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Women's experiences in influencing and shaping small-scale fisheries governance

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Abstract

This paper synthesizes current empirical evidence on how women experience, shape and influence small-scale fisheries (SSF) governance. Our synthesis addresses an important gap in the literature, and helps highlight the opportunities to improve women's participation in governance and advance gender equality. We identified, characterized and synthesized 54 empirical cases at the intersection of gender and SSF governance, which comprise the relevant body of literature. Our review confirms the need to embed gender in the empirical examination of SSF governance towards expanding the current evidence base on this topic. We found that the institutional contexts within which women participate reflect a broad spectrum of arrangements, including the interactions with rules and regulations; participatory arrangements such as co-management; and informal norms, customary practices and relational spaces. We also synthesized a typology of governance tasks performed by women in SSF. The typology includes leadership roles and active participation in decision-making; relational networking and collective action; exercising agency and legitimacy; resource monitoring; knowledge sharing; meeting attendance (with no/less participation in decision-making); and activism and mass mobilization. Furthermore, we drew broader insights based on the patterns that emerged across the literature and highlighted implications for improving women's meaningful participation in SSF governance. For example, exploring the breadth of governance arrangements to include all governance spaces where women are active, adjusting governance arrangements to respond to current and emerging barriers, and recognizing how women's efforts link with societal values may help legitimize their representation in SSF governance. Findings of this review should be of interest to the scholarly community, practitioners and policymakers alike and inform future research agendas, policy dialogues and practice intervention.

KEYWORDS

decision-making, gender equality, governance, participation, small-scale fisheries, women

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1 | INTRODUCTION

The aim of this paper is to synthesize current empirical evidence on how women experience, shape and influence small-scale fisheries (SSF) governance globally. Gender equality, which evokes inclusiveness and openness for diverse participation, has emerged as guiding principle in global fisheries policy frameworks. Gender equality is broadly understood as the 'equal rights, responsibilities, and opportunities of women and men, and girls and boys' (UN Women, 2017, p. 1). Inclusion of women's representative voices in governance and decision-making is crucial to achieving gender equality. For example, recent high-level initiatives within fisheries such as the 2015 FAO Voluntary Guidelines for Small-scale Fisheries in the Context of Food Security and Poverty Alleviation (SSF Guidelines) and, multiple other regional and national fisheries policies have made explicit commitments to improve women's participation in governance (Barclay et al., 2021; Kleiber et al., 2017; Kusakabe, 2005; Mangubhai & Lawless, 2021; Murunga, 2021). Furthermore, global efforts to advance United Nations' Sustainable Development Goals (SDG) within the context of SSF have raised growing concerns about the need to recognize the crucial link between SDG 5: Gender Equality and SDG 14: Life Below Water, the goal directly related to fisheries (Frangoudes et al., 2020; Nash et al., 2020). More recently, various forms of gender discriminations such as recognitional, procedural, and distributional injustices; and the marginalized status of women in ocean governance, have gained scholarly attention and especially in the context of blue justice and blue economy narratives (Gustavsson et al., 2021).

Globally, women make up about 40% of the SSF workforce (an estimated 45 million women) and critically depend on coastal and marine resources for their livelihoods (FAO, Duke University, WorldFish, Forthcoming). Despite the differential access to and use of these resources by women (e.g. gleaning, seaweed gathering), they have been rarely involved in decision-making concerning such resources (Kleiber et al., 2015; Weeratunge et al., 2010). This oversight largely stems from the traditional viewpoint of fisheries as a masculine domain and the resulting androcentric management that excludes women from participating in institutions and decision-making processes (Gustavsson et al., 2021; Kleiber et al., 2015; Williams, 2010). Gendered power relations and social norms operating within SSF contexts, such as the mobility restrictions that constrain women from travelling away from home and household caretaking responsibilities, further limit the scope for women's participation in governance (Lawless et al., 2012). As a result, women's representative voices concerning their experiences, knowledge, interests and priorities tend to be left out of deliberations and decision-making (Bennett, 2005; Burnley & Ziegenhagen, 2014; Gissi et al., 2018; Kleiber et al., 2017). The resulting solutions not only undermine the governance outcomes but also further marginalize women and perpetuate gender inequity (Bennett et al., 2021; Crona et al., 2020; Kleiber et al., 2017).

Adopting a gender-inclusive approach is widely recognized within environmental governance literature as self-reinforcing and

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necessary to achieve positive development outcomes for women themselves, their families and communities (Agarwal, 2001; Elmhirst & Resurreccion, 2008; Rocheleau et al., 1996). Such an approach, for example, helps to secure access and user rights for both women and men, improve resource conservation and stewardship, and strengthen economic returns from fishing livelihoods (Freitas et al., 2020; Kleiber et al., 2018). For the women themselves, such experiences may build confidence, improve their agency and provide empowering experiences in ways that other aspects of their lives are enriched (Kabeer, 1999).

Despite the decades of studies focused on gendered dimensions of SSF, we have a limited scholarly understanding about the issues of gendered power relations and how to meaningfully engage women in SSF governance (Frangoudes et al., 2020; Kleiber et al., 2017). To this end, a comprehensive synthesis on the state of current empirical evidence on women's engagement in SSF governance remains a critical gap in applied scholarship and practice. Such a synthesis is crucial to understand the entry points to meaningfully engage women in fisheries management, conservation and stewardship, and the associated livelihood interventions. To address this

gap, we conducted a systematic scoping review of peer-reviewed empirical literature. Our review was guided by three research questions:

1. What is the scope of empirical literature on how women participate, influence and shape SSF governance?
2. What specific roles do women perform in SSF governance processes?
3. How do women shape and influence governance outcomes, and what barriers do they face in doing so?

The novelty of our review arises in three main ways. First, we present the first global-level systematic scoping review of peer-reviewed empirical literature at the intersection of gender and SSF governance. Second, we advance the conceptual and analytical linkages between SSF governance and women's participation by situating our analysis in relation to the principles of interactive governance theory (Kooiman et al., 2008). Lastly, our review aligns with on-going high-level discussions across science-policy-practice interfaces, such as the global implementation of SSF Guidelines, SDGs and blue economy narratives.

The paper is structured as follows. First, we discuss the conceptual foundations that guide our review and then outline our methodological approach. Next, we present the results, where we characterize the sample, explore the institutional context, synthesize a typology of women's governance tasks, illustrate the specific outcomes to which they contribute, and assess the barriers they encounter. Lastly, we examine the patterns that emerged across the reviewed literature to draw broader insights and highlight implications to improve women's participation in SSF governance.

2 | CONCEPTUAL BACKGROUND

Small-scale fisheries represent a significant yet marginalized sub-sector within global capture fisheries (Chuenpagdee & Jentoft, 2018). SSF include the wide-ranging livelihood activities along the fish value chain from pre-harvesting to harvesting and post-harvesting in marine and inland fisheries, performed by both men and women (Smith & Basurto, 2019). SSF are strongly anchored in local communities, whose survival and well-being are critically dependent on how SSF systems are governed (Berkes & Nayak, 2018). Governance structures and processes determine access to, control over, and the management of resources in fishing communities around the world (Chuenpagdee & Jentoft, 2018). Governance happens through formal rules (e.g. policies, regulations), informal rules (e.g. norms, customs) and other arrangements (e.g. local associations) that prescribe the procedures and conditions under which fishing livelihoods operate (Kooiman et al., 2005).

In this paper, we view governance in broad terms and inclusive of all types of governance 'interactions' (Kooiman et al., 2008). Kooiman and colleagues [2005, p. 17] define governance interactions as 'the specific forms of action, undertaken in order to remove obstacles

and to follow new paths...'. The interactive governance perspective is helpful in this review in two specific ways. First, by definition, interactive governance brings attention to the process of societal problem-solving and opportunity creation while extending beyond the formal and informal rules and institutions to include all interactions among state and non-state actors such as markets and the civil society (Kooiman et al., 2008). This broad understanding about how governance can happen helps us capture all types of governance roles performed by women and all spaces where such contributions occur. For example, the relational networks and community events may provide practical spaces for women to collectively discuss the issues that matter to them, and voice concerns given the constraints they face in carving out time to do so.

Second, the concept of 'governance orders' (Kooiman et al., 2008) provides a theoretically grounded basis for analysing our review data. The three governance orders – first, second and third order – refer to what the governance deals with or the distinct tasks involved in each order. For example, first order governance involves day-to-day management activities, such as enforcing agreed-upon rules and monitoring resource use (Kooiman et al., 2008). Second order governance focuses on the institutional context within which first-order governing occurs (Kooiman et al., 2008). The institutional context includes informal rules (e.g. norms, customary rights, traditions), formal rules (e.g. policies, laws, regulations) and different other arrangements through which governance interactions are structured (e.g. procedures involving local institutions, markets, relational networks). The third order or meta-governance is about undertaking deliberations guided by fundamental societal values, principles and meanings (e.g. fairness, reciprocity, respect) to ensure effectiveness and legitimacy of the resulting outcomes (Kooiman & Jentoft, 2009). Value-based deliberations are crucial to ensure that the institutional adjustments (e.g. development of new rules, strengthening existing rules), as well as the routine management practices (e.g. enforcing rules, implementing incentive schemes) needed in governing SSF are appropriately aligned with societal values and principles. The third order governance is particularly relevant to pursuing gender equality because it is an aspirational goal within policy and practice interventions towards improving fishing livelihoods (e.g. SSF Guidelines, SDGs), and thus should be centred in decision-making agendas. Furthermore, value-deliberations open up an opportunity to bring more locally grounded understandings about how gendered governance could be improved to fit with local circumstances. Overall, the notion of governance orders provides a normative basis for assessing how gendered outcomes can be improved in SSF governance.

3 | METHODS

We conducted a systematic scoping review to assess peer-reviewed literature on how women experience, shape and influence SSF governance. Our review is characterized as a systematic scoping review because it is focused on the critical appraisal of the state of an

emergent body of literature (as opposed to conventional systematic reviews which are typically used to appraise well-established bodies of literature) (Berrang-Ford et al., 2015; Levac et al., 2010). The area of gender and SSF governance can benefit from a systematic scoping review as there have been increased calls for new knowledge to inform policies and targeted action aimed at improving women's involvement in decision-making (Frangoudes et al., 2020; Kleiber et al., 2017; Lawless et al., 2021).

We employed a rigorous and replicable search strategy to cover all relevant literature in a comprehensive way while mitigating potential sources of bias (Arksey & O'Malley, 2005; Moher et al., 2009). In compliance with the guidelines on Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA guidelines), our review followed a five-stage process: (a) formulation of research questions and scope; (b) development of search protocol; (c) database search and identification of other relevant articles through hand search; (d) screening of search results and (e) coding and analysis to discern key insights and patterns.

We selected SCOPUS and Web of Science databases to gather literature as these databases provide a comprehensive coverage of interdisciplinary environmental and social sciences literature relevant to our research questions. We followed an iterative process to determine the search terms and develop the search string in consultation with a university librarian. We included search terms that reflected governance and management more broadly and all possible alternative terms that reflect gendered analysis within to study of SSF. The search terms were revised based on the following two criteria: sensitivity (i.e. count of all studies resulted in a search) and selectivity (i.e. proportion of studies that were relevant to research questions). Search strings were tested in the databases for finalizing. Table 1 shows the final search string that was consistently applied to both the selected databases.

The search was restricted to title-abstract-author search because any item of indexed literature with a substantial focus on women in SSF governance would contain the finalized search terms within this search. The search included only the peer-reviewed publications, book chapters and conference proceedings. The search was limited to English as the language of publication based on the language expertise of co-authors and the availability of resources. A grey literature search was not included in the review due to the limitations in available resources. No restrictions were placed on the date of publication or the geographical location as the key aim of the review was to assess the state of literature. A full listing of inclusion and exclusion criteria is provided in Supplementary Material 1. A supplementary search was also conducted by tracing the citation lists and hand searching other known sources such as related reports and websites to gather all relevant articles. The initial searches were conducted in the Winter of 2021 and were supplemented by another search in January 2022 to ensure the inclusion of all relevant articles published during 2021.

The database searches yielded 1101 items in total. After removing the duplicates (35), the search results (1066) were screened in two steps. First, the titles and abstracts were screened to remove

the items that were not related to gendered aspects in the context of SSF. Second, the remaining items were screened through a more comprehensive process where full-text articles were assessed to identify empirical cases with attention to women's involvement in SSF governance more broadly. We purposely excluded the articles which drew heavily on secondary literature without an empirical case. Here, an item was identified as empirical piece of literature if it relied purely on the analysis of one or more case studies building on primary data and original evidence from field settings (Plummer et al., 2012). The additional items (13) retrieved through the supplementary search also underwent full-text screening. Altogether, 192 articles were screened for an empirical case at the second stage and 54 items (i.e. the sample) were selected for the final qualitative review. Figure 1 shows the flowchart of screening. See Supplementary Material 2 for a listing of papers included in the review along with a brief overview on each paper.

We employed a qualitative coding approach to extract variables and data relevant to our research questions (e.g. ways women participate in governance, outcomes they contribute towards, barriers they encounter). A combination of both deductive (i.e. applying a set of pre-determined codes) and inductive approaches (i.e. open coding that allows for patterns to emerge) were used in coding (Creswell, 2014). Results in relation to state of the literature were gathered through deductive coding (Research Question 1), whereas the variables on other core aspects being studied were extracted through inductive coding (Research Questions 2 and 3). Coding was undertaken using the qualitative analysis software NVivo 12 Plus.

Following the first round of inductive coding, the code list was finalized by consolidating similar codes. This process resulted in the following coding structure that the assessment of each article/case included in the final review was based on: bibliographic information (authors, year of publication, journal); characteristics of literature (geographic location, spatial scale of study, type of fishery, value chain nodes of concern); governance order; type of institutions women interact with; governance tasks performed; outcomes achieved; barriers encountered and general comments about the articles. The codes emerged through this process were categorized into groups of variables or themes for further analysis and reporting.

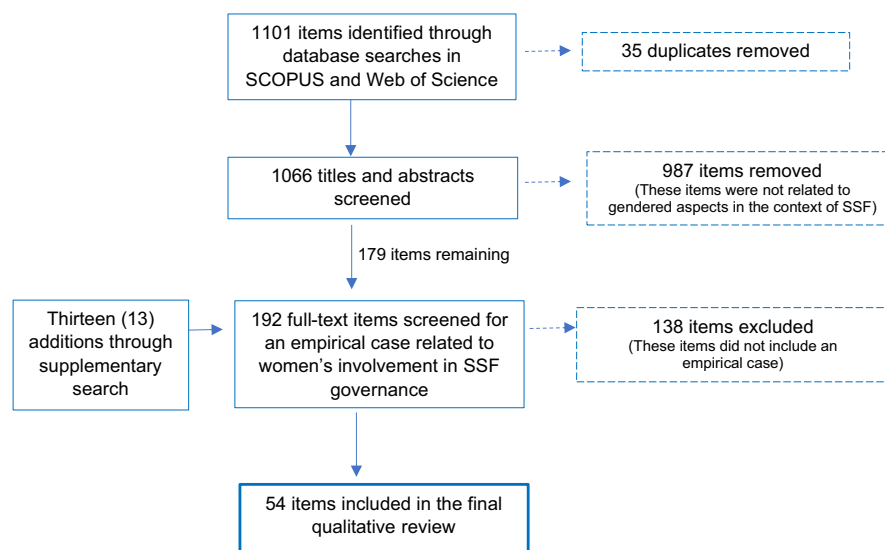
Of the 54 articles included in the final review, 52 contained one empirical case each. One of the two remaining articles included two comparative cases and the other one included four cases. The search therefore yielded 58 empirical cases in total, however, with several duplications in the study locations of focus (two cases on Jeju island, South Korea; two cases on Tone Sap Lake in Cambodia, two cases on shellfish fishery Galicia and two cases on the Bio-Bio Region of Chile). The articles focusing on the same study location were reviewed together and were counted as a single case representing each empirical location. There were also some overlaps at the country level; however, with different scales of study. For example, we found separate articles focusing on SSF communities in Wales, SSF communities in Northern England, and SSF in the United Kingdom at the country level. Such articles were treated as separate cases because of the diversity

TABLE 1 Finalized search string

Question component	Search terms included
Women	Gender* OR Women OR Female OR Fisher* OR Femini* OR Intersect
SSF	Small-scale fish* OR Small scale fish* OR Artisanal fish* OR Traditional fish*
Governance	Govern* OR Manag*

Notes: Asterisks (*) were used to broaden the search terms by capturing all variations. 'AND' operator was used to combine the three question components.

FIGURE 1 Flow chart of screening process



in laws and regulations that govern SSFs at these different scales. Overall, the screening process resulted in a total of 54 empirical cases for the final synthesis.

Our review has two limitations. First, there are categories of potentially relevant papers not captured in this review. These include the studies that obscure specific contributions made by women, for example by discussing them broadly as community contributions, without explicitly stating who is participating and in what. Further, the studies that report important details in passing such as the influential community positions held by women, are not included in our review. Second, the review does not capture any relevant items published in languages other than English or non-peer-reviewed sources (grey literature) due to the limitations in our language expertise and available resources.

4 | RESULTS

4.1 | Sample overview

Our first research question was to assess the scope of empirical literature on women's engagement in SSF governance. Fifty four articles included in the final review collectively represented the work of 160 authors. The studies presented in these articles were grounded in a variety of theoretical and applied frameworks such as feminist political ecology, agency and empowerment, community-based natural

resource management, co-management, Marine Protected Area governance and participatory action research. See Supplementary Material 2 for a brief description on each of the articles included in the review.

Figure 2 depicts the number of reviewed articles by publication year. The oldest article in our analysis was from 1995. Since then, about two articles were published each year until 2014. Several gap years (without any publication) were also present during this period. However, the annual number of publications seemed to have grown since 2017 showing the emergent nature of this body of literature.

4.1.1 | Geographic location and spatial scale of study

The review protocol resulted in a total of 54 empirical cases globally (Figure 3). These cases reflected SSF systems in 33 countries across six of the seven continents (Antarctica not included). The majority of these cases (41) were from the Global South. The articles were predominantly focused on coastal fishery systems (47 cases). In addition, there were seven inland fishery systems – Tanzanian shores of Lake Victoria (Medard et al., 2019), Malawian lakes of Chilwa and Malawi (Manyungwa et al., 2019), Okavango Delta in Botswana (Ngwenya et al., 2012), lake fisheries in Uganda (Nunan, 2006), Brazilian Amazon (Freitas et al., 2020) and Tonle Sap Great Lake in Cambodia (Resurreccion, 2008).

Table 2 further characterizes the geographic context of the reviewed literature. The spatial scale or the socio-cultural setting of study identified by authors was mostly local (34 cases) with focus on one or more study communities. Eight articles each explored governance concerns at the country level and at sub-country level jurisdictions (i.e. a province or an ecosystem). Three articles focused on regional levels (i.e. representing more than one country in a region). One article was focused on decision-making and negotiations at the household level. There were no articles focusing on governance concerns at the global level.

4.1.2 | Type of fishery and value chains stages

A significant portion of the reviewed literature (22 cases) was focused on single target species fisheries such as octopus, cockles, oysters, flying fish, Pacific herring, Cod, Nile perch or seagrass (e.g. Crawford et al., 2010; Harper et al., 2018; Wosu, 2019). Many of these fisheries predominantly involve women compared to men. The remaining 32 cases were on fisheries targeting multiple fish/seafood species (e.g. Baker-Médard, 2017; Gallardo-Fernández & Saunders, 2018; Rohe et al., 2018) or focus on SSF activities more generally.

The value chain stages of concern varied across the cases. Twenty nine cases focused specifically on the fish harvesting stage, including gleaning, seagrass gathering and subsistence (e.g. Di Ciommo & Schiavetti, 2012; Lawless et al., 2012; Lokuge & Hilhorst, 2017). Fish processing and/or trading stages were the focus of 13 cases (e.g. Medard et al., 2019; Mutimukuru-Maravanyika et al., 2017; Pena et al., 2020) while the remaining cases (12) focused on fish harvesting, processing and trading activities. There were no studies that took a whole value chain approach to study governance implications from pre-harvesting to consumption in an all-encompassing way.

4.2 | Women's engagement and orders of governance

Our second research question was to examine the specific roles women play in SSF governance processes. This included the

wide-ranging arrangements that comprise the institutional and governance context where women participate, as well as the specific roles they perform. As mentioned above, we used the concept of governance orders offered through interactive governance theory to categorize the cases into governance orders (**Table 3**).

Eighteen empirical cases clearly mentioned women being involved in performing first order tasks such as attending meetings and performing resource monitoring roles. These also included the cases which mentioned that women's participation in decision-making was particularly low. For example, despite women's and men's differential interactions with the SSF associated with seagrass meadows in Zanzibar, Tanzania, the management has historically been androcentric and the participation of women in decision-making was low (de la Torre-Castro, 2019). Thirteen cases discussed second order tasks such as active participation in decision-making and management roles. For example, in local fisherfolk organization in Bolinao, Philippines, several women continued to hold active leadership roles for over 10 years and exercise agency in decision-making (Dasig, 2020).

A total of 10 cases emphasized third order tasks performed by women, such as the value-based deliberations that led to improved outcomes for women. For example, the Indigenous Heiltsuk women on the central coast of British Columbia, Canada catalysed a transformation in the management of local Pacific herring fishery through women's unique traditional leadership roles and strategic action (Harper et al., 2018).

The remaining 13 cases were not categorized because they lacked sufficient details to identify the full range of governance tasks performed by women, or the details capturing both formal as well as informal rules and norms that potentially shape women's participation. These cases were still insightful. Some of these cases highlighted how women found ways to informally address the issues concerning the resources they interact with, but that were not framed as women's participation in governance. For example, on the Tanzanian shores of Lake Victoria, some women dried fish traders used their close ties to a cross-border men's trading network to gain access to 'helpers', who were the men affiliated with local fishing cooperatives and acted as intermediaries in filling purchase orders (Medard et al., 2019). Although these women did not belong to the cooperatives,

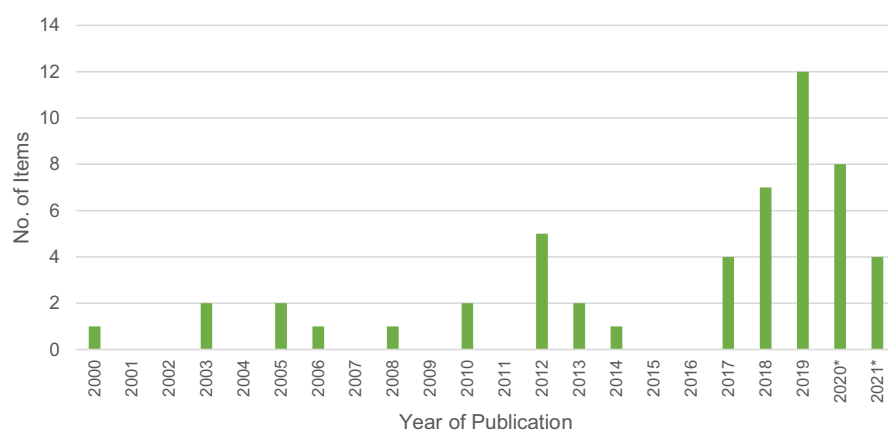


FIGURE 2 Number of items by publication year. Note: (*) The counts for 2020 and 2021 may have been impacted by COVID-19 pandemic-related fieldwork limitations and the delays in academic publishing



FIGURE 3 Geographical locations of case studies

they found indirect ways to gain support of the cooperatives to continue trading. In some other cases, the roles women performed were beyond the regular tasks that typically characterize governance orders such as decision-making, resource monitoring and attending meetings. For example, in Trincomalee, Sri Lanka, small groups of women informally negotiated their access to male-dominant lagoon space through their male kin even though it was not clear how the lagoon fishery was governed (Lokuge & Hilhorst, 2017).

In the following section, we explore the nuanced experiences of women in SSF governance. In doing so, we examine the institutional and governance context within which women participate, the specific governance tasks they perform, the outcomes to which they contribute and the barriers that may undermine their efforts.

4.3 | The institutional and governance arrangements

Table 4 highlights the institutional and governance arrangements acknowledged across all reviewed empirical cases. The overall governance context within women participate comprised an array of arrangements: (a) legal and regulatory frameworks (formal); (b) different forms of participatory arrangements and (c) customary institutions, norms, relational networks and other social venues that structure decision-making (informal).

a) Laws, acts and policies that shape the regulatory background

The literature acknowledged formal laws shaping access and use of fisheries resources such as the rules involving Marine Protected

Areas and various other fisheries-related acts, policies and guidelines (44 cases). Furthermore, legal rights, quotas and permits (11 cases), such as the exclusive user rights and commercial permits to sell cockles in Nicaragua and Tanzania directly shaped women's access to and use of resources (Crawford et al., 2010; Gallardo-Fernández & Saunders, 2018). Depending on the context, these formal rules supported or restricted women's capacity to involve in governance. For example, MPA rules in Mozambique restricted women from participating in the octopus fishery, whereas the formal recognition of customary user rights in Chile has fostered women's active participation in governing artisanal fisheries (Baker-Médard, 2017; Gustavsson et al., 2021).

b) Involvement in community-based or co-management committees

The literature emphasized community fisher associations (customary institutions or cooperatives) as a key arrangement through which women involve and influence in SSF governance (32 cases). They participated in these associations in various capacities and played different roles within them – from attending meetings to performing active leadership roles. Notably, literature mentioned nine cases of all-women community groups – Jamsuhoe women divers' groups in Jeju, South Korea (Kim, 2003; Ko et al., 2010); fisherwomen's associations in Portugal (Neilson et al., 2019), Finland (Salmi & Sonck-Rautio, 2018), northern Norway (Gerrard, 1995) and France (Gustavsson et al., 2021); Amasan women diving groups (Lim et al., 2012) and entrepreneurial groups in Japan (Soejima & Frangoudes, 2019); fisherwomen in Ngazidja, Comoros (Hauzer et al., 2013); and the seaweed gatherers union in Coliumo, Chile (Gallardo-Fernández & Saunders, 2018). These associations operated at local

TABLE 2 Characterization of reviewed literature

Characteristic		Description	Number of cases
Geographic location	Africa	The empirical case is from Africa	19
	Asia	The empirical case is from Asia	13
	North America	The empirical case is from North America	6
	South America	The empirical case is from South America	6
	Europe	The empirical case is from Europe	8
	Oceania	The empirical case is from Oceania	2
Spatial scale of concern and socio-cultural setting	Local	The governance aspects being studied concerns one or several communities	34
	Country level	The governance concerns reflect the entire country level	8
	Sub-country level	The governance concerns are beyond community level (e.g. province, ecosystem) but does not reflect the entire country	8
	Regional level	The governance concerns reflect two or more countries within a region (e.g. Africa, Melanesia)	3
	Household	The governance aspects being studied concerns the individual household level	1
Type of fishery being studied	Multi species	The fishery being studied is identified as SSF in general or include multiple targeted fish/seafood species	32
	Single species SSF	The fishery concerns a single species (e.g. octopus, oysters, cockles, Pacific herring, Arapaima sp.)	22
VC activities of concern	Harvesting	The case focused only on harvesting activities, including gleaning for subsistence	29
	Processing and/or trading	The case focused only on fish processing and/or trading activities, including a wholesale fish market	13
	Multiple activities	The case focused on multiple key value chain activities (not the entire value chain from pre-harvesting to consumption)	12

Order of governance	Description	Number of cases
First order	Only first order tasks specifically mentioned (e.g. resource monitoring, attending meetings).	18
Second order	Second order tasks clearly mentioned (e.g. active participation in decision-making at various levels). Some of these cases also discussed additional first order tasks.	13
Third order	Third order tasks are clearly mentioned (e.g. value-based deliberations with concrete action to address gender issues). Some of these cases also discussed additional second and/or first order tasks.	10
Unclear	The cases that were not coded because they lacked sufficient information to identify the full range of tasks potentially performed by women.	13

TABLE 3 Categorization of cases by the orders of governance

and sub-national levels (e.g. Chile, Cambodia, South Korea) and also at a national level within nested institutional structures (e.g. Japan, Barbados, France).

In seven cases, women were involved in various forms of co-management arrangements that share resource management responsibilities among the state and resources users, some of which also involve civil society actors. Several of these arrangements were state-supported initiatives that particularly seek to improve women in local resource management and stewardship. Examples included

the co-management interventions in the cockle fishery in Menai Bay, Zanzibar (Crawford et al., 2010) and the shellfish fishery in Galicia (Frangoudes et al., 2008), which was designed to involve women by providing them with exclusive user rights and permits to sell their harvests. Certain other co-management initiatives discussed in the literature were initiated at the community level with the support of non-profit organizations and universities. For example, the Arapaima co-management system in the Brazilian Amazon was a non-profit initiated arrangement that was adapted by the local communities and

was later formally recognized by the federal government (Freitas et al., 2020). There were also two all-women associations participating in co-management arrangements – shellfish co-management in Galicia (Frangoudes et al., 2008; Meltzoff, 1995) and fish processing cooperatives in Barbados (Pena et al., 2020).

c) Customs, norms, relational networks and other informal venues

Most cases highlighted customary practices and cultural norms as informal rules through which governance occurred (36 cases). Most importantly, these norms and practices shaped the specific ways that women can involve (i.e. what they can and cannot do, when and where they can participate). For example, the local norms in Zanzibar about how a 'respectable woman' should behave around men directly influenced the women fish traders ability to interact with men and negotiate market spaces (Fröcklin et al., 2013).

Furthermore, traditional leadership roles and authority that women may (or may not) hold at the community level was also acknowledged as an aspect that directly shape women's involvement. For example, the traditional leadership roles and social positions held by Indigenous Heiltsuk women in local Pacific herring fishery on the Central coast of British Columbia, Canada had positively reinforced women's capacity to mobilize community collective action (Harper et al., 2018). Similarly, in the traditional villages of Madagascar, both women and men held positions of authority to call meetings, make decisions and actively involve both gender groups in the process (Baker-Médard, 2017). In comparison, the strong patriarchal societies where the traditional non-elected leadership roles were passed down only to male members, such as the fishing communities in Central Java (Indonesia), Solomon Islands and lake fisheries in Uganda, had restricted women's capacity to involve in governance (Fitrianggraeni, 2019; Nunan, 2006; Rohe et al., 2018).

Local relational networks were also widely recognized in the literature as spaces where women often interact and socialize in ways that facilitate information sharing, trust building and problem solving (21 cases). These networks were underpinned by kinship ties, familial connections, friendships, neighbourhood connections, ethnic and cultural ties, and personal networks. For example, Muslim women in Trincomalee, Sri Lanka negotiated their access to lagoon space through self-organized women's groups or through their male kin (Lokuge & Hilhorst, 2017). Similarly, dried fish trade on the Tanzanian shores of Lake Victoria was structured through strong informal networks of contact that determine access to dried fish as well as the trading partners (Medard et al., 2019).

In addition to the above, various communal groups that exist beyond fisheries (e.g. church groups, self-help groups, savings groups), social gatherings, religious ceremonies and other community events were recognized in literature as platforms that enable discussions on topics of importance to governance (19 cases). Most importantly, activities taking place in such venues were associated with significant value and meaning to the communities and thus were influential in fostering social connections and community

cohesion. For example, Amasan women divers in Japan mostly engage in fishing-related activities outside of male-dominant fishing co-operatives (Lim et al., 2012). These activities included meetings with other local Amasan women, stocking of harvested seafood varieties, beach cleaning and religious ceremonies to offer food to the gods for prosperity and mark the opening of diving season (Lim et al., 2012).

4.4 | Governance tasks performed by women – a typology

Which tasks do women perform within the particular SSF governance contexts? In addressing this question, we assessed all 54 reviewed cases to capture all the tasks performed by women. Most cases discussed multiple ways that women involved in governance, for example by holding leadership roles and helping monitor resource conditions while simultaneously contributing their social-ecological knowledge to decision-making. When all the tasks acknowledged across literature were listed, a clear typology emerged within the review results. The typology included the tasks that typically characterize the orders of interactive governance (e.g. active involvement in decision-making in second order or resource monitoring duties in first order governance), as well as the additional tasks (e.g. activism/mass mobilization, relational networking and community collective action).

The most frequently discussed tasks were the leadership roles and active participation in decision-making (24 cases), and relational networking and collective action at group or community level (31 cases). Less frequently discussed tasks were, exercising agency and fostering legitimacy (16 cases); resource monitoring (10 cases); and attending meetings (9 cases). Knowledge contributions to decision-making (6 cases) and mass mobilization/activism (4 cases) were also among the tasks. Table 5 provides the case examples and further details about these governance tasks.

Further, the typology was inevitably linked to the governance and institutional arrangements in which women participate. We found that leadership and resource monitoring roles were discussed within the context of participatory arrangements or within customary leadership arrangements. In addition, agency and bargaining, knowledge transfer, and developing personal contacts were explored in relation to both community associations and informal groups/relational networks. Meeting attendance was discussed mostly in the context of co-management arrangements. Figure 4 illustrates how these types of tasks fit within the governance orders.

4.5 | Governance outcomes and barriers

Our third objective was to examine the specific outcomes to which women contribute through the roles they perform. In achieving this objective, we first explored the specific outcomes achieved in each governance order and then contextualized those outcomes in relation to the barriers that hinder such efforts.

TABLE 4 Institutional and governance arrangements acknowledged*

Empirical case	Formal rules		Participatory arrangements		Informal spaces			Literature reviewed
	Laws, Acts, and policies	Legal rights, permits, quotas	Community-based mgt/cooperatives	Co-mgt	Customary practices, cultural traditions, gendered norms	Networks, social circles & groups	Social gatherings (outside of fisheries)	
Third order of governance with evidence for gender issues as a central topic of deliberation leading to concrete action								
1 Seaweed gatherers in Bio-Bio region, Chile	●	●	●×		●			Franco-Meléndez et al., (2021); Gallardo-Fernández & Saunders, (2018)
2 Jeju island women divers, South Korea	●	●	●×		●	●		Kim, (2003); Ko et al., (2010)
3 Anlo beach fishing communities, Ghana	●			●	●			Mutimukuru-Maravanyika et al., (2017)
4 Shellfish co-mgt in Galicia, Spain	●	●		●×		●	●	Frangoudes et al., (2008); Meltzoff, (1995)
5 Herring fishery in Bella Bella, British Columbia, Canada	●	●			●	●	●	Harper et al., (2018)
6 Flying fish fishery in Barbados	●			●×		●		Pena et al., (2020)
7 Cockle harvesters in Aserradores Estuary, Nicaragua	●	●		●	●			Crawford et al., (2010)
8 Arapaima co-mgt, Brazilian Amazon	●			●	●			Freitas et al., (2020)
9 Baja California Sur, Mexico	●	●	●					Torre et al., (2019)
10 Northern Norway	●	●	●×			●	●	Gerrard, (1995)
Second order of Governance with evidence for women actively participating in institutional decision-making at various levels								
11 Azores islands, Portugal	●		●×			●		Neilson et al., (2019)
12 Densu Estuary oyster harvesters, Ghana	●			●	●	●		Torell et al., (2019)
13 Bolinao, Philippines			●		●	●		Dasig, (2020)
14 Women's entrepreneurial groups in Japan	●		●×		●		●	Soejima & Frangoudes, 2019
15 Mercado del Mer whole fish market, Mexico	●		●		●			Pedroza-Gutiérrez, (2019)
16 Cockle harvesters in Menai Bay of Zanzibar Island, Tanzania	●	●		●	●		●	Crawford et al., (2010)
17 Dique channel fishery, Colombia	●		●		●	●		Barrios et al., (2020)

TABLE 4 (Continued)

Empirical case	Formal rules		Participatory arrangements		Informal spaces		Literature reviewed
	Laws, Acts, and policies	Legal rights, permits, quotas	Community-based mgt/cooperatives	Co-mgt	Customary practices, cultural traditions, gendered norms	Networks, social circles & groups	
18	Ngazidja island, Comoros	●	●×	●	●	●	Hauzer et al., (2013)
19	Calatagan Mangrove Conserve, Philippines	●	●	●	●	●	Ladia et al., (2019)
20	Artisanal fisher movement in India (1970s–1980s)	●	●	●	●	●	Nayak, (2005)
21	Voluntary groups in Newfoundland & Labrador, Canada (1990s)	●	●	●	●	●	Neis, (2000)
22	Ugandan lake fishery	●	●	●	●	●	Nunan, (2006)
23	Artisanal fisheries, Chile	●	●	●	●	●	Gustavsson et al., (2021)
First-order governance with women participating in operational activities							
24	Western & Malaita provinces, Solomon Islands	●	●	●	●	●	Lawless et al., (2012)
25	Octopus fishery in Quirimbas National Park, Mozambique	●	●	●	●	●	Wosu, (2019)
26	Roviana lagoon, Solomon Islands	●	●	●	●	●	Rohe et al., (2018)
27	Danajon Bank MPA, Philippines	●	●	●	●	●	Kleiber et al., (2018)
28	Tonle Sap Great Lake, Cambodia	●	●	●	●	●	Kwok et al., (2020); Resurreccion, (2008)
29	Tsimalaho MPA, Madagascar	●	●	●	●	●	Baker-Médard, (2017)
30	Zanzibar seagrass collectors & fish traders, Tanzania	●	●	●	●	●	Fröcklin et al., (2013); Gustavsson et al., (2021)
31	Archipelago & Bothnian seas, Finland	●	●	●×	●	●	Salmi & Sonck-Rautio, (2018)
32	Women Fish traders in Mombasa, Kenyan coast	●	●	●	●	●	Matsue et al., (2014)
33	Corumbau Marine Reserve/MPA, Brazil	●	●	●	●	●	Di Ciommo & Schiavetti, (2012)
34	Llyn peninsular, Wales, UK	●	●	●	●	●	Gustavsson & Riley, (2018)

(Continues)

TABLE 4 (Continued)

Empirical case	Formal rules		Participatory arrangements		Informal spaces		Literature reviewed
	Laws, Acts, and policies	Legal rights, permits, quotas	Community-based mgt/cooperatives	Co-mgt	Customary practices, cultural traditions, gendered norms	Networks, social circles & groups	
35 Malawi lake fisheries	●		●		●		Manyungwa et al., (2019)
36 Iki Island diving women, Japan	●		●×		●		Lim et al., (2012)
37 Northern England	●	●				●	Zhao et al., (2013)
38 Western coast, Sierra Leone	●		●		●		Okeke-Ogbuafor & Gray, (2021)
39 Lobster & penshell fisheries, Mexico	●		●				Solano et al., (2021)
40 Small-scale fisheries, France	●		●×		●		Gustavsson et al., (2021)
41 Small-scale fisheries, UK	●				●		Gustavsson et al., (2021)

● Acknowledged in reviewed case.

●× All-women associations or all-women groups participating in co-management.

* The empty cells in Table 4 do not suggest that a particular arrangement is not present in a particular setting, rather the arrangement was not acknowledged in the reviewed case (e.g. gender norms).

a) Key outcomes achieved

Nine different key outcomes were emphasized in the reviewed literature. Figure 5 illustrates the linkages among governance orders and these outcomes. All three governance orders generated a mix of outcomes. The three main outcomes included improving socio-economic contributions (27 cases); gaining recognition for women's 'invisible' roles and contributions (20 cases); and claiming rights/access to resources while contributing to better resource management (16 cases). For example, among the many cases discussing improved socio-economic conditions, the case of Arapaima fisheries in Brazilian Amazon revealed that inclusion of women in co-managing the fishery resulted in a 77% chance of women earning US\$ 215/year compared to virtually zero income earned by women in communities without such an arrangement (Freitas et al., 2020). Women's entrance into artisanal fishing in Coliumo, Chile and through the formation of unions, women had managed to successfully claim territorial user rights and reinforce village customary practices over the nearshore marine resources (Gallardo-Fernández & Saunders, 2018). In addition, women gained recognition for their roles and contributions that previously remained overlooked within the governance contexts they operate in (16 instances). For example, women's new and influential positions as respectable leaders and entrepreneurs in Mexico's Mercado del Mar wholesale fish market garnered recognition while improving their legitimacy (Pedroza-Gutiérrez, 2019). In Arezos Islands, Portugal, fisherwomen's self-organization into associations enabled them gain place within the community while also garnering the attention of state, non-profit initiatives and the researchers interested in studying or supporting the local efforts (Neilson et al., 2019).

Other types of outcomes highlighted in literature included women's contributions in shifting the focus of governance from fishery towards wider societal issues (nine cases) and in fostering mutual support and community cohesion within spaces outside of the fisheries (six cases). These contributions helped improve the overall well-being of fishing communities while also strengthening the capacity for collective problem solving. For example, in a fishing community in Northern England, fishers' wives organized into a group called 'Fishermen's Families and Friends' with the aim to uplift the profile of the fishing industry and support the continuity of fishing-based livelihoods (Zhao et al., 2013). The efforts to foster mutual support and social cohesion were mainly highlighted in relation to women's participation in community activities (civic engagement) and their involvements in close-knit relational networks. For example, Indigenous Heiltsuk women's experiences in responding to fishery conflicts on the Central coast of British Columbia highlighted how they took on leadership roles to build solidarity and mobilize the community to protest against the management practices that overlooked their interests (Harper et al., 2018).

In addition, women also engaged in activism and in building momentum to actively develop feminist perspectives to inform decision-making (four cases). For example, in northern Norway and Newfoundland (Canada), women's mass movement and activism led to strategic action and resource mobilization (Gerrard, 1995; Neis,

2000). In doing so, women found ways to improve their representation in decision-making circles, establish organizational linkages and share their viewpoints and expertise.

Challenging gendered practices and power relations was also highlighted as an outcome achieved by women (three cases). For example, fisherwomen in Coliumo, Chile not only successfully claimed customary user rights to access the artisanal fishery but also gained confidence to start negotiating within their male-dominant households to have freedom to spend more time each day in fishing (Gallardo-Fernández & Saunders, 2018). Women's sentiments are captured in the statement, 'before we asked for permission [from husbands], now we only give notice' (Gallardo-Fernández & Saunders, 2018, p. 1; clarification added). This was a significant shift as women were traditionally required to seek permission from their husbands or male family members before going fishing.

While many of the above outcomes were predominantly positive, widened inequalities and possible negative impacts on resource governance were also reported in the sample (four cases). For example, in Tonle Sap Lake, the women who had close ties to influential men in the community manoeuvred into leadership positions while further marginalizing other women (Resurreccion, 2008). Further, the local marine management rules in Roviana lagoon, Solomon Islands had enforced a marine closure in the location where women mostly used to fish and were implemented by local male leaders on whom women had lost trust due to perceived financial mismanagement. As a result, the new rules seemed to widen the existing inequalities within the broader community while also undermining the intended conservation outcomes (Rohe et al., 2018).

Another more frequently highlighted outcome was the evidence of women attending meetings to fulfil the membership requirement (nine cases). Although women in these instances were rarely involved in any decision-making, fulfilling the attendance requirement was important for them to secure continued access to the fishery. For example, Baker-Médard (2017) estimated that women are 17 times less likely to participate in MPA governance in Madagascar than men. Sometimes women also attended meetings out of obligation as a community resident, or to just represent their husbands, for example in the case of Danajon Bank MPA in the Philippines (Kleiber et al., 2018).

b) Key barriers acknowledged

The barriers encountered by women in performing their governance roles was a key topic of discussion across the reviewed literature. These included both the barriers that had been addressed through governance efforts, fully or partially, as well as the ones that continued to hinder women's efforts. Gendered power relations were the barrier discussed most frequently in literature (27 cases). Gendered power included the conditions where men were socio-politically empowered through hierarchies/patriarchy and women were considered subordinate actors (e.g. Brazil, Solomon Islands, India, Ghana, Japan, Cambodia, Madagascar, Kenya, Malawi, Colombia, Mexico) (Baker-Médard, 2017; Kwok et al., 2020; Lawless et al., 2012; Resurreccion, 2008). Power relations were also

materialized through wage gaps where men earned more than women for the same task (e.g. seagrass in Zanzibar, Sri Lankan women working in beach seines). In other cases, for example in Brazil's Corumbau MPA, women's positions were referred to as 'assistants', which were unpaid positions. In France, fisherwomen were viewed as the representatives of their husbands/partners and the women were not recognized on their own right (Gustavsson et al., 2021).

Another barrier emphasized in the literature was constraining gender norms, traditions, attitudes and the domestic obligations embodied in everyday practices (19 cases). These norms were deeply entrenched in local contexts with diverse manifestations of how they constrained the scope for action for women as well as their access to resources. Examples included the blurred lines in practice between women were 'not allowed to' and 'not supposed to'; expectations associated with household workloads and care responsibilities; permissions required from male household heads for the women to participate in the fishery (Mozambique); restrictive attitudes among men about women not needing equal access to resources (Kenya, Tonle Sap Lake) (Kawarazuka et al., 2019; Kwok et al., 2020; Lawless et al., 2012; Matsue et al., 2014; Wosu, 2019).

Lack of supportive fisheries legislation was also discussed in the literature as a barrier that restricts women's participation. Some legislation was gender discriminatory while other legislation did not include concrete measures to effectively address gender issues (12 cases). For example, exclusion of women was evident through institutionalized rules, practices and membership rights such as the MPA rules that banned fisherwomen from gleaning in Mozambique, Danajon Bank (Philippines) and Brazil (Baker-Médard, 2017; Kleiber et al., 2018; de la Torre-Castro, 2019). Lack of formal recognition for fisherwomen (e.g. fisheries laws in Japan and Sri Lanka) or lack of concrete measures to effectively address gender issues (e.g. Mexican fisheries policies) was also discussed as key issues of concern in relation to current legislation (Lokuge & Hilhorst, 2017; Soejima & Frangoudes, 2019; Torre et al., 2019).

Lack of authority/legitimacy to influence decision-making was also discussed as a barrier undermining women's governance roles (15 cases). The challenges they face in influencing decision-making at local levels were due to various reasons. For example, both in Madagascar and Malawi, traditional leadership roles that were passed down only to male members as well as perceived lack of authority among women to voice their concerns eventually led to low/irregular meeting attendance among women (Manyungwa et al., 2019; Mutimukuru-Maravanyika et al., 2017).

Other types of barriers discussed across the reviewed literature included perceived lack of skills and capacities among women in relation to governance (10 cases). For example, Indonesian fisherwomen seemed to not have the capacity to self-organize and manage resources whereas the lower levels of literacy among fisherwomen on the Kenyan coast impacted their capacity to participate in decision-making (Fitrianggraeni, 2019; Matsue et al., 2014). In contrast, Finnish fisherwomen's modest and downplayed roles led to the perception that they lacked expertise (Salmi & Sonck-Rautio, 2018). As a result, women were excluded in decision-making concerning the resources they interact with.

TABLE 5 A typology of governance tasks performed by women

Ways women participate in governing SSF	Definition	Examples
Hold leadership roles and actively participate in decision-making (24 cases)	Hold leadership/managerial roles within community organizations and actively participate in decision-making through deliberations, negotiations and strategic action with key attention to gender issues	Women leaders in fisher organizations in Bolinao, Philippines; traditional leadership roles and collective decision-making among Indigenous women in Bella Bella's herring fishery in Pacific coast of Canada (Barrios et al., 2020; Dasig, 2020; Harper et al., 2018)
Relational networking and informal collective action at group or community level (31 cases)	Women self-organize, build social capital and collectively act at group or community levels (beyond fisher cooperatives)	Collective price negotiation with fishermen and catch sharing system among women fish traders in Kenya, women divers' informal groups that facilitate mutual support in face of physical risk at work, build social capital, resolve conflicts and encourage resource conservation (Kim, 2003; Lokuge & Hilhorst, 2017; Matsue et al., 2014)
Exercise agency and foster legitimacy in response to specific needs (16 cases)	Women exercise agency and foster legitimacy at group level but in response to specific needs	Negotiating through male kin (Sri Lanka), trading heritage (Mexico), kinship networks and personal contacts (Kenya), entrepreneurial linkages (Japan, Finland) (Harper et al., 2018; Kawarazuka et al., 2019; Medard et al., 2019)
Perform resource monitoring roles (10 cases)	Women actively perform resource monitoring roles based on agreed-upon rules and sanctions	Patrolling illegal gear use in Tonle Sap; resource maintenance and mandatory removal of other seaweeds by South Korean women divers (Crawford et al., 2010; Freitas et al., 2020; Ko et al., 2010)
Less/no participation in meetings (9 cases)	Women attend meetings (mostly irregularly) with no/minimum engagement in decision-making	Low levels of women's attendance in Corumbau MPA meetings, attending meeting out of obligation in Philippines' Danajon Bank MPA (Di Ciommo & Schiavetti, 2012; Kleiber et al., 2018; Ngwenya et al., 2012)
Knowledge contributions to decision-making (six cases)	Women share traditional knowledge more broadly through their governance roles (e.g. species and habitats they interact with, gear fabrication, weather conditions) while informing decision-making and enabling intergenerational transfer of community values and collective identities	Sharing and replication of traditional knowledge in both Indigenous herring fishery in Pacific coast of Canada and in Arapaima fishery in Brazil; transfer of local ecological knowledge and fishing techniques as young girls accompany elders and learn-by-doing in Comoros (Freitas et al., 2020; Harper et al., 2018; Hauzer et al., 2013)
Mass mobilization and activism (four cases)	Movements/socio-political activism among women toward catalysing policy/structural change with varying degrees of influence	Fisherwomen's movements in India, Norway, Galicia and Newfoundland in Canada (Gerrard, 1995; Meltzoff, 1995; Nayak, 2005; Neis, 2000)

The impact of broader drivers of change on women's efforts was also highlighted in the literature (10 cases). These include both the drivers that existed within and beyond fisheries: ageing fisher populations (e.g. South Korea and Japan); general shifts in fishing practices from communal to more private businesses (e.g. Llyn peninsular, UK); market pressures (Galicia) and the geopolitical changes such as Brexit (Aswathy & Kalpana, 2018; Gustavsson et al., 2021; Soejima & Frangoudes, 2019). The governance impact of these drivers varied from reduced membership in fishing associations to reduced scope for community collective action and the need to reform existing fisheries policies.

The literature also brought attention to different forms of exclusion among women in terms of access to decision-making (six cases). Such discrimination, for example happened when the familial ties or ethnic backgrounds of some women help them manoeuvre into influential social positions through which they can influence decision-making. For example, most women involved in community fisheries management groups in Cambodia's Tonle Sap Lake, were the wives or female relatives of the men who occupy village leadership positions, and these kin relations helped legitimize women's participation (Resurreccion, 2008).

To further explore the linkages among outcomes and barriers and how value-based deliberations work in practice, we closely examined the cases demonstrating women's involvement third order of governance (Table 6). The barriers identified in these cases included those that have been dealt with through governance as well as the barriers that continue to hinder women's governance efforts. For example, some barriers included the struggles or pre-conditions that led to women's active involvement in the first place, such as the lack of rights to access resources. In contrast, gendered power relations and gender-discriminative legislation were among the barriers that continued to undermine women's efforts.

5 | DISCUSSION

5.1 | Assessing the body of empirical literature

In this review, we systematically assessed the body of literature that comprise evidence on how women engage in governing SSF globally. Fifty-four published studies met our review criteria while yielding a

FIGURE 4 Tasks performed by women and the orders of governance

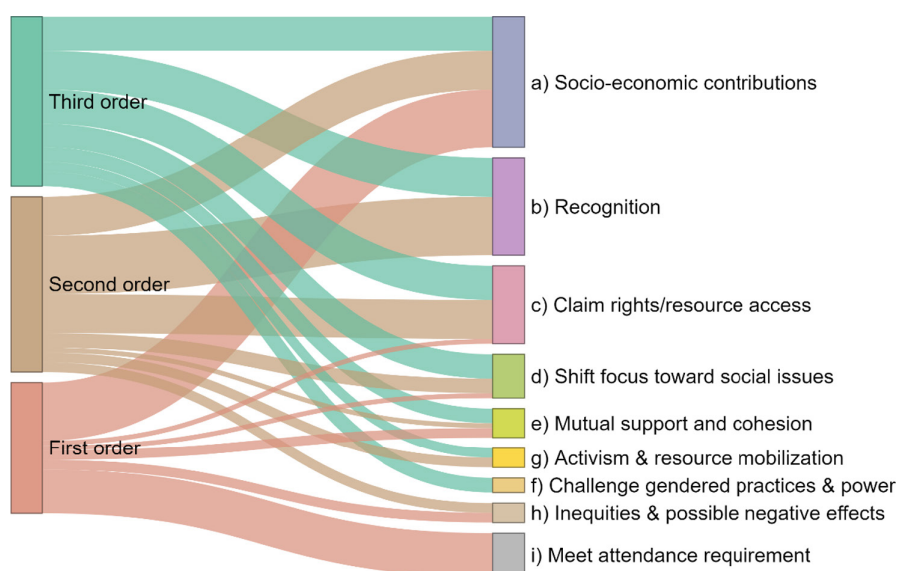
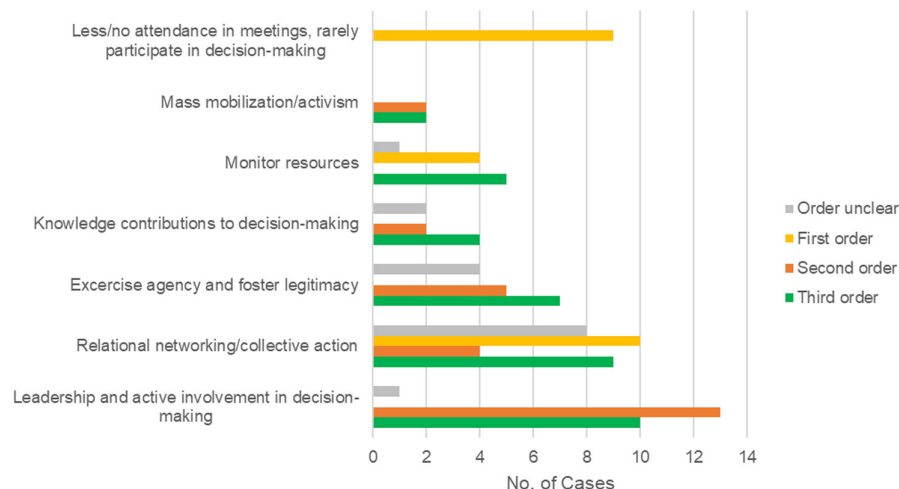


FIGURE 5 Different governance roles performed by women and the key outcomes. (a) Improve socio-economic contributions to women themselves, families and communities; (b) Gain recognition for women's 'invisible' roles and contributions; (c) Claim rights/access to resources and contribute to better resource management; (d) Help shift governance focus towards wider social issues; (e) Foster mutual support and community cohesion through activities beyond fisheries organizations; (f) Challenge gendered practices and power relations; (g) Engage in activism and resource mobilization towards integrating feminist perspectives into decision-making; (h) Widened inequities and conflicts among women arising from privileged access to decision-making and possible negative effects on resource management; and (i) Attend meetings to fulfil attendance requirement/expectations however rarely participate in decision-making

dataset encompassing a variety of empirical cases. Not surprisingly, most reviewed cases were focused on the spaces where women typically outnumber men such as the coastal/inshore fisheries (e.g. shellfish gathering, gleaning, seaweed gathering) and land-based value chain activities such as fish processing.

To put the size of the reviewed empirical body of literature into context, we use a recent study by Harper et al. (2020) on the global contributions of women to SSF, where the authors reported the participation of over two million women in small-scale marine harvesting activities while landing an estimated 11% of global fish harvests. These estimates demonstrate the need for widespread empirical investigation of gender in the context of SSF governance. This is because the potential involvement of women in influencing

the governance of the fishery systems they depend on should seemingly be much higher than the number of cases reported in literature. However, we do not suggest that there have been no other accounts of women's governance contributions beyond the 54 empirical cases reviewed in this paper. For example, Women in Fisheries Bulletin issued by the Secretariat for the Pacific Community, Yemaya newsletter issued by International Collective in Support of Fishworkers, and Women in Seafood Industry (WSI) newsletter issued by the International Organization for WSI are among the leading accounts that elevate women's roles and contributions to fisheries, including their governance contributions. Furthermore, the FAO technical paper by Alonso-Población and Siar (2018) is also a notable contribution where the authors assessed the enablers and barriers to

TABLE 6 Roles, barriers and outcomes acknowledged in cases demonstrating women's active involvement in third-order decision-making

Empirical case	Governance roles performed							Barriers (both addressed and ongoing)	
	Lead & participate in decision-making	Relational networking and collective action	Agency & legitimacy/empowering experiences	Knowledge contributions to decision-making	Resource monitoring	Mass mobilization and activism	Gendered practices and power relations	Constraining gender norms	
Seaweed gatherers in Bio-Bio region, Chile (all-women associations)	●	●	●						
Jeju island women divers, South Korea (all-women associations)	●	●		●	●				
Anlo beach fishing communities, Ghana	●	●					x	x	
Shellfish co-mgt in Galicia, Spain (all-women associations)	●	●	●	●	●	●			
Herring fishery in Bella Bella, British Columbia, Canada	●	●	●				x		
Flying fish fishery in Barbados	●	●	●	●			x√		
Cockle harvesters in Aserradores Estuary, Nicaragua	●	●	●		●				
Arapaima co-mgt, Brazilian Amazon	●			●	●		x		
Baja California Sur community-based mgt., Mexico (all-women associations)		●	●		●		x√		
Northern Norway fisheries co-mgt. (all-women associations)	●	●	●			●			

● Roles or outcomes acknowledged in literature.

x Ongoing barriers acknowledged in literature.

x√ Significant progress has been made through the governance interventions in addressing the specific barrier.

women's participation and leadership in fisherfolk organizations, and collective action (Alonso-Población & Siar, 2018). While these sources provide rich information on women in fisheries, they did not meet the inclusion criteria developed for this review.

We also encountered some limitations in the review dataset in relation to the depth of governance-related details because empirical cases were grounded in a variety of theoretical/applied frameworks and perspectives. For example, as outlined in the methodology section, the full range of governance tasks performed by women, or detailed accounts capturing both formal as well as informal rules and norms that shape women's participation, were not evident in several cases. Despite these limitations, the review yielded an evidence base to develop novel analytical insights through the application of the concept of governance orders, and to better understand women's engagement in governing SSFs. The remainder of this section identifies the patterns across literature and draw broader insights in this regard.

5.2 | Gender as a topic of discussion within governance orders

Our categorization of the review data (Table 3) showed that in cases where women were involved in performing only the day-to-day

operational tasks (first-order governance), their attendance in meetings was low, with no/less participation in any institutional decision-making. As a result, gender appeared to be largely excluded as a topic of discussion within such decision-making processes. In contrast, when women actively participated as association leaders and collaborative decision-makers (second-order governance), they helped integrate gender as a key topic in decision-making. In these cases, however, the actual progress made in achieving gender equitable outcomes appeared to be undermined by various barriers (e.g. gendered power relations), the implications of which we discuss later in this section. Moreover, women's efforts through their participation in value-based deliberations (third-order governance) widely demonstrated their agency and legitimacy in influencing decision-making, where gender was evidently a central topic of discussion. Such discussions actively sought to address the barriers women encounter, for example by claiming legal recognition for their fishing activities as demonstrated in both Galicia shellfish fishery and Barbados flying fish fishery. Women's engagement in third order of governance, however, did not mean that these cases were without any issues; rather they provided evidence that substantial progress had been made through concrete actions to transform governance processes towards achieving gender equitable outcomes.

						Outcomes contributed to					
Lack of access to & control over resources	Lack of authority/ legitimacy	Lack of supportive legislations	Lack of skills/ capacity to lead/ manage	Broader drivers of change	Socio-economic contributions	Claim rights/ access & contribute to better resource mgt.	Shift focus towards wider social issues	Gain recognition for 'invisible' roles	Challenge gendered practices/ power	Foster mutual support & cohesion	Activism, resource mobilization, & feminist perspectives
x✓	x✓	x			●	●		●	●	●	
x✓				x	●	●	●			●	
x✓	x✓					●		●			
	x✓	x✓	x✓		●	●	●				●
x✓	x✓					●		●		●	
x✓	x✓		x✓		●	●		●	●		
			x✓		●	●		●			
x✓			x✓		●		●	●	●		
		x			●			●	●		
	x						●	●			●

5.3 | Governance arrangements and implications for women's participation

Our analysis (Table 4) revealed that women perform governance roles within a broad spectrum of arrangements. Such arrangements included formal institutions (e.g. legal and regulatory frameworks), as well as participatory arrangements (e.g. co-management) and informal spaces (e.g. social gathering, relational networks, norms and traditions). As outlined below, the breadth of these arrangements influences the opportunities to advance women's participation in SSF governance.

All reviewed cases acknowledged formal arrangements that included a range of laws, acts and policies that incorporate gender considerations to varying extents. Such considerations ranged from various forms of legal recognition on women's activities through legislation (e.g. full recognition of shellfish gatherers in Galicia, Spain; collaborative spouse status offered to French fisherwomen), to broader policy commitments that advance gender equality (e.g. fisheries policies in Mexico and Ghana). In contrast, some cases highlighted legislation that was gender-discriminatory altogether (e.g. MPA laws in Mozambique and Danajon Bank, Philippines). Nonetheless, women's active governance contributions were evident when formal consideration was given by deliberately linking their efforts to formal instruments such as legal rights, permits

and quotas. For example, the institutionalization of territorial user rights of artisanal fisherwomen in Coliumo, Chile enabled them to claim customary user rights over the nearshore marine resources (Gallardo-Fernández & Saunders, 2018).

Participatory approaches to resource management, such as co-management, was emphasized in the literature as an opportunity to catalyse women's participation. However, the ability to do so seemed to vary because the active participation of women in co-management was evident only in some cases (e.g. flying fish fishery in Barbados, Arapaima co-management in Brazil). This resonates with current understanding as feminist scholars have argued that inclusion of women in institutional structures with no regard for social and power relations is counter-productive (Arora-Jonsson, 2012; Resurreccion, 2006). More specifically, drawing women into male-dominant structures and processes over which they have little/no control may inadvertently reinforce existing gender biases and hierarchies (Resurreccion & Elmhirst, 2008).

All-women groups emerged as an important institutional arrangement through which women participate in governance. In the literature surveyed for this review, there were nine all-women community associations and two women's groups participating in co-management, with five of these arrangements enabling women's active participation in decision-making (Table 4). This might suggest that all-women groups

may help strengthen women's engagement, yet further research is needed to better understand the nuanced implications of this phenomenon. For example, more clarity is required on how and where all-women groups might work and where gender groups need to collaborate, and under which governance pre-conditions.

Furthermore, informal spaces that exist beyond fisheries influence women's participation in governance (e.g. religious ceremonies, self-help groups). Such influences mainly occurred by way of creating opportunities for women, as well as men in some cases, to socialize, share information and build trust. In doing so, women played key roles – both traditional and contemporary – as collaborative decision-makers, knowledge holders and socio-political networkers, and thereby bringing together their expertise, insights and skills to bear on shared problems. Traditional norms and local practices such as the customary practices that dictate resource access and traditional community leadership roles were also important informal arrangements. Literature however cautioned about these norms and practices as they can both restrict or facilitate women's participation (Fröcklin et al., 2013; Harper et al., 2018; Rohe et al., 2018).

The informal spaces were crucial for improving women's participation in SSF governance for at least three reasons. First, these spaces revealed the embedded nature of the governance arrangements that shape women's participation. For example, most interactions of women divers' long-standing self-ruled organizations in Jeju island, South Korea took place informally (Kim, 2003; Ko et al., 2010). Second, these spaces helped women in navigating workloads, household responsibilities and constraining gender norms to carve out time and alternative spaces to socialize and take on influential community positions. Finally, these experiences eventually led to empowering experiences, improved agency and legitimacy for women to take on initiatives at both community and household levels. In fact, the need to explore opportunities across formal and informal spaces where women are active to meaningfully engage them in governance is a long-standing argument in feminist scholarship in the context of natural resources (Agarwal, 2009; Arora-Jonsson, 2008). Within community forestry groups, for example informal spaces had opened up opportunities for networking and organization among previously disaggregated groups leading to improved engagement of women in resource management and stewardship (Arora-Jonsson, 2008).

5.4 | Achievement of gender-equitable outcomes

While our synthesis did not intend to evaluate the level of success of the governance interventions reported in our sample, we sought to understand linkages among key outcomes and governance orders (Figure 4). Although each governance order generated a range of outcomes, women's active engagement in decision-making and value-based deliberations (second and third orders of governance) inevitably contributed towards achieving the most outcomes. In contrast, women's participation in first-order governance led to significant socio-economic contributions and helped them fulfil attendance

expectations. Overall, these outcomes were predominantly positive in the sense that they helped strengthen the governance capacity (e.g. improved community cohesion and social capital) and improved the well-being of fishing communities (e.g. bringing attention to wider societal issues such as livelihood vulnerabilities and market pressures).

The cases where deeply gendered practices and power relations were challenged were of particular importance to the critical examination of gendered governance outcomes. This was because such actions may signal the achievement of gender transformative outcomes; that is, the outcomes achieved through an approach that seek to engage with the root causes of gender inequities and not just work around those causes (Cole et al., 2020). Among the few such examples captured in review results, Chile's artisanal fisheries revealed how women's collective action have led to new and empowering experiences as the women no longer required permission from male household leads to engage in fishing (Gallardo-Fernández & Saunders, 2018). The term empowerment is understood here as the 'process of acquiring the ability to make strategic life choices by those who had been denied this ability' (Kabeer, 1999, p. 435).

Outcomes achieved through women's governance efforts, however, were not always positive as they included widened inequalities and possible negative impacts on resource management as well. For example, when the women who were privileged over others through their close ties with influential men manoeuvre into leadership positions, the resulting actions further marginalized other women (e.g. Tonle Sap Lake). Such actions also undermined resource governance by, for example encouraging unsustainable fish harvesting practices (e.g. juvenile catches in Tanzanian shores of Lake Victoria). Moreover, having women attend meetings without providing them the room to voice concerns appeared to be counter-productive given the difficulties they face in managing workloads. Overall, the range of outcomes from positive, including specific gender transformative outcomes, to possibly negative outcomes re-emphasize the fact that mere inclusion of women in existing arrangements will not improve their meaningful participation.

The barriers to women's participation in governance as acknowledged in reviewed literature (Table 6) were largely consistent with our current understanding about the root causes of gender inequity within SSF contexts. For example, gendered power relations, constraining gender norms, household obligations and lack of access to and control over resources, resonate with the topics widely discussed in SSF gender research. An additional insight emerged from our review was related to the impacts of external drivers of change. For example, women's governance efforts were hindered in cases of ageing fisher populations in Japan and South Korea (reduced cooperative membership). Further, the re-organization of fishing activities from communal to household enterprises in Finland and disappearing fishing communities in Northern England reduced the scope for community collective action (Aswathy & Kalpana, 2018; Salmi & Sonck-Rautio, 2018; Soejima & Frangoudes, 2019; Zhao et al., 2013). As such, these drivers not only influenced the scope for women's participation but also challenged the existing governance arrangements to continuously adjust and respond. Our analysis of barriers thus showed that even in cases where gender issues were already a

central topic in decision-making, the governance arrangements need to continuously deal with existing as well as emerging barriers that may undermine women's efforts. This highlighted a further complication in relation to the efforts to ensure women's full participation in SSF governance, where 'one-time-solutions' will not work in practice.

5.5 | How can an overarching focus on values help advance gender equitable outcomes?

Our review results showed that significant progress can be made in achieving gender equitable outcomes when women's interests, concerns and issues are brought to the centre of decision-making with special attention to the local circumstances that shape their realities (e.g. importance of informal spaces, different types of outcomes). According to interactive governance theory, a process that enables value-based deliberations (third-order governance) requires upholding community values, principles and interests across governance processes (Kooiman et al., 2008). While it is apparent that meaningful inclusion of women is crucial to bring their representative voices to such deliberations, how can an overarching focus on values help in this process? In responding to this question, we built on the concepts that link gender and institutions within natural resources scholarship, particularly the participatory exclusions framework (which provides a typology of different forms of women's participation; see Agarwal, 2001). However, as discussed in the conceptual background section, our point of departure in this review was the notion of value-based deliberations where the overarching focus is on societal values and principles.

The results across the cases demonstrating women's involvement in third-order governance showed that women were not only recognized for their knowledge contributions based on their differential interactions with SSF resources, but also for their roles as holders of community values and meanings associated with their fishing-based way of living. For example, in the Jeju island women divers' groups (with a history of over 400 years) and Indigenous herding fishery in Pacific coast of Canada, women played crucial roles in the inter-generational transfer of values, through which they fostered cultural continuity, held knowledge and acted as a source of social capital. Their viewpoints about what matters to them were largely shaped within informal spaces such as close-knit networks, neighbourhood connections and civic engagement. Moreover, the activities taking place in such venues were associated with significant value and meaning to the communities (e.g. and religious ceremonies that mark the opening of women's diving season). As such, women's governance efforts were tightly linked with the wider societal values and principles.

Furthermore, women's active contributions to decision-making earned them respect and high regard within communities, which helped them legitimize their representation. This point highlighted the importance of paying attention to the role of men in recognizing and facilitating women's efforts, starting with the openness to involve women in discussions where they were previously

excluded, recognizing women as legitimate actors in SSF on their own right and valuing their perspectives with equal footing. For example, the Arapaima co-management initiative in Brazilian Amazon achieved better social outcomes through collaborative work of both women and men at the community level (Freitas et al., 2020). Such an approach will facilitate appropriate adjustments to existing rules (e.g. formal recognition of women's activities) and targeted action that seek to directly engage with the root causes of gender inequity.

6 | CONCLUSION

Creating opportunities to meaningfully engage women in governance and decision-making is necessary to achieve gender equality in the context of SSF. Crucially, such efforts should be informed by comprehensive understandings of gendered power and oppression grounded on empirical realities. In this review, we synthesized a typology of governance tasks performed by women within SSF contexts, which includes leadership roles and active participation in decision-making; relational networking and collective action; exercising agency and legitimacy; resource monitoring; knowledge sharing; meeting attendance (with no/less participation in decision-making); and activism and mass mobilization. We also examined the outcomes women contribute to and assessed the barriers that undermine their efforts. Our review confirmed the limitations in our current understanding on the real-world experiences of women in SSF governance. We also drew critical insights by grounding our analysis on the concept of value-based deliberations offered through interactive governance theory, and highlighted the broader implications towards improving women's meaningful participation in SSF governance. The insights we offer may help identify entry points to foster gender-inclusive approaches to SSF governance, and pathways to create gender equitable outcomes across policy and practice.

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CONFLICT OF INTEREST

None.

DATA AVAILABILITY STATEMENT

The data that support the findings of this manuscript are available from the corresponding author upon reasonable request. Literature reviewed for this manuscript are provided as Supplementary Materials.

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