

## Article

# Strengthening Gender Responsiveness of the Green Climate Fund Ecosystem-Based Adaptation Programme in Namibia

Margaret Ndapewa Angula <sup>1,\*</sup>, Immaculate Mogotsi <sup>2</sup>, Selma Lendelvo <sup>3</sup>, Karl Mutani Aribeb <sup>4</sup>, Aina-Maria Iteta <sup>4</sup> and Jessica P. R. Thorn <sup>5,6</sup> 

- <sup>1</sup> Department of Geography, History and Environmental Studies, Faculty of Humanities and Social Sciences, University of Namibia, P/Bag 13301, Pioneerspark, Windhoek 10023, Namibia
- <sup>2</sup> Gender Training and Research Programme, Multi-Disciplinary Research Centre, University of Namibia, P/Bag 13301, Pioneerspark, Windhoek 10023, Namibia; imogotsi@unam.na
- <sup>3</sup> Life Science Division, Multi-Disciplinary Research Centre, University of Namibia, P/Bag 13301, Pioneerspark, Windhoek 10023, Namibia; slendelvo@unam.na
- <sup>4</sup> Environmental Investment Fund of Namibia, P.O. Box 28157, Auas Valley, Windhoek 10018, Namibia; KAribeb@EIF.ORG.NA (K.M.A.); AIteta@eif.org.na (A.-M.I.)
- <sup>5</sup> Department of Environment and Geography, York Institute of Tropical Ecosystems, University of York, Wentworth Way, Heslington, York YO10 5NG, UK; jessica.thorn@york.ac.uk
- <sup>6</sup> African Climate and Development Initiative, Upper Campus, University of Cape Town, Geological Sciences Building Level 6, 13 Library Road, Rondebosch, Cape Town 7700, South Africa
- \* Correspondence: mangula@unam.na or margaret.angula@gmail.com

**Abstract:** Scholars of gender and climate change argue that gender-blind climate change actions could exacerbate existing inequalities and undermine sustained climate change adaptation actions. For this reason, since 2017, the Green Climate Fund placed gender among its key programming prerequisites, making it the first multilateral climate fund to do so worldwide. However, to date, no lessons to inform planned gender-responsive ecosystem-based interventions in Namibia have been drawn from community-based natural resource management. Thus, this paper aims to share key lessons regarding the way in which gender assessment is useful in enhancing equity in an ecosystem-based adaptation programme for the Green Climate Fund. To this end, we conducted in-depth interviews and group discussions in the 14 rural regions of Namibia with 151 participants from 107 community-based natural resource management organisations (73.5:26.5; male:female ratio). The results identified gender imbalances in leadership and decision-making due to intersecting historic inequalities, ethnicity and geography, as well as other socio-cultural factors in local community-based natural resource management institutions. We also identified income disparities and unequal opportunities to diversify livelihoods, gendered differentiated impacts of climate change and meaningful participation in public forums. Overall, the assessment indicates that considering gender analysis at the initiation of a community-based climate change adaptation project is crucial for achieving resilience to climate change, closing the gender gap, building capacity to increase equity and empowering women in resource-dependent environments in Namibia and Sub-Saharan Africa more broadly.

**Keywords:** adaptive capacity; climate change adaptation; community-based natural resource management; community-based tourism; gender responsiveness; Green Climate Fund; nature-based solutions; resilience



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## 1. Introduction

The recent special report of the Intergovernmental Panel on Climate Change (IPCC) 1.5 °C confirms that climate change is a major threat to humanity and urgent action is needed [1]. In Sub-Saharan Africa (SSA), increasing temperatures, evapo-transpiration, variable climate and extreme rainfall could impact rural and urban populations severely. This is particularly the case for agricultural and pastoral communities that are highly reliant on natural resources for water-energy-food security in dryland Namibia [2]. While

ecosystem-based adaptations are advocated by the Convention of Biological Diversity [3] and its promise to initiate a wider systems transformation is increasingly being recognised by academic and government bodies alike at local, national and international levels [4–6], little has been documented concerning lessons that can be gleaned from experiences of incorporating gender responsiveness in existing community-based natural resource management (CBNRM).

Over the last 15 years, the discourse on gender, climate change adaptation and disaster risk reduction (e.g., [7,8]) indicates that climate change causes significant gender-differentiated vulnerabilities and impacts; for example, due to cultural norms which inhibit adaptation, levels of education and inequitable distribution of roles, resources and power [9–15]. Similarly, in Namibia, early studies confirm that the impacts of climate change on agricultural and ecosystem-based livelihoods are gender-differentiated [16]. Angula (2010) [16] argues that the gender assessment of climate adaptation and mitigation requires a diverse group of competent stakeholders rather than a homogenous group in order to draw from varied experiences and backgrounds to develop solutions in the face of uncertainty [9]. Studies emphasise women's agency and ability to cope with climate change impacts [17] and argue that analyses should go beyond perceiving women as passive victims of climate change [18–20]. More recently, gender responsiveness has emerged as a term which refers to paying attention to the unique needs of females, valuing their perspectives, respecting their experiences, understanding developmental differences between women and men and, ultimately, empowering girls and women [21]. It, furthermore, involves engaging men in climate policies aimed at achieving gender equality and equity [22].

Although there is a growing body of research on adaptation to climate change at the local level, there is still insufficient empirical understanding of gendered-differentiated, adaptive strategies to secure livelihoods [18]. Many publicly financed international projects employ gender-disaggregated data as indicators for achieving gender equality. This is problematic since it assumes that women or men are a homogenous category; consequently, it does not address the underlying causes of gender inequality and does not account for other demographic factors (e.g., culture, age, livelihood and gender) that could make men, the youth, the elderly and others more vulnerable than women [9,13].

We studied a GCF-funded project in Namibia as it was the first multilateral climate fund to place gender among its key programming prerequisites [23,24]. That is, in October 2016, the GCF Board adopted the Gender Policy and Action Plan by decision GCF/B.08/19, which was then updated for 2018–2020 [22]. The Gender Policy and Action Plan is complementary to environmental and social safeguard requirements, and emphasises gender responsiveness, rather than gender sensitivity. In other words, it ensures that remedial actions go beyond raising gender awareness and addressing historical gender biases and inequalities. Ultimately, the gender policy was rooted in its mandate of a paradigm shift towards low-emission and climate-resilient pathways in order to maximise the co-benefits of climate and development action. However, in SSA, the few climate-financed projects that have mainstreamed gender into implementation, monitoring or evaluation, have not undertaken an initial gender assessment to understand the context and to ensure equal gendered participation before commencing [25] (see Appendix A for definitions [21,26]).

Understanding the ways in which unequal gender relationships play out in GCF-funded programmes is particularly important in the context of ecosystem-based adaptation and the co-benefits of ecosystem services for mitigation and adaptation (e.g., carbon sequestration and storage, soil and water regulation, flood attenuation and crop production) [27–29]. One example of ecosystem-based adaptation in Namibia is seen through the CBNRM programme involving rural communities. A gender-responsive approach in CBNRM is critical, because the roles and responsibilities of men and women across Namibia are shaped by socio-cultural norms, traditions and, in part, by their involvement in different kinds of activities regarding livelihood and resource utilisation [9,30]. For instance, women from semi-arid areas where non-timber forest products are abundant

are actively involved in forest harvesting. Meanwhile, women in arid areas are actively involved in community tourism. Gender roles, needs and participation in CBNRM are also differentiated. In traditional societies, women are often disinclined to participate in activities that are seen to go against existing traditionally defined roles, most of which can and do present obstacles to participation in climate change adaptation projects. A case study from Kenya illustrates that women's active participation in decision-making and enrolment in activities was hindered because they were represented by their sons [31]. In India, women who were elected to local level institutional governance were represented by their husbands or sons [32]. These examples illustrate that cultural norms and levels of patriarchy limit women's participation in adaptation and developmental activities.

In this paper, we aim to share key lessons regarding the way in which a gender assessment conducted in Namibian rural communities could be useful in developing a gender-responsive, ecosystem-based adaptation project funded by GCF. Our objectives were to:

- assess the gender-differentiated impacts of the effects of climate change on community-based tourism (CBT) in the livelihood-based sector;
- assess the engagement of men and women in the CBNRM sector, their divisions of labour, access, power relations and control of CBT benefits;
- analyse underlying social, economic and political factors that affect the adaptive capacity of men and women and the ways in which they could exacerbate gender inequality; and
- investigate the potential contributions of women and men to ecosystem-based adaptation in order to build resilience to climate change.

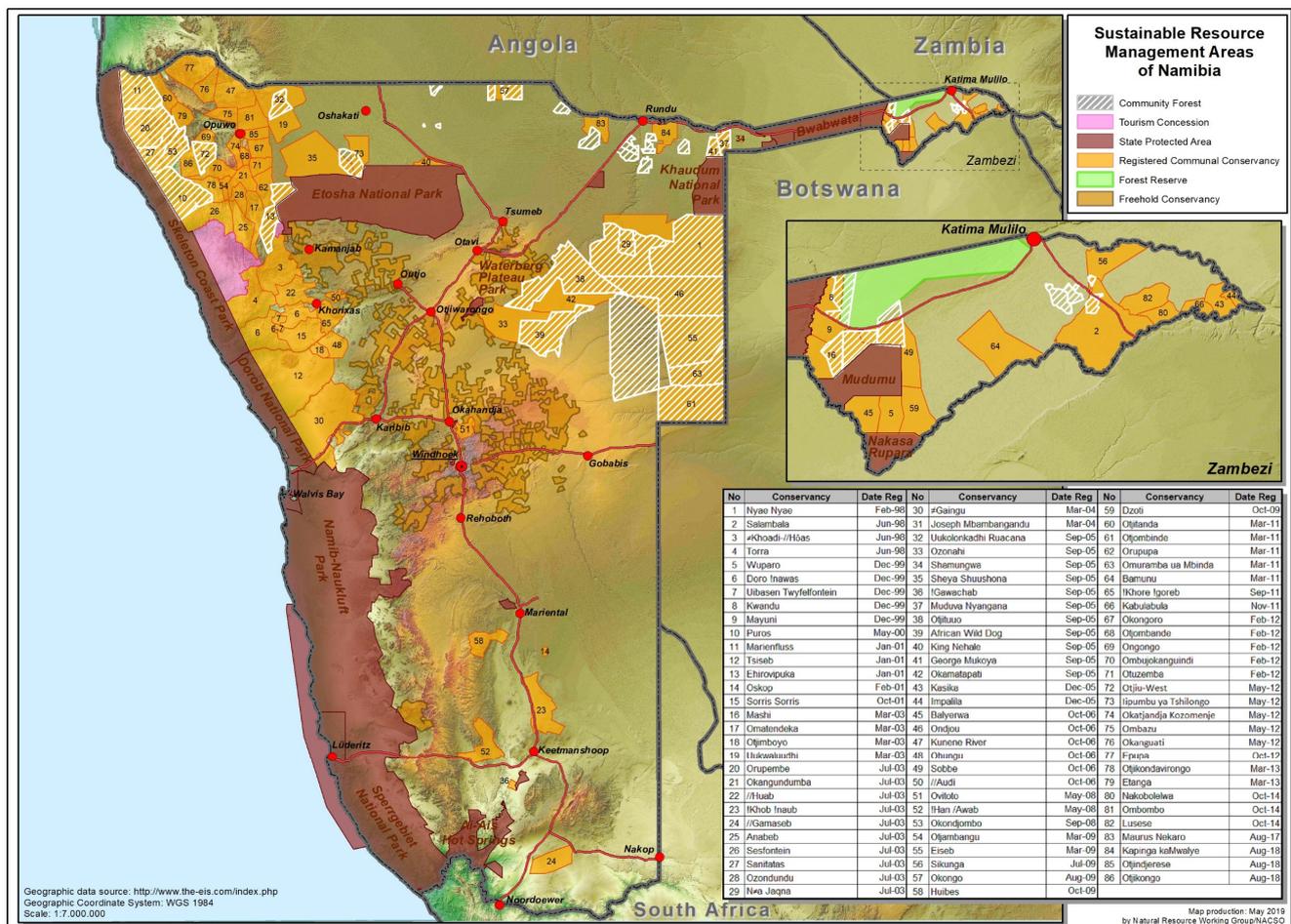
Overall, we show that there has been a shift from gender-sensitivity to gender-responsiveness in the ecosystem-based adaptation to climate change. We hope these insights can assist climate-financed projects and programmes to move away from simple gender awareness towards a more comprehensive integration of gender in project activities [22].

Such results have relevant implications for designing programme interventions in meaningful and practical ways, developing national policies, such as the Namibia's Disaster Risk Management Act, National Climate Change Policy and Strategy and Action Plan for Namibia; national targets to attain the Sustainable Development Goals (SDG) 5 (gender equality) and 13 (climate action), the Sendai Framework, the United Nations Framework Convention on Climate Change Gender Policy, the UN's Women Strategic Plan 2018–2021 and the Beijing Declaration and Platform for Action.

## 2. Materials and Methods

### 2.1. Study Site Description

The study was carried out in all 13 regions of Namibia (see Figure 1). Namibia was selected because rural communities are among the most vulnerable to the impacts of climate change [33]. Furthermore, the GCF funded an ecosystem-based adaptation programme that focused on sustainable harvesting, consumption, equitable access and benefit-sharing of these resources [9]. We focused on CBNRM and community-based tourism through the conservation of biodiversity, since these sectors were identified at the national level as having the greatest potential to diversify livelihoods, generate wider economic and developmental gains and address the adaptation deficit at the local level in rural Namibia [34,35]. Furthermore, tourism and non-timber forest products, as well as non-consumptive benefits of wildlife management offered through CBNRM, are reliant on water, biodiversity and landscapes that are strongly affected by climate change [36]. Nevertheless, the CBNRM sector is characterised by rigid gender roles, resulting in inequitable benefit sharing.



**Figure 1.** A map of Namibia illustrating the distribution of conservancies and community forests which represent the main CBNRM institutions in the country (Source: [37]).

## 2.2. Data Collection

### 2.2.1. Focus-Group-Discussion Workshops

Between March 2017 and December 2017, we conducted regional (sub-national level) focus-group-discussion workshops to ensure the inclusion of people's views at all levels. Consultative workshops offered a platform to elicit diverse worldviews through multi-layered reflections, develop a collective understanding that promoted an open and detailed discussion among participants and generated forms of data distinct from interviews, interactions and observation [38]. Due to the vastness of the country, regions were clustered into five groups. Five two-day focus-group workshops involved 151 participants. Participants represented key stakeholders knowledgeable in CBNRM, representatives of conservancies, community forestry committees, traditional authorities, the tourism sector, women's movements, staff members from the Ministry of Agriculture Water and Land Reform, as well as the Ministry of Environment, Forestry and Tourism, who worked or lived in the study areas (see Table 1).

Consultative discussions covered the following topics: aspects that shaped the nature and implementation of CBNRM initiatives; the ways in which climate change carries gender-differentiated implications concerning roles, needs, rights, priorities, access to and control over resources and decision-making processes; socio-economic, cultural and institutional gaps that prevent men and women from responding and adapting equitably to the impacts of climate change; the influence of ethnicity, income and class on socio-economic relationships and gendered adaptive capacity; ways in which the GCF projects

could either reinforce or reduce the barriers to adaptation caused by gender inequalities; visions of effective and sustainable solutions.

**Table 1.** Namibian regional consultative workshops and the number and gender of participants.

Cluster	Region	Workshop Location	Number of Participants		
			Total	Male	Female
South	Hardap, //Karas	Mariental	17	12	5
Central	Omaheke, Otjozondjupa, Erongo	Otiwarongo	13	10	3
Western	Kunene	Opuwo	38	30	8
North-Central	Oshikoto, Ohangwena, Oshana, Omusati	Ondangwa	26	14	12
North-East	Kavango West, Kavango East, Zambezi	Rundu	57	45	12
<b>Total</b>			<b>151</b>	<b>111 (73.5%)</b>	<b>40 (26.5%)</b>

Cumulatively, the workshop displayed male dominance (74%), although smaller group discussions included female representatives. Attempts were made to have an equal gender balance in participation, and the invitations addressed to the CBNRM management committees explicitly indicated a request for a balanced gender representation. Most workshops were male-dominated, except in the workshop in the north-central regions. The low representation of women could be attributed to the following social factors: women's low representation in community-based institutions, women not being encouraged to attend meetings in the presence of men (especially in the case of the OvaHimba in the Kunene region) or mobility constraints related to the gendered division of labour (e.g., household chores and childcare).

### 2.2.2. In-Depth Interviews with Informants

In July 2017, we conducted 15 in-depth informant interviews with a subset of participants who attended the workshops. Key informants were selected by UNAM researchers, Environmental Investment Fund (EIF) staff members and other consultants that were involved in developing the GCF ecosystem-based adaptation programme for Namibia. Key informants were purposively sampled by targeting individuals who impacted or were impacted by CBNRM institutions in Namibia. Stakeholders included inter alia non-governmental organisations working with conservancies, community-based organisations leaders, chairpersons of conservancies and community forests, community members, Ministry of Environment, Forestry and Tourism staff members, as well as Traditional Authority secretaries and leaders. These in-depth interviews covered the same questions that also formed part of focus-group-workshop discussions (see Appendix B for a list of questions). Each interview lasted 60–80 min. Both the workshops and interviews were conducted mainly in English and the dominant local language in each area, via translators.

### 2.3. Analysis

To understand the existing inequalities in the distribution of responsibilities and power in conservancies and community forests in Namibia regarding climate adaptation, three frameworks were utilised to structure the data collection (i.e., informing the content of the interview schedule) and analyse the outputs of the interviews and focus groups. The Harvard Analytical Framework was employed to frame questions and analyse data related to roles and responsibilities, allocation of resources and productive and socially reproductive work. The Social Relations Approach Framework was useful in assessing

and analysing existing inequalities in the distribution of resources, responsibilities and power [39]. Additionally, the IPCC vulnerability framework was applied to identify the impact (exposure and sensitivity) and adaptive capacity of communities to climate change [9]. Interview and discussion transcripts were analysed by means of thematic analysis, employing a predetermined set of deductive codes grouped into the following main themes: ecological and economic (livelihoods); employment, education and skills (to access opportunities and income); cultural and traditional practices (hindering or promoting agency); institutional and governance (decision-making and participation).

### 3. Results

Overall, patriarchal norms continue to limit the equitable access to, control of and benefit from natural resources and community-based tourism, as well as other ecosystem services. In this context, patriarchy is understood as a socio-political system that is embedded in cultural norms and practices that favour males as the dominant figure in society [40]. As a result, the limitations regarding the potential of ecosystem services in the adaptation of climate change are not only biophysically related, but are also socially induced.

#### 3.1. Gendered Division of Labour in CBNRM Institutions

In Namibia, gendered norms can exclude women from diversifying income sources in ecosystem-based adaptation projects as a means to secure livelihood, and influence the way in which women and men may employ some adaptation strategies over others. This was evidenced in the finding that employment from tourism and natural resource livelihoods were demarcated by a gender division of labour [41,42]. For example, the results show that overall, women were mainly involved in activities around cultural tourism, such as being cultural dance performers, working in crafts, cooking traditional dishes and fulfilling hospitality roles such as launderers, cleaners, waitresses and receptionists in tourism accommodation. On the other hand, men controlled higher-paid activities, such as game driving, trophy hunting, tour guiding, hiking guiding, fish harvesting and timber harvesting. In the north-eastern, western and north-central regions, stakeholders aired their views that “women cannot be game trackers and skinners because there is blood, and women are not comfortable to be near blood” (Rundu workshop participants) or “women are defenceless, they are not brave enough and will run away from wild animals, therefore, cannot be appointed to be game guards” (Opuwo and Ondangwa workshop participants). This suggests that men were still reluctant to accept women’s participation in traditionally male roles as they were perceived to be physically weak or as not having the character to hunt, given the danger associated with trophy hunting. Such male-dominated perceptions inhibit women’s participation in what is considered “men’s work”, while some women endorse it out of fear of cultural sanction.

Beyond roles, the temporal character of labour also differs. Men’s ecosystem-based tourism activities tend to be seasonal during peak tourism seasons, with short-term contracts in lodges, campsites and information offices. Men also acquire work during the construction phases of tourism establishments (e.g., drilling boreholes). Meanwhile, women’s activities are associated with more sustained permanent employment [43,44]. The number of working hours also differ. In this way, often the participation of women in CBNRM activities beyond the household and village is limited or absent.

According to respondents, the gender division of labour is more rigid in rural communities, where women are expected to stay at home, look after children, the elderly and the sick, as well as clean, cook or collect water [44]. Meanwhile, men work more often in urban areas. According to [45], most conservancy staff members across Namibia are men (76%) and the proportion of women who were elected as treasurers stands at 43%, while only 13% are elected as chairpersons.

Sometimes, where a vacuum has been created because of male out-migration to urban areas, opportunities emerge for women to take up roles that were traditionally assigned to men. For example, this was found to be the case among the Nama living in

the southern region, where in recent years women have begun serving as advisors to the Traditional Authority, a role that was traditionally reserved for men. Despite some women's involvement in such male traditional roles, we found that very few men ventured into traditional female roles, which may be because these roles have fewer to no financial gains.

Given the opportunities to address gender imbalances while enhancing their adaptive capacity through programmes that fund ecosystem-based adaptation, workshop participants were asked to prioritise livelihood diversification that would earn an income to reduce food insecurities in conservancies and community forestry reserves. The ecosystem-based adaptation and alternative livelihood activities that were prioritised included:

- Non-consumptive tourism activities, such as game viewing, driving and hiking;
- non-timber forest product activities, such as harvesting medicinal plants, basket weaving and beekeeping;
- horticultural production in water-abundant areas, including hydroponics and fog capture (in north-eastern and western Namibia), to contribute to food security; and
- cultural tourism involving "living museums", where people visit and stay in cultural villages, in addition to "landscape tourism" while protecting communities from cultural romanticism and assimilation (e.g., Damara and OvaHimba communities in the Kunene region).

### 3.2. Gender Imbalances in Leadership and Decision-Making

Given that most ecosystem-based adaptation projects recognise the importance of including traditional authorities in project planning and implementation, it is essential to acknowledge and actively counter the way in which such structures can hinder equitable participation in decision-making over community natural resources.

We found that, in general, in conservancies and community forestry committees, women are not equal partners in resource management. This can be explained in part because CBNRM management committees in Namibia are constituted of community members and advisors or councillors from the Traditional Authority [46]. These advisors from the Traditional Authorities are typically men.

On average, of 35% of women were conservancy committee members, while the majority were males. The proportion of women in CBNRM management committees varied by region, with some conservancies having no women in their management committees and others comprising more than the required 50% female representation. In particular, the north-central and southern regions have been more successful than other regions in narrowing the gender gap. For instance, in the north-central regions, 60% of the conservancy committee were women. In Erongo, Otjozondjupa and Omaheke (central regions), there was a 50% female representation in CBNRM committees. This was more than in the western and north-eastern regions, which are generally the strongest in observing traditional values.

In terms of the representation of women in leadership positions in CBNRM committees, females holding leadership roles ranged from 0% (in Ehirovipuka Conservancy) to 67% (in Otjimboyo Conservancy). Notably, there was a female professional hunter in one community in the Otjozondjupa region and 3 of the 7 game guards were female in the same region, while in southern Namibia, there was equal representation in the management committee, but the executive committee positions were dominated by men. For instance, in the Nico-Noord conservancy in the Hardap region, 3 of the 6 executive members were female and 2 were additional members without portfolios and one was a treasurer.

In the north-central, central, and southern regions women were well represented, sometimes serving as advisors in the Traditional Authority; however, this does not automatically translate into women influencing decision-making. At the same time, in other regions where women were reluctant to take up leadership positions, they tended to show a high level of participation in several voluntary community initiatives.

These findings illustrate that adaptive capacity is gender-differentiated and that these contextual nuances need to be understood before any ecosystem-based intervention. It is

likely that women who can re-negotiate their roles in decision-making and develop a range of proactive ecosystem-based management strategies will decrease their risk of exposure.

### *3.3. Gendered-Differentiated Impacts of Climate Change*

Drought, floods and high temperatures were the three main climate hazards reported to increase exposure and vulnerability. The nature of women's and men's economic opportunities within community-based tourism is affected differently by climate change through reduced earnings. Climate risks have the potential to lead to job losses and reduce household income, thereby contributing to the migration of skilled staff members to other areas in search of alternative employment. Climate change has a direct impact on the landscape of an area, resulting in the loss of wildlife species, vegetation and soil, which can also reduce the performance of the tourism industry and, thus, earnings. Climate change can also lead to human-wildlife conflicts due to the growing scarcity of resources. Women become more vulnerable owing to job losses in the tourism sector, caused by limited employment choices at the local level, as well as the fact that women are generally less mobile when seeking employment elsewhere and women generally receive lower wages compared to their male counterparts [43]. When comparing regions, we found that women in western and northeastern Namibia tended to be more vulnerable due to their limited capacity to contribute to making timely decisions at the household and community levels, their low-income earning potential from tourism and their lesser access to information.

### *3.4. Differentiated Gendered Meaningful Participation in Public Forums*

Understanding how existing structures in Namibia hinder or support gender-equitable and inclusive stakeholder engagement and consultations throughout the design and implementation of the ecosystem-based project is central to the success of any climate-financed programme. It was found that persistent patriarchal norms inhibited women's meaningful participation in the decision-making processes of CBNRM institutions.

Namibia's patriarchal governance structure goes back centuries [47]. Historically, in many regions, tradition and religion dictated gendered relationships and entrenched male domination in the structure and leadership of social organisations. In the last century, in Omusati, Oshana, Oshikoto, Ohangwena (north-central regions), Hardap and ǀǀ Karas (southern regions), cultural norms shifted somewhat. That is, the influence from Lutheran and Catholic missionaries relaxed, to a degree, some of the rigid gendered roles and allowed women to attain education and literacy. With Independence in 1990, Namibia saw the introduction of gender equality laws in the Constitution [48].

Despite this progress, we found evidence that patriarchy still continues to affect the meaningful participation of women in community consultations and meetings related to CBNRM. Across all workshops, participation was male-dominated (73.5%). For instance, in workshops in the Kavango West, Kavango East and Zambezi (north-eastern regions), fewer women attended (21%). In these areas, women's participation in local-level governance was often passive and limited to meeting attendance, with little or no input in discussions. Yet, male participants were unaware that structural norms had the potential to inhibit female participation, stating: "No cultural limitations or reasons are discriminating against our women to get work in the tourism sector. They just need to be empowered" (male participant from Rundu workshop). Similarly, in the western and north-eastern regions, cultural norms inhibited women from contributing to discussions in public or in the presence of men. Although the southern regions showed a more gender-balanced representation in their committees, only one female CBNRM committee member of 17 participants attended the workshop. These results highlight the ways in which women's voices and perspectives could be silenced, or left out from prioritising livelihood diversification projects, such as GCF ecosystem-based adaptation projects.

Yet, the level of dominance in patriarchal systems varied across ethnic groups and regions. For instance, in the north-central regions, more women attended (46%) and spoke in community meetings. It emerged from this workshop that "women are more

trustworthy to occupy the treasurer position in the committees, unlike men who are seen to be likely to mismanage funds” (male participant from Ondangwa workshop). On the other hand, in the western region, cultural perceptions emerged as one of the biggest obstacles in obtaining gender equality among the OvaHimba community. Men who did not participate in male-dominated activities were ostracised, as were women who spoke openly in meetings [49].

#### 4. Discussion

Based on a national study conducted in the 14 regions of Namibia, this study contributes to the empirical literature on gender responsiveness to financing in an ecosystem-based adaptation climate. We argue that a gender-responsive approach in any climate change programme or policy is essential from the outset. We therefore suggest three key implications for future climate financing for ecosystem-based adaptation in Namibia: align with existing institutions; build the capacity to support meaningful participation and representation in decision-making processes; engage both men and women of all ages and positions of leadership for men to play other roles in order to challenge cultural norms and to work actively to address gendered divisions of labour.

##### 4.1. *Align Ecosystem-Based Adaptation Governance with Existing CBNRM Institutional Set-Up*

One of the key lessons our assessment offers is that aligning climate adaptation governance with the CBNRM institutional set-up offers an opportunity to ensure equal representation and participation in decision-making and leadership. Namibia currently does not have institutions with a mandate to discuss climate change at regional-level (sub-national levels) and the way this links with other cross-cutting policy targets. Therefore, we recommend that an appropriate platform should be identified to oversee ecosystem-based adaptation at the community and regional level, rather than the setting up of new committees. Employing an existing institutional set-up both at regional (sub-national) and community levels presents a potentially efficient and cost-effective opportunity to integrate climate change adaptation for GCF-accredited entities, such as the Environmental Investment Fund, while achieving the decentralisation of efforts. To this end, some programmes ((i) CDKN (Climate and Development Knowledge Network) Knowledge Brokering Project Namibia and (ii) IDRC funded CLARE (Uptake of Climate Adaptation research results in Africa) Namibia project) are emerging to build capacity and raise an awareness of the ways in which climate change commitments fit in with their existing institutional targets (e.g., rural development); however, these need to be scaled up. Where they are most prominent in Namibia, differentiated levels of patriarchy that influence equitable participation, gender imbalances in leadership and decision-making need to be addressed among local-level institutions. Knowing the level of dominance and the dynamics of patriarchy and its influence on the governance of local institutions is crucial to ensure that not only women, but all participants, distinguished by multiple forms of social differentiation (e.g., ethnicity, age, education, social capital), are meaningfully involved [11].

##### 4.2. *Levels of Participation and Decision-Making Agency*

Increased participation opportunities for women in CBNRM can enhance direct, tangible and intangible benefits [44,50]. Despite the silence on gender representation in the National Policy on CBNRM in Conservancies and Community Forests’ management committees [46], there exists the political commitment from the government to embrace gender equality across all sectors in Namibia. For instance, recent legal reforms in this policy require 50% gender representation in positions of leadership in the governing body of conservancies and community forest reserves that are gazetted as CBNRM institutions [45]. This serves as an example to be replicated in other governance and community-based management structures working on ecosystem-based adaptation programming.

In Namibia, through ecosystem-based adaptation programmes, women can participate as equal partners to men. Where capacity to participate is lacking in terms of the skills

and awareness required, the Gender Action Plan for the GCF ecosystem-based adaptation project specifies the need for men and women to be granted equal opportunities to participate in, and benefit from the fund through the progressive and efficient mainstreaming of gender dimensions, while avoiding, minimising or mitigating the gender-related adverse impact of subprojects [51].

Different approaches to mainstreaming participation can enhance and reinforce one another [44]. It is indicated that effective representation could be enhanced among women if their satisfaction levels with conservancy benefits were high. Participation also increases where household benefits are tangible and members are satisfied with conservancy efforts. Moreover, the equitable and active participation of women in local institutions is enhanced through increasing the meeting attendance by females or women being voted into leadership positions. This allows women to be part of a collective voice, leading to the strengthening of common identities and local democracy [9].

Furthermore, local ecosystem-based adaptation policies and planning should create conditions that foster autonomous adaptation at the household level, and provide public support for planned adaptation when autonomous adaptation is insufficient.

Our findings resonate with other literature that shows that the gendered nature of everyday realities and experiences of women and men tend to be overlooked when it comes to developing and strengthening the adaptive capacities of local communities [13]. Arora-Jonsson [52] warns that this oversight could lead to the incorrect formulating of gender issues in policy development. There is a tendency to portray women as vulnerable, weak, poor and socially isolated, rather than seeing them as negotiating and dealing regularly with different kinds of change in their lives [53], particularly in ecosystem-based adaptations. Ramchurjee [54] alluded to the entry points for women's employment and opportunities for creating self-employment in small- and medium-sized, income-generating activities, thus creating paths towards the elimination of poverty for women and local communities.

#### *4.3. Diversification of Livelihoods Should Account for Gendered Divisions of Labour*

Climate financing should consider the way in which ecosystem-based adaptation and livelihood diversification options intersect with gendered divisions of labour and other forms of differentiation. In Namibia, we found that, because of the high economic value associated with male roles, there is a tendency for the development and policy interventions to encourage women to venture into what is perceived as traditionally male roles as a means to equalise income levels with those of men. However, such interventions can have negative impacts by overburdening women if their traditional roles remain unchanged. Thus, we contend that climate-financed interventions should strive to engage both men and women of all ages and positions of leadership for men to play other roles, equalise income disparities, raise awareness of the value of so-called "women's work" and ensure more support in order for women to perform their reproductive roles (e.g., paid maternity leave, childcare) [55]. Furthermore, cultural barriers that hinder men and women to venture into non-conventional gender roles must be addressed.

Another lesson for the GCF ecosystem-based adaptation programming is that local leadership structures should capitalise on skills development among both women and men. Similar to [9,49,54], we found that women's interests were represented less in negotiations of private ventures (e.g., trophy hunting). This appears to be, in part, due to a lack of negotiation and legal skills among community members, and this leads to a conflict over the control of the funds generated. To counter this, local leadership, government, industry, NGOs and international agencies can support training and extension programmes to influence adaptation processes positively. An example of this includes the initiatives of the Namibian Association of CBNRM Support Organizations (NACSO), which train women in public speaking, harvesting and entrepreneurial skills, and has led to women occupying leadership positions; however, this needs to be scaled up and out to include technologies that increase yields, produce goods and reduce environmental degradation [55,56].

Livelihood diversification ecosystem services that supplement traditional agricultural livelihoods and have the potential to withstand climate shocks should be prioritised. This should be accompanied by strengthening the value chains to enhance the marketing of natural products which improve returns for women and the community. An example of this is the establishment of organisations by communities to harvest, market and sell the devil's claw and other natural products [55]. Despite the existence of natural product markets, such initiatives have not involved many communities in Namibia.

A key lesson for climate financing is to engage in initial discussions on the potential value of all activities for ecosystem-based adaptation, irrespective of gender norms and cultural relations [57]. This should be followed by prioritising interventions to ensure that they address local needs and avoid reinforcing existing gendered responsibilities (e.g., males are inclined to participate in the construction of community-based tourism and wildlife infrastructure or eco-tourism activities, such as commercial hunting). Any ecosystem-based adaptation initiative in the CBNRM requires consultations that are sensitive and are aimed at addressing patriarchy and existing gendered cultural, age and other inequities [9,18].

## 5. Conclusions

This study provides important insights from community-based tourism, community forestry and wildlife management initiatives in Namibia that can inform the future mainstreaming of gender equity into interventions regarding ecosystem-based adaptation. We show that gender roles and cultural factors intersect to hinder the participation of women in discussions and the implementation of programmes. Patriarchy affects the participation of women in leadership, decision-making and livelihood diversification. The gendered division of labour differentiates income earning potential and participation in biodiversity-related activities, such as nature-based tourism. Thus, given the intersection of heterogeneous gender, but also ethnicity, education, historical and socio-cultural factors, context is important. Understanding such variations is critical when designing climate-financed programmes for ecosystem-based adaptation.

A gender analysis at the outset of a community-based, climate change adaptation project is essential to identify the hindering and facilitating factors to the implementation of effective climate adaptation and to put in place mitigation measures to reduce existing gender inequalities. Gender-responsive actions for local-level ecosystem-based adaptation projects should include capacity-building for women, engaging with men to address gender stereotypes towards women's participation and encouraging the active inclusion and participation of the youth and marginal communities. Interventions should be designed in association with gender performance indicators and sex-disaggregated targets to the monitoring and evaluation of initiatives [9].

Although there is no silver bullet regarding the way in which a GCF project can achieve gender equality, we hope that these insights contribute to a more comprehensive assessment of gender dynamics before designing any ecosystem-based adaptation intervention in Namibia and sub-Saharan Africa more broadly. Programming should be adaptive, agile and sensitive to the socio-cultural context and must not be applied homogeneously either across Namibia or other nations. Systemic shifts will require the time and commitment of many actors across scales and decades.

Further research is needed to investigate the ways in which cultural norms and patriarchy could be addressed in the context of being explicitly acknowledged in the implementation of ecosystem-based adaptation projects and programmes to ensure that the rollout of these initiatives are gender-responsive. In the same vein, it is critical to explore ways in which women can contribute and collaborate in those processes, helping to create positive change in local policies and practices [6]. Future research could assess ecosystem-based adaptation interventions retrospectively, and evaluate over time whether climate-financed interventions have achieved the desired outcomes.

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## Appendix A. Definition of Gender Concepts

**Gender analysis:** A critical examination of the way in which differences in gender roles, activities, needs, opportunities and rights/entitlements affect men, women, girls and boys in certain situations or contexts. Gender analysis examines the relationships between females and males and their access to and control of resources and the constraints they face relative to each other.

**Gender awareness:** Being conscious of the fact that men and women have different roles, responsibilities and needs.

**Gender biased:** Making decisions based on gender that result in favouring one gender over the other which often results in contexts that are favouring men and/or boys over women and/or girls.

**Gender blindness:** The failure to recognise that the roles and responsibilities of men/boys and women/girls are given to them in specific social, cultural, economic and political contexts and backgrounds. Projects, programmes, policies and attitudes which are gender blind do not consider these different roles and diverse needs, maintain the status quo and will not help to transform the unequal structure of gender relations.

**Gender mainstreaming:** Mainstreaming can be defined as re-organising, improving, developing and evaluating policy-making processes to incorporate a gender perspective in all policies at all levels and all stages.

**Gender-responsive programming and policies:** Intentionally employing gender considerations to affect the design, implementation and results of programmes and policies. Gender-responsive programmes and policies reflect girls and women's realities and needs in components, such as site selection, project staff, content and monitoring. Gender-responsiveness means paying attention to the unique needs of females, valuing their perspectives, respecting their experiences, understanding developmental differences between girls and boys, women and men and, ultimately, empowering girls and women.

**Gender-sensitive:** Programmes, projects and policies that are aware of, and address, gender differences.

**Patriarchy** is defined as the justification to marginalise women in education, the economy, labour market, politics, business, family, domestic matters and inheritance rights.

## Appendix B. Gender Assessment Questions

### Key informants' questions (in-depth interviews one-on-one)

1. What are the key vulnerabilities to drought, flooding, high temperature, shifting rainy season, low crop yields, reduced livestock yield that are facing men and women in selected conservancies?
2. How are the communities responding in these areas? Are men and women responding differently?
3. What are the external factors that help or hinder the community to respond? Which ones are institutional? Which ones are cultural and gendered?
4. What capacities are lacking in these communities that make men and women more vulnerable? Probe: which ones are specific to women and which ones are specific to men? Youth/marginalised communities such as the San, Himba or Zemba?
5. Who is more vulnerable to climate change impacts?

### Group discussions in workshops:

#### Vulnerability: Exposure and sensitivity

1. What are the CBNRM communities exposed to? These are biophysical impacts such as changes in temperature (high temperature and how it affect livestock, crops and wildlife), the same with reduced rainfall, high rainfall, and these include drought and flooding. Probing questions and what we were paying attention to when asking the exposure question included: what are they mostly exposed to? What women say, what men say? Who is most exposed to which—men or women?
2. What are the key vulnerabilities facing your communities (i) related to climatic factors such as drought, flood, high temperature, water scarcity etc.; (ii) related to non-climatic factors such as unemployment, livestock theft, human-wildlife conflict, HIV/AIDS and other health issues, etc.; (iii) related to cultural norms and values such as gender stereotypes, discrimination of marginalised, cultural beliefs hindering better responses etc.; (iv) related to governance such as traditional regulations, institutional support and lack of support, social politics, etc.?
3. Which livelihood is most sensitive to impacts of climate change? What is the gendered level of dependency on natural resources and other climate-dependent sectors by community members?

#### Adaptive capacity

1. When you are faced with climate change-related impacts such as floods, drought, high temperature and associated water scarcity, how do you cope?
2. Who make decisions regarding farming preparedness and response when faced with climate change impacts? How do cultural gender relations affect this?
3. Who responds in the household and community regarding food security in the household? livestock? water?
4. How do you benefit or how useful is CBNRM (conservancies and community forests) contributions towards enabling your capacity to respond to climatic impacts and non-climatic impacts?
5. Who make decisions and controls the harvesting of natural resources and access to it in your community?
6. What type of employment and income-generating activities are offered in your conservancy or community forest? Do men and women participate? which ones are dominated by men and which ones by women?

Questions relevant for the EDA (Empower to adapt) project activities

1. Which activities and interventions do you suggest should be included in the GCF-funded EDA (Empower to adapt) project? Which income-generating activities need to be strengthened? Which income activities need to be introduced? Which capacity building programmes? Which skills development?
2. What challenges do you currently face in your conservancy or community forest? Financial and institutional? Management committees and administration?
3. When traditional authority emerged in discussions, follow-up questions concentrated on how it acts as a barrier or an enabler to CBNRM programmes and how potentially it could act as a barrier or enabler to the GCF funding of the EDA project.

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