The results obtained about the perception of gender discrimination, experience of harassment and leadership commitment to diversity, equity and inclusion are depicted in the next figures.

Figure 12 Black Sea Basin responses to the WIN-BIG Survey question: "I have experienced gender discrimination within my organisation/firm."



As illustrated in Figure 12, only 1% of female respondents reported gender discrimination at their workplace. This is quite low, but these results arise from a very limited number of respondents so shall be taken with caution.

Figure 13 also shows that at least 1% of female respondents have witnessed gender discrimination in their organisation.

Figure 13 Black Sea Basin responses to the WIN-BIG Survey question: “I have witnessed gender discrimination within my organisation/firm.”

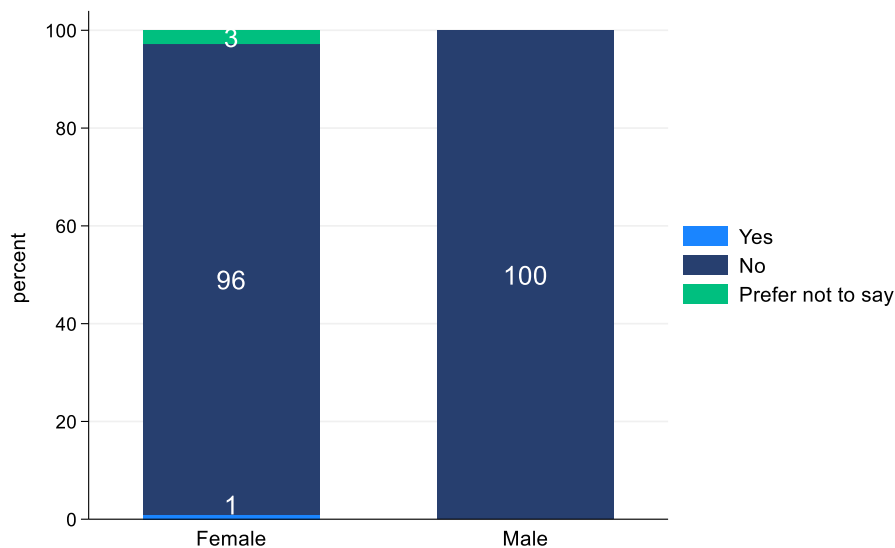


Table 8 presents a summary of the proportion of respondents who have suffered some form of harassment either in their organisation or in their industry in general.

Table 8 Black Sea Basin responses to the WIN-BIG Survey question: “Experience of harassment at organisation and industry levels”

Experience of Harassment			
	Yes ¹¹	% Female	% Male
Have you suffered any of the following forms of harassment in your firm/organisation?	3%	4%	0%
Have you suffered any of the following forms of harassment in your industry more generally? ¹²	16%	23%	0%

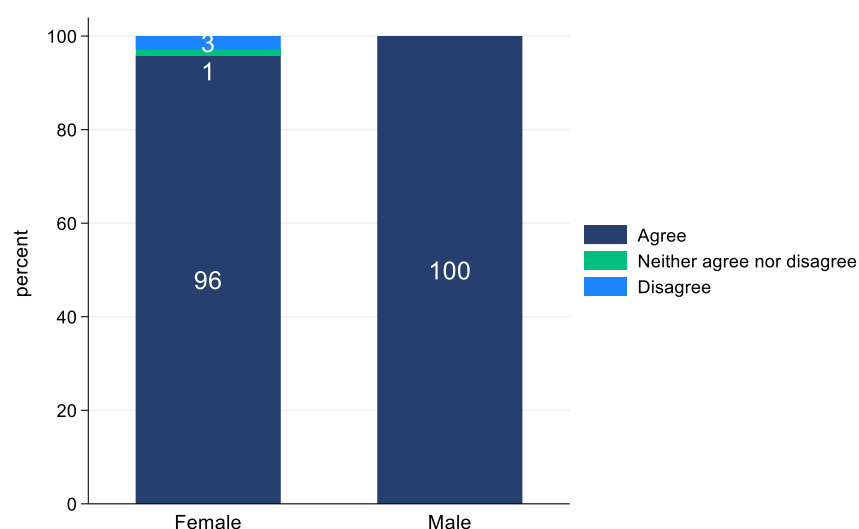
Only female respondents in the Black Sea Basin reported to have suffered some form of harassment within their firms/organisation (3%) and in general at industry level (16%).

¹¹ Respondents could choose the following forms of harassment (tick all that are relevant): Offensive jokes or slurs, Physical assaults or threats, sexual assaults or threats, intimidation, insults or put-downs, stalking, other (please state).

¹² The question on forms of harassment in industry more generally was introduced in the survey 3 months later from the launch. Therefore, the sample for this question is smaller and equals to 13.

Figure 14 displays Black Sea Basin respondents' views on internal leadership commitments to gender equality, diversity and inclusion (EDI), within their organisation. While most respondents confirmed that their leadership is committed to EDI, 3% of Black Sea Basin female respondents disagreed.

Figure 14 Black Sea Basin responses to the WIN-BIG Survey question: "Leadership in my organisation/firm is committed to Gender Equality, Diversity and Inclusion"



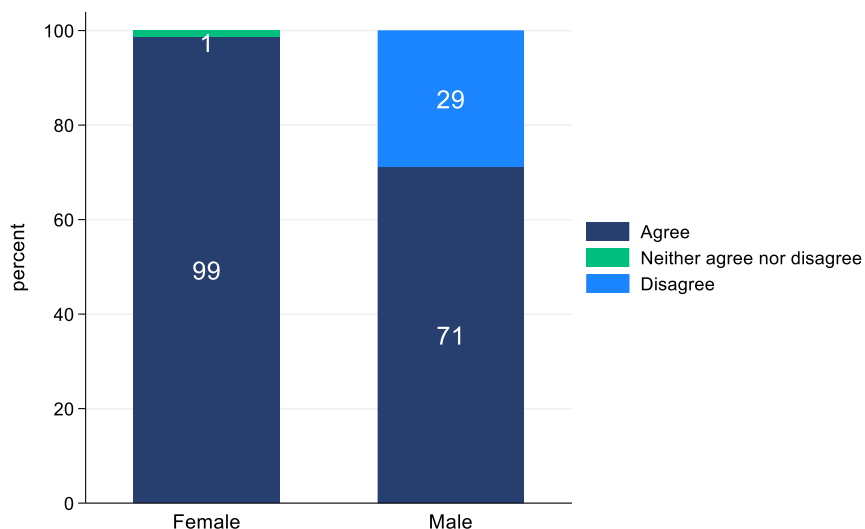
PERCEPTION OF OPPORTUNITIES

In this section the results about the perception of available opportunities at respondents' workplace are presented. The survey included questions on the availability of career growth opportunities, such as access to training and mentorship.

Previous studies note that training and mentorship programmes fill the gap between knowledge and action and play a positive role on career outcomes (Martini and Cavenago, 2016; Wikström et al., 2023). Workplace training is also acknowledged as a lifelong learning process that realises the potential for skills development, especially considering the need of new skills due to technology change and digitalisation (Lucas et al., 2018; Tikkanen et al., 2018). The existing literature also refers to the importance of training and mentorship to ensure gender equality. First, studies note that women face multiple obstacles such as lack of networks, support from colleagues, non-transparent rules of promotion and recruitment and work-family conflicts, and thus training and mentoring programs are important to close the skills gap between men and women (Górska and Burlakova, 2025; Holzinger et al., 2019; Roosmaa and Saar, 2023). Second, the literature argues that in certain sectors of economy, for example in STEM, women face stereotypes and, thus mentorship programs are important as they empower women and create an environment where women are given equal opportunity to men to develop as leaders (Barabino *et al.*, 2020). Shellock *et al.* (2022) find that encouragement and support from superiors, mentorship, training and coaching are important enablers to overcome gendered barriers, such as lack of trust, leading to the acceptance of women leaders. Mentoring programs are important, especially in masculine fields, as such programs can guide and train all the across—gender workforce to accept women to senior positions or on corporate boards (Varriale et al., 2016). Finally, the literature from the EU blue economy argues that to bridge the gender gap in sectors such as marine renewable energy and maritime transport that is in its transition towards technological advancements and automation, training is necessary in energy-related areas and technical skills (Clancy, and Feenstra, 2019; Di Vaio, 2023; Kim et al, 2019).

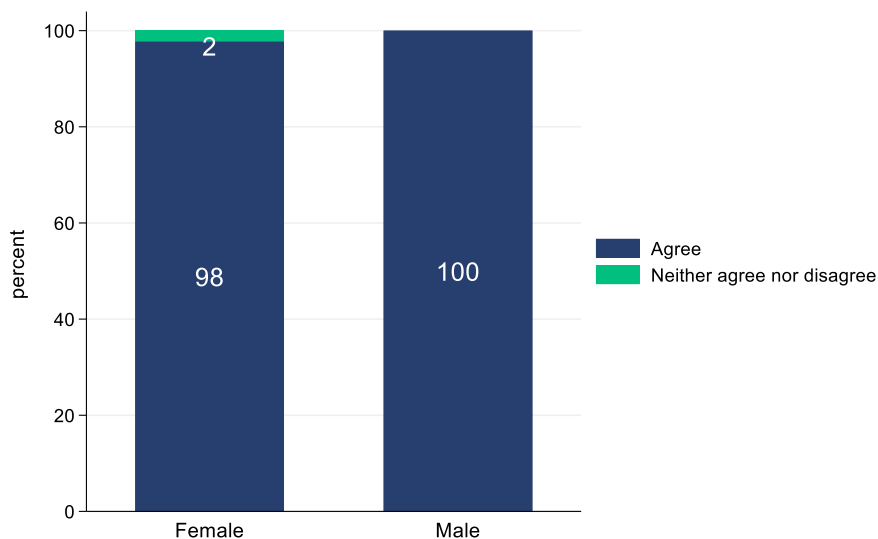
Given these factors, this section of the report documents respondents' views related to training, mentorship and career opportunities. Figure 15 shows the survey results for the broad question on access to the opportunities. Most of respondents (94%) provided positive response to the statement on the access to opportunities to support their career aspirations. Among male respondents, 29% disagreed with the availability of opportunities for their career aspirations.

Figure 15 Black Sea Basin responses to the WIN-BIG Survey question: “I have access to the opportunities I need to support my career aspirations.”



We next investigated whether the process of recruitment was perceived as fair and transparent.

Figure 16 Black Sea Basin responses to the WIN-BIG Survey question: “The process of applying for an internal vacancy is fair and transparent?”



As shown in Figure 16, the majority of respondents consider it to be fair and transparent, with only 2% of female respondents provided neither agree nor disagree response to the statement “The process of applying for an internal vacancy is fair and transparent”.

Figure 17 Black Sea Basin responses to the WIN-BIG Survey question: "I have access to the training I need to support my career aspirations."

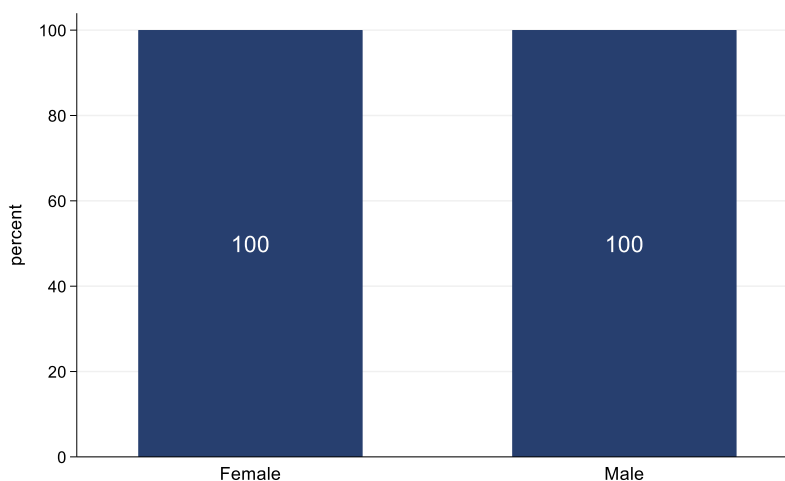
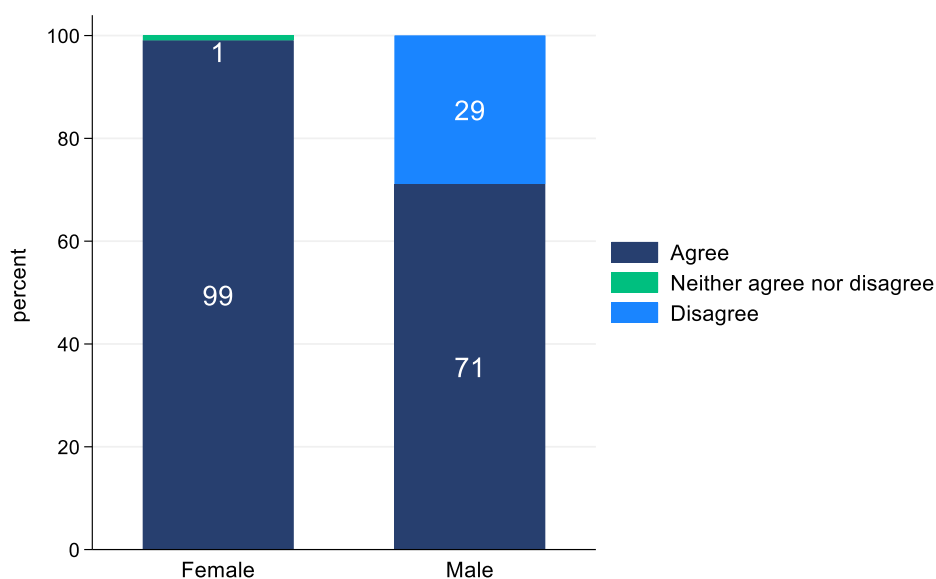


Figure 17 shows that all respondents in Black Sea provided a positive response regarding the access to training.

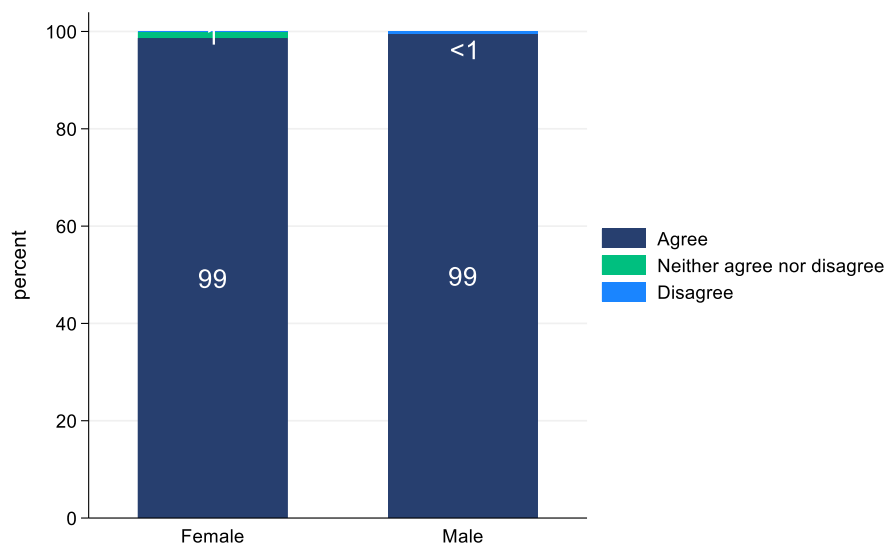
When it comes to the access to the mentoring opportunities to support career aspirations, 95% of respondents agreed about access to mentoring. Among male and female respondent answers, 29% of male respondents disagreed with the statement and 1% of female respondents neither agreed nor disagreed (Figure 18).

Figure 18 Black Sea Basin responses to the WIN-BIG Survey question: "I have access to the mentoring (formal or informal) I need to support my career aspirations."



We then wanted to evaluate direct managerial/supervisor support to career aspirations.

Figure 19 Black Sea Basin responses to the WIN-BIG Survey question: “My direct supervisor supports my career aspirations.”



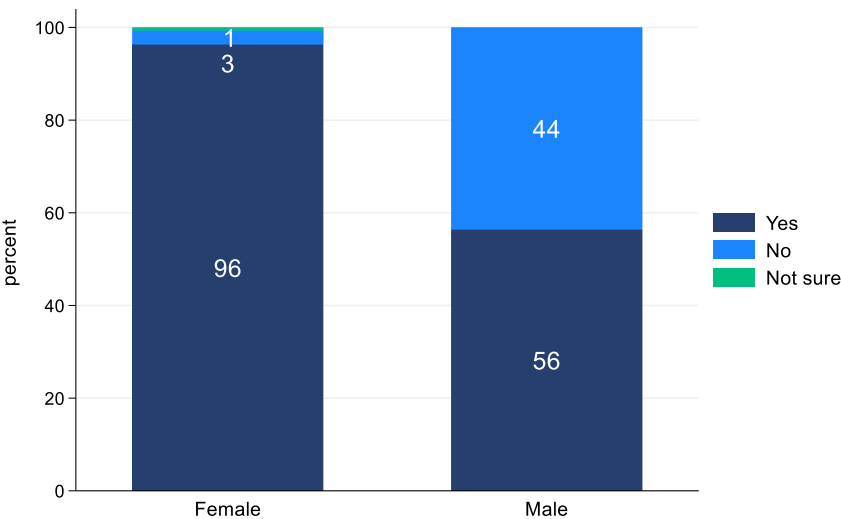
As shown in Figure 19, 99% of respondents reported agreement with the statement “My direct supervisor supports my career aspirations”.

GENDER BIAS POLICIES AND FRAMEWORKS IN THE WORKFORCE

To identify the prevalence and use of policies that might support gender equality, the survey also asked respondents about the existence of formal organization/firm policies and rules for gender balance in hiring and career promotion, or the existence of internal gender plans at their workplaces. Gender parity laws on Boards of Directors, incorporation of gender mainstreaming into policies, policies on work-life balance are recognized factors that can promote gender equality (Alonso Gallo and Gutiérrez López, 2023; Casey Skibnes and Pringle, 2011).

Figure 20 shows that regarding formal strategies or policies related to gender balance in hiring, 89% of the total respondents answered positively, 10% negatively and 1% were not sure.

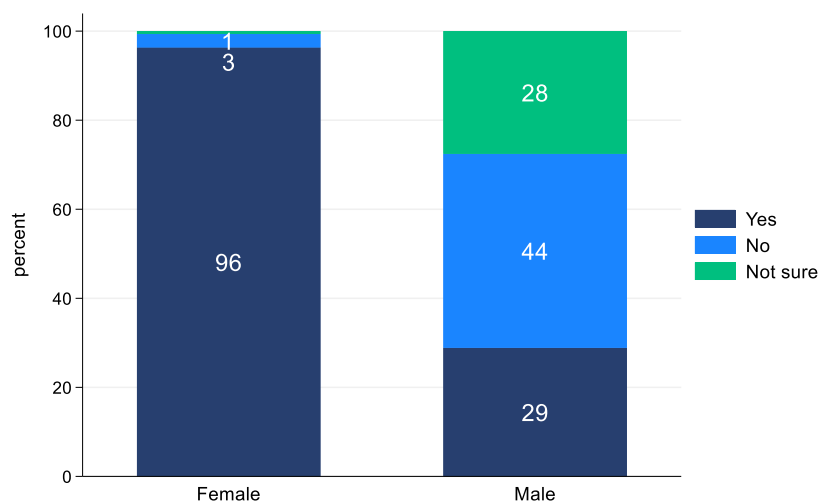
Figure 20 Black Sea Basin responses to the WIN-BIG Survey question: “Does your firm/organisation has a strategy or formal policy related to gender balance in hiring processes?”



A higher percentage of male respondents (44% male vs. 3% female) reported that their organisation does not have a policy/strategy related to gender balance in hiring processes, revealing either some lack of knowledge from the male employees or miscommunication from the management on these matters.

Figure 21 displays the results on whether respondents’ organisations had a formal gender policy/plan.

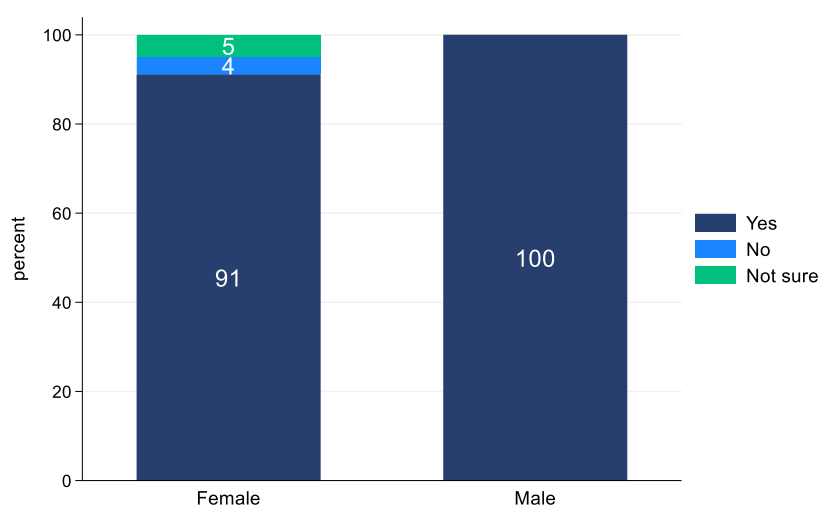
Figure 21 Black Sea Basin responses to the WIN-BIG Survey question: “Does your firm/organisation have a formal gender policy/plan?”



In total, 90% of respondents reported that their organisation has a formal gender policy or plan. A higher percentage of male respondents (42% male vs. 3% female) indicated that their organisation lacks a gender policy.

When questioned about the existence of formal or informal support to the promotion of women, responses were similar across genders.

Figure 22 Black Sea Basin responses to the WIN-BIG Survey question: “Does your firm/organisation formally or informally support the promotion and advancement of women?”

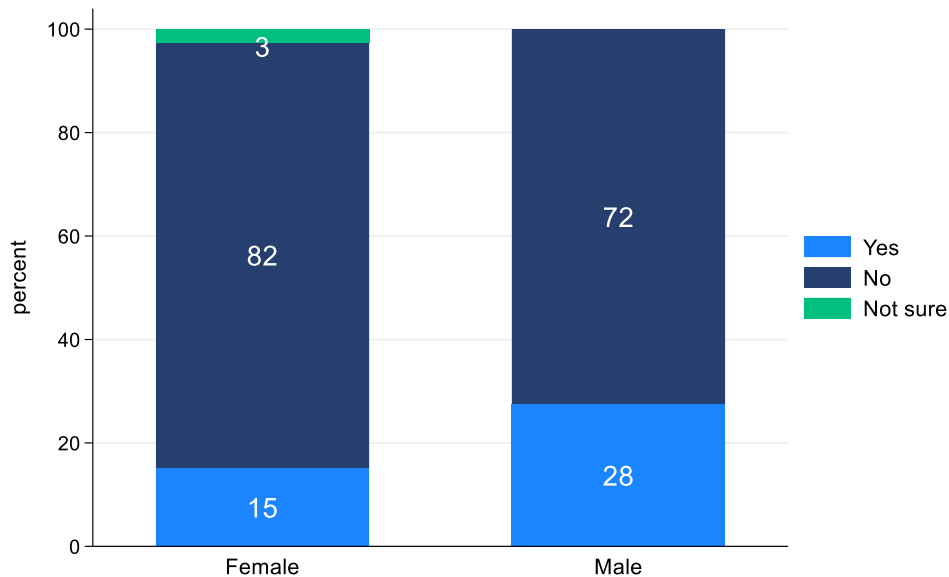


As shown in Figure 22, 93% of respondents perceive their organisation as supportive of women's career growth. A small proportion of female respondents disagreed with the statement (4%) or was not sure about the support (5%).

PERCEPTION OF BARRIERS

Similarly to the analysis of perceived opportunities, the WIN-BIG survey also asked respondents about their perception of barriers to career progression within their organisations/firms and across industries and sectors. This section also presents the results on whether the respondents' companies have female managers and role models. According to Turesky and Warner (2020) companies with female-managers have greater gender sensitivity, more flexible work-life benefits and perceived equal opportunities. An increased of share of female top managers is also associated with subsequent increases in the share of women in midlevel management positions (Kurtulus and Tomaskovic-Devey, 2012). Studies also find that female role models reduce stereotype threat and positively impact women's career-related engagement (Cortland and Kinias, 2019; Sealy and Singh, 2010).

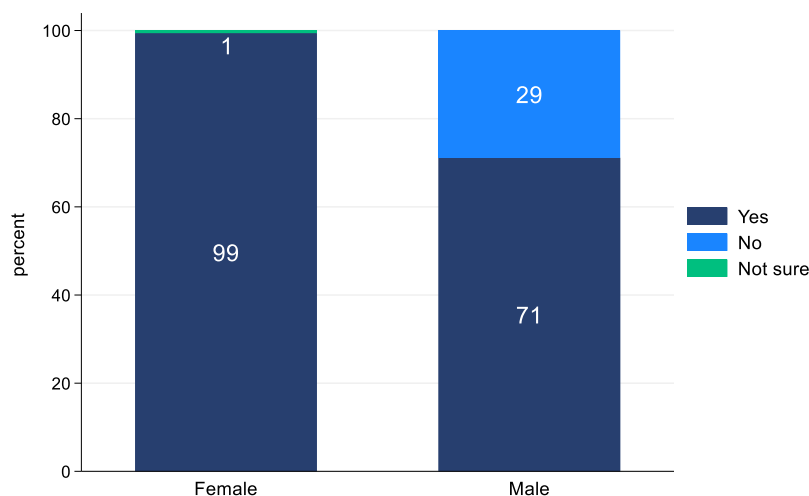
Figure 23 Black Sea Basin responses to the WIN-BIG Survey question: "In your opinion, do barriers exist preventing women being promoted to senior positions in your firm/organisation?"



As shown in Figure 23, around 17% of respondents answered that there are barriers preventing women being promoted to senior positions. Surprisingly, a higher percentage of male respondents 28% answered that “yes” there are barriers, compared to 15% of female employees.

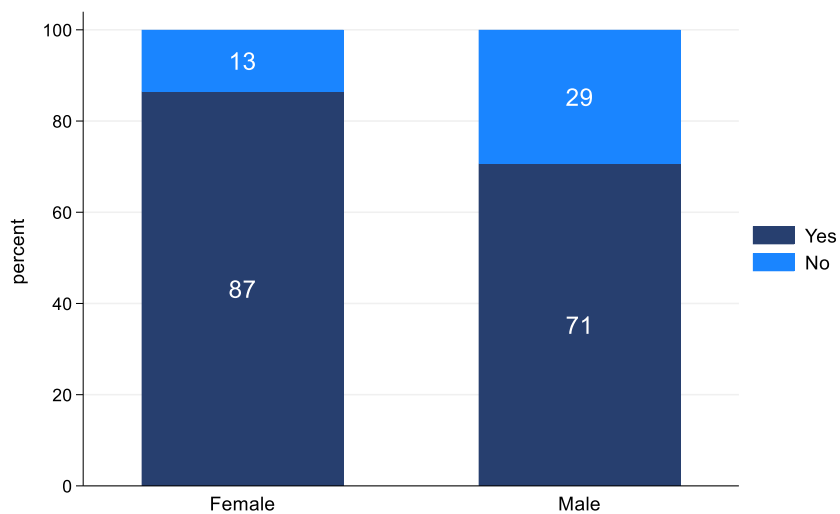
When assessed from a different perspective, on whether respondents’ organisations include women in managerial positions, approximately, 94% of respondents mentioned that they have a woman manager in their organisations (99% of females and 71% males). Figure 24 illustrates this result.

Figure 24 Black Sea Basin responses to the WIN-BIG Survey question: “Do you have any women managers in the firm/organisation?”



WIN-BIG then investigated whether female role models were abundant in EU Blue Economy.

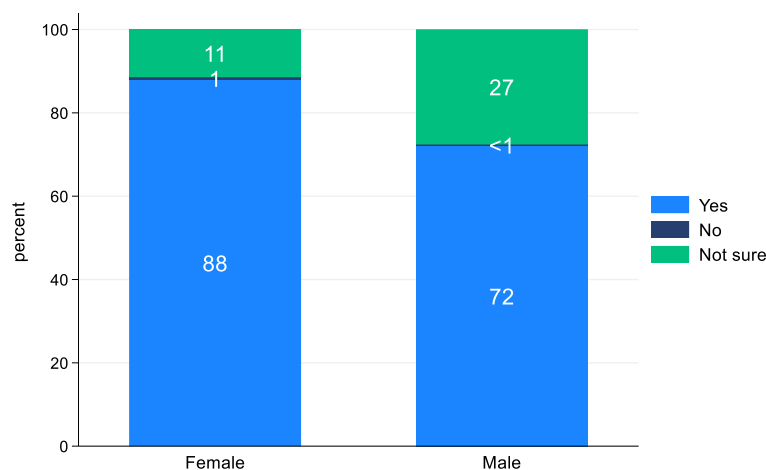
Figure 25 Black Sea Basin responses to the WIN-BIG Survey question: “Do you personally have any women role models in the firm/organisation?”



Compared to the question on female managers, more negative responses are observable when it comes to the presence of female role models across organisations (Figure 25). A higher percentage of female respondents confirmed that they have women role models in their organisations (87% female and 71% male).

WIN-BIG investigated whether the social structures in place in each member state are perceived to impact the progress of gender equality.

Figure 26 Black Sea Basin responses to the WIN-BIG Survey question: “Does the social structures in the country where your firm is based (the norms/patterns of relations between family, religion, economic, political and education institutions of the society) impact on the achievement of gender equality in your industry?”



Majority of respondents (85%) believe that social structures in the country where their firm is based (the norms and patterns of relations between family, religion, economic, political and education institutions of the society) impact the achievement of gender equality in their industry and 14% are not sure. Of note, a higher percentage of female respondents indicated that social structures impact gender equality: 88% of females versus 72% of men. This variation suggests that women may perceive that societal norms have a greater impact in shaping gender inequalities.

FEMALE PERCEPTIONS OF GENDER INEQUALITIES

In this section of the survey, female only respondents were invited to respond to questions related to the gender pay gap, their perceptions of whether they are treated equally to men in the workplace and whether they have the same promotion opportunities as men. Equal treatment at work, equal pay and opportunities are fundamental principles of EU law (Guerrero Padrón et al., 2023). Most EU countries prohibit gender discrimination by law and have enacted specific equal treatment legislation (Böök, 2021). Nevertheless, studies note that the gender wage gap still remains a problem (Hedija, 2017; Lausi et al., 2021; Segovia-Pérez, 2019, Landmesser et al., 2019).

* Note this section only includes the results from 14 female respondents. No sectorial analysis was therefore performed.

Figure 27 Black Sea Basin responses to the WIN-BIG Survey question: “Do you feel you are treated the same as men in your workplace?”. Female responses only.

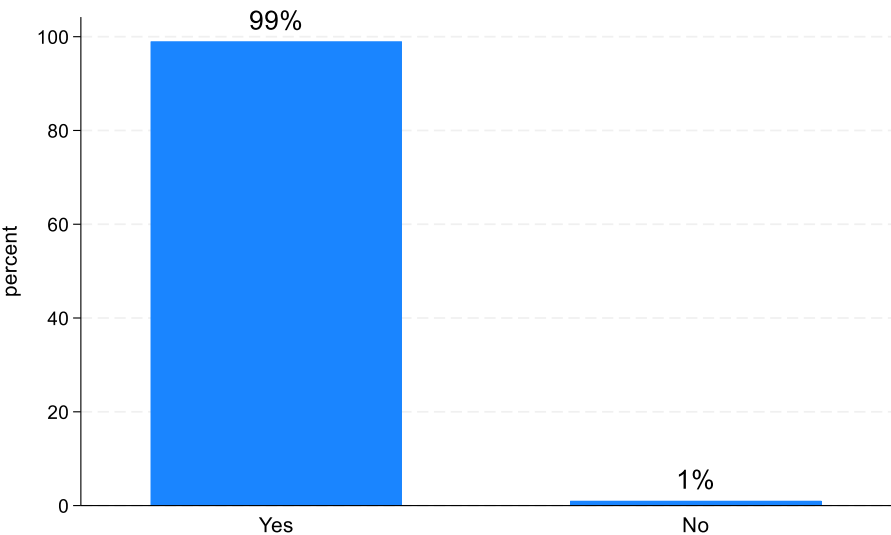
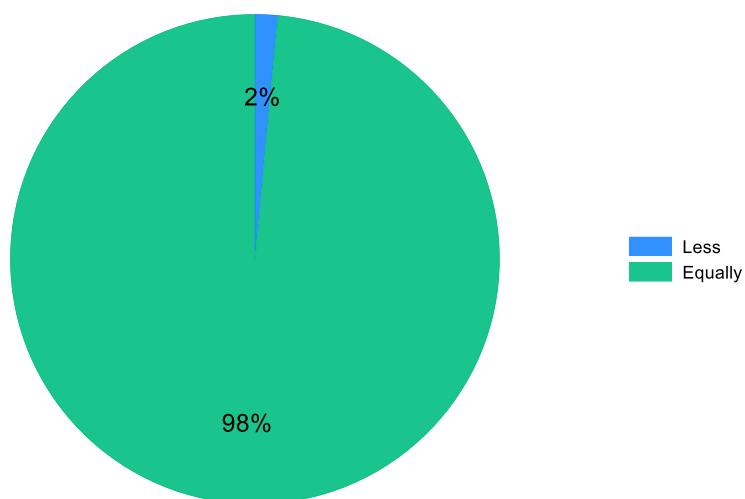


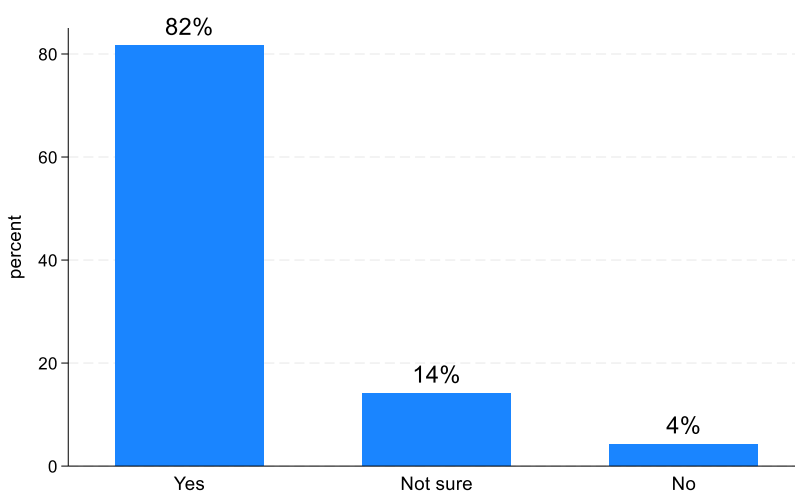
Figure 27 shows female respondents’ perceptions of whether they feel they are treated the same as men in their workplace. In total, 99% of female respondents reported that they received the same treatment as their male colleagues in the workplace.

Figure 28 Black Sea Basin responses to the WIN-BIG Survey question: “In comparison with your male counterparts do you feel that you have more, less, or equal promotion opportunities in your industry?”. Female responses only.



Examining the perceived promotion opportunities available to women compared to their male counterparts resulted in the data depicted in Figure 28. Despite the low number of respondents in this sample, still 2% of females think they have less opportunities in their industry, while 98% feel that they have equal promotion opportunities.

Figure 29 Black Sea Basin responses to the WIN-BIG Survey question: “Do you feel that attitudes and behaviour towards women in your industry have changed for the better during your career?”. Female responses only.

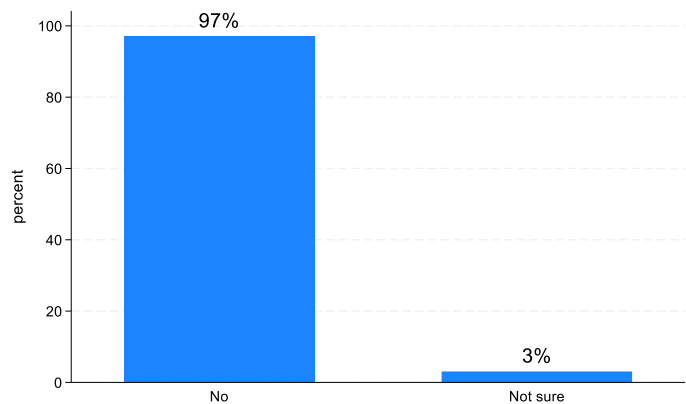


Overall, 82% of female respondents think that attitudes and behaviour towards women in their industry have changed for the better during their career. However, 14% of women employees answered that they are not sure and 4% stated that that attitudes and behaviour towards women in their industry have not changed for the better during their career. This suggests that while most

women perceive progress in gender-related attitudes, some women remain uncertain about the extent of this change or do not see it in their particular industry.

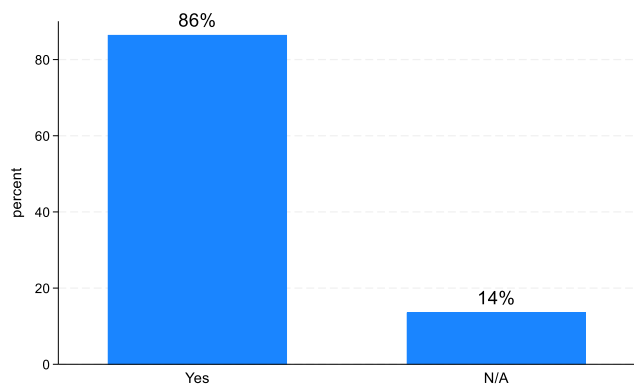
In terms of gender pay-gap, 97% of respondents believe to be paid equally to their male colleagues and 3% were not sure (Figure 30).

Figure 30 Black Sea Basin responses to the WIN-BIG Survey question: “Do you think you are currently being paid less than your male colleagues, doing the same job, in your industry?” Female responses only.



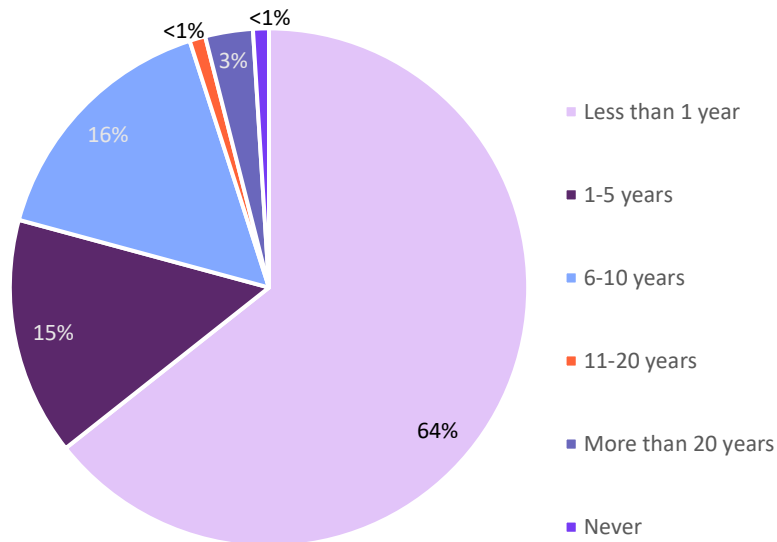
Next, WIN-BIG investigated the perception of being provided adequate equipment to carry their duties. Figure 31 shows that 88% of female respondents believe that they were provided with the right equipment to carry out their work.

Figure 31 Black Sea Basin responses to the WIN-BIG Survey question: “If required for your work, are you provided with the right equipment (including the right size/fit) to carry out your role, including Personal Protective Equipment (PPE)?”. Female responses only.



Finally, the survey asks female respondents their views on how long in years it will take to reach gender equality in their industry (Figure 32).

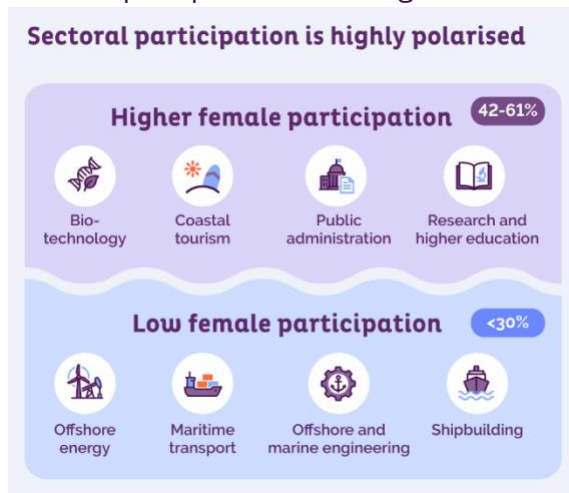
Figure 32 Black Sea Basin responses to the WIN-BIG Survey question: “How long do you think it will be until gender diversity in your industry is equal?”. Female responses only”



Interestingly, and despite mostly providing very positive answers, when this question arise among female respondents, 80% think that it will still take up to 5 years until gender diversity in their industry will be equal, while 16% of females think that 6-10 years will be required and 3% think more than 20 years with be required to reach gender diversity. This implies that there is a silently, not spoken nor communicated gender unbalance in Black Sea Basin Blue Economy.

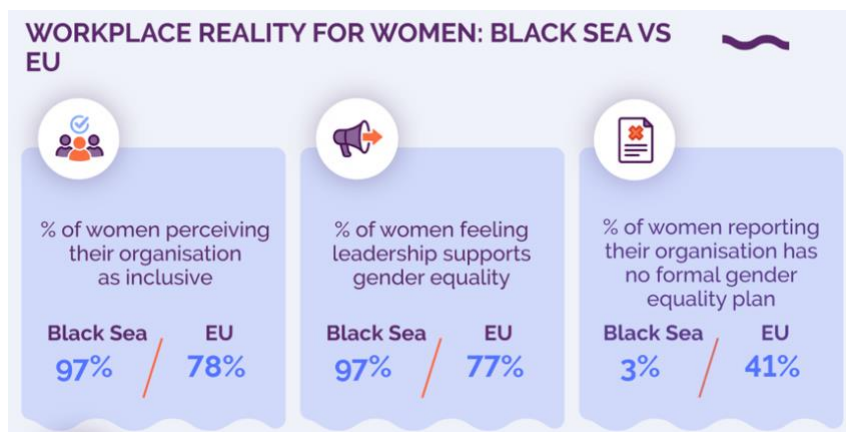
Conclusions

This report presents findings from a survey that was conducted as part of the WIN-BIG project to map the gender status of the blue economy across six Sea Basins within Europe. The Black Sea Area has an estimated 165,777 people employed in the blue economy, and **females comprise 44% of the total labour force**. Across the entire Black Sea ocean economy, women are well represented in sectors such as Biotechnology, Coastal Tourism, Public Administration and Research and Higher Education. However, female representation is lower in sectors related to Offshore, Engineering, Transport and Energy related sectors, which may reflect wider trends of lower female representation in STEM intensive fields.



The sample of Black Sea Basin is small, comprising of 24 responses. Therefore, any responses should be interpreted with extreme caution. Most respondents are from research and higher education and R&D related to the marine. **The results from the Black Sea region are not generalisable**. The lack of responses also makes it hard to compare the perception between male and female responses. Results from the survey can only be seen as a **snapshot of attitudes** towards gender inequalities in the blue economy sectors within the Sea Basin.

In terms of **working arrangements and general culture within organisations the picture is positive**. Most female respondents report access to flexible working arrangements, which have become more prevalent since the Covid-19 Pandemic. Although, a certain percentage of respondents (94%) of females confirmed that they have flexible hours, 4% provided neutral response and 2% disagreed. Only 3% of female respondents disagreed that leadership within their organisation is committed to gender EDI, and 1% neither agreed nor disagreed.





Only 1% of female respondents reported **gender discrimination** within their **organisations** and **3%** noted that they have **experienced** some form of **harassment** within their **organisations**. In **the wider industry 23% of females** reported being harassed, which still suggests problems at the industry level.

Due to the small sample, it was impossible to capture information on these aspects at a sectoral level, and also about availability of career opportunities, training and mentoring to differentiate responses by gender. Nevertheless,

most respondents provided positive responses.

With respect to **policies** directly related to advancing equality in the workplace, **the vast majority of respondents (97%)** said that their organisation **does not** have a **gender policy** in hiring. **Similarly, 3% of females** reported their organisation **does not** have **formal gender policies**. A small portion of female respondents (4%) also think that their organisations do not formally support the promotion and advancement of women and 5% are not sure. **Approximately 17% of female respondents** noted that they find it **difficult** to strike **work-life balance**.

A higher percentage of male respondents (28% male versus 15% female) think that **barriers exist preventing women being promoted to senior positions**, (although the sample is very small).

For the questions asked solely of female respondents, respondents were mostly positive – albeit the sample comprised of only 14 responses. For example, only 3% was not sure about the pay gap and only 2% reported that they have less promotion opportunities in their industry. Yet, and despite an overly positive rate of responses to most questions, in the final section results show that most female respondents think that at least up to 5 years until gender diversity is equal.

Policy recommendations

It is encouraging that gender equality has been recognized by the EU as a strategic and relevant aspect for a just and fair transition, not only through its EU Gender Equality Strategy 2026-2030, but also through the adoption of various cross-cutting directives and action plans. The EU Gender Equality Strategy 2026-2030 introduces its roadmap principles, covering issues related to equal pay and economic empowerment, work-life balance and gender equality in care, equal employment opportunities and adequate working conditions, inclusive education and training, active and safe participation in public and political life, physical and mental health, freedom from gender-based violence, and institutional mechanisms that deliver on gender equality. At the same time, the next step should be the consistent tracking of progress on gender equality by both the EU and its Member States, through systematic data collection. This will help prevent a slowdown in progress and ensure that reforms and implementation of gender equality policies stay on track.

Despite significant efforts made within the framework of the EU Blue Economy Observatory and the EU STECF to collect data on the labour force across EU blue economy, there is **still a lack of data on gender breakdown in certain sectors across the industries**. The EU should develop a **harmonised approach to collating such gender specific workforce data for each blue economy industry**. This would help ensure that Member States report employment figures in a consistent manner. Additionally, the **reporting process should be made mandatory**. Also, tracking progress around experiences in the workplace for both male and female employees would help identify general trends and progress, identify issues and barriers and support the design of policies or solutions that might address barriers.

Most respondents report positively on organisational culture and perceive improvements over time. Within the limited sample in the Black Sea Basin, a small proportion reported harassment and discrimination, and lack of gender policies. **Policies, training and legislation that support rights within the workplace and promote a cross-cutting industry zero tolerance policy towards harassment and discrimination are important**. Gender policies would be important to support the employees in terms of flexible work hours and work-life balance.

References

- Alonso Gallo N. and Gutiérrez López I. (2023) "Gender and Organizational Culture in the European Union: Situation and Prospects", *Frontiers Psychology*, 14:1164516.
- Araújo *et al.* (2021) "Current Status of the Algae Production Industry in Europe: An Emerging Sector of the Blue Bioeconomy", *Sec. Marine Fisheries, Aquaculture and Living Resources*, 7:626389.
- Ashikali, T. and Groeneveld, S. (2015) "Diversity Management in Public Organizations and Its Effect on Employees' Affective Commitment: The Role of Transformational Leadership and the Inclusiveness of the Organizational Culture", *Review of Public Personnel Administration*, 35(2), pp. 146-168.
- Auriol, E., Friebe, G. and Wilhelm, S. (2020) "Women in European Economics", in Lundberg, S. (ed.) *Women in Economics*. London: CEPR Press, pp. 26-30.
- Barabino *et al.* (2020) "Solutions to Gender Balance in STEM Fields Through Support, Training, Education and Mentoring: Report of the International Women in Medical Physics and Biomedical Engineering Task Group", *Science and Engineering Ethics*, 26, pp. 275-292.
- Boström, M. and Österman, C. (2022) "Creating Clarity and Crew Courage: Preventive and Promotive Measures for a Maritime Industry Without Bullying and Harassment", *Occupational Health Science*, 6(4), pp. 605-629.
- Böök, B. *et al.* (2021) *A comparative analysis of gender equality law in Europe 2020*, Luxembourg: Publications Office of the European Union. Available at: https://dspace.library.uu.nl/bitstream/handle/1874/416981/EELN_A_comparative_analysis_of_gender_equality_law_in_Europe_2020.pdf?sequence=1
- Brugere, C., *et al.* (2023) "Humanizing Aquaculture Development: Putting Social and Human Concerns at the Center of Future Aquaculture Development", *Journal of the World Aquaculture Society*, 54(2), pp. 482-526.
- Carrasco-Santos, M.J.; Cristófol Rodríguez, C.; Royo Rodríguez, E. (2020) "Why is the Spanish hotel trade lagging so far behind in gender equality? A sustainability question", *Sustainability*, 12:4423.
- Carvalho, I. *et al.* (2018) "Women at the top of tourism organizations: Views from the glass roof", *Journal of Human Resources in Hospitality & Tourism*, 17(4), pp. 397-422.
- Chanou Zoufath, A. *et al.* (2023) Baseline study for the implementation of lighthouses of the Mission 'Restore our ocean and waters by 2030': Atlantic, Arctic, Danube and Mediterranean lighthouses. Luxembourg: Publications Office of the European Union.
- Clancy, J. and Feenstra, M. (2019) *Women, gender equality and the energy transition in the EU*, Brussels: European Union.



Coleman, L.R. and Taylor, E.D. (2023) "The Importance of Diversity, Equity, and Inclusion for Effective, Ethical Leadership", *Clinics in Sports Medicine*, 42(2), pp. 269 – 280.

Cortland, C.I. and Kinias, Z. (2019) "Stereotype Threat and Women's Work Satisfaction: The Importance of Role Models", *Archives of Scientific Psychology*, 7, pp.81-89.

Croucher, R. and Økland, G.M. (2021) "Women Production Workers' Introduction into a Norwegian Shipyard 1965-1989", *Business History*, 63(5), pp. 776-794.

Del Carmen Triana et al. (2019) "Perceived Workplace Gender Discrimination and Employee Consequences: A Meta-Analysis and Complementary Studies Considering Country Context", *Journal of Management*, 45(6), pp. 2419-2447.

Di Vaio, A., Zaffar, A., Balsalobre-Lorente, D. and Garofalo, A. (2023) "Decarbonization technology responsibility to gender equality in the shipping industry: a systematic literature review and new avenues ahead", *Journal of Shipping and Trade*, 8(9).

Dogg Jonsdottir, S. et al. (2022) "Risk Factors for Workplace Sexual Harassment and Violence among a National Cohort of Women in Iceland: a Cross-Sectional Study", *Lancet Public Health*, 7, pp.e763-774.

Dragomir, C. (2019) "Gender in Postmodernism Maritime Transport", *Postmodern openings* 10(1), pp. 182-192.

European Commission (2026) *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Gender Equality Strategy 2026-2030*. Available at: https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/gender-equality/gender-equality-strategy_en#gender-equality-strategy-2026-2030

European Commission (2025) *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A Roadmap for Women's Rights*. Available at: https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/gender-equality/gender-equality-strategy_en

European Commission (2024) *2024 Report on Gender Equality in the EU*. Luxembourg: Publications Office of the European Union.

European Parliament. *Ensuring European transportation works for women*. (2023) Strasbourg: European Parliament. Available at: https://www.europarl.europa.eu/doceo/document/TA-9-2023-0339_EN.html

Evertsson, M. (2016) "Parental Leave and Careers: Women's and Men's Wages After Parental Leave in Sweden", *Advances in Life Course Research*, 29, pp. 26–40.

Goba, V. et al. (2023) Baseline study for the implementation of the lighthouse in the Baltic and North Sea basins for the Mission 'Restore our Ocean and Waters by 2030'. Luxembourg: Publications Office of the European Union.

Górska, M. and Burlakova, I. (2025) "The Role of Women's Leadership in Business: Challenges and Prospects", *Economics, Finance and Management Review*, 1(21), pp. 116-129.

Grimett, L. (2024) "The Status of Women within the Maritime Sector", *American Journal of Industrial and Business Management*, 14, pp. 1-35.

Guerrero Padrón, T., Kovačević, L. and Ribes Moreno, M.I. (2023) "Labour Law and Gender", in Vujadinović, D., Fröhlich, M. and Giegerich, T. (eds.) *Gender-Competent Legal Education*. Switzerland: Springer.

Hedija, V. (2017) "Sector-Specific Gender Pay Gap: Evidence from the European Union Countries", *Economic Research-Ekonomska Istraživanja*, 30(1), pp. 1804-1819.

Holzinger, F. et al. (2019) "Implementing Measures to Promote Gender Equality and Career Opportunities of Early Career Researchers", in Murgia, A. and Poggio, B. (eds.) *Gender and Precarious Research Careers. A Comparative Analysis*. Abingdon and New York: Routledge, pp. 209-235.

Johannesen, E. et al. (2023) "Gender and Early Career Status: Variables of Participation at an International Marine Science Conference", *ICES journal of marine science*, 80(4), pp. 1016-1027.

Kamm, R, Schelten, C.K., Braker, G. (2020) "Gender Equality in Marine Sciences in Kiel, Germany: How Project-Funded Measures can Urge Institutions to Act", *Advances in Geosciences*, 53, pp. 7-106.

Katsanevakis, S. et al. (2020) "Twelve Recommendations for Advancing Marine Conservation in European and Contiguous Seas", *Frontiers in Marine Science*, 7.DOI: 10.3389/fmars.2020.565968.

Kim, T. et al. (2019) "Impact of automation technology on gender parity in maritime industry", *WMU Journal of Maritime Affairs*, 18, pp. 579-593.

Krambia Kapardis, M., Mavrikiou, P. and Symeou, L. (2025) "Gender Leadership Imbalance in Academia: An Etiological Approach", *Social Sciences*, 14(8).

Kurtulus, F.A. and Tomaskovic-Devey, D. (2012) "Do Female Top Managers Help Women to Advance? A Panel Study Using EEO-1 Records", *The Annals of the American Academy*, 639, pp. 173-197.

Lausi et al. (2021) "Gender Pay Gap Perception: A Five-Country European Study", *SN Soc Sci*, 1(267).

Lechman, E. and Popowska, M. (2022) "Overcoming Gender Bias in the Digital Economy. Empirical Evidence for European Countries", *Gender, Technology and Development*, 26(3), pp. 404-436.

Legg, S. *et al.* (2023) "Gender Equity in Oceanography", *Annual Review of Marine Science*, 15, pp. 15-39.

Loriol, M., Dassisti, L. and Grattagliano (2020) "Harassment at Work in France and Italy First hypothesis for an International Comparison", *Aggression and Violent Behaviour*, 53, 101427.

Lucas, H. Pinnington, S. and Cabeza, L.F. (2018) "Education and Training Gaps in the Renewable Energy Sector", *Solar Energy*, 173, pp. 449-455.

Martini and Cavenago (2016) "The Role of Perceived Workplace Development Opportunities in Enhancing Individual Employability", *International Journal of Training and Development*, 21(1), pp. 18-34.

Matysiak, A. and Cukrowska-Torzewska, E. (2021) "Gender and Labour Market Outcomes", in Schneider, N.F. and Kreyenfeld, M. (eds) *Research handbook on the sociology*. Cheltenham, UK: Edward Elgar Publishing, pp. 329-341.

Marques, M. (2021) "The EU Blue Economy in the World", *Public Policy Portuguese Journal*, 6(1), pp. 56-70.

Macarie, F.C. and Moldovan, O. (2012) "Gender discrimination in management. Theoretical and empirical perspectives", *Transylvanian review of Administrative Sciences*, 35, pp. 153-172.

OECD (2025) *Gender Equality in a Changing World: Taking Stock and Moving Forward*. Paris: OECD Publishing.

Purcell, D., Rhea MacArthur, K. and Samblanet, A. (2010) "Gender and the Glass Ceiling at Work", *Sociology Compass*, 4(9), pp. 705-717.

Ramos Martín, N.E. (2014) "Positive Action in EU Gender Equality Law: Promoting Women in Corporate Decision-Making Positions", *Spanish Labour Law and Employment Relations Journal*, 3(1), pp. 20-33.

Roosmaa E.-L. and Saar, E. (2023) "Gender Differences in ICT Training Participation in International Comparison", RASI paper, No 22, Tallinn University. Available at: https://www.tlu.ee/sites/default/files/Instituudid/%C3%9CTI/RASI/2023_RASI%20toimetised%20nr%2022_Gender%20differences%20in%20ICT%20training%20participation%20in%20international%20comparison.pdf#page5

Salmi, P. and Sonck-Rautio, K. (2018) "Invisible Work, Ignored Knowledge? Changing Gender Roles, Division of Labor, and Household Strategies in Finnish Small-Scale Fisheries", *Maritime Studies* 17(2), pp. 213-221.

Shellock, R.J. et al. (2022) "Breaking Down Barriers: The Identification of Actions to Promote Gender Equality in Interdisciplinary Marine Research Institutions", *One Earth* 5(6), pp. 687-708. DOI: <https://doi.org/10.1016/j.oneear.2022.05.006>.

Sealy, R.H.V and Singh, V. (2010) "The Importance of Role Models and Demographic Context for Senior Women's Work Identity Development", *International Journal of Management Reviews*, pp. 284-300.

Segovia-Pérez, M. et al. (2019) "Being a woman in an ICT job: an analysis of the gender pay gap and discrimination in Spain", *New Technology, Work and Employment*, 35(1), pp. 20-39.

Tikkanen, T., Hovdhaugen, E. and Støren, L.A. (2018) "Work-Related Training and Workplace Learning: Nordic Perspectives and European Comparisons", *International Journal of Lifelong Education*, 37(5), pp. 523-526.

Turesky, M. and Warner, M.E. (2020) "Gender Dynamics in the Planning Workplace", *Journal of the American Planning Association*, 86(2), pp. 157-170.

Varriale, L., Buonocore, F. and Ferrara, M. (2016) "Insights and Challenges from Italian Regulations for Women Employment and Career Advancement: The Role of Mentoring Programs in Banking and Finance Industry", *Law and Economics Yearly Review*, 5(2), pp. 309-329.

Wikström et al. (2023) "Mentoring programmes – building capacity for learning and retaining workers in the workplace", *Journal of Workplace Learning*, 35(8), pp.732-751.

Zhao, M. et al. (2013) "Women as Visible and Invisible Workers in Fisheries: A Case Study of Northern England", *Marine Policy* 37, pp. 69-76. <https://doi.org/10.1016/j.marpol.2012.04.013>