



# “Men don’t feel comfortable with successful female leaders”: exploring participatory exclusion in community-based fisheries management, South Coast of Kenya

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## Abstract

While community-based fisheries management (CBFM) is promoted as a promising approach to achieving sustainable fisheries management, its inclusiveness is increasingly questioned in the literature. Studies that explore the inclusion of gender along other intersectional social identities in CBFM are scarce. This research gap may limit a comprehensive understanding of power dynamics in fisheries settings, while reinforcing exclusive approaches in fisheries governance. In this study, we draw on literature on participatory exclusion, intersectionality and lived experiences, to examine gender-inclusiveness in CBFM through a case study on the South Coast of Kenya. We applied qualitative data collection methods, combining participant observation, semi-structured interviews ( $n=18$ ), focus group discussions ( $n=6$ ) and relief maps ( $n=32$ ). Our findings indicate that women’s participation in CBFM is limited and systematically lower than men’s participation. Barriers to women’s participation in CBFM are complex and interlaced, including socio-cultural, economic, and institutional barriers, and specific restrictions to women’s access to leadership. In addition, our findings highlight the intersected nature of lived experiences related to CBFM places and suggest that CBFM may sustain and reinforce social inequalities in fishing communities. Overall, our results tend to confirm the relevance of the participatory exclusion concept to CBFM in coastal Kenya. Our study demonstrates the importance of applying an intersectional framework to study the complexity of power relationships in CBFM contexts, as well as fisheries management and governance. We conclude by providing key recommendations towards inclusive management approaches in fisheries settings.

**Keywords** Community-based fisheries management · Gender · Intersectionality · Ocean sustainability · Participatory exclusion · Western indian ocean

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## Introduction

Women's presence in decision-making may not guarantee outcomes in their favor but it could guarantee them representative voice, and this has both intrinsic worth and instrumental value. (Agarwal 2010, p. 13).

Over the past four decades, community-based fisheries management (CBFM) has been promoted by development actors and scholars in small-scale fisheries (SSF) contexts for its potential to achieve positive socio-environmental outcomes (Twyman 2017). At the core of this approach is the participation of local users in the decision-making processes related to the use and management of their fisheries resources. However, mainstream approaches in CBFM have often neglected gender along other intersecting markers of social identities, with implications for social justice and equity (Rabbit et al. 2022).

While women account for 40% of the labor force in SSF, the informal and unpaid nature of their activities, along with other factors, mean that women's actual contribution to the sector is downplayed (Harper et al. 2017; Kleiber et al. 2015). In turn, the undervaluation of women's roles in the SSF economy increases their marginalization in SSF management and governance (FAO et al. 2023). Research on CBFM shows that participatory projects tend to favor men's over women's participation in decision-making, suggesting that gender-inclusiveness in CBFM is lacking (Cinner et al. 2012; Evans et al. 2011; Rabbitt et al. 2022). As reported in the literature, barriers that hinder women's participation in SSF management encompass social, cultural, economic, and institutional dimensions (Bradford and Katikiro 2019; FAO et al. 2023; Galappaththi et al. 2022). Nonetheless, the few case studies that document the active participation of women in SSF management highlight the multiple positive outcomes of such inclusion at multiple levels, which supports the need to integrate gender perspectives in CBFM processes (Chambon et al. 2023; Leisher et al. 2016, 2017).

Feminist scholars have increasingly examined inclusiveness in SSF by investigating how power structures beyond gender, such as ethnicity, religion, or class, interact to generate specific social positions within society that shape the access and control over fisheries (Colwell et al. 2017; Lau and Scales 2016). Central to this concept, known as intersectionality (Crenshaw 1989), is the importance of lived experiences of inequalities (Rodó-Zárate 2022). Some scholars have notably attempted to bridge the gap between intersectional and feminist geography theories by relating the notion of comfort to places (Rodó-Zárate 2023; Valentine 2007). This research area points out the relevance of using a place-based approach in intersectional studies, recognizing

that emotions associated with certain social identities are contingent on places that engender and may reinforce social inequalities. Despite the value of applying an intersectional framework to unveil power asymmetries in SSF management, intersectional studies on CBFM processes are scarce (House et al. 2023). This blind spot in the literature may limit a comprehensive understanding of power dynamics in SSF settings, while reinforcing exclusive approaches in SSF governance.

To address some of these knowledge gaps, the overarching goal of this study is to examine gender-inclusiveness in CBFM through an intersectional perspective. To do so, we cross the concept of participatory exclusion with those of intersectionality and lived experiences, through a focus on the discomfort notion. This study aligns with recent calls for supporting gendered research in marine social sciences (Bavinck and Verrips 2020) and intersectional perspectives in ocean science and policy (Axelrod et al. 2022). More specifically, our study seeks:

(O1) To assess women's and men's participation levels in CBFM;

(O2) To identify the main barriers to women's participation in CBFM; and

(O3) To examine to what extent other power structures interact with gender in shaping lived experiences related to CBFM places.

The Beach Management Units (BMU) network on the South Coast of Kenya is an ideal case for exploring gender and intersectional dynamics related to CBFM. Community-based fisheries management initiatives through the BMU framework have mushroomed along the coast of Kenya over the two past decades to respond to local social, economic, and environmental imperatives, while incorporating gender considerations in their institutional development (Kawaka et al. 2017). As a result, this case study offers relevant grounds to assess the extent of inclusiveness of such processes based on empirical evidence. We acknowledge that our findings may not apply to other fisheries settings since gender relationships and their interactions with other social identities vary in space and time and are highly context-specific (Berliner 2007).

To the best of our knowledge, this study is the first that critically examines participation in CBFM through a gender intersectional perspective in the Kenyan context. In the following, we begin by providing a brief background about the origin and development of CBFM in Kenya through the institutionalization of BMU. Next, we introduce the conceptual framework of our approach drawing on participatory exclusion, intersectionality, lived experiences and discomfort literature. Then, after describing our mixed-method approach, we outline the main evidence of our work and discuss these findings in relation to the existing literature.

Lastly, we conclude by suggesting key recommendations for more inclusive management approaches in SSF.

## Beach management units

Our Beach Management Unit is like a tree, if you cut it down, it will take away the benefits of the shade and you remain burning in the sun (Mariam, fisherwoman, Shimoni-Vanga seascape 2021).

As in many other tropical countries, SSF management in Kenya has long been centralized by the State, which alienated local communities from their coastal and marine resources (Kiaka 2012; Maina et al. 2012). Between the 1960s and 1990s, nine national marine protected areas were established in the coastal region under State management, within which subsistence fishing was limited or forbidden (Samoilys and Obura 2011). This top-down approach failed in providing tangible benefits to local communities, thus generating a lot of resentment and lowering compliance from local users to the management regime (Munga et al. 2010; Wanyonyi et al. 2008). Against this background and pressed by local communities supported by non-governmental organizations (NGO) and international donors, from the 1990s, Kenyan fisheries management has shifted towards the recognition of the need for a greater participation of local users in SSF management processes (Kawaka et al. 2017).

The shift in the Kenyan fisheries management approach has been reflected in the promotion of CBFM, an approach in which the responsibility for managing fisheries is shared between the government, local users, and other stakeholders (Cinner & McClanahan 2006; GoK 2016; Leeney et al. 2019). CBFM was first introduced by the Department of Fisheries in Western Kenya around Lake Victoria through the BMU framework, which built on grassroots organizations and collectives who used to manage their fisheries at the community level (Nunan et al. 2012). The framework provided a formal recognition to local fisheries organizations by gazetting them as BMU. These formal community-based institutions are responsible for implementing SSF management on the ground, in collaboration with the State, NGO, international agencies or research institutes. Since 2007, this model has been extended from Lake Victoria to the rest of the country to enhance and formally support the participation of local communities in the management of fisheries as specified by the BMU regulation of 2007 legal notice no. 402 (GoK 2007).

Officially, BMU comprise three main governance bodies: the general assembly, the executive committee (EC), and the board. The general assembly is made up of all registered BMU members and convenes every three months to approve

and discuss the decisions taken by the EC. Membership to BMU is conditioned to certain administrative criteria, such as being an adult Kenyan citizen, but it is largely open to all individuals who depend on fisheries for their livelihoods (GoK 2017). The EC corresponds to the decision-making body of the BMU and is elected by the general assembly every four years. It is made up of nine to 15 members, of which five are nominated to constitute the BMU board, which has a final say on decisions.

The rise of CBFM in Kenya has been concomitant with the growing recognition of the need to support women's representation in SSF management and decision-making. The Kenyan State has expressed its commitment to support gender equality in fisheries governance in line with Sustainable Development Goal N°5 (target 5.5) by ratifying several Multilateral Environmental Agreements that guarantee an equitable access to natural resources. At the national level, the Constitution of Kenya posits equity and inclusiveness as core national values and principles of governance (article 10). More specifically, the Constitution of Kenya introduced a key governance rule – known as the two-thirds gender principle – which requires that “*not more than two thirds of the members of elective or appointive bodies shall be of the same gender*” (article 27 (8)). These constitutional dispositions are completed in national legislation through Sessional Paper No. 02 of 2019 on National Policy on Gender and Development (GoK 2019) which notably aims to “*enhance women's participation in fisheries sector and the blue economy*” (p.34). This gendered dimension in the fisheries sector is also integrated in sectoral policies and laws such as the Kenya National Fishery Policy (GoK 2020), the Fisheries Management and Development Act (GoK 2016), and the Fisheries BMU Regulations (GoK 2007). In practice, this legislative arsenal, and especially the two-thirds gender principle, implies respecting a minimum quota of 33% women representatives in BMU executive committees.

## Conceptual approach

This section reviews the literature on participatory exclusion, intersectionality and lived experiences to highlight the potential of intersectional and emotional analyses through a focus on (dis)comfort for complexifying the notion of participatory exclusion and illuminating power hierarchies in SSF management.

### Participatory exclusion

The notion of participatory exclusion emerged in the literature through Agarwal (2001)'s work on community-based forestry management approaches in South Asia. Through

an ethnographic experience in India and Nepal, the author examined gender inclusiveness in these local management initiatives centred around community forestry groups. To do so, Agarwal developed a participation typology based on six participation levels: nominal; passive; consultative; activity-specific; active; interactive/empowering participation. While women were members of the group (nominal) and attended meetings (passive) they seldom spoke up in community meetings. The author concluded that most women did not have an effective participation in community forestry groups. From this analysis, Agarwal derived the concept of participatory exclusion referring to “*exclusions within seemingly participatory institutions*” (p.1623) and argued that these exclusionary processes may lead to negative outcomes for women. This concept of participatory exclusion is powerful to highlight and reflect on existing gender inequalities in resource management and governance. This notion has been used in other settings than the forestry sector, including fisheries management. Adapting Agarwal’s participation typology to Melanesian SSF communities, Rabbitt et al. (2022) show that participatory exclusion is also relevant to CBFM contexts. Their study reveals that despite the inclusive aspirations of CBFM, this approach did not systematically translate into women’s active participation in fisheries management. While not using this concept explicitly, other gender and fisheries scholars have also examined exclusionary processes predicated on gender in fisheries management (Baker-Médard 2016; Rohe et al. 2018). However, adding an intersectional lens to the study of participatory exclusion appears relevant to unpack power dynamics within gender categories.

### Intersectionality

Intersectionality was coined in the late 1980s by the legal scholar Crenshaw who examined how different social positions may compound one other to reinforce social inequalities, hence bringing to light specific forms of oppression (Crenshaw 1989, 1991). Although this concept initially focused on the intersection of gender and race in the United States, it has rapidly expanded to other power structures and socio-cultural contexts (Davis 2008; Lykke 2010; McDougall et al. 2021). Recent work has contributed to enriching the conceptual basis of intersectionality (e.g., Hankivsky 2014; McCall 2014) and making it resonate within a wider array of power-related issues (Axelrod et al. 2022; Bradford et al. 2023; Colfer et al. 2018; King 2023). However, intersectionality also faces several critics from feminist scholars. In particular, Nash (2008) qualifies this term of “buzzword” (p.3), stressing four main pitfalls derived from its lack of defined methodology, its questionable focus on black women, its unclear scope, and its empirical validity.

Furthermore, intersectionality has been denounced for its lack of attention to historical and cross-border processes by focusing on local and domestic dynamics, mostly in the Global North (Patil 2013). Despite these drawbacks, intersectionality offers the potential to unravel individual experiences resulting from the combination of intersecting axes of social difference, while providing a flexible framework to adapt to diverse contexts (Davis 2008). It represents a critical analytical tool to provide a more nuanced understanding of the intersecting factors shaping social inequalities (Rodó-Zarate 2014). In SSF settings, scholars have increasingly used an intersectional approach to highlight the complexities of power dynamics in relation to the access and control over fisheries resources (Ferguson 2021; Galappaththi et al. 2021; Hapke and Ayyankeri 2018; Khan et al. 2018). For instance, a study on fisherfolk’s livelihood adaptation in southeastern India reveals that gender interacts with wealth and class in shaping adaptive and coping responses to changes in SSF communities (Novak Colwell et al. 2017). In this study, we adopt an intersectional lens to capture the multidimensional nature of social identities that may favor or challenge participation in CBFM. While we acknowledge and support the need for further research on the spatiality of intersectionality (Patil 2013), we focus our research at the local level, grounding our study in SSF communities on the South Coast of Kenya.

### Lived experiences and (dis)comfort

Lived experiences correspond to “*a researcher or research subject’s human experiences, choices, and options and how those factors influence one’s perception of knowledge*” (Boylorn 2008, p.489). They reflect personal perspectives shaped by subjective and intersecting factors of the daily life (Ellis and Flaherty 1992; Kruks 2014). This approach is relevant to better understand intimate and personal topics such as gender power dynamics (Boylorn 2008). Scholars have often investigated lived experiences through phenomenology, a discipline developed over the XX<sup>th</sup> century in rejection of dominant rationalist epistemologies (Husserl 1989). Despite its similar focus on the situated and affective nature of lived experiences, phenomenology has long been dismissed by feminist researchers (Kruks 2014). According to certain poststructuralist feminists, phenomenology failed in addressing gender differences (Fisher 2000; Scott 1992). Contemporary feminist researchers, however, increasingly challenge this view, arguing that phenomenological methods represent a relevant approach to theorizing and exploring lived experiences on various gender intersectional topics (e.g., Ahmed 2006; Alcoff 2006; Young 2005). In this regard, emotions have often been used by feminist researchers to capture the intimate and political dimensions of lived

experiences (Chadwick 2021). In particular, the notion of (dis)comfort has been theorized by Ahmed (2007) regarding the notion of whiteness to characterize the emotional fit of individuals in a given environment. In the author's own words, "[t]o be comfortable is to be so at ease with one's environment that it is hard to distinguish where one's body ends and the world begins" (p.158). (Dis)comfort has also been discussed in the literature in relation to feminist research praxis (Chadwick 2021) and epistemologies (Eaves et al. 2023). This concept is often used as an entry point to investigate power asymmetries and critically examine complex forms of oppressions (Collins 1990; Harding 1986). More specifically, (dis)comfort is a central notion to understand the relation between social inequalities and spatial dynamics (Rodo-Zarate 2014). To the best of our knowledge, this concept has not been applied in the fisheries literature yet, although it has the potential for unravelling perceived experiences of inequalities related to the access and management of fisheries resources. In line with Eaves et al. (2023), this study adopts a place-based approach of (dis)comfort by exploring fisherfolk's lived experiences in relation to CBFM spaces and through an intersectional lens.

Weaving these three conceptual frameworks provides an enriched and in-depth picture of power geometries within CBFM processes by making visible exclusionary dynamics based on gender and other axes of social differentiation. Specifically, using an intersectional lens contributes

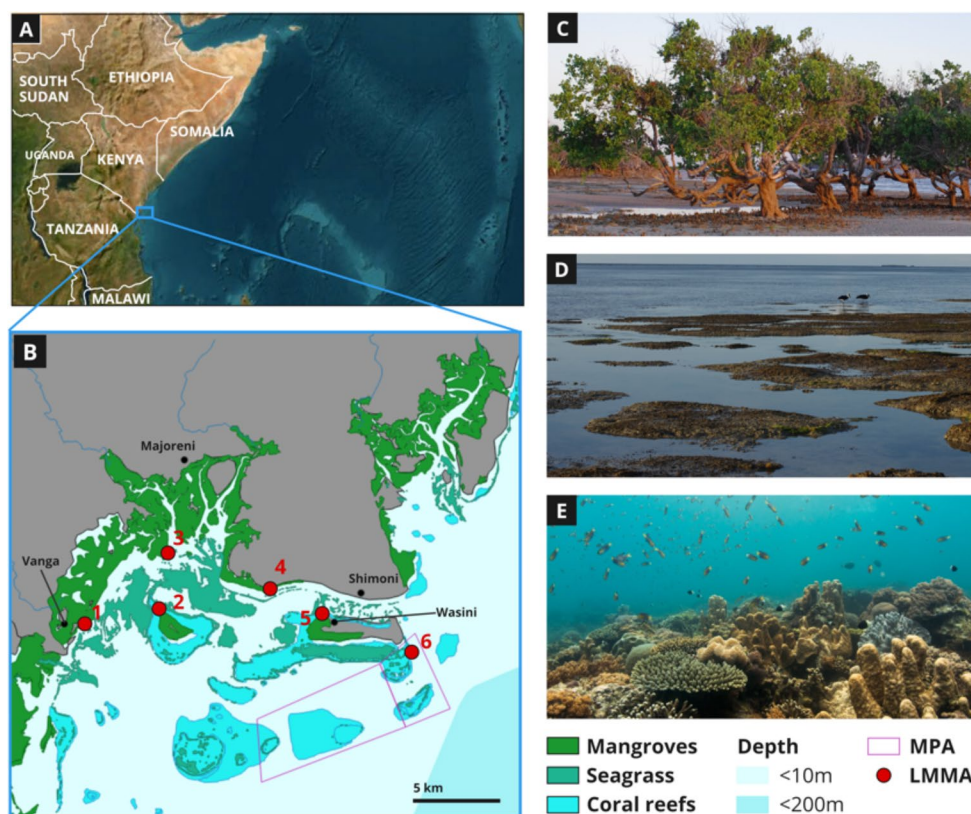
to deepen the analysis of gender power hierarchies that are illuminated through the participatory exclusion concept, while the study of (dis)comfort provides a more comprehensive view of subjective experiences resulting from social inequalities. Combining these three analytical lenses is thus relevant to capture the complex dialectic between intersecting social positions, subjective emotions, and participation in SSF management.

## Materials and methods

### Study site

We carried out research within the Shimoni-Vanga seascape, South Coast of Kenya. The study site experiences two main monsoon seasons – the Northeast (November-March) and the Southeast monsoons (April-October). Marine habitats found across the study site include seagrass beds, mangroves, and coral reefs (WWF 2001) (Fig. 1). The study site encompasses the Shimoni-Vanga Joint Co-Management Area, a coastal area jointly managed by seven BMU (GoK 2017). In addition to this common area of jurisdiction, some of these BMU have designated their own locally managed marine areas (LMMA) which they manage with the support of county fisheries authorities. It is estimated that about 18 000 people of diverse ethnic groups live in the

**Fig. 1** (color) Location map of the study site. (A) Situating the study site within Kenya and the East African region (based on OpenStreetMap, 2024). (B) Ecological characteristics of the Shimoni-Vanga seascape (QGIS 3.28.0, 2022) and conservation tools such as the Kisite-Mpunguti Marine Park and Reserve (MPA) and six locally managed marine areas (LMMA): 1-Vanga, 2-Jimbo, 3-Majoreni, 4-Kibuyuni, 5-Wasini and 6-Mkwiro. Key ecosystems in the Shimoni-Vanga seascape include: (C) mangroves (D) seagrass beds, and (E) coral reefs. © M. Chambon 2021 (C-D) and D. Knoester 2021 (E), from Reefolution Foundation Shimoni



Shimoni-Vanga seascape (GoK 2017), of which the Swahili people are the largest cultural group. Local people primarily rely on SSF for their livelihoods (Lau et al. 2021).

Within our study site, we selected three communities that share socio-environmental features regarding their coastal environment, fishing patterns, and fishery management rules, while representing the socio-cultural diversity of the site (Table 1). Although Community 2 (C2) comprised two settlements, we consider that they form one single community since they share strong historical and family ties. In each community, CBFM is operated by BMU structures. Both women and men engage in SSF but in different segments of the value-chain. Based on our field observations on fishing characteristics in the research sites, we found that access to intertidal areas is a determining factor of women's participation in the production sector. Owing to the proximity of C2 to reef flats, women in this community glean shells and fish octopus along the shore. They are also involved in post-production as fish processors or traders. By contrast, Communities 1 and 3 (C1 and C3) do not have direct access to intertidal areas. As a result, women in these communities are mostly involved in the post-production segment of the SSF value chain. In the three communities, men engage throughout the whole SSF value chain.

## Data collection

Prior to collecting data, we obtained the approval of the Ethics Committee of the Universitat Autònoma de Barcelona (CEEAH CA01). We compiled Free Prior and Informed Consent from each community and individual who participated in the research as well as consent from local authorities. We

collected data over ten months, divided into two fieldwork periods from November 2021 to April 2022, and from July to November 2023. We cited our key informants as knowledge holders following the citation template by MacLeod (2021) and used pseudonyms to anonymize their identities. We primarily identified respondents' genders according to their self-identification. We respected a gender-balance in all our sampling methods. We applied qualitative data collection methods, using both primary and secondary data as detailed below (Fig. 2).

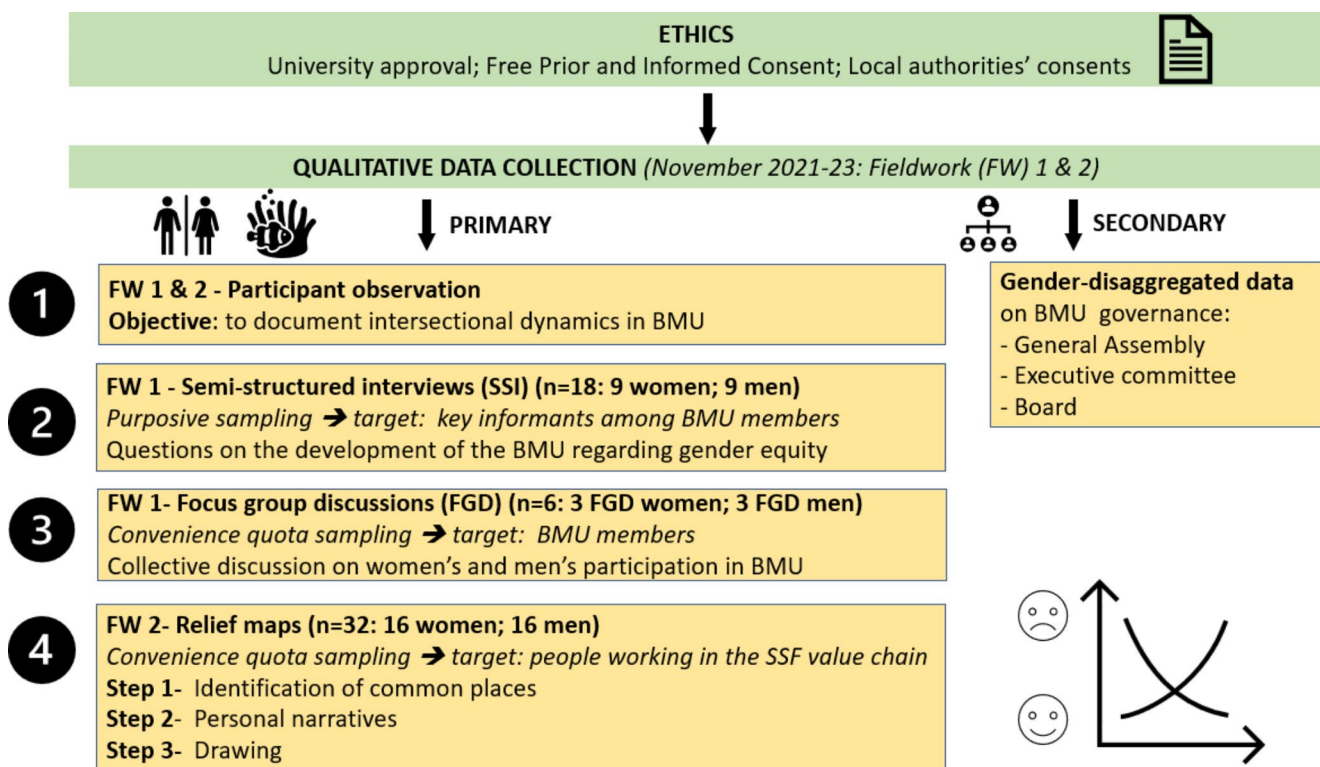
## Primary data

In the three studied communities, the lead author used participant observation to explore intersectional power dynamics related to participation in CBFM (Kawulich 2005). More specifically, the lead author attended meetings of the BMU general assembly and the EC whenever possible, joined community fisheries-related activities, visited conservation initiatives, and assisted local users in their daily activities.

We also conducted semi-structured interviews (SSI) on gender equity in BMU across the study site. For SSI, we selected 18 key informants (nine women and nine men) using purposive sampling. Specifically, we selected BMU members who had good knowledge about BMU history and its development in each community. We ran SSI to collect historical and institutional background information on the BMU development and the integration of gender considerations. To do so, we asked questions related to the history of local BMU, women's and men's representation in BMU, and their respective management activities. We provide the list of questions for SSI in supplementary material (List

**Table 1** (color). Background information on the three studied communities. Summary of the geographical settings, BMU places, BMU's history and conservation tools (LMMA), gendered roles in the SSF value chain and data collection methods applied in each community

	Community 1	Community 2	Community 3
Geographical setting	Mainland community located on the coastline, with no direct access to intertidal areas	Located on a coral-made island, separated from C1 by a maritime channel	Surrounded by mangrove forests with no direct access to intertidal areas
Number of Settlements	1	2	1
Number of BMU	1	2	1
BMU places	<b>BMU office:</b> EC meetings, administration and accounting, storage of resources and facilities	<b>BMU office:</b> EC meetings, administration and accounting, storage of resources and facilities <b>Eco-friendly building:</b> large meetings with partners and the general assembly; conservation activity planning	<b>Social hall:</b> large meetings with partners and the general assembly <b>Landing site(Bandarini):</b> data collection and monitoring
BMU foundation year	2008	2008 (BMU-1), 2009 (BMU-2)	2007
LMMA	No	Yes, operational	Yes, non-operational
Women's roles in the SSF value chain	Post-production	Production; post-production	Post-production
Men's roles in the SSF value chain	Pre-production; production; post-production	Pre-production; production; post-production	Pre-production; production; post-production
Data collection methods	5 SSI 2 FGD 16 relief maps	9 SSI 2 FGD	4 SSI 2 FGD 16 relief maps



**Fig. 2** (color) Summary of the methodological approach applied in this study over the two fieldwork periods (November 2021–November 2023), from ethical considerations to data collection. Main tools for primary data collection include 1) participant observation, 2) semi-

structured interviews (SSI); 3) focus group discussions (FGD) and 4) relief maps. Primary data were complemented with gender-disaggregated data on BMU governance

1). The lead author conducted all SSI which lasted about 45 min each.

Further, we conducted six focus group discussions (FGD) with BMU members, two in each community, to collectively discuss the perceptions of women's and men's groups regarding their participation in management and decision-making processes. We provide the main guiding questions for FGD in supplementary material (List 2). We selected FGD participants using convenience quota sampling and gathered between four and nine people in each FGD. FGD lasted about 90 min on average. Given the context in our study site, which implied a spatial separation of women and men and power asymmetries, FGD were done separately by gender to ensure that everyone felt comfortable discussing in public.

Finally, we used relief maps to capture intersectional dynamics linked to CBFM (Rodó-de-Zárate 2014). More specifically, we used this method in C2 and C3 to investigate the intersectional dimensions of CBFM through the analysis of lived experiences in BMU places. We adapted the digital relief map method to our research context by (i) using a manual approach based on hand drawings, (ii) adjusting it to rural and fisheries settings, and (iii) making it accessible to illiterate people. In a first step, we asked BMU members

during meetings to identify places frequented on a weekly basis, and especially places related to BMU activities. For this study, we focused on BMU places as defined in Table 1. We then selected 32 participants (16 women and 16 men) using convenience quota sampling and respecting a gender balance. These participants were individuals engaging in the SSF value chain, but not necessarily BMU members since we were interested in exploring both inclusive and exclusive dynamics of the participation in BMU. We asked them to define their comfort level in each place and through their multiple identities. Identities were defined according to six power structures relevant to the socio-cultural context of our study site and research topic: administrative status (i.e., status regarding the Kenyan citizenship, which conditions access to BMU membership); age; education level; ethnicity; gender and marital situation. We considered that the way respondents relate to each power structure was constitutive of their plural identities, which were also fluid as they varied according to their lived experiences and participation in BMU places. From discussions with participants, we derived narratives related to their personal experiences in BMU places. Lastly, participants used papers and colored pencils to draw lines of their relief maps. BMU places were indicated on the abscissa axis and respondent's lived

experiences expressed by their comfort levels on the ordinate axis. Different colors were associated with each power structure of interest. Since some participants were illiterate, we used symbols for “happy” and “unhappy” faces to represent the gradation from comfort to discomfort.

All interviews, meetings, and group discussions were first translated from Swahili to English, and then transcribed. Owing to time constraints and to ensure the fluidity of the discussion, only the main points raised by participants during FGD and BMU meetings were summarized and translated. By contrast, the interviews were fully translated and transcribed *verbatim*.

### Secondary data

We obtained gender-disaggregated data on BMU governance from the BMU boards in each studied community. Specifically, we compiled data on the number of women and men in the three main BMU governance bodies: the general assembly, the EC, and the board.

### Data analysis

To assess women’s and men’s participation levels in CBFM (O1), we used gender-disaggregated data on BMU governance and information from participant observation, SSI, and FGD. We built on Rabbitt et al. (2022)’s women’s participation model which comprises six participation levels (i.e., no participation, nominal, passive, consultative, active, and interactive (empowering) participation) and that adapted Agarwal’s typology (2001) of women’s participation in forestry management to SSF settings. To capture the gendered dimensions of CBFM, we broadened Rabbitt et al. (2022)’s model by applying it to both female and male BMU members. Specifically, we applied the model drawing on both quantitative and qualitative information. First, we used descriptive statistics based on BMU gender-disaggregated data to calculate gender ratios of the BMU general assembly, EC, and board. Then, we gathered qualitative information and examined a certain number of criteria described in Table 2 to distinguish between different participation levels.

To identify the main barriers to women’s participation in CBFM (O2), we used the transcriptions from SSI and FGD. We applied an inductive qualitative content analysis to identify four main categories of barriers: socio-cultural, economic, institutional, and leadership. Within these broad barriers categories, we further identified subtopics. To do so, we read through our transcription texts and generated codes inductively to capture emerging common themes (Manning 2017).

To examine to what extent other power structures interact with gender in shaping lived experiences related to CBFM

places (O3), we analyzed relief maps and their narratives using narrative inductive analysis (Josselson and Hammack 2021). We examined and compared relief maps between men and women to identify specific patterns in the context of their gendered narratives. We analyzed how the power structures examined interacted with gender in influencing respondents’ experiences in BMU places and characterized their intersectional relations. We completed this qualitative approach by using descriptive statistics to compare the number of relief maps displaying flat or discontinuous lines between male and female respondents. The flat lines pattern corresponds to relief maps expressing the respondent’s high comfort feelings in each of his or her identities and regarding all BMU places, whereas discontinuous lines reveal places that are not frequented by the respondent. We calculated the respective frequencies of relief maps with flat or discontinuous lines among female and male respondents.

### Research Positionality statement

We acknowledge that our research team’s attributes contrast culturally, socially, economically, and ontologically with those of the studied SSF communities. As a result, our study may have not fully grasped the complexities of intersectional power dynamics related to participation in CBFM in coastal Kenya. To mitigate this bias derived from our positionality, we used three main strategies that include (i) conducting an extended fieldwork period to build and maintain trust with local communities, (ii) closely working with local key informants who know well the local context and (iii) rephrasing questions in interviews to cross-check information. Overall, we recommend developing local research on gender and intersectional issues in CBFM in the Western Indian Ocean region to improve understandings of these critical issues.

## Results

### Participatory exclusion in CBFM

In this section, we combine primary data from participant observation, interviews and group discussions with secondary data on BMU governance to investigate participatory exclusion within CBFM processes through the analysis of women’s and men’s participation levels in the three studied communities.

#### Community 1

In C1, the two-thirds gender principle is not respected in any of the three BMU bodies, with male members largely



**Table 2** (color). Criteria used to assess women’s and men’s participation levels in CBFM based on Rabbitt et al. (2022)’s six-stage participation model.

(adapted from Agarwal 2001). Criteria in bold correspond to limiting factors that restrict the access to higher participation levels in this model

Participation level in CBFM	Characteristics	Related assessment criteria
None	Women or men are excluded from participating in CBFM committees, and from attending meetings.	- <b>No access to BMU membership</b> - <b>No regular attendance to BMU meetings</b>
Nominal	Women or men are members of the CBFM committee but do not necessarily attend meetings.	- Access to BMU membership - <b>No regular attendance to BMU meetings</b>
Passive	Women or men are members of the CBFM committee, regularly attend meetings, but do not contribute to meeting discussions.	- Access to BMU membership - Regular attendance to BMU meetings - <b>Passive attitude during BMU meetings reflected in verbal or non-verbal expressions/postures</b>
Consultative	Women or men are members of the CBFM committee, regularly attend meetings and contribute to meetings discussions, but are largely ignored.	- Access to BMU membership - Regular attendance to BMU meetings - Active attitude during BMU meetings reflected in verbal or non-verbal expressions/postures - Engagement in various management tasks - <b>General feeling of exclusion from BMU decision-making</b> - <b>Restricted access to BMU leadership positions that would empower people of the same gender identity</b>
Active	Women or men are members of the CBFM committee, and regularly attend meetings where their ideas are valued and discussed. They are actively involved in all stages of resource management, from initial consultations and decision-making, through to ongoing monitoring and evaluation.	- Access to BMU membership - Regular attendance to BMU meetings - Active attitude during BMU meetings reflected in verbal or non-verbal expressions/postures - Engagement in various management tasks - General feeling of inclusion in BMU decision-making - <b>Restricted access to BMU leadership positions that would empower people of the same gender identity</b>
Interactive (empowering)	Women or men are members of the CBFM committee, attend and contribute to meetings where their ideas are valued and discussed, and they are involved in all stages of management. Women or men hold specific roles within the committee that empower other members of the same gender identity.	- Access to BMU membership - Regular attendance to BMU meetings - Active attitude during BMU meetings reflected in verbal or non-verbal expressions/postures - Engagement in various management tasks - General feeling of inclusion in BMU decision-making - Access to BMU leadership positions resulting in the empowerment of people of the same gender identity

**Table 3** (color). Gender ratios of the main BMU governance bodies (i.e., general assembly, executive committee, and board) by community derived from secondary data on BMU governance. Cases where the two-thirds gender principle is not respected (i.e., less than 33% of women represented in a given elective body) are indicated in red color

Community	Settlement	Gender	General assembly		Executive committee		Board	
			Headcount	Percentage	Headcount	Percentage	Headcount	Percentage
C1	/	Men	570	73	12	80	5	100
		Women	210	27	3	20	0	0
C2	S1	Men	185	60	9	60	4	80
		Women	124	40	6	40	1	20
	S2	Men	117	45	5	38	3	60
		Women	143	55	8	62	2	40
C3	/	Men	551	77	9	69	4	80
		Women	167	23	4	31	1	20

outnumbering female members (Table 3). Only a small percentage of women attend BMU meetings. For instance, during the 2022 BMU annual general assembly, only 21% of the 40 attendants were women ( $n=8$ ). Our observations indicate that women who join BMU meetings usually adopt a passive posture, listening to men without intervening. Further, female FGD members feel that their opinions do not

count as much as male members’ opinions. Even though there are three female representatives within the EC, these women feel oppressed by the other male members and forced to keep quiet. This feeling limits their engagement in decision-making within the EC. In addition, female members feel that they do not benefit from the same economic opportunities and access to information about fisheries

management than men. Female FGD participants believe that this situation would not happen with a BMU chairlady, who would likely better represent their interests. Given minimal women's interventions in BMU meetings and their limited role in the EC, we consider women's participation level in CBFM in C1 as passive.

Interviews and group discussions reveal that men regularly attend BMU meetings and meaningfully contribute to management-related discussions. They are involved in a wide diversity of management tasks, including data collection, patrol, finance, the coordination of two sub-committees, and the organization and chairing of meetings. Male FGD participants perceive that their opinion is valued within the BMU, but they also recognize a need for a better representation of women in the BMU, and especially in the decision-making body: "*Here, we have mama karangas [female fish processors], so we need to ensure that we make good decisions for them, that is why we also need women in the BMU Executive committee.*" (Omar 2021). Since men actively participate in management tasks and meetings, and feel fully included in decision-making processes, we consider that they have an interactive (empowering) participation in CBFM.

## Community 2

In the two settlements of C2, the two-thirds gender principle is respected both in the general assembly and EC (Table 3). Women are part of the board as vice-secretary (S1,2) or treasurer (S2), although in the two settlements, the chairperson is a man.

Based on our observations, we found that most women in C2 attend BMU meetings and that some of them are very vocal in expressing their opinion. One female EC member in S2 notes: "*In the BMU [Executive committee] there are not so many women, and those who are part of it need to be outspoken and tough to withstand a lot of opposition from the guys.*" (Mwanamisi 2021). Interviews and group discussions indicate that women in C2 oversee fisheries data collection, lead entrepreneurship and conservation groups, and coordinate BMU sub-committees. Female FGD participants are enthusiastic about their roles within the BMU and feel that their opinion is as valued and listened to as that of men. However, in both settlements, they nuance their feelings by indicating that they feel excluded from specific management activities that challenge traditional gender roles. In S1, women cannot take part in the patrol sub-committee because their male counterparts, especially within the board, consider that this activity is not suitable for women arguing it is too unsafe and physically demanding for them: "*It is only men who are part of the patrol sub-committee because there are some works ladies cannot do: going out at night... also*

*going out in the waters... It is physically difficult. You see?'"* (S1 BMU Chairman 2021). Yet female FGD participants in S1 express their willingness to contribute to patrolling activities. Similarly, women in S2 are denied tour guiding activities since these activities require them to go on a vessel and interact with men. For these reasons, female FGD participants do not feel well represented within the BMU. Since women in C2 participate and express their opinions during BMU meetings and actively engage in various management tasks, we classify their participation level in CBFM as active. However, the fact that they feel excluded from specific management activities and are not well represented in leadership positions constitutes a limiting factor to their interactive participation.

In C2, we observed that men usually attend BMU meetings and participate in management tasks such as data collection, patrol, finance, and BMU sub-committees' coordination. Male FGD participants do not feel excluded from decision-making processes. They rather consider that their opinions are appreciated and considered by the board. Since men are involved in a great diversity of management activities and feel well represented and included in decision-making processes, we consider that they have an interactive participation in CBFM.

## Community 3

Community 3 is characterized by a weaker BMU governance than the other studied communities owing to a long history of BMU corruption. The two-thirds gender principle is neither respected in the general assembly, the EC, nor the board (Table 3). While the BMU is led by a chairlady, all other board members are men.

Participant observation combined with interviews show that, while women are invited to attend BMU meeting, they barely do so because of their lack of trust in the BMU. We observed that when women attend meetings, they usually keep quiet. Female FGD participants are not enthusiastic about their roles in the BMU and do not feel included in the decisions related to the LMMA or the organization of seminars and trainings. Women complain that power is concentrated in a few hands and regret not having a say in the BMU decisions. Female FGD participants are not satisfied with the current chairlady because they do not feel empowered through her leadership. This is exacerbated by the fact that the chairlady is not representative of the other women. Her interview reveals that she graduated university, has a high financial capital and does not depend on fisheries for her living. These specificities limit the other women's identification and support to the chairlady. Since women are under-represented in BMU bodies, seldomly attend meetings, do not express their opinions, and feel excluded from

decision-making processes, we consider that they have a passive participation in CBFM.

Like women, men in C3 are invited to BMU meetings but usually do not attend them since they do not support the board. Participant observation and interviews indicate that some men engage in BMU sub-committees, but most of them disapprove of BMU’s actions and deliberately boycott some initiatives. Male FGD participants feel that both men and women who are BMU members are alienated from BMU decision-making processes. They agree with having women in the board to make sure that women’s voices are heard and included in management decisions, but they consider that the current chairlady fails in providing collective benefits to BMU members. Although men and women face similar challenges in accessing BMU opportunities, men outnumber women in all BMU governance bodies. For this reason, we assess men’s participation level as consultative.

**Gender gap assessment**

In the three studied communities, women’s participation levels in CBFM are lower than those of men (Table 4). Men mostly participate interactively in CBFM, whereas women’s participation levels vary from passive (C1, C3) to active (C2). These results indicate that, despite its participatory nature, CBFM contributes to feed into women’s exclusionary processes from fisheries management and decision-making in these three SSF communities. Thus, these findings demonstrate the relevance of using the participatory exclusion notion in the SSF sector.

**Barriers to women’s participation in CBFM**

In the following, we use data from participant observation, interviews and group discussions to identify the main barriers to women’s participation that drive participatory exclusion in CBFM.

**Socio-cultural barriers**

Participant observation and interviews suggest that gender roles socialization plays an important part in preventing

**Table 4** (color). Women’s and men’s participation levels in CBFM by community. The assessment of gendered participation levels in CBFM in each community results from the analysis of primary (i.e., participant observation, SSI, FGD) and secondary data

Participation level in CBFM	Community 1	Community 2	Community 3
Women	Passive	Active	Passive
Men	Interactive (empowering)	Interactive (empowering)	Consultative

women from participating interactively in CBFM. In the three studied communities, women are primarily ascribed reproductive roles and are socially valued as mothers and wives, whereas men are considered family providers, responsible for bringing income to their households. As a result, women are expected to take care of children and ensure family cooking tasks throughout the day. These caring tasks often add to other women’s daily activities such as fishing or farming, whereas men mostly dedicate their working time to productive activities only. Women’s time budgets, and the weight of reproductive tasks, have implications for their participation in CBFM. Often, women are reluctant to go to BMU meetings because they expect delays that will interfere with their house duties.

In addition, the internalization of local gender norms leads to a general depreciation of women’s opinion within BMU settings, both from women themselves and from their community. For instance, assertiveness and eloquence are more valued as male than as female qualities. The FGD revealed that women perceive men as more voiceful and more knowledgeable than women. This lack of self-confidence impedes them from speaking up during meetings. Likewise, social expectations about women’s behavior result in women keeping quiet in front of men.

Finally, gender-based stereotypes and discriminations also act as a key limiting factor to women’s participation in CBFM. During our interviews and group discussions, we noticed a male scepticism towards women’s legitimacy in taking part in CBFM processes as reflected in the words of a former BMU chairman: *“I am not refusing having women at the head [of the BMU] but I would say it is not working well (...) To me, they are not understanding well [the BMU] (S2 Former BMU Chairman 2021).*

**Economic barriers**

Interviews conducted with women reveal that their lack of financial and material capital often limits their capacity to meaningfully engage in the BMU. For instance, women’s lack of financial capital hinders them from owning a boat, and consequently, to be recognized as proper fishers in their communities. Although women formally have the right to become a BMU member, female FGD participants believe that their participation in direct fishing activities may increase their bargaining power within BMU arenas. Furthermore, many women are economically dependent on their male relatives, a situation that influences their behavior in the BMU. Female FGD participants admit their reluctance to express their opinions during BMU meetings because they are afraid of losing the support of their husbands or other male family members, with direct implications on their daily lives.

### Institutional barriers

Interviews and group discussions indicate that BMU membership represents one barrier to women's participation in CBFM. To become a BMU member, women and men need to make a request to the BMU board. Yet some of the women we interviewed were not even aware about the existence of the BMU and its activities. While BMU awareness appears to be the first condition for taking an active role in CBFM, our interviews and observations suggest that women are less exposed than men to information about the BMU. Women's low level of BMU awareness may reduce their engagement in management processes. In addition, the influence of BMU's institutional partners has been reported by FGD participants to exacerbate existing gender bias at the BMU level. The EC represents the main interface between local users and external stakeholders such as NGOs, international organizations, or research institutes. Most of these external actors communicate with the EC to provide resources or plan activities, which may raise representativity issues as commented by Mwanajuma, one FGD participant: "*The problem is that most of the organizations and NGOs are only covering the participation of a few members [of the BMU] – always the members of the Executive committee, which perpetrates inequalities in the sense that it is the same people who get involved in seminars and trainings.*" (Mwanajuma 2021). This situation may lead to gender inequalities in the access to resources, information, and capacity building, given that most of the EC examined in our study are male dominated.

### Leadership barriers

From the group discussions, we found that access to the board leadership positions is subject to specific barriers to women in terms of human and social capital and gender discrimination. First, eligibility to board positions requires to have completed education until high school level. Female FGD participants believe that this regulation favors men since male members have a higher education level than female members. Beyond formal requirements, FGD participants consider that the election campaign itself also contributes to sustaining gender inequalities since male members are usually more vocal and have more social connections within the community than female members. This represents two main disadvantages for women getting support from the other members: "*In the end, the BMU election has become political (...) It favors men because they can go to other members and tell them: "vote for me, vote for me". But women are less outspoken*" (Mwanajuma 2021). Finally, interviews and group discussions reveal a general resentment and discriminatory attitude from male members

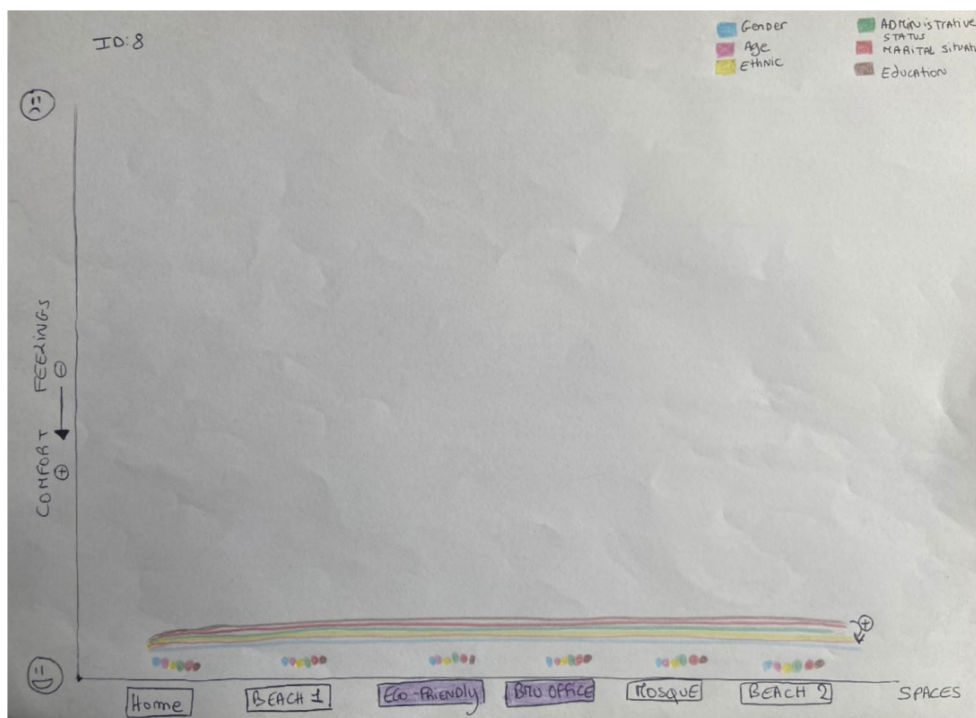
towards women running for positions within the board. The few women who are part of the EC in C1 confided that they were denied higher leadership positions by male members because of their gender.

### Intersectional experiences of CBFM places

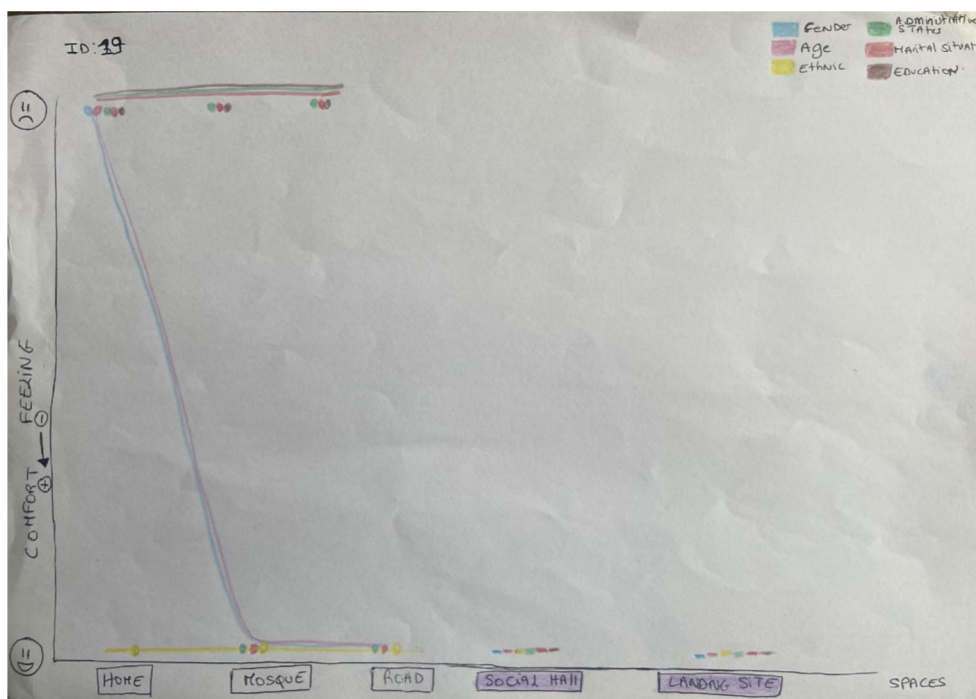
In this section, we present the intersection between gender and other power structures in shaping lived experiences related to BMU places with specific examples of relief maps. One key finding is that 25% ( $n=4$ ) of the male respondents feel comfortable in BMU places *vis-à-vis* all their examined identities, as reflected in their flat relief maps. These respondents do not raise any negative feelings associated with a specific identity in BMU settings. The profile of male respondents who feel most comfortable corresponds to Kenyan senior men, over 50 years old, and married. The only exception is the case of Ali, a 22-year-old man living in C2, who also feels comfortable in each of his identities in relation to BMU places. Despite his young age, he engages actively in BMU meetings since he is more educated than most of the other members: "*I am fine everywhere because I have a good level of education, which makes me more knowledgeable than others in the village. I can then speak more during meetings*" (Ali 2023). Ali's story reveals a tension between age and education, with his high education level mitigating the disadvantage of his young age within BMU places. Ali's relief map consists of six flat lines of different colors located at the bottom of the graph – corresponding to the highest comfort level – with no graphic relief (Fig. 3). By contrast, we did not report these flat lines patterns in women's relief maps (0%;  $n=0$ ), which systematically show a certain level of discomfort in BMU places associated with specific positions.

We compared the number of relief maps that displayed discontinuous patterns drawn by men and women. We find that more women (25%;  $n=4$ ) than men (6%;  $n=1$ ) drew discontinuous lines, indicating that they are not accessing BMU places because of some of their identities. In the next example, we show the relief map of Aisha (Fig. 4), a 32-year-old woman who works as a cook in a local restaurant. Every day, she fries and seasons fish and prepares Swahili dishes for local customers. She is Tanzanian and recently moved to C3 to find a job. She has three children who stayed with her mother in Tanzania, and no husband. To make a living and sustain her family, she must work hard at the restaurant. Since she does not have Kenyan citizenship, she is not able to register with the BMU to become a member and take part in meetings or management activities. In addition, because she does not have much free time and did not go to high school, she is not very much aware of the BMU and how participation may benefit her. Her story illustrates how her administrative status, combined with her

**Fig. 3** (color) relief map drawn by Ali showing a “flat lines” pattern. Power structures are represented by lines and dots, differentiated by colors (Gender: blue; Age: pink; Ethnicity: yellow; Administrative status: green; Marital situation: red; Education level: brown). Arrows describe intersectional relations between power structures that contribute to increasing (“+”) or decreasing (“-”) comfort levels of the respondent in BMU places. This level of comfort is represented on the ordinate axis from a happy (highest comfort level, at the bottom) to an unhappy (lowest comfort level, at the top) face. BMU places – among other places – are indicated on the abscissa axis and highlighted in purple



**Fig. 4** (color) relief map drawn by Aisha. See notes in Fig. 3. Dashes indicate places that are not accessed by the respondent



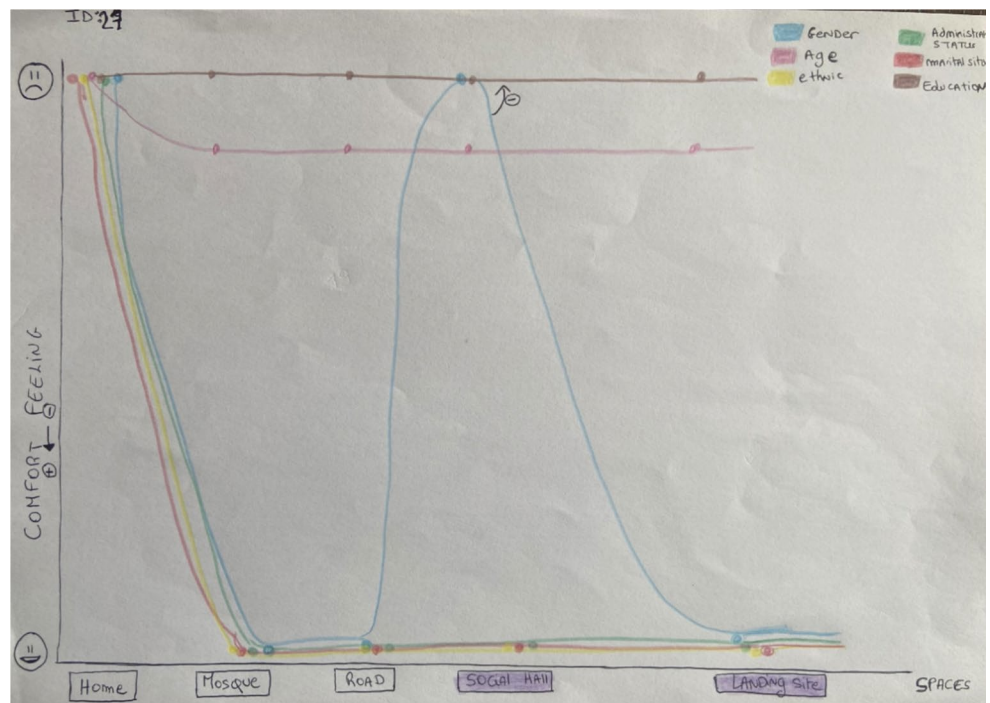
gender, her family situation, and her education level prevents her from accessing BMU places. The conjunction of these multiple identities exacerbates her marginalization from CBFM as expressed in her own words: “I don’t know much about the BMU; might be because I just moved to C3 this year (...) Here, I am seen as an outsider to the community. I am not from C3, so I do not go to certain community places like the social hall or bandarini because I would feel out of place. I prefer dealing

with my own business” (Aisha 2023). This marginalized status regarding the BMU is reflected in the disruptive spatiality of her relief map. Places where she goes (i.e., home, mosque, public road) are displayed with continuous lines whereas BMU places are represented with dashes to show that she does not go there.

Finally, we find a strong intersectional dimension in the relations between the examined power structures as

illustrated by the case of Mwanahawa's relief map (Fig. 5). Mwanahawa is a 30-year-old Kenyan female fish processor and BMU member. She lives in C3, has completed primary school, and is married. She spends her day collecting small sardines from fishermen, then boiling and drying them before selling the fish to her community. She is locally called a “*mama chemsha*” (literally: “a woman who boils”). Although she goes to BMU places and attends the meetings, she feels quite uneasy in these settings because of being a woman with a low education level. She only started school when she was 13 years old, when primary education became free in Kenya. However, she could not enroll in high school, and she now feels this lack of education during BMU meetings at the social hall: “*I think that with a higher education level, I would be more respected in meetings. This is even worse because I am a woman. If I were a man, my voice would be more listened to*” (Mwanahawa 2023). Mwanahawa's experience of BMU places reflects the intersectional dynamics between her gender and education level, two identities that reinforce each other in limiting her meaningful participation in BMU settings. These intersectional power dynamics are displayed in her relief map where we can notice a marked relief on the blue line that represents her gender associated with the social hall place. Further, the lines associated with her education level and age (in brown and pink respectively) are situated on the top of the map, indicating a high level of discomfort in all places. The arrow between the blue and brown lines materializes her experienced oppression in BMU spaces intensified by the combination of her gender and education level.

**Fig. 5** (color) relief map drawn by Mwanahawa. See notes in Fig. 3



Overall, findings from the relief maps show that more men than women felt comfortable in all BMU places regarding each of their identities (25%;  $n = 4$  vs. 0%;  $n = 0$  of relief maps with a flat lines pattern respectively). In addition, less men than women drew discontinuous lines that reflect a limited access to BMU places (6%;  $n = 1$  vs. 25%;  $n = 4$  of discontinuous relief maps respectively). Finally, reliefs maps drawn by both men and women reveal that gender intersects with respondents' education level, age, administrative status, and marital situation in shaping their lived experiences related to BMU places.

## Discussion

This study assesses gender-inclusiveness in CBFM using an intersectional angle and focusing on coastal Kenya. Our results reveal that women's participation in BMU is limited, ranging from passive to active. By contrast, men's participation level is systematically higher than that of women, providing evidence for participatory exclusion predicated on gender in BMU. Barriers to women's participation that drive this participatory exclusion mechanism are multifold and intertwined, combining socio-cultural, economic, and institutional factors, and barriers specific to female leadership. Moreover, we found that all BMU members do not experience BMU places in the same way, owing to their intersecting identities, suggesting that BMU places may ultimately reproduce social inequalities. These findings tend to indicate that participatory CBFM approaches have the

potential to support exclusionary processes and highlight the relevance of intersectionality as an analytical framework to capture the complexities of power hierarchies in SSF management and governance.

We recognize two main limitations in our research methodology. To begin with, we primarily used Swahili to collect data although some communities appeared more comfortable expressing themselves in their own language. This may have limited our understanding of the nuances related to intersecting power hierarchies in BMU, thus highlighting the need for a better appreciation of language diversity in academia. Another limitation stems from the selection of the power structures used for the intersectional analysis in this study. While, owing to time constraints, we restricted our analysis to six power structures, we acknowledge that additional social variables may also influence lived experiences related to BMU places. Thus, we encourage the development of relief map methods (Rodó-de-Zárate 2014) in gender and fisheries research which allow the comparison of relevant variables on the same topic or region.

### Participatory exclusion in CBFM

Our findings reveal that, in all studied communities, women's participation level in BMU is lower than that of men. These findings demonstrate the value of applying a gender analysis to the study of SSF management and governance as it provides an enriched picture of power relationships. By using gender-disaggregated data, our study allows a sound comparison of both genders' engagement in BMU and highlights that CBFM approaches in coastal Kenya are male-dominated, thus supporting evidence from literature on SSF management (Baker-Médard 2016; Hauzer et al. 2013; Kleiber et al. 2015), and environmental governance in general (OECD 2021).

Specifically, these findings tend to confirm the relevance of the participatory exclusion notion (Agarwal 2001) in the coastal Kenya context and adds to the scholarship pointing out the limitations of CBFM in terms of gender-inclusiveness (Johnson et al. 2021; Twyman 2017). While this concept emerged in the forestry sector, our study contributes to demonstrating its importance for research on SSF, in line with other gender and fisheries scholars (Baker-Médard 2016; Rohe et al. 2018). For instance, Matsue et al. (2014) analyzed the participation of female fish processors – locally called *mama karangas* – in SSF management in Mombasa County, Kenya. In accord with our findings, they show that, although *mama karangas* are directly affected by management decisions, they are not fully included in SSF decision-making.

Participatory exclusion in CBFM processes may be explained by measures focusing on improving women's

quantitative representation at the expense of their meaningful participation. Our results indicate that even when women are well represented in BMU (as in the case of C2), they do not participate interactively in management processes. This observation suggests that management measures focusing on increasing women's membership or attendance of meetings – though necessary – are not sufficient to achieve their interactive participation in CBFM. Instead, our study highlights the need to go beyond gender quotas and displace structural gender inequalities, a recommendation also supported by other scholars (Lau et al. 2021; Mangubhai and Lawless 2021; Verge and de la Fuente 2014).

In addition, we found that women's participation level in BMU varies across communities. The highest participation level reported for women is in C2. Given that C2 is the only community included in our study where women engage in the production sector, we suggest that women's roles in the SSF value chain influence their bargaining power and opportunities to access management. In particular, being a fisher seems to be a determinant factor in legitimating women's participation in CBFM processes as suggested in the SSF literature (Kleiber et al. 2015). Our findings also suggest that the election of a female BMU leader does not necessarily reverberate in a greater participation of women in CBFM, as illustrated by the passive participation of women in C3, where the chairperson of the CBFM is a woman. This paradox may be explained by the privileged position of the BMU chairlady, as women of high social status who are elected in positions of power may fail to represent the views of other women (Rabbit et al. 2019).

### Barriers to women's participation in CBFM

Our results illuminate the diversity of barriers faced by women in CBFM that drive participatory exclusion, thus revealing the complexity of gender power relationships in CBFM. These findings are largely consistent with the literature on SSF management globally, suggesting that reported barriers are not specific to CBFM approaches but find ground in a broader SSF governance context (FAO et al. 2023; Galappaththi et al. 2022). The multifaceted nature of these barriers suggests that addressing participatory exclusion in SSF management requires holistic and multidimensional approaches.

Our findings reveal the significance of socio-cultural, economic, and institutional barriers. In particular, and in line with previous studies on SSF management (Bradford and Katikiro 2019; Fröcklin et al. 2013; Singleton et al. 2019), we found that gender norms play an important role in hampering women's participation in BMU. For example, Vunisea (2008) highlights the predominance of a "culture of silence" in SSF communities of the Pacific, whereby certain

groups such as women do not raise their voices in community meetings because of strong cultural norms. As a result, women are disadvantaged in management decisions since their views are not considered.

An additional insight that emerges from our results is the specificity of barriers related to female leadership. Women are largely excluded from leadership positions in the BMU board because of a lack of human and social capital and gender discrimination. This may explain why only women with a high social status may access these positions, thus limiting women's representativity as observed in C3. These findings are consistent with recent studies on women's restricted access to leadership positions in fisheries and ocean governance, both in Kenya (Ojwala 2023) and elsewhere (Bradford et al. 2023; IOC-UNESCO 2020). Without addressing these barriers to female leadership, achieving women's interactive participation in CBFM, and more broadly in SSF management and governance, will remain deeply compromised (Rabbit et al. 2022).

### Intersectional experiences of CBFM places

We found that 25% ( $n=4$ ) of male respondents to relief maps feel comfortable in all BMU places regarding each of their identities, while the rest of the respondents experienced some extent of discomfort. This finding echoes the notion of systemic comfort (Ahmed 2007; Rodo-Zarate 2023), which corresponds to a feeling of general and unquestioned comfort associated with all frequented places and power structures. Our results suggest that men are more likely than women to experience systemic comfort in BMU places. Furthermore, the relief maps reveal that these respondents are mostly senior and married men who are BMU members. According to Rodo-Zarate (2023), flat lines lay the outlines for "emotional maps of silence" (p.2) that shed light on their privileged social positions. They show that besides benefiting from their social positions, these senior male respondents have also normalized their personal privilege, to the extent that they do not even notice it. Our findings suggest that this privilege stems from intersected identities linked to their gender, age, marital status position within the BMU. Such situation may have major implications for CBFM, and inclusiveness given that board positions in all studied communities are dominated by senior married men in number. Their privileged position may occult the recognition of oppressed identities within the BMU, particularly among women groups but also experienced by men of other identities, thus limiting the development of inclusive management strategies.

More women (25%;  $n=4$ ) than men (6%;  $n=1$ ) drew relief maps showing discontinuous lines. This observation reveals that more female than male respondents experience

marginalization in CBFM since they cannot access BMU places owing to specific social positions. This suggests that the experience of discomfort in BMU places both results from existing gender inequalities and reproduces such inequalities by restricting women's access to BMU places and, beyond that, to management opportunities. As such, discomfort feelings must not be seen as static emotions but rather as a dynamic process of production of spatial inequalities. This finding aligns with previous studies documenting women's restricted access to CBFM places (Chitará-Nhandimo et al. 2022).

Our results indicate that gender intersects with other power structures in shaping lived experiences related to BMU places. This suggests that gender is embedded in broader power social dynamics that shape the participation of individuals in CBFM, thus reinforcing the relevance of intersectionality as an analytical lens for capturing power hierarchies (Crenshaw 1989, 1991). More specifically, our findings support the call made by several scholars to foster intersectional approaches in research on SSF management and governance (Ferguson et al. 2021; Rice et al. 2024). Adopting an intersectional perspective has the potential to improve our understanding of SSF communities by illuminating the social differences produced by intersecting identities among fisherfolk, as opposed to mainstream views that emphasize the homogeneous character of local communities (Ferguson et al. 2021; Ojwala 2023). By revealing the determinant role of education level, age, administrative status, and marital situation on an individual's participation-or lack thereof- in CBFM places, alongside gender, our findings add to intersectional analysis in the SSF sector (see Alati et al. 2023; Axelrod et al. 2022; Ferguson 2021; Rohe et al. 2018). The documented power dynamics, however, are specific to our study area, which highlights the importance of the local context in situating intersectional issues (Axelrod et al. 2022; Nightingale 2011) and supports recent criticisms against the "one-size-fits-all solution" narrative in SSF communities (Rabbit et al. 2022; Rohe et al. 2018).

### Conclusions

Our study on gender inclusiveness in CBFM through the case of BMU on the South Coast of Kenya demonstrates that women's participation in CBFM is limited owing to multifold barriers, including a restricted access to leadership. Furthermore, our findings contribute to document intersectional dynamics linked to CBFM places, suggesting that CBFM may result in exclusionary processes. Overall, this study provides a critical contribution to the academic field of gender and fisheries, and more specifically to intersectional research on CBFM. At the empirical level, our



study confirms that CBFM processes in the studied SSF communities are characterized by participatory exclusion, adding evidence to the growing body of literature denouncing the lack of inclusiveness in CBFM approaches (Johnson et al. 2021; Rabbitt et al. 2022). From a methodological standpoint, the adaptation of the relief maps method to SSF communities demonstrates the relevance of this analytical tool for SSF contexts. This method is powerful in highlighting both privileged and marginalized positions within BMU places, thus contributing to shedding light on the intersected nature of social inequalities produced by CBFM processes. Moreover, our adaptation of the relief maps revamps this methodological intersectional tool by highlighting the connections between emotions (discomforts) and access and participation to CBFM places through the examination of spatial discontinuities. We encourage the application of this method in gender and fisheries research to improve our understanding of intersectional and place-based dynamics related to participation in SSF management and governance.

Altogether, our findings support three main recommendations to foster inclusive management approaches in SSF. First, our study shows the importance of collecting gender-disaggregated data to provide a thorough analysis of gender dynamics related to CBFM. Such a baseline is necessary for tracking changes towards gender-related targets and supporting the development of inclusive SSF management strategies. Second, our study reveals that women's participation in CBFM in coastal Kenya is limited owing to multiple and overlapping barriers. These findings highlight the need for supporting the meaningful participation of women in CBFM. Moving towards this objective requires going beyond gender quotas and embracing holistic gender-transformative management strategies aiming at addressing structural gender barriers, especially those affecting women's access to leadership positions. Finally, our study highlights the heuristic power of intersectional analysis applied to CBFM processes, thus calling for further intersectional research in SSF contexts. Since this area of study is in its infancy, theoretical and methodological development is much needed.

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**Data availability** The data that support the findings of this study will shortly be openly available in Figshare repository.

## Declarations

**Competing interests** The authors have no competing interests to declare that are relevant to the content of this article.

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