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A Continental Strategy for Gender Mainstreaming in Conservation of Aquatic Biodiversity and Environmental Management in Africa

Priority Issues and Actions Necessary for Strengthening the
Role of Women in Conservation of Aquatic Biodiversity and
Environmental Management in Africa

Report submitted to the Conserving Aquatic Biodiversity in African Blue Economy Project in the African Union Inter-African Bureau for Animal Resources (AU-IBAR)
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Published by AU-IBAR, Nairobi, Kenya

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EXECUTIVE SUMMARY

Women inclusivity is important for the sustainability of outcomes in aquatic biodiversity conservation and environmental management. Developing strategic measures to enhance the involvement of women is more critical in Africa due to the prevalence of exclusive gender norms that undermine the place and role of women in conservation efforts. There is increased recognition among conservation and development community that women inclusivity would help in achieving sustainable outcomes in aquatic biodiversity conservation and environmental management. However, women inclusivity has not received adequate attention in aquatic conservation projects due to limited efforts in gender mainstreaming in the interventions. The report presents the findings of a literature review, expert workshop and virtual surveys on women inclusivity in aquatic biodiversity conservation and environmental management. Findings show that women inclusivity has relevance for conserving aquatic biodiversity due to their limited access to resources and decision-making processes, the prevalence of constraining gender norms, and the importance of gender-specific knowledge. Increased attention to reducing the constraining gender norms, gendered roles and relations that limit women's access to technical, managerial, and leadership capacities will enhance women's inclusivity.

The following priority areas are identified for mainstreaming gender in aquatic biodiversity conservation and environmental management:

- a. Priority area one: Capacity development and empowerment
- b. Priority area two: Communication and stakeholder engagement
- c. Priority area three: Policy reform
- d. Priority area four: Research and innovation

TABLE OF CONTENTS

EXECUTIVE SUMMARY	iii
ACRONYMS AND ABBREVIATIONS	vi
1. INTRODUCTION	1
1.1 Rationale	2
2. THE PROCESS OF FORMULATION	3
2.1 Expert stakeholder consultative workshop	3
2.2 Desk studies	3
2.3 Virtual survey	4
3. KEY FINDINGS	4
3.1 Issues and challenges for women inclusion in aquatic biodiversity conservation and environmental management	4
3.2 Opportunities for women inclusion in aquatic biodiversity conservation and environmental management	6
3.3 Women inclusion in aquatic biodiversity conservation and environmental management in Africa – Successes, Challenges and Lessons	9
4. PRIORITY AREAS AND ACTION POINTS FOR WOMEN INCLUSION IN AQUATIC BIODIVERSITY CONSERVATION AND ENVIRONMENTAL MANAGEMENT	11
4.1. Priority area one: Capacity development and empowerment	11
4.2. Priority area two: Communication and stakeholder engagement	11
4.3 Priority area three: Policy reform	12
4.4 Priority area four: Research and innovation	12
5. GUIDELINES FOR WOMEN INCLUSIVITY IN AQUATIC BIODIVERSITY CONSERVATION AND ENVIRONMENTAL MANAGEMENT	13
5.1 Key guidelines for gender-responsive strategies in aquatic biodiversity conservation and environmental management:	13
5.2 Mechanisms for piloting the guidelines	15
6. CONCLUSION	15

ACRONYMS AND ABBREVIATIONS

AFMESI	African Marine Environment Sustainability Initiative
AU	African Union
AU-IBAR	African Union Inter-African Bureau for Animal Resources
AUDA-NEPAD	The African Union Development Agency- New Partnership for Africa's Development
COMESA	Common Market for Eastern and Southern Africa
COMRED	Coastal and Marine Resources Development
CORDIO	Coastal Oceans Research and Development – Indian Ocean
DAA	Development Action Association
ECOWAS	Economic Community of West African States
FAO	Food and Agriculture Organization of the United Nations
GIZ	German Corporation for International Cooperation GmbH
IFAW	The International Fund for Animal Welfare
IFRC	International Federation of Red Cross
KES	Kenya Fisheries Service
KMFRI	Kenya Marine and Fisheries Research Institute
MAAIF	Ministry of Agriculture, Animal, Industry and Fisheries
PES	Payment for Ecosystem Services
PCRM	Regional Partnership for the Conservation
SeyCCAT	Seychelles Conservation and Climate Adaptation Trust
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
USAID	The United States Agency for International Development
WIMOSA	Western Indian Ocean Marine Science Association
WHO	World Health Organization
WOAH	World Organization for Animal Health
WWF	World Wide Fund for Nature
ZaSCI	Zanzibar Seaweed Cluster Initiative

I. INTRODUCTION

Aquatic resources contribute to income and livelihoods for several rural communities in Africa and elsewhere (Muringai et al., 2021). Estimates show that 61 million people globally engage in the primary sector of capture fisheries and aquaculture (FAO, 2021a). However, the potential of aquatic resources for livelihoods improvement is threatened by the high rate of degradation and loss of aquatic biodiversity, attributed to overexploitation and unsustainable practices in aquatic environments (e.g. Numbere & Maduike, 2022). The degradation of aquatic resources affects the day to day lives of resource dependent communities due to loss of opportunities for income, livelihoods and entrepreneurship (Iyiola et al., 2022). This situation persisted regardless of the increased interest in blue economy as a means to conserve aquatic resources, reducing the environmental risks, and improving the wellbeing and equity of communities (Okafor-Yarwood, 2020).

Women are central to the efforts towards blue economy due to their frequent interactions with aquatic environments in their daily economic activities and also in their efforts to meet the food and nutrition requirements of their households (Aregu et al., 2019). For instance, women play crucial roles as environmental stewards in their communities such as through adoption of practices that reduce degradation of resources and prevent the negative impact of climate change (Akinsemolu, & Olukoya, 2020). However, women face constraints in accessing resources and engaging in decision-making processes due to exclusive gender norms and social relations (Aregu et al., 2019). As well, women are rarely involved in problem identification and problem solving regarding aquatic biodiversity conservation in Africa. The inequality in opportunities and participation has undermined women's contributions as agents of positive change in aquatic biodiversity conservation and beyond (Armitage et al., 2020).

Initiatives such as afforestation and awareness creation on the need to conserve aquatic biodiversity and managing the environment have been underway (Iyiola et al., 2022). For instance, the realization of the interlinkages between ecological and social issues in aquatic biodiversity conservation has led to the development of holistic approaches such as the One Health approach. Such approaches aim at addressing the challenges in biodiversity conservation, environmental management, public health, and animal health sectors in a harmonized manner and with due consideration of the interlinkages among the different components. For that reason, gender equality and women's empowerment were highlighted as an integral part of the design and implementation of the approach in line with the UN 2030 Agenda for sustainable development (FAO, UNEP, WHO, WOA, 2022).

Past studies in aquatic biodiversity conservation and environmental management focused on the ecological aspects (e.g. de Moor & Day, 2013; Mitchell, 2013; Dallas et al., 2014; Farrag et al., 2019). Some studies were made in analyzing gender issues in the fisheries value chains in Africa (Girei et al., 2019; Odhon et al., 2020). However, gender aspects have not received adequate attention in the field. In fact, research and development in aquatic biodiversity conservation rarely attempted to understand women's opportunities, challenges and experiences in the initiatives and in implementing gender-responsive activities (Armitage et al., 2020). It has emerged that initiatives which do not take the gender norms, women's agency, and local structures which define access to and control over resources into consideration may end up exacerbating

the existing gender inequalities (Witinok-Huber et al., 2021).

Thus, understanding opportunities and constraints for women's successful engagement in aquatic biodiversity conservation and management is critical for designing and implementing sound policies and practices supporting blue economy. Against this background, the present study aims at examining the opportunities, challenges, lessons and priority areas for women inclusivity in the aquatic biodiversity conservation and environmental management.

1.1 Rationale

Building resilience in aquatic biodiversity and environmental management depends on enabling equitable benefit sharing among diverse resource users (Pelletier et al., 2020). Women's livelihood activities have been underestimated and remain 'invisible' regardless of their relevance towards achieving food security and nutrition improvements (UN Women, 2021a). The norms and beliefs shaping what counted as labor tend to disfavor women by excluding and undervaluing their contributions and legitimacy (McDougall et al., 2021). Oftentimes, opportunities in aquatic biodiversity conservation and environmental management are not equally accessible among men and women. High value opportunities and areas with high potential for economic gains are usually male dominated. Yet, women earn their livelihoods from low value opportunities in areas with high resource degradation. For instance, a study in Kenya found that overfished fisheries retain traders with low education, capital, and savings – often women; whereas sustainable stocks favour the opposite characteristics, and often men (McClanahan & Abunge, 2017).

Efforts in aquatic biodiversity conservation and environmental management that fail to recognize the interplay between gender norms and women's day to day livelihood activities may further aggravate gender inequality (Muigua, 2021). Women have limited access to resources, knowledge and information for engaging in biodiversity conservation and environmental management in a meaningful manner. Factors such as women's low literacy level, and the inadequacy of gender-responsive approaches in capacity development initiatives contribute to low participation of women. However, there is increased realization on the important role women's organizations and community groups play as platforms for building women's technical, managerial, and leadership capacities and in improving women's access to and control over resources (Huyer et al., 2021). This situation indicates the urgency of inclusiveness and equitable distribution of opportunities and for checking constraining gender norms for women's engagement in aquatic biodiversity conservation and environmental management (UNEP, 2020).

The policy framework at continental level shows progress in promoting gender equality and women's empowerment in agriculture and natural resources management. The Comprehensive African Agriculture Development Programme (CAADP) framework underlined the entrepreneurial role of women in Africa and called for mechanisms for improving their access to information and market infrastructure supporting women's active participation in rural development (AU, 2003). The African Union Strategy for Gender Equality and Women's Empowerment (2018-2028) and the Agenda 2063 also set a goal to achieve full gender equality in all spheres of life through empowering women and addressing violence and discrimination against women and girls (AU, 2015, 2018; AU-NEPAD, 2022). These policy frameworks can be translated into practical actions by putting in place gender strategies across different sectors including conservation

of biodiversity and environmental management.

The AU-IBAR led the development of the Africa Blue Economy Strategy (ABES) for guiding an inclusive and sustainable blue economy that contributes to Africa's transformation and growth (AU-IBAR, 2019). The strategy aims at ensuring sustainable social, economic, environmental and equitable outcomes and human rights whilst safeguarding natural capital and blue investment, among others. Recognizing the importance of gender inclusivity in the sustainable use and management of aquatic resources, the ABES prioritizes the empowerment of women and youth in fisheries and aquaculture in order to take full advantage for blue growth. Furthermore, the crucial role that women play in the sustainable use and conservation of aquatic resources towards the development of the fisheries sector is also echoed in the Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa (PFRS) document which was adopted by the 23rd summit of African Heads of States and Governments in Malabo, Equatorial Guinea, in June 2014. In this document which was adopted to create a conducive and enabling environment for the fisheries sector in Africa to create equitable, social and economic development, Gender and Youth was highlighted as a cross-cutting issue to be addressed.

Achievement of these policy goals call for actions to strengthen women's inclusivity in aquatic biodiversity conservation and management. This can be partly addressed by putting in place a gender strategy outlining the priority issues, challenges and opportunities for increasing women's inclusivity in aquatic biodiversity conservation and environmental management. With this rationale, this strategy provides guidance on mainstreaming gender in support of the continental blue economy strategy.

2. THE PROCESS OF FORMULATION

The study involved expert consultative workshop, literature review and virtual surveys to gather data on the extent of gender mainstreaming in aquatic biodiversity conservation and environmental management in Africa.

2.1 *Expert stakeholder consultative workshop*

An expert consultative workshop which convened 28 participants - representing various African Union member states, Regional Seas Conventions, Regional Economic Communities, Non-state actors, Academic institutions, independent consultants and technical partners was held in Kenya from 05-07 October 2022. At the workshop, the experts deliberated and summarized key issues and actions for enhancing the role of women in aquatic biodiversity and environmental management in Africa. The outputs of the workshop were harmonized with the information obtained from the literature review and virtual surveys.

2.2 *Desk studies*

Subsequently, a literature review was conducted based on published literature on how different initiatives attempted to enhance women inclusivity for increased impact of the initiatives in improving the ecological and socio-cultural contexts. Scientific databases such as science direct and google scholar were accessed to synthesize the recent scientific evidence on women inclusivity in initiatives towards sustainable outcomes in aquatic biodiversity conservation and environmental management. The review also applied a gender

lens on the project documents, reports, publications, and communication materials of the initiatives with the goal of identifying opportunities, challenges, and lessons for enhancing women inclusivity. Repositories of key organizations working on aquatic biodiversity conservation and environmental management such as the Food and Agriculture Organization of the United Nations (FAO), United Nations Development Programme (UNDP), Nature Conservancy, and the Conservation International were also consulted to gather information on gender issues in aquatic biodiversity conservation and environmental management. The key achievements, challenges, opportunities, and lessons learned from past initiatives on women inclusivity in aquatic biodiversity conservation and environmental management were documented.

2.3 *Virtual survey*

The desk review was supplemented with virtual surveys. For the virtual survey, purposive sampling technique was employed to identify participants with first-hand experience on the aquatic biodiversity conservation and environmental conservation projects in different regions of Africa. Semi-structured questionnaires with open and close-ended questions were used to gather data from 15 key informants using survey monkey, a virtual platform. The expert workshop and the virtual surveys focused on opportunities, challenges, and priority areas for women inclusivity in the aquatic biodiversity conservation and environmental conservation projects. The data from literature review, virtual survey, and expert workshop were synthesized based on key themes such as opportunity, challenges and lessons for aquatic biodiversity conservation and environmental conservation projects.

3. KEY FINDINGS

3.1 *Issues and challenges for women inclusion in aquatic biodiversity conservation and environmental management*

3.1.1 ***Constraints related to gender division of labor***

Gender norms often impose restrictions on women's mobilities, limiting their access to aquatic resources and related livelihood activities. Gender norms assign women roles and responsibilities in undertaking domestic chores and in ensuring the overall food and nutrition security of their households. For instance, the roles of women in undertaking domestic chores, child care, and supporting the sick and the elderly in the community may consume their time and labor. Women's role in childcare and guiding children also provides them the opportunity to pass their knowledge and practices to their children. Women's roles have been recognized mainly in processing and marketing activities of aquatic products but not in decision-making and leadership roles as they have little or no access to decision-making processes (FAO, 2019). For instance, women in Tanzania got little representation and management in mangrove management regardless of their interest in engaging in employment in the management and protection of mangroves (Gullström, 2021). Gender norms that assign women productive and reproductive roles to reproductive work and household duties have contributed to low savings of women to engage in business and entrepreneurship (Rajaratnam et al., 2020).

3.1.2 Inequalities in accessing resources and benefits

Access to aquatic resources has been gendered, and women have lower access to aquatic and environmental resources compared to men in Africa and elsewhere. Women often have low access to productive resources, profitable markets, and high value fish attributed to the lack of adequate gender consideration in the policies and programs (Fröcklin et al., 2013). In addition, minimal efforts have been done in understanding the gender-specific constraints faced by women fish traders, and gearing support towards enhancing their efficiency of operations (UNCTAD, 2014). As well, the rights, access, and control over resources have been ignored (WWF, 2012; Randrianantoandro et al., 2022).

Women's limited access to the resources could emanate from social norms that influence consumption patterns and male dominance in decision-making processes over aquatic resources (e.g. fish harvests), productive assets and income (FAO, 2019). The rights of women in accessing aquatic resources such as seagrass meadows and wetlands often reveal insecurity (UNEP, 2020). Such constraints in turn contributed to women's low access to aquatic resources (Baker-Médard, 2017). Gender norms coupled with women's workload also negatively influence women's access to resources, technology, and information on aquatic biodiversity conservation (Randrianantoandro et al., 2022).

Gender discrimination in accessing resources could have limited the opportunities to engage women in developing gender-responsive technologies and innovations for reducing strategies for post-harvest losses and wastages of aquatic products, among others (Cole et al., 2018; Randrianantoandro et al., 2022). It has been observed that engaging community in conservation initiatives may not necessarily mean engagement and representation of diverse interests and groups (Baker-Médard, 2017). Besides, the fact that women might not benefit from conservation calls for a more meaningful engagement of women in aquatic ecosystem and environmental conservation (James et al., 2021).

3.1.3 Participation in decision making processes

Gender equality and women's empowerment have been central to building resilience due to the relevance of women's traditional and local ecological knowledge in management strategies (UNEP, 2020). Women's understanding of the environment and their role as custodians of traditional knowledge could have relevance in co-creation of resilience and adaptation strategies in aquatic biodiversity conservation and environmental management (FAO & ARC, 2021). Women engage in inshore fishing whereas men engage in coastal and offshore fishing, indicating the relevance of incorporating women's knowledge in conservation initiatives (James et al., 2021). Women interact with the environment more than men, implying the importance of consideration of women's knowledge and their perspectives in the valuing of resources in conservation initiatives.

In addition, gender norms often define what men and women should do, and contribute to underrepresentation of women in decision making processes (Baker-Médard, 2017). Women tend to prefer using aquatic resources that are in close distance from their residences or resources suitable to use. For instance, a study in Senegal found that women's access to estuarine and mangrove areas had critical importance for women's engagement in harvesting and using of crustaceans such as cymbium, oysters, and shrimps (Ababouch & Fipi, 2015). In the same vein, women in Zambia engaged in seasonal

fishing using baskets and in shallow waters unlike men, attributed to women's roles in domestic chores and child care and their fear of fishing in deeper waters (Cole et al., 2015). These cases indicated that women's access to aquatic and environmental resources has been influenced by closeness to home and shallowness of water (De la Torre-Castro et al., 2017). Low access to diverse aquatic and environmental resources in turn could have an influence on women's aspirations of seaweed farming and collection of invertebrates, thereby influencing their opportunities for innovation and entrepreneurship.

3.1.4 Women's vulnerability to shocks and gender-based violence

Women have been disproportionately vulnerable to environmental risks and disasters and gender-based violence amid degradation of aquatic and environmental resources (IFRC & UNICEF, 2021; UN Women, 2021a). For instance, women and girls have increased vulnerability to gender-based violence in the fisheries sector attributed to structural constraints and harmful social norms (Siles et al., 2019). In this regard, the implementation of a gender-responsive and rights based One Health Action Plans could enhance the role of women in building resilience in aquatic biodiversity conservation and environmental management (Women4Biodiversity, 2021).

The need for women's inclusion in building resilience has been recognized among aquatic resource management stakeholders (UN Women, 2021a, b). The decline in aquatic resources increase women's vulnerability to engaging in sexual exploitation for accessing fish or other aquatic resources. Additionally, opportunities exist in promoting equity in gender integration such as respecting the rights of women and vulnerable groups, and bringing them at the forefront of conservation initiatives. In this regard, providing women platforms to influence decision-making process could strengthen their capacities in leadership and decision-making, and lead to positive outcomes in gender equality and women's empowerment (de Siqueira et al., 2021).

Further, infrastructure development in aquatic ecosystems in Africa revealed little gender consideration. This may aggravate gender inequality and threaten the livelihoods of women. For instance, the investment in the Kribi Port in Cameroon has threatened the livelihoods of coastal communities, biodiversity loss, and fragmentation of ecosystems (Okafor-Yarwood et al., 2020). The infrastructure development reduced the access to aquatic ecosystems such as fishing grounds among the coastal communities. In such situations, women become disproportionately vulnerable to loss of livelihoods due to their dependence on low-value aquatic ecosystems. Such cases indicate the opportunities for promoting gender-sensitive infrastructures in aquatic biodiversity conservation and environmental management.

3.2 Opportunities for women inclusion in aquatic biodiversity conservation and environmental management

The study revealed that opportunities for enhancing the role of women in aquatic biodiversity conservation and environmental management in Africa are associated with: 1) transforming gender norms and sustaining women's livelihoods, 2) increasing women's access to aquatic and environmental resources, 3) including women and integrating gender-specific knowledge in building resilience in aquatic biodiversity conservation and environmental management, and 4) building women's technical, managerial, and leadership capacities.

3.2.1 Transforming gender norms and sustaining women's livelihoods

Diverse economic opportunities exist for enhancing livelihoods of women in fisheries and coastal wetlands including seagrasses and mangroves. Women interact with aquatic resources for their income and livelihoods in their daily lives. For example, women engage in fishing, aquaculture development, post-harvest management and processing of fish and seafood, seaweed farming and invertebrate gleaning, tourism and services, among others (Nagoli et al., 2018). Women play important roles in the small-scale fisheries sector through direct and indirect fishing activities (i.e. inshore gleaning, maintenance of nets, preparing fish fillets, trading fish and fish products), and through the roles assigned to them at the household and community levels (Minnaar, 2022).

Women could have crucial roles in exploring solutions as well as transferring good practices between generations. Thus, understanding gender norms which act as a barrier to women at different levels could be a stepping stone for stimulating collective actions towards sustainable blue economy in Africa. Once more, inclusive decision-making processes, and active participation of women and marginalized groups in decision-making processes coupled with capacity development at all levels has relevance for transforming gender norms in aquatic biodiversity conservation and environmental management.

3.2.2 Increased women's access to aquatic and environmental resources

Opportunities exist in promoting equitable access to resources among men and women, creating an enabling environment for women engagement and entrepreneurship in developing strategies, technologies, and innovations supporting aquatic ecosystem conservation. Promotion of inclusive and human-rights approaches that put gender equality at the center would help in sustaining the outcomes of aquatic conservation and environmental management.

3.2.3 Women inclusion in building resilience in aquatic biodiversity conservation and environmental management

Opportunities exist in learning the experiences of women in aquatic biodiversity conservation, and in promoting inclusiveness in resilience building. There is increased realization of the importance of building resilience to risks and addressing underlying vulnerabilities as a unifying goal for gender, climate change, disaster management, and resilient development practitioners at all levels (UN Women, 2021a, b). For instance, women have contributed to wetlands conservation and building resilience in the Achwa river catchment, Northern Uganda by using their indigenous knowledge in sustainably using wetland resources and engaging in low investment eco-enterprise such as craft making from papyrus and wood (CARE Uganda & UNEP, 2020). Such cases underline the relevance of preventing the loss or underuse of women's knowledge and experiences. Opportunities in building resilience in aquatic biodiversity conservation and environmental management involve the transformation of gender inequalities for building resilience in aquatic biodiversity conservation and environmental management.

Additionally, women's stewardship practices have relevance in aquatic biodiversity conservation and environmental management. For instance, women's engagement in less destructive economic activities such as seaweed farming and in reduction of post-harvest losses have relevance in the sustainable conservation of aquatic resources and environmental management. Women's role in processing of fish and fish products has relevance in ensuring safety and the quality of the standards of the produce (UN Women, 2021a, b). Yet

again, gender-specific knowledge could be associated with one's frequent interactions with the resources and engagement in socio-cultural activities (Pearson et al., 2019; Nyangoko et al., 2020).

The depth of men's or women's knowledge about aquatic biodiversity conservation could also depend on the accessibility and the livelihood activities of individuals or communities (Mensah et al., 2017). However, women's knowledge and their critical role in knowledge transfer has been undervalued and got little recognition in policies and practices. This situation indicates the need for adoption of intersectional approaches in policies and practices at local level for building on relevant gender-specific knowledge.

3.2.4 Building women's technical, managerial, and leadership capacities in aquatic biodiversity conservation

Engaging women in collective action such as group formation and mobilizing social capital towards common goals in aquatic conservation and environmental management helps for increasing women's inclusivity. To name a few, engagement in group activities help women share information and exchange knowledge, and also increase their access to credits, trainings, and strengthening their overall capacities. For example, women engaging in collective action had increased access to resources and were more resilient to climatic shocks in Northern Ghana (Dapilah et al., 2020). These could help women to make their voices heard and enhance their negotiating power and motivate women towards entrepreneurship and networking (Setini et al, 2020).

Here, critical actions in assigning women leadership, trainer, and mentorship roles in women groups and networks has relevance for women's empowerment (Siles et al., 2019). Opportunities exist in empowering women with active engagement in decision-making and leadership roles in aquatic biodiversity conservation and environmental management. To mention a few, strengthening the capacities of women has relevance in building their capabilities and agencies as well as paying attention to constraining gender norms and promoting flexible and women-friendly arrangements in capacity development could supporting gender transformative approaches. Efforts geared in building women's leadership and financial management capacities could also play central role in enhancing women's engagement in aquatic biodiversity conservation and environmental management.

Such efforts coupled with promoting women's economic opportunities and asset ownership could support women's empowerment. Opportunities for building women's technical, managerial, and leadership capacities in aquatic biodiversity conservation should go beyond skills development. Experiences from development interventions across Africa revealed that transforming gender norms that limited women's access to capacity development can be more effective with male engagement approaches and working with local formal and informal structures (Hill and Scarborough, 2018). Increased attention to reducing the constraining gender norms, gendered roles and relations that limit women's access technical, managerial, and leadership capacities helps in increasing women's inclusivity.

3.3 Women inclusion in aquatic biodiversity conservation and environmental management in Africa – Successes, Challenges and Lessons

Table 1: Summary of factors influencing women’s inclusivity in aquatic biodiversity conservation and environmental management initiatives and programmes in Africa (Compiled based on literature review, expert workshop and virtual surveys)

Case study	Success factors	Challenges faced	Lessons
Oyster harvesting and wetland conservation, Gambia	<ul style="list-style-type: none"> Collective action among women; Capacity development; Combined economic and ecological efforts; Market demand for Oysters; Women’s ownership of aquatic conservation and environmental management activities; Income and employment opportunities for women, provision of exclusive rights to women in a participatory process, and leadership. 	<ul style="list-style-type: none"> Lack of supportive infrastructure (e.g. electricity, cold storage facility, and processing and marketing area), Poor working conditions; Lack of proper protecting and processing equipment; Labor-intensive activities; Low economic returns; Unsuitable processing and marketing environment; Lack of shellfish sanitation schemes; Inadequate standards to meet international markets; limited alternative livelihoods; limited access to credits and floods. 	<ul style="list-style-type: none"> Engaging women in collective action and capacity development for conserving aquatic biodiversity in turn supports their livelihoods; Empowering women as environmental stewards enhances the prevention of overexploitation of aquatic resources; Investing in women’s domain contributes to aquatic biodiversity conservation; Engaging women in conserving mangroves has relevance in building climate resilience; Holistic approaches which combine capacity development, economic opportunities, and environmental management empower women; Rights-based approaches strengthen the capacity of women in undertaking their responsibilities, and claiming their rights over aquatic and environmental resources.
Mikoko Pamoja, Kenya	<ul style="list-style-type: none"> Active community participation in the project activities; Using local institutions for mobilizing the community; Empowering women with community projects; Transparent benefit sharing mechanism; Increased awareness on conservation; Capacity development; Ownership of local community; Income generation and economic opportunities. 	<ul style="list-style-type: none"> Small size of mangroves; fluctuating Carbon markets; low market demand for Carbon; lack of alternative energy sources; limited diversification of income and livelihoods; illegal harvesting of mangrove poles. 	<ul style="list-style-type: none"> Involving the local community in conservation has importance in developing sense of ownership; Considering gender-specific constraints in interventions is relevant for empowering women; Using local structures helps in awareness creation on aquatic biodiversity conservation.

Case study	Success factors	Challenges faced	Lessons
Seaweed farming in Zanzibar	<ul style="list-style-type: none"> Market demand for seaweeds; Market value; Women's increased income and employment; Opportunity to engage in entrepreneurship 	<ul style="list-style-type: none"> Little attention to gender consideration in policies and practices; poor women representation; Low payments; Labor-intensive activities; Increased workload on women; Poor regulatory systems; Open access situation and unprotected tenure rights; Lack of gender-responsive policies; Low level of policy implementation; low access to women-friendly technologies and innovations. 	<ul style="list-style-type: none"> Women inclusion and representation in policies and practices is of critical importance in aquatic conservation and environmental management; Integrating women's interests, gender-specific knowledge, and experiences enhances the effectiveness of conservation initiatives; Paying attention to women's domains in aquatic ecosystems helps in development of gender-responsive policies and programs; Enhancing Gender equality and women's empowerment in conservation activities requires integrated approaches in strengthening women's capacity development (technical, financial, leadership skills); Understanding gender norms and social dynamics is crucial for effectively mainstreaming gender in aquatic biodiversity conservation and environmental management.
Fish trade and women	<ul style="list-style-type: none"> Women's familiarity to fish trade; opportunities for entrepreneurship; Women fish trader's informal networks; local knowledge in post-harvest management and fish trade. 	<ul style="list-style-type: none"> Constraining gender norms; Low level of business competitiveness and profitability; Poorly protected rights to access fish; illegal and unregulated fishing activities. 	<ul style="list-style-type: none"> Integrated approaches such as access to finance and capacity development empower women fish traders; Recognizing the value/significance of informal fish trade promotes the protection of women's livelihoods; Identifying women's networks and operations is key for properly engaging them in aquatic biodiversity conservation activities; Investing in infrastructure for supporting women's engagement in the fish value chain empower their participation in conservation activities, and reduce exposure to gender-based violence.

4. PRIORITY AREAS AND ACTION POINTS FOR WOMEN INCLUSION IN AQUATIC BIODIVERSITY CONSERVATION AND ENVIRONMENTAL MANAGEMENT

The study identified the following priority areas and action points for enhancing women inclusivity in aquatic biodiversity conservation and environmental management:

4.1. *Priority area one: Capacity development and empowerment*

Objective: To promote the use of rights-based approaches in strengthening the capacity of women in undertaking their responsibilities, and claiming their rights over aquatic and environmental resources.

The expected outcome: Women are equipped with the required skills, knowledge, information, rights over resources to effectively undertake leadership roles in aquatic biodiversity conservation and environmental management.

Strategic actions / Strategies:

- a. Undertake human capacity development interventions to strengthen women's inclusion in conservation of aquatic biodiversity and environmental management (this would include organization of training workshops for identified local communities, leadership trainings, conflict management and resolution, strategic planning, innovation and technology, digital tools, digital literacy, financial literacy).
- b. Promote women's equal access to resources for identified local communities to address the gender inequalities in accessing resources and benefits in aquatic value chains (includes access to finance, group formation, collective action, changing constraining gender norms and access to inputs)
- c. Support capacity building in gender mainstreaming among institutions to implement the strategies for increased women inclusivity in programmes and interventions (includes experts working in aquatic biodiversity conservation and environmental management who may not be equipped with the required knowledge and skills to implement gender mainstreaming strategies)

4.2. *Priority area two: Communication and stakeholder engagement*

Objective: To build engagement on gender equality and women's empowerment in aquatic biodiversity conservation and environmental management through gender-responsive communication.

The expected outcome: Increased use of gender-responsive communication for better awareness on gender-responsive and rights-based approaches among stakeholders in aquatic biodiversity conservation and environmental management, and enhanced recognition of women's knowledge and skills in aquatic biodiversity conservation and environmental management.

Strategic actions:

- a. Promote gender-responsive communication strategies to facilitate community engagement on gender equality and women's empowerment in aquatic biodiversity conservation and environmental management (includes employing the use of mass media to engage society on aquatic conservation and environmental management related issues, taking into consideration cultural settings, e.g., using local actors/ drummers / influential community leaders or members/ religious institutions; and identifying community champions/ influencers)
- b. Establish a gender working group on aquatic biodiversity conservation and environmental management to enhance: creation of databases and platform for data sharing; monitoring and evaluation of gender mainstreaming; informing policies at different levels.
- c. Develop instruments for involvement of private sector in supporting gender inclusivity in aquatic biodiversity conservation and environmental management.
- d. Put in place mechanisms for stakeholder and consultative engagements for increased implementation and ownership of policy measures (such as Knowledge sharing/Experience sharing).

4.3 Priority area three: Policy reform

Objective: To develop and operationalize evidence-based gender equality and women's empowerment policies and programs.

Expected outcome: Gender analysis and gender budgeting conducted to identify gender issues to be emphasized in the design, formulation, implementation, and monitoring of policies relevant for aquatic biodiversity conservation and environmental management.

Strategic actions:

- a. Support the development of gender-responsive policies and programs coupled with adequate institutional and financial support helps to narrow the gender inequalities in aquatic biodiversity conservation and environmental management.
- b. Domesticating gender-responsive international protocols/policies in national laws – alignment with national level policies; legal frameworks, harmonize relevant policies across different levels.
- c. Support the strengthening of institutions and allocation of resources for policy adaptation and implementation.

4.4 Priority area four: Research and innovation

Objective: To strengthen the active participation of women in research and innovation systems in aquatic biodiversity conservation and environmental management.

The expected outcome: Enhanced participation of women in research and innovation teams for increased inclusion of women's knowledge and experiences in research and innovation, and gender-responsiveness of research and innovation in aquatic biodiversity conservation and environmental management.

Strategic actions:

- a. Support gender-responsive research and innovation approaches for realizing active engagement of women in the conservation efforts (this involves collection of sex disaggregated data to increase the visibility and values of women's contributions, women-specific constraints, and women-friendly innovations and technologies).
- b. Involve women in research and innovation and support their engagement in a holistic approach to integrate women's gender-specific knowledge in the research and innovation process (includes incentivising women's activities, such as allocating specialized funding opportunities on gender research, and providing entrepreneurship opportunities for women).
- c. Enhance value addition and competitiveness to reduce post-harvest losses through the development of "waste to wealth" activities and provide opportunities to involve them in environmentally and sustainable social-economic activities.
- d. Identify ways of creating decent jobs for women in aquatic biodiversity conservation and environmental management (Includes the provision of organisation and support for women – social capital development; provision of child care facilities to support working women with children. Supporting interventions that help women excel in their careers and engagements has importance for gender equality and women's empowerment. Capacity development and mentorship programs should go beyond creating equal opportunities in supporting women in breaking the barriers to career development).

5. GUIDELINES FOR WOMEN INCLUSIVITY IN AQUATIC BIODIVERSITY CONSERVATION AND ENVIRONMENTAL MANAGEMENT

Gender equality has central role in sustaining ecological objectives in aquatic biodiversity conservation and environmental management outcomes due to the gendered nature of the constraints in accessing resources, and rights over use and management, among others. Women's inclusivity is central to the sustainability of positive outcomes in aquatic biodiversity conservation and environmental management. The adoption of a gender-responsive approach in aquatic ecosystem conservation and environmental management requires actions which actively seek to achieve gender equality throughout the process of programmes or initiatives development and implementation.

5.1 Key guidelines for gender-responsive strategies in aquatic biodiversity conservation and environmental management:

Policy and institutional framework

- a. Invest in inclusive policy making by applying gender lens and tools for assessing how gender issues are framed in the documents, and how women have been affected by the policies and programs in aquatic biodiversity conservation and environmental management. In this regard, the policies and programs developed for biodiversity conservation and environmental management need to be assessed for the extent of using sex disaggregated data (e.g. gender gap in terms of productivity, time use, infrastructure, access to resources and services) to support gender-responsiveness in impact assessments, policy analyses, and advocacy.

- b. Promote women friendly infrastructures for enhancing women inclusivity in aquatic biodiversity conservation and environmental management. Strengthen role of women in value addition and competitiveness. Reduce women's barriers to excel in their activities through organisation and support (social capital development, child care facilities).
- c. Dedicate budget for gender-related work. Commitment and priority in gender-responsive budgeting is critical for mainstreaming gender in aquatic biodiversity conservation and environmental management. Government's commitment in mobilizing resources and allocating in gender-related activities across relevant ministries and departments helps in designing and implementing activities enhancing women's inclusivity in aquatic biodiversity conservation and environmental management.

Communication and information sharing

- a. Develop awareness and gender-related skills. This includes building women's technical, managerial and leadership capacities, investing in gender awareness among key actors in aquatic biodiversity conservation and environmental management, and promoting gender-specific knowledge for building climate resilience in aquatic ecosystems. Establish partnerships with private sector in capacity development initiatives.
- b. Promoting women leadership in aquatic biodiversity conservation and environmental management. Leadership roles in the subsector revealed male dominance at the different levels. Bringing women to leadership roles in leading research and innovation activities helps in mainstreaming gender in the development of product and services. Improve the flexibility of working conditions for encouraging women taking up leadership roles in ministries relevant for aquatic biodiversity conservation and environmental management.

Data and capacity development

- a. Adopt intersectional approaches that capture key gender dimensions across initiatives. This can be achieved by paying attention to gender division of labor for targeting women effectively, promoting women's increased access to resources and benefits, empowering women in decision-making and controlling of resources, income and assets, and critically examining the local structures (formal and informal) for supporting gender equality in aquatic biodiversity conservation and environmental management.
- b. Promote transformative approaches for addressing gender norms constraining women's access to resources and achieve gender transformation in the long term. Invest time and resources to understand and critically examine the underlying causes of gender inequality. Promote male engagement and community engagement approaches for identifying and addressing the underlying causes of gender inequality.

Monitoring and Evaluation

- a. Monitoring gender issues across the initiatives. Gender issues have dynamic and complex nature due to their embeddedness in the socio-cultural contexts. Monitoring of gender issues helps in capturing the lessons and making required changes in the initiatives. Information gathered during monitoring can be used in reprioritization of the gender issues and allocation of resources.

5.2 Mechanisms for piloting the guidelines

- a. AU member states revealed variation in the extent of policies relevant for gender mainstreaming in the subsectors. Identify those member states that have potential for improvement in gender mainstreaming in aquatic biodiversity conservation and environmental management to support the process of piloting gender mainstreaming in the continent. Some AU members states with potential for piloting gender mainstreaming include Algeria, DRC, Egypt, Ethiopia, Eritrea, Nigeria, Malawi, Mozambique, Senegal, Sudan, and Zambia.
- b. Setup partnership with the relevant ministries and engage in formal and informal discussions with key actors for gender mainstreaming.
- c. Support policy dialogue at national and sub-national levels for identification of specific priority issues and action areas for main streaming specific to the identified countries.
- d. Support development of gender mainstreaming strategies with clear objectives, roles and responsibilities of stakeholders, and workplan development in the identified countries.
- e. Strengthen the gender expertise in the relevant ministries. Gender experts play critical role in awareness creation on gender and the gender mainstreaming strategy.
- f. Monitor the piloting process. Gender indicators have to be developed, measured, and analyzed.
- g. Several NGOs work in aquatic biodiversity conservation and environmental management. Identify NGOs with good track record in aquatic biodiversity conservation but with little consideration on gender equality. Support NGOs to build their capacity in developing a gender strategy and action plan, and development of tools for enhancing women's inclusivity. Focus on women-led NGOs working at grassroots level for increased impact.

6. CONCLUSION

The report presents the findings of a literature review, expert workshop and virtual surveys on women inclusivity in aquatic biodiversity conservation and environmental management. Findings show that women inclusivity has relevance for achieving aquatic biodiversity conservation and environmental management goals, however, the active participation of women is hampered by their limited access to resources and decision-making processes, the prevalence of constraining gender norms, and limited gender-specific information. Women inclusivity has not received adequate attention in aquatic conservation projects due to limited efforts in gender mainstreaming in the interventions. Opportunities for increased women inclusivity in aquatic biodiversity conservation and environmental management include: 1) transforming gender norms and sustaining women's livelihoods, 2) increasing women's access to aquatic environmental resources, 3) including women in building resilience in aquatic biodiversity conservation and environmental management, and 4) building the technical, managerial, and leadership capacities in aquatic biodiversity conservation and environmental management. Challenges for enhancing women inclusivity in aquatic biodiversity conservation and environmental management include limited visibility of women's contribution to the conservation activities, and limited capacity and representation of women in decision-making processes, and lack of adequate gender expertise in the team. Strategic priority issues and actions to reduce constraining gender norms, and understand gendered roles and relations that limit women's access to technical, managerial, and leadership capacities have been outlined in this report.



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