

Women In The Blue Economy: An Empirical Analysis

EXECUTIVE SUMMARY



Women in the Blue Economy: An Empirical Analysis

This is the executive summary of the full report prepared by the NOVA School of Law (NSL) research team in collaboration with Leading Women for the Ocean network (LWO) and the University of Cape Verde (Uni-CV) research team. Contributions were also gathered from Ocean Policy Research Institute (OPRI) at the Sasakawa Peace Foundation (SPF). The research project which led to the full report and this executive summary was funded by Oceans 5.

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Notices

This document only reflects the views of the authors, and does not necessarily represent the views of the institutions involved in the project.

The authors wish to acknowledge the use of large language models (LLMs) as editorial tools in the preparation of this manuscript. As non-native English speakers, we utilised these technologies for grammar and language clarity improvements while maintaining full authorial control over all research processes, analyses, and scholarly content presented in this report.

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Women in the Blue Economy: an empirical analysis

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Ocean Policy Research Institute (OPRI) @ Sasakawa Peace Foundation (SPF)

Funding

Oceans 5

Description

The project aims to assess women's involvement and influence in traditional domains of the blue economy - small-scale fisheries and cargo shipping - and provide recommendations on effective gender inclusion strategies for these sectors. A growing body of evidence signals that the role of women in the blue

economy - and the associated policy decision-making and ocean governance structures - is consistently undervalued. The ultimate goal of the project is to demonstrate the added value of gender inclusivity to policymakers and other stakeholders via actionable data, knowledge, and evidence-based proposals.

Duration

August 2023 – March 2025

Geographical Focus

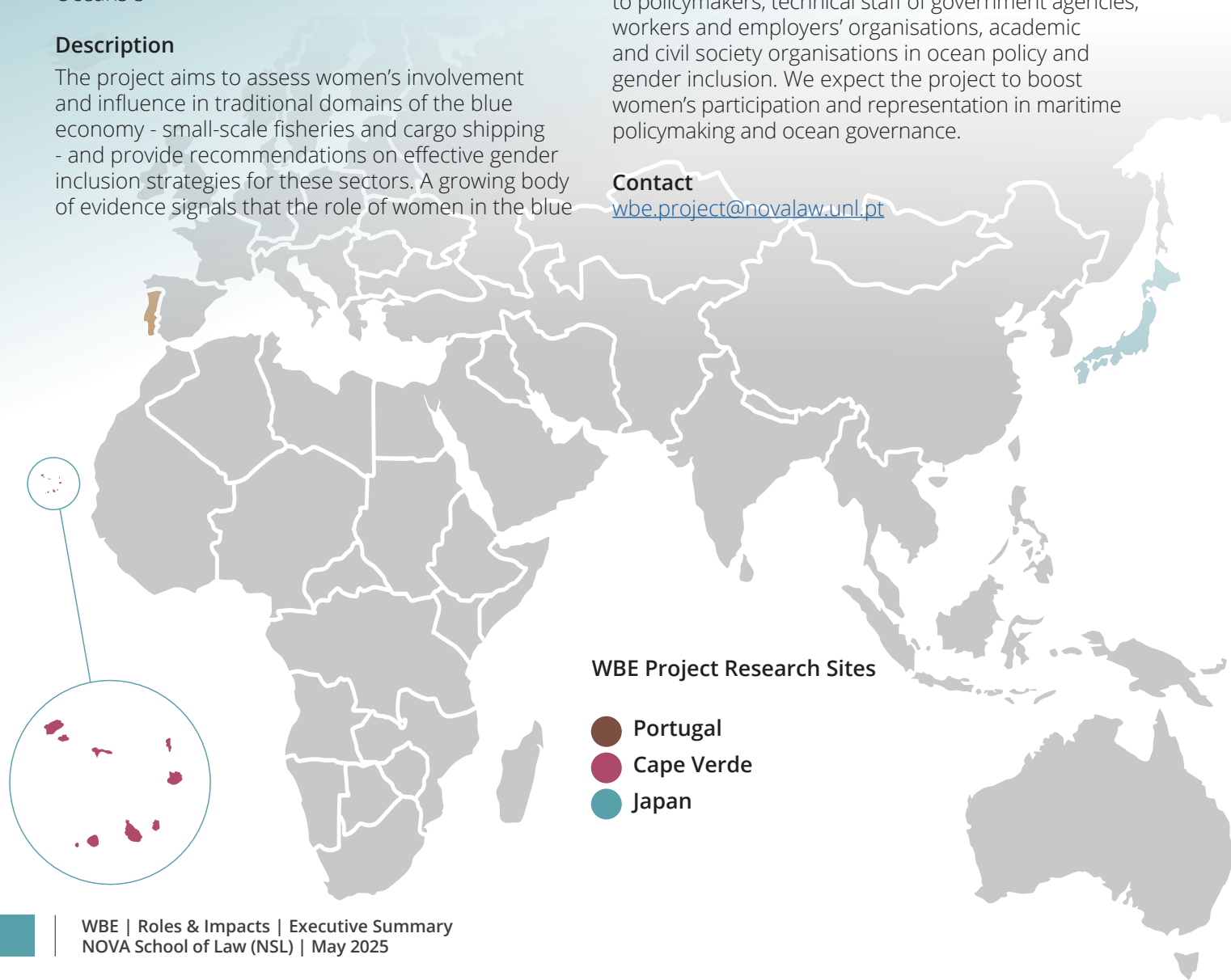
Portugal, Cape Verde, and Japan

Summary

The project consists of three geographical case-studies using empirical, qualitative research techniques (semi-structured interviews, non-participant observation and documentary analysis) and collaborative and critical discussions with stakeholders, resulting in a final report, presentations at scientific and policy conferences, and academic research papers. It will be directly beneficial to policymakers, technical staff of government agencies, workers and employers' organisations, academic and civil society organisations in ocean policy and gender inclusion. We expect the project to boost women's participation and representation in maritime policymaking and ocean governance.

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1. Overview

The Women in Blue Economy (WBE) project is a collaboration between NOVA School of Law (NSL) and the Leading Women for the Ocean network (LWO) aimed at identifying existing gender gaps, documenting women's contributions, and developing evidence-based recommendations for enhancing gender inclusion in ocean governance.

The study represents the first comprehensive empirical effort specifically devoted to examining the gender dynamics - including women's roles and impacts - within small-scale fisheries and shipping sectors in Portugal and Cape Verde. While initial

research design included Japan as a third case study, methodological validation requirements led us to focus our comparative analysis on Portugal and Cape Verde, though insights from the Japanese context are included in a supplementary report (see the Annex to this summary, and Annex 1 of the full report).

The report provides actionable insights and localised recommendations that can directly inform policy agendas tailored for these contexts and, critically, for the women whose lives are most impacted.



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2. Distinctive Contributions to Maritime Gender Studies

This study makes several significant contributions to our understanding of gender dynamics in maritime sectors:

Theoretical Innovation

Our research bridges traditionally separate analytical streams - Gender and Fisheries (GAF) scholarship and gender-focused shipping research. By applying a unified analytical framework to both fisheries and shipping, we illuminate common patterns of gender-based constraints while identifying sector-specific manifestations of inequality.

The study's comparative socio-legal framework reveals how formal equality measures interact with informal practices to create distinct patterns of opportunity and constraint. This theoretical approach helps explain why similar legal frameworks can produce different outcomes across cultural contexts.

Methodological Advances

The study introduces some methodological innovations in maritime gender research:

- **Cross-Sector Comparative Design** Our simultaneous examination of fishing and shipping sectors within the same geographical contexts reveals how different forms of maritime labour organisation shape gender dynamics, helping to identify patterns.
- **Adaptive Data Collection** Our adaptation of research methods to sector-specific conditions demonstrates effective approaches for gathering sensitive data in maritime contexts.

Empirical Contributions

The study provides several significant empirical insights:

- **Documentation of Informal Economic Systems** We offer a detailed analysis of women's informal financial systems in Cape Verdean fishing communities, including the '*totocaixa*' system and credit networks. This reveals sophisticated economic strategies not widely reported in maritime gender literature.
- **Sexual Harassment** Our research provides rare empirical documentation of sexual harassment in shipping in Portugal, with survivor-friendly methodology which enabled women to safely share experiences often hidden in maritime research.

- **Cross-Cultural Patterns** The comparative design reveals how similar challenges (e.g., work-life balance, professional authority) manifest differently across cultural contexts, providing new insights into the relationship between cultural norms and gender equality in maritime work.

Policy Innovation

The research makes distinctive contributions to policy development:

- **Evidence-Based Intervention Design** Our findings provide suggestions for interventions that work with, rather than against, existing community structures and women's economic strategies.
- **Implementation Guidance** The study offers unique insights into how formal policies interact with informal practices, enabling more effective policy design and implementation.
- **Monitoring Framework** We introduce new approaches to measuring policy effectiveness that capture dimensions of gender equality in maritime contexts.

Future Research Directions

The study opens several new research pathways:

- **Comparative Frameworks** Our methodology provides a template for examining gender dynamics across different maritime contexts and sectors.
- **Informal Economics** The study's documentation of informal economic systems suggests important directions for research on women's economic agency in maritime sectors.
- **Policy Implementation** Our findings about the interaction between formal and informal systems indicate crucial areas for future policy research.

These contributions build upon and extend existing scholarship on gender in maritime sectors. Understanding how our research advances current knowledge requires examining the key streams of literature we engage with and the gaps our work addresses.



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3. Literature Review: A Snapshot

The study of gender in maritime contexts has evolved significantly over recent decades. Early scholarship focused primarily on making women visible in maritime spaces. The "women in fisheries" (WIF) approach of the 1990s and early 2000s accomplished crucial groundwork by documenting women's presence across maritime sectors (Williams et al., 2002), although it left open questions about how gender actually shapes maritime work. More recent "gender and fisheries" (GAF) scholarship has tackled these deeper questions, examining how gender influences everything from access to resources to decision-making power (Lawless et al., 2021). Our research extends this analytical trajectory by examining how gender operates across both formal and informal dimensions of maritime work.

The economic contributions of women in maritime sectors have received increasing scholarly attention, with researchers documenting how women's work often occurs through informal or unpaid channels (Kleiber et al., 2017; Harper et al., 2020). However, the sophisticated economic strategies women develop to navigate maritime spaces have remained understudied. Our research addresses this gap through detailed examination of specific practices like the *totocaixa* system in Cape Verde, showing how women create economic resilience through informal financial networks.

The separation between fishing and shipping research has created an artificial divide in understanding maritime gender dynamics. While fishing sector research has highlighted women's roles in post-harvest activities and community resilience, shipping sector studies have focused on the persistent underrepresentation of women, captured in the oft-cited "notorious 2%" of women in global seafaring (Belcher et al., 2003). By examining these sectors together, our research reveals important patterns across different contexts.

In shipping, previous research has documented significant workplace challenges for women, from practical issues of facility access to deeper problems of discrimination and harassment (Thomas, 2004; Turnbull, 2013; Piñeiro & Kitada, 2020). However, methodological challenges have often limited the depth of this documentation. Our research used approaches that enabled women to safely share experiences often hidden in maritime research, while revealing sophisticated strategies women develop to navigate professional authority in male-dominated spaces.

The geographical contexts of our research have received varying scholarly attention. In Portugal, historical research has documented women's maritime roles across centuries (Fina d'Armada, 2006; Abreu-Ferreira, 2000, 2012), while contemporary studies examine ongoing challenges (Pita & Gaspar, 2020). Cape Verde's maritime sectors have been studied primarily through the lens of development (Fidalga et al., 2014) and informal economies (Grassi, 2001). However, our study represents the first comprehensive examination of gender dynamics across both fishing and shipping sectors in these contexts.

Several critical gaps in existing literature shaped our research design. While scholars have documented women's presence in maritime sectors and identified barriers to their participation, less attention has been paid to how women actively shape maritime spaces through both formal and informal strategies. Similarly, while challenges facing women in maritime work are well-documented, successful strategies for navigating these challenges have received less attention. Our research addresses these gaps through careful attention to women's agency in transforming maritime gender relations.

The methodological challenges of studying gender in maritime contexts have also received insufficient attention. Traditional research approaches often struggle to capture sensitive topics like harassment or informal economic practices. Our study introduces several innovations that enable deeper understanding of these crucial issues while ensuring participant safety and comfort.

Perhaps most importantly, existing research has provided limited guidance for policy development. While scholars have documented problems, less attention has been paid to how formal policies interact with informal practices to shape women's maritime experiences. Our research addresses this gap by examining these interactions in detail, providing concrete guidance for more effective policy development.

These gaps in existing research guided our methodological choices, leading to several innovations in research design and implementation. As we detail in the following section, our approach emphasises both rigor and sensitivity to the complex realities of maritime gender relations.



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4. Methodology and Research Design

Our qualitative comparative design emerged from careful consideration of how best to understand gender dynamics across different maritime contexts, capturing both formal structures and informal practices while maintaining sensitivity to local cultural patterns.

Research Strategy and Design Choices

Our approach centred on comparative case studies in Portugal and Cape Verde, encompassing 71 in-depth interviews conducted between February and August 2024. This acknowledges the visible and hidden mechanisms that enforce gender dynamics; counting women's presence or documenting formal policies would miss crucial dimensions of how gender shapes maritime work.

The research combined three complementary methods:

- Semi-structured interviews with maritime workers and key informants
- Non-participant observation in key maritime sites
- Documentary analysis of relevant policies and regulations

This methodological triangulation proved particularly effective for understanding gaps between formal equality measures and lived experiences. For instance, while documentary analysis revealed progressive gender policies in Portuguese shipping, interview data uncovered persistent informal barriers to report sexual harassment and to women's advancement. Similarly, observation in Cape Verdean fishing communities revealed sophisticated economic practices that rarely appear in official documents.

Sample Design and Emergent Patterns

The distribution of our interviews reflected and revealed crucial differences in how gender shapes maritime work across contexts.

Portugal:

- Fisheries: 11 interviews (5 women, 5 men, 1 female key informant)
- Shipping: 16 interviews (14 women, 2 men, including 6 key informants)

Cape Verde:

- Fisheries: 30 interviews (18 women, 12 men, including 8 key informants)
- Shipping: 10 interviews (all women, including 2 key informants)

- Cross-sectoral: 4 interviews with institutional stakeholders

For instance, while Portuguese women participated directly in fishing activities, Cape Verdean women concentrated on post-harvest work - a pattern that emerged clearly in our sampling process.

Effective Methodological Adaptations in Practice

Several of our methodological choices proved particularly valuable for understanding maritime gender dynamics:

Interview Settings and Safety

Our use of online interviews for the Portuguese shipping sector yielded unexpected benefits. The privacy and distance of video calls enabled women to discuss sensitive experiences, including harassment, more openly than might have been possible in person.

In contrast, our in-person approach in fishing communities enabled observation of crucial informal practices. Watching how women managed credit relationships or organised collective savings schemes provided insights that might not have emerged in formal interviews alone.

Cultural Context and Comparative Analysis

The two-country design revealed how similar challenges generate different responses across cultural contexts. For example, work-life balance emerged as a universal concern, but women in each country developed distinct strategies for managing it. The cross-sector comparison similarly highlighted how different forms of maritime labour organisation shape women's opportunities and constraints.

Ethical Practice and Research Relationships

Our ethical framework directly shaped what we could learn about maritime gender relations. Clear protocols for discussing sensitive topics enabled documentation of harassment patterns, particularly in shipping.

Similarly, careful attention to power dynamics in research relationships helped reveal similar patterns in maritime workplaces.

Quality Assurance Through Collaborative Analysis

The collaborative nature of our research enhanced both data collection and analysis. Our February 2025 validation workshop brought researchers from both countries together to distinguish between:

- Universal patterns in maritime gender relations
- Context-specific challenges
- Different manifestations of similar issues

This process helped ensure our findings reflected real patterns rather than preconceptions about gender in maritime work.

Understanding Limitations and Implications

Acknowledging our methodological limitations helps contextualise our findings while suggesting directions for future research:

- Gender imbalances in participation reflected sector patterns while illustrating lack of interest from male participants
- Time constraints affected observation of seasonal patterns in fishing communities

However, these limitations also revealed important patterns. For instance, the difficulty recruiting male participants in the Portuguese case study itself indicated important features of gender awareness in maritime sectors.

Research Sites and Contextual Understanding

The selection and comparative analysis of research sites played a crucial role in our methodological approach to understanding maritime gender relations.

In Portugal's Setúbal Peninsula, our research encompassed multiple interconnected fishing communities, each offering distinct insights into gender and maritime labour. This multi-site approach within a single region revealed how gender relations vary even across closely connected communities, with women's roles ranging from direct participation in fishing to crucial shore-based economic activities.

The Cape Verdean fishing research centred on Porto Rincão, a small settlement on Santiago Island's western coast where 174 out of 279 households are headed by women. This demographic pattern itself suggested important questions about gender and maritime economies. The community's relative isolation and limited formal infrastructure created conditions where women's informal economic strategies became particularly visible.

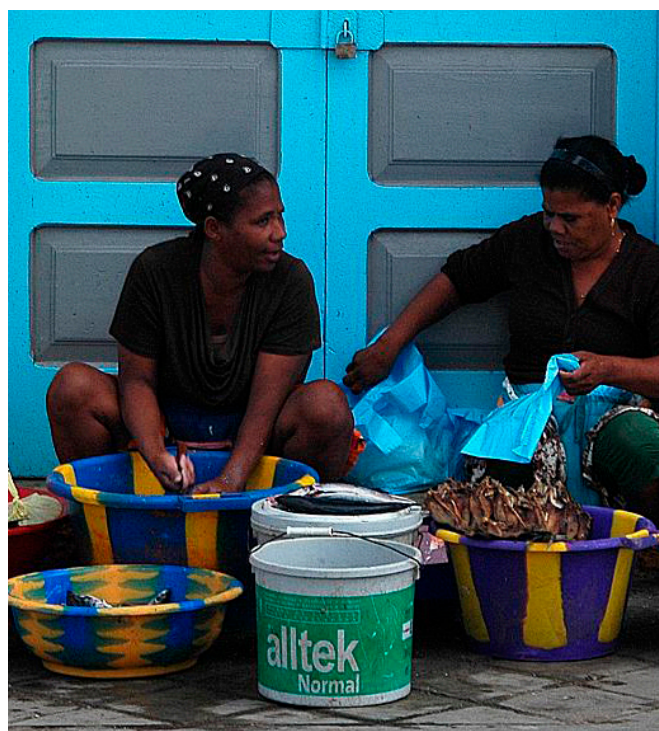
The shipping sector research revealed different spatial patterns reflecting the industry's distinct organisation. In Portugal, our participants worked across various routes and vessels, requiring methodological adaptation to capture experiences across different maritime spaces. The use of online interviews, initially a practical solution, revealed unexpected benefits in discussing sensitive topics like workplace harassment.

Cape Verdean shipping research centred primarily in Mindelo, São Vicente Island, reflecting its role as the country's primary maritime education and commercial shipping hub. This concentration enabled examination of how institutional development shapes women's professional opportunities. Mindelo's position at the forefront of Cape Verde's blue economy initiatives also provided insight into how formal development policies interact with gender dynamics in maritime sectors.

These carefully considered methodological choices yielded several key advantages:

- Recognition of how different maritime spaces shape data collection possibilities
- Adaptation of interview approaches to local contexts
- Identification of both site-specific patterns and broader themes in maritime gender relations
- Understanding of how formal and informal practices interact differently across contexts

These methodological choices and challenges shaped what we could learn about maritime gender relations.



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5. Empirical Assessment: Key Findings

Sector Profiles: A Contextual Overview

Small-Scale Fisheries

The fisheries sectors in both countries show distinct patterns of organisation while sharing certain structural features. In Portugal, small-scale fisheries remain crucial to coastal communities' economic and cultural identity, though official statistics lack gender disaggregation. The sector operates under the EU's Common Fisheries Policy framework.

Cape Verde's fisheries sector plays a vital role in food security and employment. The sector shows clear gender segregation: of over 4,000 artisanal fishers, only 6 are women. However, women dominate fish selling and some own boats, indicating complex patterns of gender-based economic participation.

Shipping Sector

Portugal's sector has experienced dramatic decline, although women's participation as maritime officers has paradoxically increased. Cape Verde's shipping sector is crucial for inter-island connectivity and international trade. Women's participation remains low, though recent developments in maritime education and training suggest potential for change.

Our comparative research in Portugal and Cape Verde reveals how gender dynamics in maritime sectors operate through complex interactions between formal institutions and informal practices, whilst also revealing a sameness v uniqueness tension.

> Key Findings

Formal Rights and Informal Power

The relationship between formal equality measures and informal power dynamics emerged as a theme across different maritime contexts. In Portuguese shipping, women have achieved significant formal equality through legal frameworks and professional certification, yet face persistent informal barriers that require constant demonstration of competence. Even when holding senior positions, women officers described developing sophisticated strategies to establish and maintain their command authority while carefully navigating gender expectations.

In Cape Verde's fishing communities, despite limited formal recognition, women have developed significant economic influence through control of distribution networks. The '*totocaixa*' system, for instance, operates as a rotating savings and credit arrangement to fuel resilient economic networks that support both individual traders and community stability.

By operating through formal and informal channels, women's agency creates parallel power structures rather than directly challenging traditional gender hierarchies. The success of these strategies varies significantly by context - while Portuguese women have achieved formal authority but struggle with informal resistance, Cape Verdean women exercise substantial informal power while facing formal exclusion from many aspects of maritime work.

Economic Agency and Institutional Constraints

Women's economic strategies across both countries reveal sophisticated responses to institutional constraints. In Portuguese shipping, women navigate formal hierarchies while maintaining crucial informal support networks. Their economic strategies often involve combining official professional advancement with careful cultivation of informal relationships that enable effective exercise of their authority.

In Cape Verde's fishing communities, women have developed complex credit networks that enable economic activity despite limited access to formal financial institutions. These networks demonstrate remarkable sophistication in managing risk and maintaining economic flows under uncertain conditions, creating flexible payment arrangements that keep the local economy functioning while building strong social bonds.

Violence, Safety and Strategic Responses

Our research uncovered striking variations in how gender-based violence manifests and is addressed across different maritime contexts. In Portuguese shipping, women spoke with remarkable candour about experiences of sexual harassment. Several described incidents that required formal intervention. The explicit discussion of harassment, revealed both the persistence of gender-based violence and women's increasing willingness to challenge it formally.

In Cape Verde's fishing communities, gender-based discrimination often takes more explicit social forms, particularly through what we term the 'fish stigma'. These experiences reveal how gender discrimination intersects with class and occupation to create compound forms of marginalisation. Women have responded by developing collective strategies for mutual support and protection while gradually building greater social recognition for their work.

Collective Organization and Generational Change

The evolution of women's collective responses to maritime gender challenges reveals both progress and persistent barriers, with cross-generational challenges requiring distinct strategies for success.

The pioneers of the 1970s and 80s often worked in isolation, breaking initial barriers with limited institutional support. The middle generation, entering maritime work in the 1990s and 2000s, began creating more formal support networks while establishing stronger institutional presence. Today's generation faces a complex landscape of formal equality and persistent informal barriers. They benefit from established networks and institutional frameworks while confronting new forms of gender discrimination.

Work-Life Integration and Community Support

Women are consistently tasked with multiple responsibilities; in Portugal, participants frequently described what we term a "triple journey" combining maritime work, off shore work, and household management and childcare. This burden reflects limited institutional support for work-life integration, forcing women to develop individual strategies for managing competing demands.

Cape Verdean women, particularly in fishing communities, adopted more collective approaches to managing these demands, drawing on family networks and community support systems to create flexible arrangements that enable women's economic participation while maintaining family responsibilities. However, these informal support systems can be fragile and do not fully compensate for limited institutional support for working mothers.

Economic Impact and Institutional Recognition

A striking pattern across all contexts was the persistent gap between women's actual economic contributions and their formal recognition in

maritime sectors. While women play crucial roles in sector sustainability through innovation in marketing, distribution, and financial management, their contributions often remain invisible in official statistics and policy frameworks.

This recognition gap has practical consequences for both individual economic security and sector sustainability, translating into gaps in social protection, restricted access to credit, and barriers to professional advancement. The result is a paradoxical situation where women's work is simultaneously essential to maritime economies and systematically undervalued by formal institutions.

Understanding these patterns is crucial for developing more effective interventions to support gender equality in maritime sectors.



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6. Comparative Analysis: Cross-Cultural and Cross-Sectoral Insights

Our comparative analysis reveals patterns of both convergence and divergence in how gender shapes maritime work across different cultural contexts and sectors. These patterns provide unique insights into the relationship between formal institutions, informal practices, and gender equality in maritime spaces.

Informal Economic Systems and Community Resilience

The research revealed distinct approaches to economic organisation and community support across the two countries. In Cape Verde, women fish sellers have developed intricate informal financial systems which, alongside the '*fiado*' credit arrangements, creates a web of financial relationships that supports individual traders and strengthens community bonds.

In Portugal, by contrast, women's economic strategies tend to work within more formalised structures, though informal support networks remain important. Women in the studied Portuguese fishing community often manage both official paperwork and informal arrangements, creating hybrid approaches to economic security. This difference reflects the broader institutional contexts - while Portuguese women operate within EU regulatory frameworks, Cape Verdean women have developed alternative systems to address limited formal financial infrastructure.

Power Dynamics and Professional Recognition

The manifestation of gender-based power dynamics varies significantly between contexts:

- In Portuguese shipping, women face explicit challenges to their authority, particularly in leadership positions. Despite holding formal qualifications and ranks, they must constantly prove their competence above and beyond their male peers.
- In Cape Verde's shipping sector, challenges often take more subtle forms, embedded in cultural assumptions about appropriate roles. Women's concentration in service positions (revealed in our sector profile data) reflects persistent gender segregation despite increasing access to maritime education.
- Fishing communities show different power patterns: while Portuguese women increasingly participate directly in fishing, Cape Verdean women exercise significant economic power through control of distribution networks, despite formal exclusion from fishing activities.

Social Stigma and Professional Identity

One of the most striking contrasts emerged in how social stigma operates in each context. In Cape Verde, the 'fish stigma' creates explicit social barriers for women in the sector.

In Portugal, while such explicit social stigma was not found, women face different forms of professional marginalisation. Portuguese women in both fishing and shipping described the constant pressure to prove their competence, reflecting a more subtle form of gender-based discrimination.

Sexual Harassment and Discrimination

A particularly significant contrast emerged in how sexual harassment and discrimination manifested and were reported across the two countries' shipping sectors. The Portuguese data revealed more explicit reporting of these issues, with 6 out of 16 participants describing either first-hand or second-hand experiences of sexual harassment in detailed accounts. In Cape Verde, direct reports of sexual harassment were less frequent, though this difference in reporting patterns requires careful interpretation. Several factors may contribute to this contrast:

Structural Differences in Maritime Operations The nature of shipping operations differs significantly between the countries. While Portuguese women often work on longer international routes, Cape Verdean women typically serve on inter-island routes allowing daily return to port. This structural difference affects both exposure to risk and the nature of workplace dynamics.

Reporting Culture and Professional Strategy

Portuguese women appeared more likely to explicitly name and discuss experiences of harassment, possibly reflecting different professional cultures and reporting norms. Cape Verdean women more often described developing preventive strategies, suggesting a focus on avoiding rather than reporting incidents.

Power Dynamics and Career Stakes In Portugal's more formalised shipping sector, some women in higher-ranking positions, faced resistance to their command. With some women facing physical incidents, humiliation, disbelief. Regardless of their ranking position, many women did report sexual harassment in the workplace.

Cultural Context and Professional Identity

The research suggests different approaches to managing professional identity in relation to gender discrimination. Portuguese women more frequently described direct confrontation of discriminatory practices, while Cape Verdean women often emphasised strategies of professional authority establishment that preempted such challenges.

Emerging Patterns of Change

The research identifies different trajectories of change in each country: Portugal shows movement toward formal integration of women into traditionally male roles, though significant barriers remain. Cape Verde demonstrates the strengthening of women's economic power through informal systems and collective organisation, while maintaining more traditional gender divisions in direct maritime labour.



Costin Marian/Adobe Stock

7. Policy Implications, Recommendations and Implementation Challenges

7.1. Policy Implications and Recommendations

Our research reveals that women's experiences in maritime sectors call for policy responses that are as sophisticated and adaptable as the strategies women themselves have developed to navigate these spaces. The voices of our participants point clearly to the need for interventions that work across multiple levels - from international maritime law to local community practice.

Building on Women's Strengths

The remarkable resilience and ingenuity shown by women in both countries suggests that effective policies should build upon, rather than replace, existing practices. Rather than attempting to formalise these systems completely, policies should create supportive frameworks that enhance their effectiveness while providing additional security. Collective approaches to financial management such as the *'totocaixa'* could be strengthened through targeted microfinance programs and legal recognition, while maintaining the community-based character that makes it effective.

Addressing Safety and Dignity

The stark realities revealed by our research, particularly regarding harassment and discrimination, demand urgent attention. Policy responses must address both immediate safety concerns and underlying cultural attitudes. In shipping, this means developing robust harassment reporting mechanisms that account for the unique circumstances of life at sea. For fisheries, it requires infrastructure investments - from cold storage to sanitation facilities - that recognise women's labour as professional work deserving of proper conditions.

Supporting Work-Life Integration

The "triple journey" described by many women in our study - combining maritime work, off shore work, and household management and childcare - requires systematic support.

In practice, this could mean:

- Community-based childcare facilities operating on maritime schedules
- Flexible work arrangements that accommodate family responsibilities

Priority Areas for Intervention: Evidence-Based Framework for Action

Domain	Evidence Base	Strategic Recommendations
Safety, Dignity & Professional Authority	Evidence from Shipping: <ul style="list-style-type: none">• 6/16 Portuguese participants reported sexual harassment• Women officers develop sophisticated strategies to maintain authority Evidence from Fisheries: <ul style="list-style-type: none">• Cape Verdean fish sellers face "fish stigma" affecting basic dignity• Portuguese women fishers report pressure to prove competence	<ul style="list-style-type: none">• Improve existing maritime-specific harassment reporting mechanisms• Institute clear protocols for confined maritime spaces• Invest in basic infrastructure (sanitation, storage)• Implement gender-sensitive safety audits• Create professional development programs focused on leadership
Economic Agency & Institutional Recognition	Evidence from Fisheries: <ul style="list-style-type: none">• Sophisticated informal financial systems• Complex credit networks enabling market function Evidence from Shipping: <ul style="list-style-type: none">• Limited recognition of women's contributions to operational effectiveness• Gaps in social protection despite formal equality	<ul style="list-style-type: none">• Establish gender-disaggregated data collection• Create formal recognition for informal roles• Develop targeted financial support programs• Support women's associations while preserving autonomy• Institute social protection measures
Work-Life Integration & Career Sustainability	Evidence from Both Sectors: <ul style="list-style-type: none">• "Triple journey" burden in Portuguese contexts• More collective approaches in Cape Verde• Career interruptions around family formation• Limited institutional support for working mothers	<ul style="list-style-type: none">• Support formal professional networks• Create cross-generational mentoring programs• Foster international exchange opportunities• Develop leadership training programs

- Recognition and support for the informal care networks women have developed
- Professional development opportunities that don't require choosing between career and family

Strengthening Collective Voice

Our research shows how women's collective organisation can create powerful change, even in highly traditional settings. The success of women's associations in Cape Verde's fishing communities and professional networks in Portugal's shipping sector suggests the importance of supporting collective action.

However, these organisations need more than just formal recognition - they need resources and authority to participate in decision-making. Policy support should help such initiatives move from reactive problem-solving to proactive participation in sector governance.

7.2. Implementation Challenges and Monitoring Framework

The path from policy development to effective implementation is rarely straightforward, as our research in both countries demonstrates. The challenges identified reflect both practical obstacles and deeper structural barriers that must be addressed through careful monitoring and adaptive management.

Navigating Implementation Challenges

Our research reveals several key implementation challenges that require particular attention:

The Formality Paradox In both countries, we observed a paradox between formal policies and informal practices; informal arrangements often work more effectively than formal systems, yet remain vulnerable to disruption by well-intentioned but poorly designed interventions. The challenge lies in strengthening these informal systems while providing necessary protections.

The Reporting Dilemma Women in both fisheries and shipping face significant barriers to reporting discrimination and harassment. As our Portuguese shipping data revealed, even when formal reporting mechanisms exist, structural barriers often prevent women from using them. Implementation must address not just the existence of reporting mechanisms but the complex social and professional dynamics that affect their use.

- **Resource Allocation Gaps** While many initiatives fail due to insufficient funding, our research suggests the bigger challenge often lies in how resources are allocated. In Cape Verde, women repeatedly emphasised the need for basic infrastructure: "We need freezers!" This simple but urgent request from fish sellers in Rincão demonstrates how implementation often falters by failing to address fundamental operational needs identified by women themselves.
- **Cultural Resistance** Perhaps the most persistent challenge lies in addressing cultural resistance to change. As one Cape Verdean participant noted: "They usually say that fishing should be done by men." Such deeply held beliefs can undermine even well-designed policies, requiring implementation strategies that engage with cultural dynamics while promoting change.

A Responsive Monitoring Framework

To address these challenges, we propose a monitoring framework that combines traditional metrics with innovative approaches to capturing change:

Quantitative Indicators with Qualitative Context The framework tracks concrete metrics while remaining sensitive to local context:

In Fisheries:

- Percentage of women's participation by activity type
- Economic indicators including income levels and market access
- Infrastructure development metrics
- Training and capacity building participation rates

In Shipping:

- Women's representation across different ranks
- Harassment incident reporting and resolution rates
- Career progression metrics
- Work-life balance indicator tracking

However, these numbers tell only part of the story. Each metric must be accompanied by a qualitative assessment that captures the lived experience behind the statistics.

Participatory Monitoring Mechanisms

Learning from the success of community organisations in Cape Verde, we propose monitoring systems that actively involve women in data collection and analysis. This could include regular community feedback sessions, peer-to-peer assessment networks, women-led evaluation committees and digital platforms for continuous feedback.

Adaptive Management Triggers

The framework includes specific triggers for policy adjustment when monitoring reveals unexpected barriers to participation, unintended consequences of interventions, emerging opportunities for enhancement or new forms of discrimination or exclusion.

Cross-Border Learning

While contexts differ, our comparative research suggests the value of international learning exchanges. The monitoring framework therefore includes mechanisms for sharing successful practices between countries, identifying common implementation challenges, developing shared solutions and building international support networks.

Ensuring Accountability

Finally, the framework emphasises accountability at multiple levels:

Institutional Responsibility Clear assignment of responsibility for data collection and analysis, response to monitoring findings, resource allocation adjustments and policy modification when needed.

Community Oversight Building on existing women's organisations to ensure local participation in monitoring, regular feedback on implementation, community-based problem solving and continuous improvement of interventions.

International Engagement Linking local monitoring to broader frameworks through regular reporting to international bodies, participation in global learning networks, access to international support resources and contribution to global knowledge base.

Conclusion

This comprehensive monitoring framework aims to create a learning system that can identify and address implementation challenges while building on successful practices. As one Cape Verdean association leader noted: *"We managed to get by, borrowing, working together with what we had."* The framework seeks to match this adaptability while providing the structure needed for sustained progress toward gender equality in maritime sectors.

The research demonstrates that achieving gender equality in maritime sectors requires moving beyond formal equality measures to address deeper structural barriers. The findings highlight how women's contributions to maritime economies often occur through informal channels that escape official recognition and support.

The comparative analysis of Portugal and Cape Verde reveals both common challenges and unique contextual factors that shape gender dynamics in maritime sectors. This understanding provides a foundation for developing more effective and nuanced approaches to promoting gender equality in the blue economy.

The study's recommendations offer a roadmap for transformation, emphasising the need for coordinated action across multiple levels of governance. Success will require sustained commitment from stakeholders at all levels, from local communities to national governments and international bodies, guided by a clear understanding of both formal and informal barriers to gender equality in maritime sectors.





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Annex 1: A Glimpse into the Japanese Experience

The dataset from Japan adopted a different methodology from the established one, which impacted its ability to meet the required validation standards to be directly comparable with the data from the other countries under review. However, the insights it provided were valuable, and the case has great potential for future study and analysis.

1. Introduction

Japan boasts the sixth largest EEZ in the world, with its territorial waters and EEZ covering an area of approximately 44,470,000 km². Domestic fisheries and aquaculture production provide about half of the seafood supply in Japan while the other half is supplied by imports (Kobayashi, 2022). While small fishing vessels from coastal villages still fish the rich inshore waters, larger vessels travel ever increasing distances across the world's ocean to satisfy the massive demand of the Tokyo and Osaka markets (Sajima & Tachikawa, 2009).

Ranking among the top nations in terms of fleet ownership and shipbuilding, Japan is a key global player in the shipping industry. In 2024, it accounted for 10.4% of the global deadweight tonnage (DWT), with the total fleet ownership corresponding to 242.4 million DWT. Besides its dominant position in global maritime trade, Japan also has a relevant shipbuilding industry, representing 14.9% of the global ship output in 2023 (UNCTAD, 2025c).

2. An overview: Women in the blue economy

In Japan, efforts to promote women's participation in various economic sectors, including fisheries, gained momentum following the fourth world conference on women in Beijing in 1995. As part of this initiative, women's fisheries groups were established, operating under the authority of the Fisheries Cooperative Association (FCA).

In 2003, the Japanese forum of fisherwomen groups known as UMI HITO KURACHI (Sea People Life) was established. This network significantly enhanced women's capacities for entrepreneurship and marketing. Currently, there is a growing desire among women to establish their own entities independently of the FCA due to the existing

limitation that only men representing fishing enterprises can be full individual members of cooperatives (Soejima & Frangoudes, 2019).

According to Ishida (2020), the number of women seafarers in Japan is very small, both in domestic and international shipping industries. The lack of female seafarers in Japan is attributed to various factors, including gender stereotypes, limited opportunities for advancement, and the absence of supportive policies and practices within the shipping industry (Ishida, 2020).

3. Fisheries - Main perceptions

As identified by the Japanese team, it seems the fishers tend to lessen relevance of some of the gender-related challenges faced by them, as there are claims that their main obstacles were largely the same as those faced by male fishers.

Another issue raised was the unpleasant treatment from senior male fishermen at the beginning of their careers. Once again, it seems they attributed this to their inexperience rather than gender-based discrimination.

One of the issues that seems to underline the different roles between male and female fishers is the additional burden of household responsibilities managed by women alongside their fishing activities. Fishers appear to express interest in obtaining better access to information and being more involved in cooperative management. However, it seems participation in decision-making remains limited to an extremely small group of members, affecting both male and female fishers.

In addition to gender-related challenges, fishers expressed concerns about economic and environmental challenges. As reported by the Japanese team, the rapid decline in fish stocks, directly affecting their livelihoods, seems to be the most pressing economic and environmental challenge raised by the fishers. Fishers seemed to be eager to address the decline in fish stocks, but they lack access to scientific data on the root causes and solutions, to collaboration with researchers, and to financial incentives for the development of effective countermeasures.

Table 1 – Gender Related Matters

GENDER-RELATED MATTERS
Workplace conditions, social interactions and inclusion
<ul style="list-style-type: none"> • Apparent tendency to lessen the relevance of gender-related challenges, such as physical limitations, lack of toilet facilities and unpleasant treatment
Work-life balance
<ul style="list-style-type: none"> • Household responsibilities are placed on the female fishers. It is acknowledged as an additional burden, but its impact is disregarded.
Participation in decision-making
<ul style="list-style-type: none"> • There is interest in participation in decision-making, but it appears to still be limited to a small group of members.

Table 2 – Economic and Environmental Matters

ECONOMIC AND ENVIRONMENTAL MATTERS
Declining fish stocks and financial stability
<ul style="list-style-type: none"> • Identified as an economic and environmental challenge. • On the economic side, the decline in fish stocks, rising fuel costs and stagnant fish prices are identified as challenges that directly impact their capabilities of sustaining an income.
Alternative livelihoods and future prospects
<ul style="list-style-type: none"> • The lack of successors in the fishing sector is considered a concern that discourages their interest in investing in boats and equipment.

4. Shipping - Main perceptions

Despite the existence of legislative efforts promoting gender equality, Japanese female navigators appear to face structural barriers that discourage companies from hiring women, resulting in fewer job opportunities for female seafarers.

Women in the maritime sector are entitled to maternity and childcare leave but the nature of the work seems to hamper the balance of family and childcare responsibilities with long periods at sea. This results in many women choosing to leave their jobs upon marriage or childbirth, with very few returning to work at sea as it becomes even more difficult to re-enter the profession after time away. The creation of government incentives, such as fiscal and tax incentives, could encourage companies to rehire women who wish to return after long-term childcare. Another suggestion involved reintegrating women into the workforce through on-land positions as an intermediary step before they return to the sea.

Harassment and violence against women in the workplace remain a concern in the maritime sector, with suggestions including stronger corporate-level protections, awareness training, stricter enforcement of workplace harassment policies, and effective countermeasures.

The need to raise awareness about the importance of the shipping sector was repeatedly mentioned as increasing recognition of the industry's relevance can attract and retain more professionals and create more social support for seafarers.

Table 3 – Gender Related Matters in the shipping sector

GENDER-RELATED MATTERS
Job opportunities
<ul style="list-style-type: none"> • Infrastructure gap in vessels lacking separate sanitary facilities for men and women discourages companies in hiring female seafarers.
Maternity and childcare
<ul style="list-style-type: none"> • Difficulties in balancing family and childcare responsibilities with long periods at sea result in many women choosing to leave their jobs upon marriage or childbirth. • Possible solutions could be the introduction of fiscal or tax incentives, or the reintegration of women into the workforce through on-land positions as an intermediary step before returning to the sea.
Harassment and workplace protections
<ul style="list-style-type: none"> • Harassment remains a real concern within shipping, even causing victims to resign their positions. • Awareness training, stricter enforcement of workplace harassment policies, and effective countermeasures are necessary to guarantee female seafarers' safety.

Table 4 – Social Matters

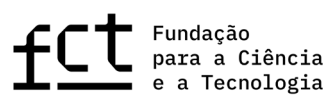
SOCIAL MATTERS
Public awareness
<ul style="list-style-type: none"> • Need to raise awareness on the importance of the shipping sector as a way to attract and retain professionals and increase the social support of the profession.

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