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**Title:** Hindered, Overlooked, and Undervalued: Gender Equality in Nordic Blue Economies

**Year:** 2025

**Version:** Published version

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**Please cite the original version:**

Ekstedt, J., Svelds, K., Boström, M., Gustavsson, M., Ounanian, K., Rønningen, K., Schreiber, M., Solnør, S., & Österman, C. (2025). Hindered, Overlooked, and Undervalued: Gender Equality in Nordic Blue Economies. *Ocean and Society*, 2, Article 8761. <https://doi.org/10.17645/oas.8761>.

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## Hindered, Overlooked, and Undervalued: Gender Equality in Nordic Blue Economies

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**Submitted:** 30 May 2024 **Accepted:** 9 September 2024 **Published:** in press

**Issue:** This article is part of the issue “Into the (Gendered) Blue: New Perspectives on Gender Equality and Participation in Blue Growth” edited by Kristina Svells (Natural Resources Institute Finland), Milena Schreiber (University of Santiago de Compostela), Kristen Ounanian (Aalborg University), and Magnus Boström (Linnaeus University), fully open access at <https://doi.org/10.17645/oas.i401>

### Abstract

The Nordic countries are ranked among the most gender equal countries worldwide. Equality, political, and civil rights, leading to the high participation of women in the workforce, have paved the way for this egalitarian view. However, women remain the minority in managerial positions in general, and they are also strongly underrepresented in many male-dominated sectors of the blue economy. The aim of this article is to introduce and discuss gender equality in the blue economy, and to assess the status of gender research in the Nordic context. To achieve this, a purposive interdisciplinary literature review resulted in three encompassing themes on how women’s participation is hindered, overlooked, and undervalued. Using these themes as an analytical lens, we propose that the underlying mechanisms are similar within fisheries, aquaculture, and maritime transportation in how they affect women’s participation. Still, there is a lack of statistics and research within parts of the blue sector. To move forward, there needs to be a shift in focus from policy to practice. One starting point could be to implement current knowledge, e.g., regarding workplace design and tailoring equipment to fit a diverse workforce. We call for scaling up best practices and evaluating policy performance and effectiveness. These are prerequisites for sustainable recruitment and retention of the blue sector workforce and the only way forward for countries aspiring to be truly gender equal.

### Keywords

blue economy; fisheries; gender equality; labor market; male-dominated; SDG 5; seafarer; social sustainability; women’s participation; workforce

## 1. Introduction

Gender inequality and women's empowerment have been acknowledged in the global political agenda through the UN SDG 5 "gender equality." The Nordic countries (Denmark—Faroe Islands and Greenland—, Finland—Åland—, Iceland, Norway, and Sweden) have historically been at the forefront of women's rights, being among the first countries to grant women the right to vote. Their efforts towards gender equality are well regarded globally, and international gender equality monitoring and reporting indices regularly list Nordic countries at the top of global or regional rankings (Teigen & Skjeie, 2017; see European Institute for Gender Equality, n.d.; UNDP, n.d.; World Economic Forum, 2023). Such regional trends in gender equality are partially attributed to strong Nordic welfare states (Bergqvist, 2015; Daly, 2020; Mustosmäki et al., 2021), and additionally Nordic policies' positive influence on women's citizenship, education, labor market opportunities, and caring roles (Melby et al., 2008).

The Nordic region is also considered to be a blue sector stronghold, Nordic countries are prominent in many marine and maritime sectors (Sepponen et al., 2021) and the marine environment has throughout history played important roles as a source of food, livelihoods, and transport. Today aquaculture, fisheries, and maritime transport hold the highest importance in the region, while coastal—and ocean—tourism and country-specific industries, e.g., Denmark's global leadership in offshore wind development, add significant value (Sepponen et al., 2021). Notably, while Nordic countries are often perceived to be gender equal, marine and maritime industries remain some of the most male-dominated industries in these countries (Karlsdóttir & Guðmundsdóttir, 2024; Svelds et al., 2022). Persistent inequalities have been identified in women's participation in the Nordic labor market including segregation across industries and male-dominated occupations, pay gaps, and underrepresentation of women in higher managerial and corporate positions (Mustosmäki et al., 2021; Nordic Council of Ministers, 2021).

Women's labor participation in blue sectors is an especially worrying case in the struggle for gender equality worldwide and in the Nordic countries. Globally it is estimated that women represent only 2% of all the workforce in seafaring (Baltic and International Maritime Council, 2021). Statistics from the Nordic countries compared to global numbers are less alarming, however still disconcerting, division in the workforce where women represent 14–35% of the aquaculture workforce, and 2–17% of the fisheries workforce (Karlsdóttir & Guðmundsdóttir, 2024). Factors contributing to this skewed gender division in maritime industries are systemic and cultural and include prejudices against women professionals, persistent stereotypes, workplace bullying, (sexual) harassment, lack of role models, scarce training opportunities, and unfavorable working patterns (Österman & Boström, 2022). With such conflicting images of Nordic gender equality, some are calling for a more thorough and cautious analysis of gender equality indices and the remaining challenges for gender equality (see Lister, 2009). Moreover, with marine and maritime sectors poised to expand under the new blue economy initiatives, questions about Nordic gender equality and labor participation become even more pertinent. In this article, we identify the progression of thought on the gender aspect of the blue economy in the Nordic context and aim to present existing mechanisms that hinder, overlook, and undervalue women across aquaculture, fishing, and marine transport.

Rather than addressing gender issues in the blue economy sector by sector, this article will use thematic categories, conceptualized by the researchers, to present mechanisms that hinder, overlook, and undervalue women and their roles in the blue economy. *Hindered* refers to placing barriers for greater participation (entry

and retention) of women in the blue economy. In contrast, *Overlooked* refers to the ways women are not seen as being a (legitimate) part of—or as potential contributors to—the blue economy. Here, the emphasis on potential is particularly important as will be illustrated later in this article. When women’s actual contributions are not recognized (to their full extent) within the blue economy or defined as being outside the purview of the blue economy, then such mechanisms are defined as *Undervalued*.

### 1.1. Blue Economy and Gender

Solidly promoted by supranational and national-governing bodies, blue economy (and blue growth) strategies depict the “yet untapped” oceans, as the world’s new frontier for economic growth and development (Cohen et al., 2019; Gamage, 2016; Ulmann, 2017; Zulkifli et al., 2023). Demonstrating the blue sector’s importance for the Nordic region, Denmark, Finland, Norway, Sweden, and Åland have all developed national strategies for a future blue economy while the Faroe Islands, Greenland, and Iceland have several industrial strategies within separate maritime sectors (Sepponen et al., 2021). However, there is a clear lack of inclusion of gender and strategies for gender inclusion in most Nordic national and sectoral policies (Svels et al., 2022).

The EU has been a frontrunner in fostering a vision for blue growth and adopted its Blue Growth—Marine and Maritime Agenda for Growth in 2012 (European Commission, 2012, p. 2). In addition to their vision of blue growth, the EU is also a pioneer in developing gender policies. Article 8 of the Treaty on the Functioning of the European Union states, “In all its activities, the Community shall aim to eliminate inequalities, and to promote equality, between men and women” (Lombardo & Meier, 2008, p. 104).

Although not explicitly mentioned, the target of ensuring an “inclusive transformation” of blue growth suggests a potential synergy with EU gender policies based on principles of social inclusion and equal opportunity. By setting targeted goals and promising to mainstream gender in all stages of policy design in its Gender Equality Strategy, the European Commission further marks its intention to achieve gender equality (European Commission, 2020). However, as argued by Österblom et al. (2020, p. 1), EU legal frameworks to support equity are not sufficiently developed, and “in practice, ocean policies are largely equity-blind.” While the opportunities for women to participate equally in the new jobs provided by the blue economy are not stated, boosting an inclusive transformation could set the basis for advancing gender goals in tandem with economic and environmental targets. By embracing inclusion, the European Commission is arguably harmonizing with the Gender Equality Strategy 2020–2025 (European Commission, 2020 p. 2) and its commitments to “including a gender perspective in all stages of policy design in EU policy areas” and striving for a Union “where women and men, girls and boys, in all their diversity, are equal.”

In addition to national and international strategies, the blue economy has promoted its gender equality strategies. Through its small-scale fisheries guidelines, FAO (2015) has highlighted the importance of gender equality and equity in development. The International Maritime Organization (IMO) initiated a gender program in 1988, Women in Maritime (IMO, n.d.). Joint efforts by IMO and the International Labour Organization (ILO, 2024) resulted in the amendment of the ILO Maritime Labour Convention (2006), and the adoption of a list of coordinated recommendations aiming at protecting seafarers from violence and harassment in line with the ILO Violence and Harassment Convention (2019). In addition, these recommendations included new IMO mandatory training for seafarers, additional IMO guidance related to violence and harassment for shipowners, and the launch of a joint IMO and ILO international awareness campaign to combat sexual harassment, bullying, and sexual assault in the maritime sector (ILO, 2024).

There are further strategies within the Nordic countries, where Norway and Iceland have been noted to have come the furthest in their work (Svels et al., 2022). For example, in Norway, the Ocean Strategy recognizes that: “The proportion of female employees is low in several ocean industries, making this an example of a gender-segregated labor market” (Norwegian Ministries, 2019, p. 21). To address this, the Norwegian government has formulated objectives around both expanding the blue economy and promoting gender equality. As a request of the Norwegian parliament to the government, the Gender Equality Strategy for the Maritime Sector was developed by the Ministry of Trade, Industry and Fisheries in 2022 (Norwegian Ministry of Trade, Industry and Fisheries, 2023). The strategy followed the Norwegian government’s goal of “increasing diversity in the labor market and improving gender representation in gender-segregated industries” (Norwegian Ministry of Trade, Industry and Fisheries, 2023, p. 37).

## 2. Method

This study followed a two-step approach, where findings from a purposive review were analyzed and conceptualized by researchers, resulting in this article. A purposive review was used as it affords researchers to reflect more broadly and across disciplines on research themes, building on the authors’ own experiences of the field, and facilitating insights that would not be achievable through a systematic review (Cook, 2019). The literature reviewed included peer-reviewed (empirical) studies, reports, policy documents, and statistics within the timespan from the 1980s to the current day.

Preliminary findings from the review, grounded in the researchers’ pre-existing knowledge, were clustered into the broader themes (hindered, overlooked, and undervalued). These categories serve as the study’s analytical tool and its conceptualization. While the article centers on the Nordic context, the geographical context has been broadened when relevant.

Academic literature addressing gender issues within the Nordic blue economy is limited and availability fluctuates. While there is a rich range of literature from Iceland, with scholars such as Karlsdóttir and Skaptadóttir, and from Norway, where scholars such as Gerrard and Munk-Madsen have been important contributors, literature on gender in the fisheries sector based in other Nordic countries are still scarce. Furthermore, there is a sectorial focus across literature, where literature can be strong in one sector in one country, but not across the blue economy as a whole.

In addition to a limited amount of academic literature, it is worth noting that data needs and gaps persist. Legg et al. (2023) identify the opportunity for self-reporting on gender in questionnaires in order to break from the gender binary and better understand who participates in oceanographic research; similar recognition could be given to the collection of blue economy statistics. Lacking statistics on gender-related demographics connects to failure to collect such data and to increasing data protection and privacy protocols which limit access and prevent retention of such information in publicly available data.

Furthermore, our review risks overlooking non-digitized or unpublished material. As authors, we also have certain language abilities, which encompass English and Scandinavian languages, but exclude Icelandic, Faroese, Greenlandic, and Sámi languages. Our findings nevertheless offer a thorough overview and valuable insight into how gender-related matters are hindered, overlooked, and undervalued in the Nordic blue economy.

### 3. Hindered, Overlooked, and Undervalued

In the following section, we present gender issues in the Nordic context through the conceptualized categories hindered, overlooked, and undervalued. Overall, the three concepts are in conversation with one another, though there are distinctions in what they represent. Acknowledging the fluidity among these categories, they should not be regarded as absolutes. Nonetheless, we still find the conceptual division insightful.

#### 3.1. *Hindered: Women's Greater Participation (Entry and Retention) in the Blue Economy Faces Barriers*

A common misconception is that women are new to the maritime industry, but this is not true. Rather, women's participation has largely been ignored in historical narratives (Lloyd's Register, 2022). While the industry has seen some recent initiatives to increase the visibility of women, more can be done. Likewise, while there are women role models in the maritime sector, Narayanan et al. (2023) call on both governmental and private organizations to intensify the work to highlight and promote women's participation in leading and mentoring positions. One example is *Rewriting Women into Maritime History*, a cross-industry project run by the Lloyd's Register Foundation. Similarly, Willson (2016) highlights how the historical participation of women in fisheries in Iceland has been largely forgotten.

Life at sea is highly institutionalized and characterized by a strong hierarchy where "the captain is king" (Sampson, 2021, p. 90). Onboard, rank is the most visible hierarchical marker. This is manifested through, e.g., uniforms, the size and location of cabins, and on some ships different mess rooms for officers and crew (Knudsen, 2005). Furthermore, Sampson (2021) reports that particularly captains, and sometimes officers in general, often acknowledge the need to maintain a social distance from the rest of the crew. Not only does hierarchy affect onboard work, but it also influences social relationships (Hult, 2012). Seafarers sometimes refrain from taking shore leave together with officers, simply to enjoy "a few brief hours when they feel free of 'surveillance' from managers and supervisors" (Sampson, 2021, p. 94). The onboard hierarchy influences women seafarers. Kitada (2013) describes how two women captains felt more secure as they rose to the highest rank; as the title itself had a legitimating effect, they could relax in their senior roles.

From a linguistic perspective, the frequently used titles "seaman" and "fisherman" (and other similar terms) can be seen as exclusionary for women and non-binary persons. While the terms might seem harmless, children tend to make gender-specific interpretations of job titles, being least likely to attribute strongly marked titles, such as "policeman," to both men and women (Liben et al., 2002). Most of the Nordic countries use the genderless title "fisher," excluding Iceland which only has gendered titles, and Greenland which has both a genderless title and a gendered title "fisherman," but no word for "fisherwoman" (Branch & Kleiber, 2017). Since fisherman and seaman are gendered titles, we argue that they could have a deterring effect on those wishing to enter the blue sector. Consequently, implementing alternative titles could change the perceived suitability of blue sector jobs to a wider workforce; possible gender-neutral alternatives include "seafarer" and "fisher." In 2010, IMO changed its titles from gendered to gender-neutral. Ratings, who had previously been called either seaman or motorman, now became "able seafarer deck" and "able seafarer engine" respectively (IMO, 2010). Albeit small, the change signals the organization's intention to make the maritime industry more gender inclusive.

Maritime transport and fisheries also share many similarities regarding work-life balance and being separated from partner and family is a crucial stress factor for many seafarers (Thomas et al., 2003). According to West

and Hovelsrud (2010), many young people shy away from long periods at sea and irregular hours, while at the same time, lifestyle choices and family dynamics have changed, deterring newcomers to the blue economy. Another similarity entails difficulties in combining work with childcare. There are limited childcare services in fishing communities, especially rural communities (Gerrard & Kleiber, 2019). This, in combination with often long periods of work onboard, increases the seafarer's or fisher's dependency on a partner or other family member for reproductive chores.

Workplace bullying, harassment, and sexual harassment are known risk factors affecting women workers in the blue economy in the Nordic region. While this has been long documented through anecdotal evidence, e.g., in news media, there is now a growing body of scientific literature as well (Mangubhai et al., 2023; Österman & Boström, 2022). Some of the earliest and most influential research on workplace bullying and harassment was done by Scandinavian researchers (Einarsen et al., 2020). A culture of hypermasculinity (Kennerley, 2002), social isolation while being away from home for prolonged periods of time as required for many blue sector jobs, as well as blurred boundaries between work and private life, aggregate these risks (Österman & Boström, 2022).

In summary, the literature on the Nordic blue economy identifies several ways in which women face barriers to greater participation. Barriers include but are not limited to, onboard hierarchy, linguistics, work–life balance, and harassment, and one could argue that these barriers are linked together. Onboard hierarchy might keep women out of leadership roles, which perpetuates the use of gendered titles and norms that marginalize women. Thus, the male-dominated culture and lack of leadership opportunities for women contribute to poor work–life balance, as the industry fails to adapt to the needs of a more diverse workforce. In such a culture, harassment can become normalized, with few consequences for perpetrators. This creates an unsafe and unwelcoming environment for women, hindering the increased participation of women in the blue economy. There is less scientific literature on these barriers in the Nordic countries, although it is growing, such as workplace bullying and sexual harassment. There is no doubt that history, path dependencies, and culture still play a role in women's opportunities to participate in a good working environment at sea in the Nordic countries.

### **3.2. Overlooked: Women Are not Viewed as a Legitimate Part of the Blue Economy**

#### **3.2.1. Implications of Access Privileges/Rights**

Individual transferable quotas and other catch-share system variants became the prevalent fisheries management mechanism in the Global North at the end of the 20th century. Their implementation has documented effects on access privileges for women, especially fishers' wives (Gerrard, 2008; Gerrard & Kleiber, 2019; Munk-Madsen, 1997, 1998). Catch share (Bromley & Macinko, 2007) and license limitation (Ginter & Rettig, 1978) systems center on establishing who will be allocated the access privilege, which is often constructed on (historical) participation records of time spent on vessels or at sea. When the scope of what constitutes a fisher—or a “rightful” quota owner—rests on gendered labor divisions in fisheries, then those divisions are carried forward into catch share systems and the accumulation of generated wealth (Munk-Madsen, 1997, 1998). When fishing quotas were formalized, women's fishing contributions were not well acknowledged; women were not granted ownership of rights to access, or control of fish resources (Munk-Madsen, 1998).

Gerrard (2008) notes that few women (2% in 1988 and 1.9% in 2006) were registered as full-time fishers in Norway; consequently, relatively few female boat owners resulted in few female quota owners. Ultimately, women's shore-based fisheries work did not engender access to political, social, and welfare rights and there was no formal recognition of shore-based contributions (Gerrard, 2008; Munk-Madsen, 1997, 1998). Thus, women are overlooked as rightful fishing quota owners because systems that provide flexibility to women's multiple roles then undercut their legitimacy to own quota (Munk-Madsen, 1998). Regarding access to financial capital to buy quota, few policies aim to rectify this gendered financial inequality: "As long as quotas in the closed group are expensive, the criteria for the recruitment quota will mostly benefit men, as no special financing means exist, and most women cannot compete for a quota in this [Norwegian] quota market" (Gerrard & Kleiber, 2019, p. 271). Furthermore, the introduction of catch shares reinforces boats' symbolic and financial capital and their coding as "masculine" or men's domain (Gerrard & Kleiber, 2019; Munk-Madsen, 2000). More recently the Norwegian government has been trying to rectify the disadvantaged position of women fishers through their recruitment quota program where three quota shares will be given to women (under 40), while three quota shares will be given to young men (under 30; Norwegian Ministry of Trade, Industry and Fisheries, 2022). The age limit's gendered difference is justified by research that found that new-entrant women often become fishers later in life (Norwegian Ministry of Trade, Industry and Fisheries, 2021) due to what is seen as an incompatibility between raising small children and a fishing career (Gerrard & Kleiber, 2019).

### 3.2.2. Aquaculture and Fish Processing

With the symbolic strength of boats—and the men who work on them—so deeply tied to fisheries, the importance and added value of processing—thus women's contribution—to the seafood value chains are often overlooked. Fish processing demonstrates a stark gendered division of labor and a devaluation of such work which underscores racial and ethnic divisions (Yingst & Skaptadóttir, 2018). In addition to large-scale fish processing, Gustavsson (2021) found that women in the UK engage in fish entrepreneurship and fish processing within small family-based fishing businesses—processing the fish caught by family members to add value to their catch and produce additional value as they sell fish products (street food, boiled lobsters at farmer's markets, etc.) to local markets. Flexibility and the multiplicity of roles that women play in coastal communities and families also had implications for reduced participation in aquaculture (Pettersen & Alsos, 2007). Family business composition and industrial change away from such a model tend to disfavor women's participation in more formalized, industrialized blue economy sectors (e.g., fisheries and aquaculture; Pettersen, 2019; Pettersen & Alsos, 2007). With an emphasis on practical experience in addition to formal education, the aquaculture sector tended to overlook women's contributions and the need to sustain their participation, especially in "grow out" production, "the myth of fish farming as best suited for men still remains" (Pettersen & Alsos, 2007, p. 116). Nonetheless, over more than a decade as women serve as professional partners, owners, board members, or managers in the aquaculture sector, there are some documented changes (Pettersen, 2019). Moreover, outside of the Nordic context but in the North Atlantic, evidence suggests that women's participation in aquaculture may increase much more readily than in fisheries (McClenachan & Moulton, 2022). In the same study, while simplified license structures for aquaculture have been shown to benefit women's participation, gender inequality in high-value aquaculture segments remains (McClenachan & Moulton, 2022).

Education trends and greater participation of women in aquaculture and blue biotechnology show the promise of more women coming into the blue economy (Karlsdóttir & Guðmundsdóttir, 2024). Nonetheless, many women have experienced the “surprise” of colleagues and others working in aquaculture when they are present (Karlsdóttir & Guðmundsdóttir, 2024, p. 28):

When we are having meetings...I am always asked: What is your job? None of the guys in the meeting are asked this: What do you do? It is just that you always have to be explaining yourself. But they do understand that the guys are there...but they howl when I am there. (Managing employee in an aquaculture company N-Iceland)

### 3.2.3. Equipment and Policy Support for Diverse Seafarers and Their Physiological Needs

A concrete way in which women’s participation and thus physical needs are overlooked in the blue economy is the availability of safety equipment, sector-specific work garments, and adequate onboard sleeping and toilet facilities (Johannesen et al., 2022). Legg et al. (2023, p. 16) identify “equipment and facilities not designed for all genders” as one of the obstacles to greater participation and advancement of women and gender minorities in oceanography—a point raised by others (Glüder, 2020; Johannesen et al., 2022). Glüder (2020) explicates the severe safety risks (i.e., death) due to survival suits’ sizing and functionality based upon an average male body, which thus fails to ensure the safety of persons smaller, especially in cold water regions such as the Arctic. While these issues could be seen as hindrances, they strike at the deeper issue of women’s participation: “The prevalence of ill-fitting personal protection equipment has a second less extreme but more prevalent side effect than drowning: it makes many of us feel that we do not belong” (Glüder, 2020, p. 9). Such feelings of exclusion illustrate the tendency to overlook women’s (potential) participation in marine-based sectors where safety gear that fits and functions as intended for a diversity of bodies is essential. Speaking directly about overlooking women in fisheries Gerrard and Kleiber (2019, p. 271) write:

Women’s issues are infrequently considered when making policies, rules and regulations....Some additional regulations stipulate labor exceptions for women who are pregnant or are mothers of children younger than two years, but so far, there are few signs of taking all aspects of women fishers’ special biological, cultural and social situation into consideration when policies are established.

Relatedly, impediments and opportunities for women in marine science and in particular oceanography are also still present (Gissi et al., 2018; Legg et al., 2023). Johannesen et al. (2022, p. 21) point to European maritime policy actors overlooking the importance of gender in the next generation of research vessels: “[The European Marine Board’s] report makes no specific mention of gender and fails to consider the changing gender demographic of the research workforce.”

## 3.3. Undervalued: Women’s Contributions to the Blue Economy Are not Recognized

### 3.3.1. Invisible Labor

When considering women’s participation in the blue economy it is important to acknowledge the context in which the blue economy operates, which means expanding the understanding of what work is and who are blue economy workers. Previous research, on fisheries specifically, has pointed to the continued

undervaluing of the work that women do ashore—be it paid or unpaid, in their role as “shore skippers” (Davis, 1988; e.g., being responsible for the administration of operating a business, or even marketing of fish; see Salmi & Sonck-Rautio, 2018) or as mothers and community members that enable male fishers (and arguably also seafarers) to go to sea (Gustavsson & Riley, 2020). Such roles are often not conceived of as part of the blue economy, arguably so because when failing to view the blue economy in its socio-cultural and broader economic context much of the work women tend to do is unrecognized and undervalued and its broader relevance is omitted. Already Gerrard (1983, p. 226) argues that women’s flexible roles in fishing households create a “buffer” to fishing households and the industry more widely, something Szaboova et al. (2022) argue contributes to building resilience across the industry. Echoing Gerrard’s thinking, Thorsen (1994) introduces the term “the flexible gender” which addresses how women are seen as helpers, assistants, and seasonal workers when needed. As women’s contributions are seen as “help” rather than work (see Zhao et al., 2013) such positions imply a constant undervaluation of the relevance of their contribution. In fisheries in Finland, it has further been noted that women in fisher households often provide a stable paid job in comparison to an uncertain fishing income (Salmi & Sonck-Rautio, 2018). Such incomes—beyond women’s unpaid contributions—work towards supporting fishing households by providing resiliency to fishing industries more widely yet its significance is often unrecognized (Szaboova et al., 2022). Willson (2016) shows that modernization and technological intensification may push women out of the boats and fisheries (see Haugen, 1990, for a clear parallel in agriculture). Thus, as society and fisheries become more professionalized, industrialized, and regulated, women’s roles expectedly become even less visible, and as previously presented by scholars such as Salmi and Sonck-Rautio (2018) and Szaboova et al. (2022), they may exit from fisheries-related jobs, and then their practical contributions may become even more undervalued. Similar findings have been evident in research on seafarers where, e.g., Slišković and Juranko (2019) point out overload with domestic duties, childcare, and subordination of their job/career done by those who stay ashore to sustain shipping industries. Such sea-shore dynamics are particularly evident in blue economy sectors where workers stay at sea for longer periods of time. The complete absence of sea-based workers from family activities ashore makes the work women have tended to do around childcare even more crucial to enable blue economy sectors to flourish.

### 3.3.2. Feminized Work Conditions Within the Blue Economy

Evidence from the shipping sector suggests that even when women have paid recognized jobs on board, gender becomes relevant in how responsibilities and roles are organized, and this has implications for how work is valued, or under-valued. After studying the onboard working life of Swedish seafarers, Hult and Österman (2015) discuss the work carried out within catering departments on board passenger ships. Such work is sometimes valued as less significant compared to that performed within the deck or engine department; catering staff can be perceived as less of seafarers, or even “non-seafarers.” Since many women seafarers work within the catering department, one can see a feminization of the work that many women do on board which leads to an undervaluing of their work, and arguably a feminization of their work conditions as well.

In the fishing industry, we can see similar gendering of work roles on board, where women are more likely to hold apprenticeship positions, or to be cooks or fish gutters when women do fish on board larger vessels. In aquaculture, we can see that women tend to work in on-shore smolt facilities (Pettersen & Alsos, 2007), roles that do not offer the same economic rewards as sea-based roles. Thus, the roles that the majority of the women who are involved and adopt in the blue economy are economically undervalued.

## 4. Discussion

While this article has addressed hindering, overlooking, and undervaluing mechanisms separately, it is important to acknowledge that these mechanisms do not act in isolation and that women and girls face several of these mechanisms simultaneously. One tangible place where these mechanisms intersect is onboard vessels where overlooking something as important as safety equipment not only threatens women's safety but also reinforces a notion of not belonging when women's work is concurrently undervalued or "invisible." Such points dovetail with barriers mentioned in the hindered section (Section 3.1) related to (sexual) harassment at sea. Moreover, without the option to lock the cabin door or having only a curtain for privacy demonstrates how the physical working environment at sea overlooks the needs of a diversifying workforce and hinders seafarers' safety. Issues such as these should be addressed through changed practices, e.g., requirements for better facilities onboard ships and safety gear testing on more than the average male body; such efforts would be important steps to prevent women's role in the blue economy being overlooked.

The hindrances for women are evident through the failure to change linguistic terms (e.g., adopting the gender-neutral term "fisher" as compared to "fisherman") could dissuade women from joining—or encourage them to leave—the sector when such hindrances intersect with their work being undervalued. While there have been efforts to change linguistic terms—with the IMO's (2010) and Nordic countries (Branch & Kleiber, 2017) initiatives—little is known of the changes' effectiveness and whether they have gone beyond paper and been adopted into workplaces and social contexts.

Additionally, reproductive or care work is overlooked and undervalued in sectors both within and outside (McDowell, 1999) the blue economy. Traditionally, there has been an acknowledgment within coastal communities of the necessity of this work, and women's flexible contribution to the fishery sector. However, this role in a modern, blue economy context is challenged and changing. Showcasing the fluidity of gendered issues between hindering, overlooking, and undervaluing, we highlight the need for a conversation surrounding possible common foundations of these issues while also acknowledging the need to act on the isolated issues. Gendered barriers extend outside of the blue economy, and while the blue economy sectors have historically been male-dominated, changes to address overarching social barriers could help form a bridge for women's participation in the blue economy.

We recognize, together with other scholars, such as Svendsen et al. (2022) that there is a need for a cultural and social shift—facilitated by structures. Coastal women being undervalued in male-dominated industries, is one of the implications that necessitates a cultural shift. Informal and flexible structures are often seen as part of the attraction and sense of freedom in rural and coastal communities (Højrup, 1983); however, it may also leave women in an unattractive position and a declining number of young women see a future therein. Generally, being outside the formal economy also has consequences for social security and pensions when retiring. Furthermore, the occupational identity as fishers has been a taken-for-granted aspect (for men; see Gustavsson, 2020), while women's identity linked to their buffer role in fisheries and other economic activities is less articulated, and consequently, also for themselves. Gustavsson and Riley (2020) point out how family, children, fisheries, and related businesses are entangled parts of women's roles and tasks. Women are thus left to negotiate their time between children, family, fisheries, and other incomes. With the increasing globalization of fisheries and aquaculture, international and seasonal migration replaces much of the previous paid buffering

function of women. However, it does not necessarily enhance the future viability of the coastal communities and the blue economy. When women's participation is hindered, overlooked, and undervalued, young women's desire to remain in or return to these communities dwindles, and thus the future reproduction and viability of these communities also dwindles.

Social and cultural constructions of gender and gender roles are on display in the examples made of hindering, overlooking, and undervaluing. The reflections on linguistics and their ability to include and exclude puts this in view. Additionally, the dominance of market-based approaches and the importance placed on the blue economy for regional competitive advantage, tend to overlook and undervalue goals concerning gender inclusion or diverse workforces. As demonstrated in the discussion of fishing quotas, eligibility criteria applied overlook and undervalue certain practices and contributions in the fishery and then hinder the wider participation of women in these sectors. While recognizing that the existing knowledge presented is scattered and thin in certain industries and/or geographic locations, we do consider existing knowledge sufficient to advise a shift from policies to practice, i.e., implementing policies already in place. We believe this may also be an impetus for innovation that may affect the blue economy positively.

#### **4.1. Policies**

Policies have so far documented the intentions of inclusion. As mentioned in the introduction, there are several policies in place that address gendered issues in the blue economy. Although there is an unequal distribution of gender policies, during recent years there have been efforts both within the EU and the Nordic region to recognize the importance of gender equality and inclusion within the blue economy. Whether these policies are achieving their goals or not, is difficult to measure; however, efforts to evaluate policy effectiveness and performance are needed. Despite efforts and policy measures, participation and representation of women in the blue economy have lagged. Shortfalls of gender equality have been highlighted by Karlsdóttir and Guðmundsdóttir (2024), who acknowledge that recommendations directed to decision-makers to achieve gender equality are as relevant today as when they were issued at the beginning of the millennia.

As the countries in the Nordic region share commonalities in the welfare state (Bergqvist, 2015; Daly, 2020; Mustosmäki et al., 2021) and blue economy sectors (Sepponen et al., 2021) we argue that there should be less effort to develop national gender blue economy policies and instead further recognize lessons learned from nations with further developed policies, such as the Norwegian policies. Furthermore, we second Sveld et al. (2022) argument to look across blue economy sectors that have been studied more thoroughly with a gender lens, such as fisheries, accumulate lessons learned, and direct efforts towards less studied sectors. Wider inputs from blue economy sectors would be an important addition to policymaking. Additionally, to address the challenges presented in this article where women are hindered, overlooked, and undervalued, policymakers must prioritize the implementation and enforcement of existing gender equality initiatives.

#### **4.2. Future Efforts and Research**

As the global blue economy grows and continues to be endorsed, it is important that new blue economy sectors show early investments to reduce and prevent gender equality gaps. Novel industries such as the blue bioeconomy have the potential to overlap gender inclusion in STEM and the blue economy, and due to

the novelty of the industry also have the potential to implement policy-advised practices early on. Increased interest of young women to enter blue sectors should be met by investments to keep women in the industry—decreasing hindering, overlooking, and undervaluing mechanisms—to avoid women exiting the blue economy. Research efforts should be directed toward improving practices, investigating policy implications, consequences of labor migration, and the current participation of women and girls in the blue economy. Moreover, strategies to combat sexual harassment are crucial to ensure a safe blue economy for all. The lack of academic literature and statistical data, especially from Greenland and the Faroe Islands, evidences a continued need for effort to decrease and acknowledge gendered issues within the blue economy in the Nordic region. A common gender database shared among the Nordic countries, or by extension the EU, could be useful to map progress and/or persistent challenges for a more gender equal blue economy.

Overall, advocacy and action are needed to ensure that girls and women feel welcome and included in the blue economy. We recommend gender mainstreaming (adhering to the EU vision) of policymaking and recommend blue economy sectors to develop gendered strategies. Such sector-specific gendered strategies could be shared between countries, recognizing the Nordics' similar social and cultural values. Furthermore, as encouraged by Karlsdóttir and Guðmundsdóttir (2024) and Sveld et al. (2022), steps should be taken to increase women's access and enrolment to education related to the blue economy, making female role models more visible and avoiding biases concerning career choices to disrupt such hindrances of women's participation in the blue economy. We argue that the benefits of such a change would not be isolated exclusively to women, but also to men, non-binary persons, and society at large.

## 5. Conclusion

Despite the Nordic region's reputation of having high gender equality ideals, this article has highlighted the hindering, overlooking, and undervaluing of women in the Nordic blue economy. The challenges women and girls face are many affecting their work-life, livelihoods, career paths, and personal safety. Notwithstanding several Nordic and international policies in place that promote a more gender-inclusive blue economy, gender inequalities persist. The authors therefore highlight the urgency to implement policy recommendations into practice building from accumulated knowledge presented in this article. Given the Nordic countries shared social and political values, efforts to increase gender equality in the Nordic blue economy should be a shared effort across the region where the countries not only learn from each other but also cooperate to overcome gender issues. These efforts should be directed towards improving practices, increasing statistical data on women's participation in the Nordic blue economy, and prioritizing gender inclusion early on in novel industries. Finally, societal and cultural changes are needed to secure a gender inclusive blue economy which is beneficial for wider society, regardless of gender identity.

## Acknowledgments

The authors would like to thank the academic editors of the Thematic Issue, the managing editor of *Ocean and Society*, and the two anonymous reviewers.

## Funding

The Nordic Arctic Co-operation Program, NAPA Sisters in the Arctic Blue Network—Third-year project No. 23-13-0003 from the Nordic Council of Ministers has funded some of the authors. Arias Schreiber was

supported by the EU's Horizon 2020 Research and Innovation Program under the Marie Skłodowska-Curie grant agreement No. 843165.

### Conflict of Interests

In this article, editorial decisions were undertaken by Khanssa Lagdami (World Maritime University, Sweden).

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