



Coastal Women and Sustainable Development: a Literature Review On Policies and Field Realities

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Abstract. This article examines the role of coastal women in sustainable development, focusing on the challenges and opportunities they encounter. Women in coastal areas significantly contribute to fisheries, marine product processing, and environmental conservation. However, they often face various obstacles, including exclusion from decision-making processes and unequal resource access. A gender-based approach is used to explore how empowerment can be achieved through capacity building, enhanced access to technology and capital, and livelihood diversification. Additionally, strengthening social networks and local institutions proves essential for supporting active female participation. Inclusive and gender-sensitive public policies are key to creating an environment that fosters women's empowerment. Through these measures, the empowerment of coastal women is expected to enhance their contributions to sustainable development, strengthen community resilience, and support more sustainable natural resource management.

Keywords: Coastal women, Gender empowerment, Sustainable development.

1. INTRODUCTION

Coastal areas play a strategic role in ecosystems' sustainability and local communities' economy. Within coastal societies, women hold significant roles both in domestic and public spheres. They are not only involved in managing marine resources but also actively participate in economic activities such as marine product processing, marketing, and other endeavors that support family welfare and environmental sustainability. However, this strategic role is often underrecognized in development policies, leading to gaps in decision-making and the distribution of development benefits (Harper et al., 2013).

The empowerment of women in coastal areas is closely linked to the success of sustainable development. Women engaged in small-scale fisheries, for example, contribute significantly to food security and household income. In Fiji, research has shown that women play a substantial role in the small-scale fisheries sector, both through fishing activities and processing the catch (Thomas et al., 2021). This role is critical in achieving the Sustainable Development Goals (SDGs), particularly in eradicating poverty (SDG 1), promoting gender equality (SDG 5), and conserving marine ecosystems (SDG 14).

Despite the significant contributions of coastal women to the economy and environmental sustainability, they often face structural challenges that hinder their roles. These challenges include limited access to resources, restricted participation in decision-making

processes, and gender-based discrimination. Studies in Indonesia reveal that women fishers are often regarded simply as assistants rather than primary actors in fishing activities. This perception limits their opportunities for formal recognition and policy support (Alami & Raharjo, 2017).

To address these inequalities, various women's empowerment initiatives have been undertaken. In Indonesia, community-based programs such as *Puspita Bahari* have successfully encouraged coastal women to participate in cooperatives and develop micro-enterprises. These efforts have not only boosted women's incomes but also strengthened their roles within society (Prihatiningsih, 2019). However, these initiatives require more inclusive and sustainable policy support to ensure their long-term impact.

Policies that integrate a gender approach to coastal development have been proven to give broad benefits. Research in Mexico shows that women's involvement in fishing cooperatives enhances the sustainability of fishing practices and ecosystem conservation. Women who serve as leaders in fishing communities also demonstrate remarkable abilities in developing initiatives that support sustainability and economic empowerment (Torre et al., 2019).

On the other hand, natural disasters frequently occurring in coastal areas, such as the tsunami in Aceh, highlight the critical role of women in post-disaster recovery. Studies indicate that Acehnese women demonstrated remarkable resilience in rebuilding their lives after the tsunami by actively participating in economic and social empowerment programs (Renuka & Srimulyani, 2015). This highlights the significant potential of coastal women to serve as agents of change in sustainable development, despite often facing substantial challenges.

Strengthening women's roles in coastal resource management also impacts ecosystem sustainability. Research in the Pacific Islands demonstrates that women play a crucial role in preserving marine ecosystems, particularly through community-based management practices that are sensitive to social and ecological values (Ram-Bidesi, 2015). Acknowledging these contributions not only increases the effectiveness of conservation policies but also strengthens the resilience of coastal communities against climate change and environmental degradation.

Thus, this article aims to provide a literature review on policies and field realities regarding the role of coastal women in sustainable development. The main focus is on how development policies can be made more inclusive of women and how coastal women can be empowered to become key actors in resource management and local economic development. Based on existing literature, a holistic and participatory approach is required to ensure that women's contributions are optimally recognized and supported. These efforts represent a

strategic step toward achieving fair and inclusive sustainable development (Lawless et al., 2021).

2. LITERATURE REVIEW

Coastal areas serve as critical zones for both ecological and economic functions. Women in these areas contribute significantly to the management of marine resources, economic activities like processing and marketing marine products, and family welfare. However, these contributions are often underrepresented in mainstream development policies (Harper et al., 2013). Studies emphasize that women are key to local economies and environmental sustainability, although their roles remain marginalized in policy frameworks. Recognizing and integrating these roles into decision-making is essential for creating sustainable coastal development.

The empowerment of women in coastal areas is an essential component of achieving the Sustainable Development Goals (SDGs), particularly in relation to eradicating poverty (SDG 1), promoting gender equality (SDG 5), and conserving marine ecosystems (SDG 14). Research in Fiji illustrates the critical role of women in small-scale fisheries, where their involvement in both fishing and processing activities is vital for food security and household income generation (Thomas et al., 2021). Empowering women within these sectors has direct implications for achieving SDGs, highlighting the need for policies that prioritize gender equality and economic inclusion.

Despite their essential role in coastal economies, women often face significant barriers that limit their contributions. Structural challenges such as limited access to resources, gender-based discrimination, and exclusion from decision-making processes impede their full participation in coastal resource management (Alami & Raharjo, 2017). These barriers perpetuate the marginalization of women in fisheries and coastal development, preventing them from receiving the formal recognition and support necessary for long-term success in these sectors. Addressing these challenges is crucial for fostering inclusive and equitable development in coastal areas.

Various women's empowerment programs have shown positive outcomes in enhancing the roles of women in coastal communities. In Indonesia, initiatives like Puspita Bahari have empowered women to participate in cooperatives and establish micro-enterprises, boosting their income and strengthening their roles in society (Prihatiningsih, 2019). These initiatives demonstrate the potential for economic growth and social empowerment through targeted interventions, but they require ongoing policy support to ensure sustainability and scalability.

Empowering women in coastal communities contributes to both economic development and environmental sustainability.

Coastal communities are particularly vulnerable to natural disasters such as tsunamis, which often disrupt livelihoods and ecosystems. Studies on the aftermath of the Aceh tsunami illustrate how women, despite facing significant challenges, played a vital role in the post-disaster recovery process. Acehnese women demonstrated resilience by actively engaging in economic and social empowerment programs, contributing to community rebuilding efforts (Renuka & Srimulyani, 2015). This underscores the capacity of women to act as change agents in the recovery and long-term sustainability of coastal communities, emphasizing their importance in disaster resilience and community-based development.

3. METHODS

This study used a literature review approach to explore and analyze the role of coastal women in sustainable development. This approach was chosen because it allows for the collection and synthesis of various relevant empirical and theoretical data from previous research and policy documents. This method is well-suited to addressing the research objectives, which include evaluating the contributions of coastal women, the challenges they face, and the policies that can support their empowerment holistically.

The research data were collected through a systematic search using academic databases such as Scopus, ScienceDirect, and Google Scholar, as well as publications from international institutions like FAO, UNDP, and national policy reports. Keywords used in the search included "coastal women," "sustainable development," "gender equality," and "economic empowerment." The study focused on publications from the last 10 years (2013–2023) to ensure the relevance and currency of the data. Additionally, literature sources were selected based on their relevance to the coastal geographical context, particularly in Southeast Asia, which served as the primary research location.

The data analysis process was conducted using thematic analysis techniques, which allowed grouping data based on key themes such as women's contributions to the local economy, their roles in ecosystem conservation, and the social and structural challenges they face. Each theme was analyzed to identify key patterns and relationships between variables. For instance, structural challenges identified included exclusion from decision-making processes and unequal access to resources. The analysis also involved evaluating the effectiveness of policies implemented in various countries, such as cooperative programs in Mexico and community-based empowerment initiatives in Indonesia.

To enhance the validity of the research, the literature sources were verified through triangulation analysis, comparing data from multiple sources to ensure consistency of information. For instance, the contributions of women in the small-scale fisheries sector identified in Fiji were compared with similar findings in Indonesia to explore global trends and their implications for local policies.

This literature review approach was complemented by a policy analysis to evaluate how gender-based approaches have been implemented in the context of coastal development. These policies were analyzed using a gender framework to explore the extent to which they address the structural barriers faced by coastal women. For example, fisheries policies in Indonesia were assessed based on women's access to training, technology, and capital, while gender-based conservation approaches in the Pacific Islands were used as a comparative case study.

By using this method, the study provides in-depth and comprehensive insights into the interplay between policies, social norms, and the roles of coastal women in sustainable development. This literature-based approach also enables researchers to identify gaps in previous studies and offer relevant recommendations to strengthen the empowerment of coastal women.

4. RESULTS & DISCUSSION

The Strategic Role of Women in Social, Economic, and Ecological Contexts

Coastal women play a important role in their communities, both as natural resource managers and as drivers of household economies. Across various coastal regions worldwide, women are actively involved in small-scale fisheries, marine product processing, trade, and environmental conservation activities. Their contributions not only support household livelihoods but also have a significant impact on food security, local economies, and the sustainability of coastal ecosystems. For instance, women in Pacific coastal regions, such as Fiji, are reported to account for up to 56% of the total small-scale fisheries catch annually. This contribution is not only of high economic value but is also crucial for the sustainability of livelihoods in coastal communities (Harper et al., 2013).

In the context of sustainable development, the role of coastal women is highly strategic as they are at the forefront of natural resource management. For example, women fishers in Indonesia often contribute to sustainable fishing practices, such as manually collecting shellfish and managing marine habitats like mangrove forests. A study by Alami & Raharjo (2017) in the Talaud Islands reveals that women fishers are not only involved in post-harvest activities but also actively participate in the trade and processing of marine products. This indicates their

crucial role in connecting the production sector with consumers, even though this role is often not officially recorded in fisheries statistics.

In a social context, coastal women play a central role as guardians of cultural values and community traditions. This role is often integrated into community-based natural resource management, where women are directly involved in marine ecosystem conservation. For instance, research in the Pacific Islands highlights that women have a significant influence in instilling sustainability values in younger generations, particularly in promoting environmentally friendly fishing practices. This role includes nurturing conservation ethics through daily interactions with their children (Ram-Bidesi, 2015). Additionally, coastal women often serve as drivers of collective action within their communities, advocating for the implementation of equitable and inclusive natural resource management policies (Torre et al., 2019).

From an economic perspective, coastal women make significant contributions to household livelihoods and local economies. They are involved in various productive activities, including processing marine products into value-added goods. In Southeast Asia's coastal regions, seaweed farming is one of the sectors where women play a central role, both in cultivation management and processing. Research by Msuya & Hurtado (2017) indicates that women in Southeast Asia not only work in this sector but also contribute to improving their families' quality of life through the income generated from these activities. This income is used to meet basic needs such as children's education, healthcare, and housing improvements, all of which are key indicators of sustainable development.

Ecologically, coastal women have a close connection with their natural environment. Their dependence on local natural resources positions them as key actors in coastal ecosystem conservation. A case study in Mexico shows that women involved in fisheries cooperatives often promote sustainable practices, such as mangrove reforestation and fish population monitoring, which support the recovery of marine ecosystems (Torre et al., 2019). This highlights that women's involvement in natural resource management is not only crucial for environmental sustainability but also for poverty alleviation and the economic empowerment of coastal communities.

However, despite their significant contributions, coastal women often face various structural challenges. The lack of recognition of their roles in public policies and limited access to resources such as capital, technology, and training are major obstacles. For instance, research in the Philippines shows that women fishers are frequently excluded from decision-making processes in the management of marine protected areas, even though they have deep knowledge

of local ecosystems (Di Ciommo & Schiavetti, 2012). This inequity hinders their ability to contribute fully to conservation efforts and sustainable development initiatives.

Another challenge faced by coastal women is the dual workload they bear as both productive workers and household caretakers. In many cases, women must manage their time between family responsibilities and economic activities. This often limits their opportunities to participate in training sessions or empowerment programs. A study by Silva & Barbosa (2020) in Brazil highlights that women leading fishing communities have significant potential to adapt to challenges such as the COVID-19 pandemic, but they require greater support in the form of inclusive policies and access to adequate resources.

To address these challenges, a more inclusive and community-based approach is needed to empower coastal women. For instance, the *Puspita Bahari* program in Indonesia has successfully enhanced women's capacities in marine resource management through training, cooperative organization, and strengthening social networks (Prihatiningsih, 2019). These measures not only provide economic benefits but also enhance women's awareness of the importance of coastal ecosystem sustainability. Additionally, such initiatives can help create a more equitable space for women in decision-making processes.

Enhancing the role of coastal women in sustainable development also requires a paradigm shift in development policies. Existing policies need to be more sensitive to the needs and contributions of women, including access to technology, education, and training. A study by Movono & Dahles (2017) in Fiji shows that through economic and social empowerment, women can become effective agents of change in promoting sustainable development. Therefore, integrating a gender-sensitive approach into development policies is a strategic step toward creating more equitable and sustainable coastal communities.

Overall, coastal women hold highly strategic roles in social, economic, and ecological contexts. Their contributions not only support sustainable development but also strengthen the resilience of coastal communities against global challenges such as climate change and environmental degradation. Therefore, recognizing and empowering coastal women is key to achieving sustainable development goals holistically and inclusively (Lawless et al., 2021).

Critical Review, Discussion, and Gender-Based Analysis of Challenges and Opportunities for Coastal Women

A critical review of the role of coastal women in sustainable development reveals structural challenges that hinder their optimal contributions but also highlights opportunities that can be leveraged to enhance their empowerment. A gender-based approach is employed in

this analysis to understand the interaction between social norms, policies, and the roles of coastal women in society. This approach emphasizes how patriarchal structures, policy exclusion, and unequal access to resources impact coastal women, as well as how empowerment can strengthen economic, social, and environmental sustainability.

Structural Challenges: Gender Inequality and Exclusion

One of the main challenges faced by coastal women is their exclusion from decision-making processes in natural resource management. Despite playing crucial roles in fisheries activities, such as processing catches and trading, women are often regarded as informal workers or assistants, lacking formal recognition. Research in the Talaud Islands, Indonesia, found that although women contribute significantly to the fisheries supply chain, existing policies fail to adequately reflect their roles, thereby limiting their access to economic support and training (Alami & Raharjo, 2017). A similar situation is observed in Brazil, where women fishers have limited participation in managing marine protected areas due to gender norms that hinder them from assuming leadership roles (Di Ciommo & Schiavetti, 2012).

Inequality in access to resources also represents a significant challenge. Coastal women often lack equal access to capital, technology, and training necessary to improve their productivity. For example, in Southeast Asia, women involved in seaweed farming face limitations in obtaining production tools and business capital, which restricts their ability to compete in global markets (Msuya & Hurtado, 2017). This shows that gender challenges in the fisheries sector are not only local but also connected to global dynamics.

Double Burden and Economic Inequality

Coastal women also face a double workload arising from their domestic and productive responsibilities. In addition to engaging in economic activities, they are responsible for childcare, household management, and community social activities. A study in coastal areas of Aceh, Indonesia, revealed that women disproportionately allocate their time to household tasks, reducing their opportunities to participate in training and empowerment programs (Renuka & Srimulyani, 2015). This condition not only hinders their productivity but also reinforces economic dependence on male family members.

Economic inequality is also evident in the fact that women often earn less than men. In the context of small-scale fisheries, women are generally involved in lower value-added sectors, such as processing and marketing catches, while men dominate the more lucrative fishing activities. A study in Mexico found that women who lead fisheries cooperatives can

significantly increase their communities' income but face social and cultural barriers in accessing such opportunities (Torre et al., 2019).

Potential and Opportunities for Empowering Coastal Women

Despite facing numerous challenges, coastal women have significant potential to become agents of change in sustainable development. Research shows that empowering women can bring broad benefits, not only for their families but also for their communities and the environment. For instance, community-based programs such as *Puspita Bahari* in Indonesia have successfully enhanced women's capacities in marine resource management through training, cooperative organization, and strengthening social networks. These initiatives not only provide economic benefits but also raise women's awareness of the importance of coastal ecosystem sustainability (Prihatiningsih, 2019).

In the context of conservation, coastal women often have deep local knowledge about marine ecosystems, which can be leveraged to enhance the effectiveness of resource management policies. In the Pacific Islands, women play a crucial role in instilling sustainability values in younger generations, including through traditional conservation practices. This role is particularly vital in addressing global challenges such as climate change and environmental degradation (Ram-Bidesi, 2015). Moreover, women's involvement in fisheries cooperatives has been shown to improve the economic and social sustainability of their communities (Freeman & Svets, 2022).

Leadership Roles and Gender Transformation

Women's leadership in coastal communities shows significant potential to drive social and economic transformation. Research in Fiji indicates that women involved in community-based tourism have not only successfully increased their incomes but also influenced gender dynamics within their communities. They have challenged traditional perceptions of women's roles and become catalysts for significant social change (Movono & Dahles, 2017). This highlights that economic empowerment can serve as an entry point for broader gender transformation.

However, to support these leadership roles, more inclusive and gender-sensitive policies are essential. Current development policies often fail to address the specific needs of women, particularly in terms of access to education and training. A study by Lawless et al. (2021) indicates that small-scale fisheries policies often focus solely on economic outcomes,

overlooking the gender dynamics underlying the sector's sustainability. Therefore, a more holistic approach is needed to create fair and inclusive policies.

Towards Gender-Based Development

A gender-based analysis of the roles of coastal women reveals that while they face various structural challenges, they also possess significant potential to support sustainable development. Empowering coastal women is not only essential for improving their well-being but also for ensuring the sustainability of coastal ecosystems and local economies. By integrating a gender-based approach into development policies, we can create more equitable, inclusive, and sustainable coastal communities (Thomas et al., 2021).

Coastal Women and Sustainable Development: Strategies or Alternative Approaches

Empowering coastal women is key to ensuring sustainable development in coastal areas. Despite facing structural and social challenges, there are various strategies and alternative approaches that can be implemented to strengthen the role of coastal women in development. These approaches must be grounded in the principles of inclusivity, gender equality, and environmental sustainability.

Capacity Building and Gender-Based Training

One of the key strategies is enhancing women's capacity through training programs tailored to their needs in coastal sectors. Training programs that integrate a gender perspective can help women acquire new skills, such as sustainable aquaculture techniques, natural resource management, and financial management. In Indonesia, the *Puspita Bahari* program has shown that community-based training can improve women's abilities in marine product management and micro-enterprise development. This program also helps women build supportive social networks, which are crucial for strengthening their position in society (Prihatiningsih, 2019).

On the other hand, training focused on natural resource management can enable coastal women to make greater contributions to ecosystem conservation. Research in the Pacific Islands reveals that women possess unique local knowledge about marine ecosystems, which can be leveraged to enhance the effectiveness of conservation policies. With appropriate training, women can actively participate in environmental monitoring, ecosystem restoration, and environmental education for younger generations (Ram-Bidesi, 2015).

Improving Access to Resources and Technology

Another crucial strategy is enhancing women's access to resources and technology that support their economic activities. Environmentally friendly and accessible technologies can help women improve their productivity, such as in marine product processing or seaweed farming. In Southeast Asia, women involved in seaweed farming face challenges in accessing the equipment and technology they need. Providing these technologies, along with training on their use, can significantly improve their earnings and incomes (Msuya & Hurtado, 2017).

In addition to technology, access to capital is also an important factor. Coastal women often face difficulties in obtaining capital to expand their businesses due to limited access to formal financial institutions. A cooperative-based approach, as implemented in Mexico, can be an effective solution. Fisheries cooperatives not only provide access to capital but also create opportunities for women to participate in decision-making and resource management (Torre et al., 2019).

Strengthening Social Networks and Local Institutions

Community-based and social networking approaches hold significant potential for enhancing the empowerment of coastal women. In Brazil, research has shown that women involved in fishers' associations were able to increase their capacity to manage the social and economic impacts of the COVID-19 pandemic. These social networks provided essential emotional and practical support during the crisis (Silva & Barbosa, 2020). Therefore, building and strengthening inclusive local institutions is a strategic step to improve resilience and empower women.

Local institutions can also be utilized to promote women's participation in decision-making. For example, research on marine protected areas in the Philippines shows that integrating women into community-based management structures can enhance the effectiveness of conservation policies. Women's participation brings a more holistic and inclusive perspective to natural resource management (Di Ciommo & Schiavetti, 2012).

Economic Empowerment through Livelihood Diversification

Livelihood diversification strategies are essential to reducing coastal women's dependence on the fisheries sector. Programs supporting economic diversification, such as the development of small and medium enterprises (SMEs), can provide alternative income opportunities for women. In Fiji, women involved in community-based tourism have successfully created new economic opportunities while reducing pressure on local natural

resources. This approach not only increases income but also promotes women's social and political empowerment (Movono & Dahles, 2017).

Diversification can also be pursued by utilizing the ecotourism potential of coastal areas. Women can be involved in managing ecotourism activities, such as serving as tour guides or managing homestays. This not only provides additional income but also raises community awareness about the importance of environmental conservation (Harper et al., 2013).

Integrasi Perspektif Gender dalam Kebijakan Publik

A more holistic approach requires the integration of a gender perspective into public policy. Existing policies often fail to reflect the specific needs of women, thereby limiting their opportunities to contribute to development. A study by Lawless et al. (2021) highlights that small-scale fisheries policies frequently focus solely on economic aspects, neglecting the gender dynamics that influence the sustainability of the sector. Therefore, development policies must be designed with consideration for women's needs and contributions, including access to education, training, and economic opportunities.

Inclusive policies can also include social protection mechanisms that support women in dealing with crises, such as natural disasters or pandemics. For instance, in Aceh, women affected by the tsunami successfully rebuilt their lives with the support of community-based empowerment programs. These programs not only provided direct assistance but also strengthened women's capacities to face future challenges (Renuka & Srimulyani, 2015).

Strategies and alternative approaches for empowering coastal women must be designed holistically, considering social, economic, and ecological aspects. Capacity building, improved access to resources, and livelihood diversification are essential steps to support women's roles in sustainable development. Furthermore, inclusive and gender-based public policies are needed to create an enabling environment for women's empowerment. By integrating these approaches, coastal women can become powerful agents of change in fostering equitable, inclusive, and sustainable coastal communities (Thomas et al., 2021).

5. CONCLUSION

This article has reviewed the critical role of coastal women in sustainable development, highlighting their significant contributions to social, economic, and ecological aspects. Despite their pivotal role in natural resource management and supporting household livelihoods, coastal women still face major challenges, such as exclusion from decision-making processes, unequal

access to resources, and the burden of a dual workload. With a gender-based approach, it is evident that empowering coastal women can be achieved through capacity building, improved access to technology and capital, and livelihood diversification. Community-based approaches and strengthening social networks are also crucial in enhancing women's positions within society. To achieve inclusive sustainable development, the integration of a gender perspective into public policies is essential. Policies that support women's access to education, training, and economic opportunities will strengthen their contributions to natural resource management and ecosystem restoration. Additionally, recognizing and empowering women through community-based programs has proven to have positive impacts on improving social and economic well-being. Thus, empowering coastal women benefits not only the women themselves but also the overall resilience of coastal communities.

LIMITATION

While this article provides a comprehensive review of the role of coastal women in sustainable development, several limitations must be acknowledged. First, the scope of this research was limited by the available literature, which may not fully represent the diversity of experiences and challenges faced by coastal women in different geographical contexts. Much of the research focuses on specific case studies from regions such as Fiji, Indonesia, and Mexico, which may not be universally applicable to all coastal areas.

Second, the analysis primarily draws on qualitative data, such as case studies and reports from community-based programs, which may be subject to biases inherent in local reporting and researcher perspectives. The lack of quantitative data and statistical analysis limits the ability to generalize the findings to a broader population or draw definitive conclusions about the overall impact of women's empowerment initiatives across diverse coastal communities.

Additionally, the gender-based approach used in the review, while critical for understanding the challenges faced by women, does not fully account for the intersectional factors—such as race, class, and age—that may further complicate the empowerment process. The experiences of women in coastal communities are not homogeneous, and these factors can influence their ability to access resources, participate in decision-making, and benefit from development programs.

Lastly, while the article highlights the importance of policy integration and community-based programs, there is a lack of detailed analysis on the effectiveness of specific policies or programs over time. Future research could benefit from longitudinal studies that track the

impact of empowerment initiatives on women's roles in coastal resource management and the long-term sustainability of these efforts.

These limitations suggest that further research, using a more diverse set of case studies, quantitative methods, and intersectional approaches, is needed to gain a fuller understanding of the challenges and opportunities for empowering coastal women in sustainable development.

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