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Intersectional Development: How Seaweed Farming in Kwale County, Kenya Can Foster Inclusive and Transformational Development

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Abstract: Seaweed farming has been growing in prominence in the coastal region of Kwale County, Kenya, as a livelihood led by women since the turn of the century, however the sector remains far below its full productive capacity. As such, this study explores the factors that influence women's ability to access seaweed farming through engagements with the theories of intersectionality. The Blue Empowerment Project is seeking to upscale seaweed farming in this region to promote women's empowerment and this study questions the extent to which men should be included in such an endeavour. It finds that several factors may intersect with gender to create varying levels of (dis)advantage amongst women in this region, and that we may need to reframe the conceptualisation of women's empowerment to be inclusive of men. This study therefore makes a range of recommendations for the BEP, development practitioners in general, and researchers to inform them of how women's empowerment initiatives may be made more inclusive and transformational.

Keywords: seaweed farming; blue empowerment; women empowerment; IMTA technology

Introduction

Gender relations in Kenya have roots in pre-colonial and colonial histories, with British colonial rule perceived to reduce women to private domestic beings. The Kenyan Constitution now states that women and men have the right to equal treatment, including equal opportunities in political, economic, cultural, and social spheres [1]. The Kenya National Human Rights and Equality Commission facilitates gender mainstreaming in national development. Kenya's Vision 2030 ratifies its commitments to the United Nations' Sustainable Development Goals (SDGs) and Africa's Agenda 2063. However, there are criticisms of the gap between policy and practice, with cultural, political, and socio-economic factors hindering progress [2].

In Kenya, initiatives led by non-governmental organizations and funded by external donors are emerging to actualize women's empowerment. The Blue Empowerment Project (BEP) aims to build the agency, resources, and institutional structures of female seaweed farmers on Kenya's south coast through Integrated Multi-Trophic Aquaculture (IMTA). The BE aligns with the Kenyan government's commitment to the development of the Blue Economy (BE), prioritizing the growth and sustainability of ocean and coastal ecosystems. Seaweed farming is being prioritized in Kwale County, Kenya, to contribute to the BE's development. This study explores the reasons why certain women in coastal Kwale may be restricted from engaging in seaweed farming in Kenya. It uses intersectionality theories to understand how gender intersects with other social differences, creating a matrix of domination that oppresses certain women.

Ecosystem services as defined by [3] are the benefits and incomes afforded to communities by their surroundings. Within the last decade, the United Nations' SDGs have prompted the development field to investigate how gender mediates men's and women's access to ecosystem services and, thus, how it impacts their livelihood opportunities [4]. Girls and women are typically restricted to utilising ecosystem services that are close to home, with their livelihood realm ceasing

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at the shoreline [3,5]. In contrast, men can access ecosystem services on land and far beyond the shoreline into the deep sea. Skills and knowledge are transferred between generations according to gender, resulting in women assuming roles associated with femininity and caregiving, and men pursuing livelihoods that demonstrate masculinity and courage [5]. As a result, seaweed collection, firewood collection and trade, palm and charcoal trade, and the gleaning of marine produce are roles dominated by women [5]. Men typically gain their livelihoods from fishing, tourism, and pole cutting in the mangroves [5]. Most importantly, women's livelihoods are the least profitable and men's are the most profitable, which leads to the perpetuation of a stark disparity between the incomes of the two genders. Although limited, the existing literature therefore reveals the significant, entrenched gender roles and responsibilities influencing men's and women's access to certain livelihoods and use of ecosystem services [6].

Although seaweed farming has been growing in prominence in coastal Kwale since it was first developed by KMFRI in the early 2000s [7], some believe that it is not a major livelihood and is thus "*left for the women to perform*" (male Beach Management Unit official in Kwale [7,8]). Since 2009, the village of Kibuyuni and its neighbours have been supported by various stakeholders to further develop the sector, but seaweed farming remains far below full productive capacity [7]. Consequently, Kenya only contributes to 0.4% of the African continent's total seaweed production [7]. Many institutions have called for productivity to be upscaled, as seaweed farming has the potential to drive significant positive socioeconomic development for local communities and Kenya as a whole [6,7,9,10]. The two seaweed species cultivated along Kwale's coast are *Eucheuma denticulatum* and *Kappaphycus alvarezzi* [7,9]. Farmers most typically use the "Off Bottom" method to cultivate these species in intertidal areas that are easily accessible by foot [7]. KMFRI and IUCN provide detailed explanations of the precise techniques used by seaweed farmers and the specifications of their infrastructure [6,7,10]. Most sources estimate that around 90% of seaweed farmers in Kwale are women, although [9] found that up to 70% are sometimes assisted by their husbands.

IMTA is a model in which different species are farmed within close proximity of one another. One species' uneaten food, waste, and other by-products are recaptured by the other species, enabled by the movement of water. It is a flexible model that can be adapted to suit the context in which the farm is located [6]. Due to Kenya's abundance of ocean resources, there are great prospects for the IMTA model to bolster the BE [6]. Seaweed is a central component of the BEP's IMTA model because it can be cultivated alongside a variety of cultured species, the first of which will be rabbitfish [6]. The potential benefits of the IMTA model are threefold: (i) productivity becomes more efficient, (ii) environmental waste is reduced, and (iii) producers' profits are increased [11].In a recent case study in India, the implementation of IMTA resulted in improved water quality, a 19% increase in production, and a 69% increase in net income for producers [12]. A study in South Africa found that the implementation of IMTA in abalone farms had a positive impact on local communities, which are characterised by high unemployment and limited skills (Nobre et al., 2009). This suggests that marginalised communities elsewhere in the developing world could benefit from the integration of IMTA in their aquaculture livelihoods.

The ambition to pursue a more nuanced evaluation of gender in developmental ecosystem services research has not yet been adequately fulfilled. The studies do not adequately account for the fact that gender is not the sole axis that may determine how one can access certain livelihoods. Literature shows that there is a need to assess gender at the intersections of other markers of social difference, such as poverty, education, age, ethnicity, religion, and disability status, but they do not incorporate such variables [5]. This paper aims addresses two research questions 1) what are the factors that influence women's ability to access and benefit from seaweed farming in coastal Kwale?; and 2) to what extent should men be incorporated into the design of projects that endeavour to empower women?

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Methodology

Data Collection, Study Settings, and Participants

Using the bottom-up" approach the researcher interviewed women at the grassroots level before all other participants. The researcher asked open-ended questions, allowing participants to discuss the issues that mattered to them. In addition, the tools made room for follow up questions to be asked based on each participants' responses. The semi-structured interview was used to interview women at the grassroots level, using open-ended questions and follow-up inquiries to allow participants to share their experiences without researcher bias.

The BEP held workshops on 20 and 21 May in Lunga Lunga, and on 23 and 24 May in Msambweni. From the groups present at these workshops, the researcher collaborated with BEP's field staff to purposively sample participants for two KIIs in each location (see Table 1). The participants were women who held positions of leadership in their respective seaweed farming groups and were deemed vital sources of information on two grounds. Firstly, it was expected that they would have more years of experience in seaweed farming and could thus provide insights on how it has evolved over time. Secondly, it was assumed that they interact with their fellow group members, meaning that they could provide a broad view of their own perspectives and those of their colleagues.

Table 1. Information of KII participants in the field.

		Group	Positionin group	Year group founded	Duration of membership (years)	Duration of leadership (years)
Lunga Lunga	**Leader1**	Village CSeaweed Farmers	Secretary	2009	14	10
	Leader2	Village AWidows'Group*	Chairlady	2003	20	20
Msamb-weni	**Leader3**	Village ZSeaweedFarmers	Secretary	2008	12	5
	Leader4	Village YSeaweedFarmers	Vice-Secretary	2017	4	2

The KIIs were complimented by two FGDs, one in Lunga Lunga and the other in Msambweni. Both consisted of six female seaweed farmers, who were purposively sampled by the researcher with the assistance of BEP's field staff. In the Lunga Lunga FGD, the sample consisted of the members of two different seaweed farming groups to diversify the dataset. In the Msambweni FGD six members from one local seaweed farming group took part. The details of both FDGs' participants are detailed in Table 2.

Table 2. Information of Lunga Lunga and Msambweni FGD participants.

		Group	Age	Religion	Years cultivating seaweed
Lunga Lunga	**Participant1**	Village ASeaweed Farmers	40*	Muslim	10**
	Participant2	Village ASeaweed Farmers	56	Muslim	10**
	Participant3	Village A SeaweedFarmers	62	Muslim	10**
	Participant4	Village BSeaweedFarmers	23	Muslim	4
	Participant5	Village B SeaweedFarmers	33	Muslim	4
	Participant6	Village BSeaweed Farmers	35	Muslim	2
Msambweni	**Participant7**	Village Z SeaweedFarmers	25	Muslim	3
	Participant8	Village Z SeaweedFarmers	30	Muslim	2
	Participant 9	Village Z Seaweed Farmers	30	Muslim	1
	Participant10	Village Z Seaweed Farmers	35	Muslim	4

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Participant11	Village Z Seaweed Farmers	36	Muslim	4
Participant12	Village Z Seaweed Farmers	38	Muslim	4

Data collection took place between 20 May and 1 July 2023. Field research was done from 20 to 24 May, and additional key informant interviews were held thereafter over Microsoft Teams. The data collection in the field consisted of key informant interviews (KIIs) and focus group discussions (FGDs), which were held in the Beach Management Unit (BMU) buildings of Mwazaro and Gasi. These villages are located on the shores of the Indian Ocean in Kwale County's sub-counties of Lunga Lunga and Msambweni, respectively. These BMU buildings are local and well known to a wide range of communities in the research sites, so they proved to be the ideal location to conduct the fieldwork. The participants based on their experience in seaweed farming and their roles as leaders within their groups. KIIs were also conducted with various stakeholders in the seaweed sector in coastal Kwale over Microsoft Teams in English. The purposively selected participants included experts in seaweed farming, and governance, a seaweed buyer, and a member of ACTS' staff associated with the BEP.

Once the fieldwork was finalised, the researcher was able to identify and formulate KII tools for participants who operate in other areas of the seaweed sector in coastal Kwale. These interviews took place over Microsoft Teams in English, as all of the interviewees were fluent in the language. All the participants were purposivelyselected according to the data that was obtained in the field, and they were all associated with the BEP in varying capacities. The researcher anonymised the data to protect the identities of the participants. Furthermore, the participants were provided with participant information sheets and consent forms, which explained how their data was to be used and their right to withdraw. All discussions were audio recorded upon gaining the participants' consent. These audio files have since been destroyed according to the University of Edinburgh's data management protocols. The researcher worked closely with BEP staff to be respectful of communities' beliefs and promote participants' receptivity to the research. The researcher also collaborated with BEP Field Officers and the Project Manager, all of whom belong to the communities where the research took place. They were indispensable in communicating the information of the participant information sheet and consent form to the interviewees, and they interpreted between the English-speaking researcher and the Swahili-speaking participants.

Results and Discussion

Seaweed Farming Can Offer Transformative Livelihood Opportunities

According to research, it is evident that seaweed farming has significantly improved the lives of coastal women in Msambweni and Lunga Lunga [9]. This is apparent from their ability to transform their homes, provide education to their children, improve the surrounding infrastructure, and manage their families' medical expenses. This information was backed up by a key informant who has been visiting the community for ten years. Many of the participants in this study relied heavily on seaweed farming as their primary source of income, with only a few from Lunga Lunga supplementing their income with other sources. This is because they could only access the shores during low tides, which meant they were only able to work on their farms for about 14 days a month. During the remaining days, they were engaged in activities such as mangrove restoration, beach cleaning, fishing at the shores, and collecting shells. Seaweed farming accounted for over 80% of household earnings in Kenyan rural coastal communities as compared to marine fishing when it comes to consistency [3]. There however remains a significant gap as seaweed farming is yet to be fully exploited to reward more returns [9]. This area is an area that should be explored to understand the limiting factors for coastal women seaweed farmers to maximize their incomes, and why some may be excluded from such empowering initiatives.

Factors That Influence Seaweed Farming

According to this study, several underlying factors influence the outcome and participation of coastal women in seaweed farming. Such factors include:

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- **Age and Poverty.** The challenges related to age affecting female seaweed farmers in coastal Kwale are multifaceted. Issues include the necessity for women to acquire skills like swimming for deeper water work, with differing views on modesty and swimming among older women. Early pregnancies among young girls lead to poverty cycles and limited opportunities, exacerbated by the closure of schools during the COVID-19 pandemic. Balancing childcare responsibilities with seaweed farming becomes more complex when children are unable to attend school, impacting women's ability to sustain their livelihoods and pay for their children's education.
- **Physical challenge.** Seaweed farming is labour intensive; most participants mentioned that barriers for older women include the long trips from their residences to the farms and the physical stamina needed to complete necessary chores [9]. It is also possible to argue that any woman who has a physical limitation—related to an injury, pregnancy, or something else entirely—may not be able to engage in seaweed farming. The IMTA model of seaweed farming is a solution to this. It is less laborious than the current models, as water movement clears the seaweed without any intervention required from farmers. This implies that the IMTA model can make seaweed farming less physically demanding and more inclusive of those with physical disabilities.
- **Marital Status.** According to a BEP partner, a woman who works with her husband is more likely to have a bumper harvest and generate more profits. This was discovered after several KIIs and FDGs had conducted their study. According to the KIIs, widows have less income sources than married women. Despite this group's fragility, participants said that widows' disadvantage has been sustained because development professionals have ignored them. Married women reported that their husbands were supportive of their seaweed farming ventures, but some said their husbands still influenced their participation, leading to disagreements that posed challenges.

The BEP and other development projects that aim to empower women must first understand the facets that currently intersect with gender to created varying levels of (dis)empowerment amongst their beneficiaries before they can formulate initiatives. Gender inequality is not a single axis in which all women experience disadvantage to the same degree and the intersecting factors of age, poverty, physical disability, and marital status may influence women's participation in seaweed farming to a greater extent than their gender [13]. As well as making the axes of social difference visible, utilising the conceptual prism of intersectionality allows us to recognise how some axes interact with one another. For instance, just as the colours of the refracted light bleed into one another, a woman's marital status as a widow may make her more vulnerable to poverty and, in turn, make it more difficult for her to send her children to school [1]. With limited access to childcare, she may thus have less freedom to leave the home and participate in seaweed farming. Indeed, any number of the four identified factors may be combined to produce manifold experiences of disadvantage across diverse groups of women.

Taking a "bottom-up" approach therefore necessitates that we account for these women and promote their participation in and leadership of interventions to overcome the disadvantages associated with age, poverty, physical disability, and marital status, as well as perhaps discover more [14]. Without such an approach, a development intervention such as the BEP may only serve to empower women who are already at a relative advantage, potentially perpetuating inequalities amongst the women of coastal Kwale. Furthermore, if we are to understand empowerment by the definition of Sen a development intervention that is insensitive to the specific needs of women who experience multiple intersecting factors of disadvantage cannot adequately transform existing power structures, therefore leaving women's empowerment unfulfilled [15].

Although this study discovered that these four factors are pertinent in coastal Kwale, it does not propose that this list is exhaustive. In line with some of the existing literature on intersectionality, the original design of this study's research tools hypothesised that religion may be a significant factor influencing the participation of women in seaweed farming in Lunga Lunga and Msambweni. However, our research sites are largely religiously homogenous, with all but one leader of a seaweed farming group stating that all their members were Muslim. Even in the exceptional group, 47 of the

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52 members were Muslim. Expectations of women may vary according to their religion and, if not adequately considered, this could produce uneven outcomes for development initiatives in religiously diverse communities. For example, if some women's religion does not necessitate modesty to the same degree as that of other women, the barriers to learning how to swim may differ between different groups of women.

Sexual orientation is also frequently posited in the literature of intersectionality as a factor that influences some women's oppression [16–20]. However, following Hillsburg's first axiom of intersectional approaches, the researcher did not raise the issue of sexual orientation to the participants. That does not necessarily mean that this factor is irrelevant in Lunga Lunga and Msambweni, but this study cannot provide data with regard to how sexual orientation may influence women's participation in seaweed farming.

Whilst it is valuable that the corpus of theorisations and studies of intersectionality have thus far been concentrated in predominantly African American contexts, this study highlights that the facets of women's oppression must be rediscovered when the intersectional prism is brought to different terrains. A few researchers have recently emphasised that studies need to consider the varying and intersecting facets of women's disadvantage when analysing how gender influences women's access to ecosystem services and livelihoods [4,5,21]. In addition, the literature regarding to societal impacts of seaweed farming remains lacking [9]. The categories of age, poverty, physical disability, and marital status do not represent the ultimate list of axes that intersect with gender in this context, but they serve as a critical starting point to inform the BEP and future development projects seeking to empower women. Furthermore, these findings are intended to be expanded upon by future research to consolidate and expand the literature.

The Role of Men in Seaweed Farming

The study conducted within the framework of the BEP project highlights the intricate relationship between men and women in seaweed farming communities in coastal Kwale. While women are the primary beneficiaries of empowerment initiatives, the study reveals that men play crucial roles in supporting women's success in seaweed farming [9]. Through interviews and discussions with women leaders and BEP partners, it became evident that men assist women in various aspects of seaweed farming, including providing materials, technical support, and transportation. It is estimated that over 70% of women farmers are assisted by their husbands. This support is essential for women's economic independence and the overall success of seaweed farming groups. Between 18% to 23% of men were discovered to be part of these women groups, except for those exclusively for widows.

Guided by the existing literature regarding the gendered implications of pandemics [22–24], it was hypothesised that the informants would report that women had been affected by the COVID-19 pandemic to a worse extent than the men in their communities. The study discovered that most participants thought the COVID-19 epidemic had an equal impact on both genders, despite assumptions that it would have a stronger effect on women. One participant even made the argument that men were under more pressure to support their families, which led to more severe repercussions. Using a comparative approach, previous studies have investigated the pandemic's effects on the male-dominated coastal Kwale fishing business, and opinions of the pandemic's effects on men and women in the community were influenced by reasons other than gender norms [23,25]. During KIIs, two seaweed farmers highlighted that the COVID-19 pandemic disproportionately affected women compared to men. A common challenge reported was the inability of children to attend school due to pandemic restrictions. Existing studies suggest that gender norms often confine women to domestic roles during such crises, potentially limiting their opportunities to earn income independently and increasing their reliance on their husbands. While some partners of the BEP agreed with this observation, only two out of the seventeen interviewed seaweed farmers explicitly expressed this concern. The study suggests that while some women faced challenges during the COVID-19 pandemic, only a few believed they experienced worse conditions than men. These women viewed disadvantages from a collective, community perspective rather than solely based on

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gender. Their primary concern, aligning with Lau et al. (2021), was the widespread impact of the pandemic on livelihoods and incomes across the community, irrespective of gender [25].

In the context of coastal Kwale, involving men in women's empowerment initiatives, such as seaweed farming and the IMTA model, is crucial practically and ideologically. Shifting the focus from women's empowerment in isolation to a collaborative approach benefiting both genders is advocated by scholars of African feminism. In poverty-stricken areas like Kwale County, projects should be framed for the mutual benefit of women and men, challenging the notion of conflicting interests. It is recommended to move towards a "win-win" scenario where empowering women uplifts the entire community, as Jahan and Mumtaz (1996) suggested [26]. Excluding men from empowerment projects may perpetuate a divisive dynamic and limit their effectiveness. The "bottom-up" approach to development must be effectively advanced by ensuring that programs are directed by and allow beneficiaries to participate [26–28]. Female seaweed farmers in the study are open to men being part of their livelihood activities if they do not dominate, and they appreciate the support they already receive from men. The suggestion is to enhance this collaborative dynamic, aligning with African feminisms and the grassroots approach to women's empowerment. The study participants' experiences reveal that women's traditional roles in reproductive and domestic labour can hinder their ability to fully engage in seaweed farming. This echoes findings from similar studies in Zanzibar and the Solomon Islands [29,30]. While providing women with resources and skills is important, it may not guarantee their empowerment or equality with men [15]. Although seaweed farming can accommodate women's unpaid labour responsibilities, it does not address the underlying expectation that only women should perform such tasks. Without addressing the unequal distribution of domestic labour, promoting women's involvement in seaweed farming could add to women's burdens. It is crucial to consider this complexity to achieve women's complete empowerment, not just partial empowerment.

Conclusions and Recommendations

This study highlights the transformative livelihood opportunities that seaweed farming offers to coastal women in Msambweni and Lunga Lunga. Seaweed farming has significantly improved their lives by providing income, transforming their homes, supporting education for their children, improving infrastructure, and managing medical expenses. It is evident that seaweed farming is a crucial source of income for many women in these communities. However, there are still limitations and challenges that need to be addressed for maximizing their incomes and including more women in these empowering initiatives. The study also identifies several factors that influence women's participation in seaweed farming, including age, poverty, physical challenges, and marital status. These factors impact women's ability to engage in seaweed farming and benefit from its economic opportunities. Additionally, the role of men in supporting women's success in seaweed farming is emphasized. Men play crucial roles in providing materials, technical support, and transportation, which are essential for women's economic independence and the overall success of seaweed farming groups.

The study suggests that a "bottom-up" approach to empowerment initiatives is necessary, taking into account the intersecting factors of age, poverty, physical disability, and marital status. It is important to promote the participation and leadership of women who experience multiple intersecting factors of disadvantage. Without considering these factors and promoting inclusivity, development interventions may only serve to empower women who are already relatively advantaged, perpetuating inequalities among women in coastal communities. Furthermore, the study highlights the need to involve men in women's empowerment initiatives and shift the focus from women's empowerment in isolation to a collaborative approach benefiting both genders. Involving men in seaweed farming and other empowerment projects can lead to a "win-win" scenario where empowering women uplifts the entire community. However, it is important to ensure that men's participation does not dominate and that programs are directed by and allow beneficiaries to participate.

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Overall, seaweed farming has the potential to provide transformative livelihood opportunities for coastal women, but there are still challenges and inequalities that need to be addressed for women to fully benefit from them. Inclusivity, collaboration, and addressing intersecting factors of disadvantage are essential in promoting women's empowerment and achieving equality in coastal communities. Based on the findings of the study, it is recommended that:

- Researchers and development practitioners must prioritize **intersectionality**, and understanding the unique contexts before empowering women. Each community presents varying matrices of disadvantages for women. The study's findings offer crucial recommendations for those working in coastal Kwale communities.
- Development practitioners should collaborate with local women to create targeted interventions for the most disadvantaged groups. Understanding that a woman's age can impact her response to training initiatives, practitioners should engage with women of various ages to grasp their perspectives before offering skills training, ensuring alignment with their beliefs and values.
- Inclusivity and success of similar projects can be enhanced by empowering beneficiaries to lead. Recognizing young mothers as a vulnerable group, particularly exacerbated by the COVID-19 pandemic in Lunga Lunga and Msambweni, interventions like the BEP should involve them in activities like seaweed farming. To expand participation in seaweed farming, solutions must address barriers that restrict women's mobility, such as childcare constraints. Sensitivity to women's abilities and disabilities is crucial in designing inclusive initiatives for seaweed farming, considering physical limitations throughout the implementation process to ensure equitable participation.
- Researchers should investigate how various social factors impact women's involvement in seaweed farming and other livelihoods in coastal Kwale. While this study does not provide specific recommendations on how marital status influences participation, it suggests that widows may require significant support in seaweed farming. Future research should delve deeper into this area to guide development practitioners on better supporting widows. Additionally, exploring how religion affects women's participation in livelihoods can inform practitioners on adapting empowerment strategies to align with local beliefs. Understanding the impact of religious values on women's empowerment initiatives is crucial in heterogeneous religious communities for ensuring equitable outcomes.
- Research into how factors like **sexual orientation**, as suggested by various theorists, intersect with gender to contribute to women's inequality in coastal Kwale is essential. Additionally, exploring the roles of **education** and **ethnicity**, as proposed by Lawless et al., can provide further insights into this intersectionality. While these categories were not highlighted by the study participants, they could play crucial roles in understanding and addressing women's inequality in the region.
- In projects aiming to empower women, it is crucial to **involve men** to foster a more inclusive approach. Development practitioners need to recognize their own perspectives and biases when designing initiatives in coastal Kwale. While external stakeholders may assume that women should be the primary focus of development efforts, the study participants suggest that involving men is equally important. To ensure that development decisions align with the priorities of the community, practitioners should engage with both men and women in the BEP and future projects. By involving men in the empowerment process, practitioners can promote a community-wide understanding of the benefits of women's empowerment. Educating men on how women's empowerment can benefit the entire community and alleviate traditional gender roles can help shift underlying norms that perpetuate women's inequality. This inclusive approach can lead to a "win-win" situation that transforms gender dynamics in the region.
- Researchers should delve deeper into strategies for reducing women's unpaid care work and reproductive labour. Encouraging men to participate more in caregiving and household management is essential. However, implementing such a structural change may require generations to adopt fully.

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Limitations

The research has two main limitations. Firstly, participants were recruited only through ACTS' staff, who have limited connections with women not actively involved in seaweed farming. This omission excludes the perspectives of women in coastal Kwale who have left the industry or never participated in it. Future studies should engage with these women to broaden the scope of understanding. Secondly, all informants had ties to the BEP, either as partners or potential beneficiaries. To enhance the study's credibility, exploring sites where seaweed farming occurs independently of the BEP would be beneficial. Despite these limitations, the study provides valuable insights that can guide future research on women's empowerment in coastal Kwale, particularly in the context of seaweed farming.

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