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From symbolic inclusion to shared governance: contesting conservation in a climate-stressed South African landscape

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Conservation areas are increasingly seen as crucial for addressing biodiversity loss and climate change, yet their expansion often produces socio-economic tensions with adjacent communities, particularly where governance is exclusionary. This study examines perceptions of equity, resource access, and governance among rural communities and private game reserve officials in the Makana Local Municipality, Eastern Cape, South Africa. It also investigates how climate variability intensifies these challenges by deepening local vulnerability. Guided by vulnerability and participatory governance theory, the study adopted a qualitative, interpretivist approach. Data were collected between July and August 2024 through 58 in-depth interviews with community members, 2 focus group discussions and 5 key informant interviews with conservation managers and community leaders. The study focused on communities surrounding Amakhala and Lalibela Game Reserves, including Alicedale, Seven Fountains, and Kraabos. Findings reveal that while some benefits from conservation exist—such as employment and limited outreach, these are perceived as symbolic, precarious, and inequitably distributed. Communities report restricted access to land, water, and sacred sites, with governance processes experienced as opaque and exclusionary. Climate variability, particularly erratic rainfall and drought, exacerbates these vulnerabilities by undermining agricultural livelihoods and intensifying resource scarcity. The study concludes that socially just and climate-resilient conservation in South Africa requires a shift from rhetorical inclusion to meaningful participation, transparent governance, and equitable benefit-sharing. Aligning conservation with local rights, needs, and adaptive capacities is essential for enhancing both biodiversity protection and community resilience.

KEYWORDS

conservation governance, participatory governance, benefit-sharing, equity, conservation, Eastern Cape

1 Introduction

Governance and equity are increasingly recognized as critical lenses for understanding conservation outcomes in the context of climate change (Dawson et al., 2021; International Institute for Environment Development (IIED), 2023). In biodiversity-rich yet economically marginalized regions like South Africa's Eastern Cape, conservation

models that fail to meaningfully include local communities in decision-making often deepen historical injustices. This study contends that climate vulnerability is not just environmental, but political—mediated by exclusionary governance and inequitable benefit-sharing (Vallet et al., 2020; Srinivas, 2023).

While climate change and biodiversity loss remain urgent global concerns, their implications must be analyzed through a justice-oriented framework that foregrounds local perceptions of fairness, access, and agency. Rather than treating biodiversity as a purely ecological concern, this research situates it within contested governance structures that determine whose voices matter in managing shared natural resources.

The Earth's climate is undergoing significant changes due to anthropogenic greenhouse gas emissions [Intergovernmental Panel on Climate Change (IPCC), 2021]. Future warming trajectories depend on the extent of these emissions and the sensitivity of the climate system. Whether a more positive or negative trajectory unfolds, climate change is already causing a myriad of challenges to socio-ecological systems, particularly in Southern Africa (Wang et al., 2024; Xie et al., 2024). These include extreme weather events, biodiversity loss, food insecurity, and resource conflicts.

South Africa is one of the world's 17 mega-diverse countries and hosts substantial biodiversity-dependent economic sectors such as tourism and traditional medicine [South African National Biodiversity Institute (SANBI), 2019]. Yet, the country also grapples with extreme inequality, unresolved land reform processes, and highly vulnerable rural populations, particularly in provinces like the Eastern Cape (Thondhlana and Cundill, 2017). These conditions make the intersection of biodiversity protection, climate adaptation, and equitable governance particularly fraught and important to investigate.

Despite the ecological and economic value of conservation areas, especially private reserves, local communities often experience them as exclusionary typically marked by opaque decision-making, restricted access to land and sacred sites, and symbolic rather than substantive benefits (Nsikwini and Bob, 2019). This study posits that the key issue is not simply biodiversity loss or climate impacts, but how these are governed in ways that exacerbate or alleviate inequality.

Drawing on vulnerability theory, which helps to understand how socio-economic conditions and external shocks (like climate change) create differentiated susceptibilities, and governance theory, particularly its focus on power dynamics and participatory frameworks in environmental management, this research provides a robust analytical lens for the Eastern Cape context. While existing research extensively highlights the ecological benefits of conservation (e.g., IUCN, 2025; Starling, 2025; Ubalijoro, 2025), there remains a critical gap in adequately addressing the complex socio-economic challenges faced by neighboring communities, including restricted access to land and resources, limited benefit-sharing, and the intensifying effects of climate change on livelihoods. This paper aims to bridge this gap by highlighting the perceptions of two key stakeholders, that is, rural communities and game reserve officials in order to provide a nuanced understanding and explore how participatory governance models can integrate both conservation priorities and community needs.

To bridge this gap, this paper aims to:

1. Examine the perceptions of rural communities and game reserve officials regarding equity, resource access, and governance within conservation areas in the Eastern Cape.
2. Analyze how climate variability and resource scarcity interact with these perceptions to influence socio-economic vulnerabilities.
3. Explore the potential for participatory governance models to integrate both conservation priorities and community needs.

This research, therefore, centers on these magnified socio-economic tensions, ultimately undermining efforts to balance biodiversity preservation with community wellbeing.

In terms of organization after this introduction there is a theoretical framework section which is followed by a description of the methodology utilized in the study. The article then presents and discusses findings and terminates by making recommendations and conclusions.

2 Analytical framework

This study adopts an integrated analytical framework, firmly grounded in an interpretivist paradigm, to explore the intricate socio-economic tensions surrounding conservation management in the Eastern Cape. This qualitative lens acknowledges that understanding the subjective perceptions and lived experiences of both rural communities and game reserve officials is paramount to comprehending the complex dynamics of conservation governance.

2.1 An integrated analytical framework

The framework guiding this study synthesizes vulnerability theory and governance theory, with a focused application of participatory governance principles. Visually and conceptually this framework (Figure 1) is structured around the interconnectedness of five key dimensions: vulnerability context, external influences and contextual factors, challenges and barriers to participation, participatory governance mechanisms and equitable conservation outcomes. Each component contributes to a comprehensive understanding of how exclusion, climate pressures, and institutional dynamics jointly shape conservation outcomes.

2.2 Vulnerability theory

This framework begins with the vulnerability context where socio-economic precarity (e.g., poverty, insecure tenure, dependence on natural resources) intersects with environmental risks such as extreme climate events. This is compounded by external influences which amongst others are issues such as historical land use patterns, economic pressures, and policy shifts. These exacerbate the exposure and sensitivity of rural communities to conservation decisions (Adger, 2006; IPCC, 2022).

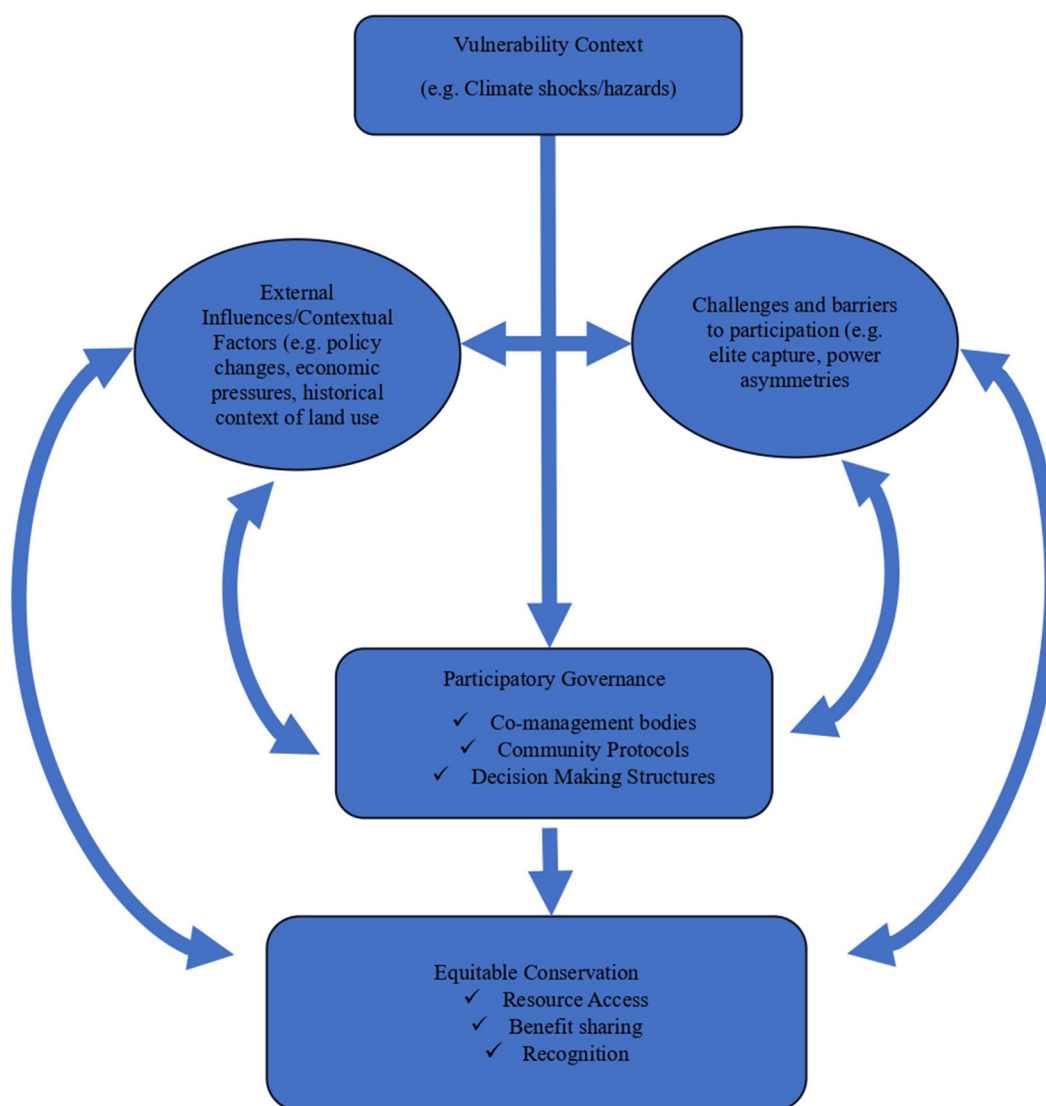


FIGURE 1

Integrated analytical framework linking vulnerability, participatory governance, and equitable conservation outcomes in the context of private game reserves. Sources: Authors, 2025.

This dimension underscores that vulnerability is not simply about exposure to climate risks, but also about the structural constraints that impede adaptive responses. Thus, governance emerges as a critical mediator of resilience and equity.

2.3 Governance theory and participatory governance

Moving through the framework, governance theory provides the overarching lens for interrogating institutional arrangements and power relations inherent within conservation areas (Kooiman, 2003; Rhodes, 1996). In particular, challenges and barriers to participation such as elite capture, lack of transparency, and entrenched power asymmetries impede equitable outcomes, even when participation exists on paper.

Within this broader framework, participatory governance emerges as particularly relevant for scrutinizing the role of communities in conservation governance. Participatory governance emphasizes inclusive decision-making, shared authority, and accountability—principles increasingly promoted in environmental policy discourse, yet inconsistently applied in practice, especially within private conservation models (Srinivas, 2023; Jadallah and Ballard, 2021; Shereni and Saarinen, 2020). To counteract these shortcomings, this framework centers participatory governance mechanisms, including co-management bodies, community protocols and decision-making structures.

At the heart of this model is co-management, which aims to redistribute power by recognizing the rights, interests, and knowledge systems of local communities (Borrini-Feyerabend et al., 2007; Jamart and Rodeghier, 2009). Co-management has been applied successfully in various contexts—such as community-based

natural resource management (CBNRM) programs in Zimbabwe, Tanzania, and Namibia—where it contributed to greater benefit-sharing and reduced conflict (Frost and Bond, 2008; Blomley and Iddi, 2009; Jones, 2010). However, in South Africa, particularly in private reserves, implementation remains limited. Legal provisions such as the National Environmental Management: Protected Areas Act (NEM:PAA) and Biodiversity Act (NEMBA) formally endorse public participation, yet these are inconsistently applied and often exclude private reserves from mandatory participatory obligations (South African Government, 2014, 2024; Biodiversity Law Centre, 2025). These legal and institutional gaps reinforce patterns of exclusion and complicate efforts to institutionalize equity-driven conservation. Recent assessments highlight the need for stronger institutional alignment between private landowners and national biodiversity targets, particularly within the framework of the National Biodiversity Strategy and Action Plan (NBSAP) (Government of South Africa, 2015). Although some private reserves receive tax incentives or benefit from tourism marketing under national schemes, they often operate with limited oversight or obligation to engage surrounding communities. This policy ambiguity creates both a challenge and an opportunity: to formalize expectations around equitable governance and embed participatory mechanisms within the legal apparatus that governs private conservation efforts.

2.4 Addressing power asymmetries

A critical function of the framework is to expose and problematize power asymmetries. Conservation authorities and private reserve owners often hold disproportionate influence over decision-making processes, while local communities particularly those without formal land tenure remain structurally marginalized (Vallet et al., 2020; Nyamahono, 2024). Participatory governance frameworks seek to counterbalance this by institutionalizing community representation, ensuring transparency in benefit-sharing, and creating avenues for grievance redress. In the Eastern Cape, where land ownership is fragmented and land reform processes remain incomplete, these interventions are particularly urgent. Transitioning from these power asymmetries to a more just and sustainable future requires some understanding of equity in conservation.

2.5 Understanding equity in conservation

The concept of equity in conservation has evolved from a narrow focus on the distribution of costs and benefits (distributional equity) to include deeper concerns about the fairness of decision-making processes (procedural equity) and the recognition of diverse values, rights, and identities (recognition equity) (Franks et al., 2018; International Institute for Environment Development (IIED), 2023; Schreckenberg et al., 2016). This study engages primarily with procedural and recognition equity by examining how communities perceive their inclusion (or lack thereof) in conservation governance structures and how their cultural practices, histories, and identities are acknowledged

or marginalized. While distributional concerns which include amongst other things issues such as benefit-sharing also emerge strongly, the findings underscore the centrality of procedural fairness and cultural recognition in shaping local attitudes toward conservation areas. Future conservation models in South Africa must therefore address all three dimensions of equity to be considered socially just and sustainable.

2.6 Toward an integrated, justice-oriented lens

This analytical framework enables a nuanced understanding of how conservation governance and climate pressures jointly shape community experiences. By centering community voices and applying a justice-oriented analytical lens, the study examines how exclusionary governance amplifies vulnerability, and how more inclusive, participatory models could promote both biodiversity outcomes and socio-economic resilience.

In sum, the framework guides the research in three ways:

- It explains how vulnerability is socially constructed and unevenly distributed within the conservation context.
- It reveals how governance arrangements and power asymmetries either mitigate or exacerbate those vulnerabilities.
- It highlights participatory pathways for achieving more equitable, climate-resilient conservation outcomes.

Ultimately, the framework affirms that inclusive governance is not merely a normative ideal but a functional necessity for achieving both ecological and social sustainability in conservation.

3 Materials and methods

This section details the research design, study area, participant selection, data collection, and ethical considerations that guided this qualitative study.

3.1 Profile of the study area

This investigation centered on the Eastern Cape Province of South Africa (33.3089° S, 26.5373° E), with a specific focus on the Makana Local Municipality. Geographically, Makana Local Municipality is situated in the central interior of the Eastern Cape. This region lies within the Albany Thicket biome, a unique and highly biodiverse vegetation type characterized by diverse spiny shrubs, succulent species, and occasional forest patches. The topography is undulating to hilly, with altitudes ranging from 300 to 700 meters above sea level (Achieng, 2019; Makana Local Municipality, 2024).

The geographical scope encompassed two privately managed wildlife sanctuaries, Amakhala and Lalibela, both strategically positioned along the N2 arterial route. Amakhala Game reserve is ~69 km² in expanse whereas Lalibela Game reserve is ~62 km² (Maciejewski and Kerley, 2014). This area was selected

as a compelling case study due to its complex socio-ecological landscape, characterized by a history of underdevelopment, reliance on natural resources, and increasing exposure to climate variability (Achieng, 2019; Shackleton and Luckert, 2015). The presence of large private conservation areas within a context of rural poverty presents unique challenges and dynamics concerning human-wildlife interactions and community engagement, distinguishing it from state-managed protected areas and offering rich insights into contested conservation governance. Both reserves are recognized for their rich biodiversity, notably featuring the iconic “Big Five” megafauna (Eastern Cape Game Reserves, 2025). The participant cohort comprised residents from three distinct communities: Kraabos, 7 Fountain, and Alicedale, alongside five key informants.

Lalibela Game Reserve is engaged in a substantial “ecosystem reset” initiative, expanding its protected wilderness through the acquisition and rehabilitation of former agricultural areas, such as peach and prune farms (Design News, 2025). Amakhala Game Reserve was formed when eight descendants of original farm owners combined their adjacent livestock farms into a single reserve (Amakhala Game Reserve, n.d.). This pivotal shift from traditional farming to wildlife conservation was largely prompted by a severe 6-year drought from 1989 to 1995, causing widespread degradation of pastures and water sources (Achieng, 2019). The transformation of these reserves has facilitated the introduction of high-value wildlife and conversion of farmhouses into tourist lodges. Although this ecotourism model has successfully attracted visitors, its social effects have been profound. The installation of fencing and land restructuring significantly disrupted prior cohesive community life among farmworkers, leading to their relocation and a fundamental alteration of these rural communities’ character and cohesion (Achieng et al., 2020).

The research focused on three rural communities situated alongside the reserves: Kraabos, Seven Fountains, and Alicedale. Kraabos is situated proximate to the Amakhala Game Reserve’s administrative center, within a 3 km radius of the N2. 7 Fountain, characterized as an informal settlement, lies ~5 km from the Lalibela Game Reserve, also along the N2. Alicedale, a semi-rural locale, is located at a greater distance, roughly 35 km from Lalibela and 30 km from the N2. The demographic profile of the study area is diverse, including Black, White, and Colored South Africans. Kraabos and Seven Fountains are marked by a lack of formal educational infrastructure and informal housing, contrasting with Alicedale’s modern residential development.

Although there are no site-specific socio-economic descriptions of the study sites, there are however provincial level ones that give a macro view of the same from which one can discern obtaining socio-economic realities. The eastern Cape province has the second highest poverty headcount (67.3%) in South Africa after Limpopo province (67.5%) (Statistics South Africa, 2018). However, the province comes out third (15.6%) in terms of its ranking with respect to its percentage contribution to the national poverty figure after the provinces of KwaZulu-Natal (22.7%) and Gauteng (15.8) (Statistics South Africa, 2018). The Eastern Cape province is burdened by a high unemployment rate, estimated at 42.4% in the first quarter of 2024, a percentage which is far much higher than the national average of 32.9% (Eastern Cape Socio

Economic Consultative Council, 2024), with a significant portion of the population engaged in informal economic activities. Data from the third quarter of 2024 indicate a marked dichotomy within the Eastern Cape’s non-metropolitan labor force. Of the 793,000 employed in non-agricultural sectors, 173,000 operated within the informal economy, underscoring structural challenges and the prevalence of precarious employment in the region (Statistics South Africa, 2024). Data from Statistics South Africa (2024) reveal a significant disparity between informal employment levels and formal agricultural employment in the Eastern Cape. In the third quarter of 2024, the province reported only 124,000 agricultural sector employees, contrasting sharply with the robust informal sector. However, the agricultural sector’s economic importance is underscored by its status as the fourth largest provincial contributor to the national agricultural employment figure of 935,000, coming after the provinces of the Western Cape, North West and Limpopo indicating its strategic role in the national agricultural landscape.

The Eastern Cape is characterized by a climate that supports robust agricultural activities. The region experiences mean summer temperatures of 26°C and mean winter temperatures of 13°C, with average seasonal precipitation of 1,000 mm and 400 mm, respectively. These quantifiable climatic conditions directly contribute to the province’s agricultural output, notably in livestock, vegetable, crop, and citrus production (Gidi et al., 2024). Climatic shifts, driven by climate change, are progressively modifying these favorable conditions, thereby jeopardizing the sustainability of agrarian-based livelihoods, particularly among vulnerable, impoverished communities (Apraku et al., 2018). Consistent with this observation, Mahlalela et al. (2020) document a sustained period of severe drought in the Eastern Cape Province of South Africa since 2015, emphasizing its profound socio-economic consequences, notably on both rural and urban water resources. Their analysis reveals a discernible downward trend in spring rainfall totals and a reduction in the frequency of rainy days since 1981, attributing these shifts to regional climate variability influenced by the interaction of tropical and midlatitude atmospheric systems. Resultantly, chronic poverty and food insecurity are serious challenges in the Eastern Cape (Mthethwa and Wale, 2020). Mthethwa and Wale point out that the failure of natural resources to support agricultural livelihoods is a major factor contributing to food insecurity and poverty in rural South Africa. They point out that environmental stresses such as land degradation, deforestation, overgrazing, soil erosion, and water pollution have significantly reduced the capacity of rural households to sustain their livelihoods through farming. These environmental challenges, combined with recurring droughts and unreliable rainfall, undermine agricultural productivity, making it difficult for rural households to produce enough food for consumption and income generation.

3.2 Research design

This study adopted a qualitative research design, employing an interpretivist paradigm to gain in-depth insights into the subjective

perceptions and lived experiences of the research participants. The data gathering phase of this study occurred during fieldwork conducted between June and August of 2024.

This study employed a sequential, mixed-methods design, structured across two distinct phases to comprehensively investigate the complex interplay between biodiversity conservation, community livelihoods, and climate change within the Eastern Cape's private game reserve context. The initial phase of the study (pilot phase), conducted in June 2024, commenced with a reconnaissance field trip. This excursion aimed to investigate existing biodiversity conservation approaches and gauge community experiences within the study area. During this preliminary engagement, meetings with reserve management and community leaders facilitated the identification of core conservation mechanisms, provided insight into immediate community perspectives, and helped refine research questions and logistical aspects for the subsequent phase. The second phase, spanning July to August 2024, focused on the in-depth examination of contested issues related to biodiversity conservation. A total of 63 participants were engaged in this study, selected through a purposive sampling approach to ensure a diverse range of perspectives from key stakeholders. This total comprised 58 individual in-depth interviews with rural community members, and two focus group discussions (FGDs), with one FGD in Alicedale involving 10 participants and the other in Seven Fountains, 6 participants. Additionally, 5 key informant interviews were conducted with game reserve officials.

Community members were selected to represent various demographics and experiences within the adjacent communities, providing rich narratives on their daily lives and interactions with conservation areas. Of the 58 community members interviewed, 40 were female and 18 were male. Participants ranged in age from 21 to 78 years old and represented a mix of primary livelihood strategies. Approximately 60% of these participants had not completed secondary education, reflecting broader educational challenges prevalent in the region.

The 5 key informants included a Director of the Amakhala Foundation, two game reserve managers (one from Amakhala and one from Lalibela), and two community leaders. These individuals were specifically chosen due to their direct involvement in conservation management, policy implementation, and community engagement initiatives within the private game reserves, thereby providing an essential institutional perspective to complement community viewpoints.

3.3 Data collection

Primary data were collected using semi-structured interview and focus group discussion guides to facilitate in-depth exploration of participants' perceptions. For community members, questions broadly focused on their historical relationship with the game reserves, their perceptions of conservation benefits (e.g., employment opportunities, access to services), the challenges they face related to resource access (including land, water, and cultural resources), their experiences with existing governance and participation mechanisms in decision-making processes, and their

observations on climate change impacts on their livelihoods. For game reserve officials, questions explored their reserve's specific conservation objectives, current community engagement strategies, perspectives on benefit-sharing, approaches to managing human-wildlife interactions, observations regarding climate change impacts on biodiversity and operations, and the overall challenges and opportunities involved in co-managing resources with local communities. All interviews and focus group discussions were audio-recorded with the explicit consent of participants. These recordings were then meticulously transcribed verbatim.

Prior to each interview or FGD, all participants were provided with a clear, comprehensive explanation of the study's purpose, objectives, and their anticipated role. Informed consent was obtained both verbally and in writing from every participant, ensuring they fully understood their right to voluntary participation, their right to confidentiality of their responses, and their right to withdraw from the study at any point without penalty. Measures to ensure participant confidentiality and anonymity were also clearly explained, including the use of pseudonyms or unique codes (e.g., "Alicedale Resident 1," "KII_Amakhala_Manager") in data analysis and all subsequent reporting to protect their identities. Furthermore, formal permission to conduct research was sought and granted from relevant community leaders and the management authorities of both Amakhala and Lalibela Game Reserves, ensuring institutional approval alongside individual consent.

3.4 Data analysis

Participant responses were audio-recorded, transcribed verbatim, and manually coded for subsequent analysis. Data were meticulously organized and stored in date- and name-labeled folders to ensure confidentiality and facilitate rigorous analysis. To protect participant anonymity, pseudonyms were used for game reserve authorities and community members. Thematic analysis was conducted by meticulously reviewing the collected data, with a specific focus on identifying patterns and recurring ideas relevant to the study's central questions. This analysis was informed by the robust analytical framework discussed in the foregoing. This framework directly underpins and guides our chosen qualitative analytical approach: inductive thematic analysis (Braun and Clarke, 2006). This methodological choice is inherently aligned with our interpretivist paradigm, allowing themes related to perceptions of equity, resource access, and governance, as well as their intricate interplay with climate vulnerability, to organically emerge from the rich qualitative data generated through interviews and focus group discussions. Findings from the interviews and FGDs are presented in descriptive narratives, with direct quotations incorporated to enhance the analytical depth and provide rich, contextualized insights into the research findings.

4 Results

This section presents the study findings in alignment with the study's three core objectives: (1) perceptions of equity and benefit sharing, (2) access to natural resources and land tenure,

TABLE 1 Community perceptions on equity and benefit sharing.

Respondent code	Summary of view	Positive/negative	Quote
INT-F1-AL	Feels marginalized and unsupported by the reserve	Negative	"It feels like we're ignored or even marginalized. We don't have any control, and they can fire people anytime without warning."
INT-M2-AL	Acknowledges some benefits for a few, but majority excluded	Negative	"Those who aren't employed there often feel dissatisfied... They're not happy. Many of them are struggling to find proper jobs."
INT-M1-AL	Some material support acknowledged, but limited	Mixed	"They might offer small things, like food supplies for kids... but it's not enough."

and (3) governance and participation, with an added focus on the role of climate variability and resource scarcity in exacerbating these issues. Tables are used to present and synthesize data from interviews and focus group discussions.

4.1 Perceptions on equity and benefit sharing

Participants expressed a widespread sense of dissatisfaction regarding the distribution of benefits from conservation areas. While employment opportunities were noted by some, these were often described as precarious, limited in scope, or available only to a small proportion of residents. The lack of meaningful and sustained socio-economic development support was a recurring concern. Many community members felt that the game reserves prioritized their own operational needs over local wellbeing as indicated in Table 1.

Further narratives reveal that expectations set during initial community consultations were largely unmet. For instance, promises of infrastructure projects, skills training, and inclusive employment practices were cited as areas where implementation fell short. Focus group participants from Seven Fountains and Kraabos described a disconnect between what was promised and what was delivered. One participant stated, "Most of the promised benefits, like skill development and proper job training, have not been adequately provided. Only a few elderly community members receive food parcels, which is not enough to sustain entire households."

Game reserve officials recognized these tensions but often framed their contributions in terms of resource constraints and their primary conservation mandate. Their efforts included educational outreach, basic health support such as animal vaccinations, and limited food distribution. Yet, as one Amakhala staff member conceded, "We are doing anti-poaching awareness in schools and environmental education, but we know it's not enough given the extent of the needs." This acknowledgment highlights a gap between intentions and community expectations.

4.2 Access to natural resources and land tenure

Restricted access to land and natural resources remains a critical concern as shown in Table 2. Participants described a loss of

autonomy and the inability to practice traditional livelihoods due to fenced-off areas, wildlife conflicts, and limitations on gathering or farming within or near the reserves.

Several respondents also noted barriers to culturally significant sites. In some cases, pre-clearance and security escorts were required for access to ancestral graves, which community members saw as disrespectful and burdensome. The perception that conservation lands are prioritized over community welfare was common, especially given the lack of reciprocal benefit. One resident shared, "It becomes a process—you have to report first and get pre-clearance to visit a grave, and then a detective accompanies you."

Reserve officials maintained that such restrictions are necessary to ensure wildlife safety and minimize liability. They noted that limited access was allowed under controlled circumstances and that invasive plant removal provided firewood as an incidental resource benefit. However, these measures were widely regarded by communities as insufficient and symbolic.

4.3 Governance and participation

A recurring theme in community accounts was exclusion from decision-making processes. Many felt that decisions regarding land, resource use, and benefit allocation were made unilaterally by the reserve authorities as Table 3 shows.

Many interviewees stressed that existing governance frameworks favored the interests of conservation entities and donors over those of local residents. Suggestions included community-elected board members, regular public forums, and accessible grievance redress mechanisms. A participant suggested, "The foundation should have people from the community; they should be part of the board and elected to represent us."

Reserve officials stated that while formal benefit-sharing mechanisms are not yet in place, some efforts were underway to increase engagement. As one manager noted, "Currently, our board does not include direct community representatives, but we are aiming to include one to ensure their perspectives are integrated."

4.4 Climate change, resource scarcity, and vulnerability

Participants linked environmental stressors—particularly drought and erratic rainfall patterns—to increased difficulty in

TABLE 2 Community concerns on resource access and land tenure.

Respondent code	Issue raised	Summary	Quote
INT-F2-AL	Land dispossession	Conservation buying large tracts of land limits community space	"They are buying large areas of land, and we are left with smaller spaces. It's not fair to have it done this way."
INT-M3-AL	Water access	Reserve uses boreholes, community left with irregular delivery	"We all need water, but... the conservation area has boreholes... they don't share much with us anymore."
INT-M4-7F	Access to land for agriculture	Limited access, despite availability of underutilized land	"Some parts of the conservation land lack animals... those areas could support small-scale farming."

TABLE 3 Perceptions of governance and participation.

Respondent code	Governance issue	Summary	Quote
KIF-AL-WC	Participation barriers	Decisions made without local voices	"We often reach out... but when someone arrives at their property, they assert their ownership and may dismiss others' opinions."
KIF-M1-7F	Lack of transparency	Benefit-sharing and agreements unclear	"There were promises... but these have yet to fully materialize."
INT-M5-AL	Exclusion from planning	Cultural and ancestral claims ignored	"Arrangements need to be made for those who wish to access their ancestral lands for cultural reasons."

maintaining agricultural livelihoods, food security, and health. Some of the views are summarized in [Table 4](#).

These disruptions compound already fragile conditions. Residents described how borehole reliance in reserves contrasts with the communities' vulnerability due to municipal water system failures. Many viewed conservation areas as comparatively insulated from climate impacts, while community resilience mechanisms were lacking.

Officials acknowledged observing climatic shifts, such as shrinking water resources and changing animal behavior. They viewed climate resilience as primarily an ecological issue, with adaptation strategies centered on species protection, not community co-benefit. One stated, "The question is whether it's our responsibility to raise climate change awareness or if that lies with the government or schools."

5 Discussion

This study investigated the complex socio-ecological dynamics within conservation areas of the Eastern Cape, focusing on the perceptions of rural communities and game reserve officials regarding equity, resource access, and governance, particularly in the face of climate variability and resource scarcity. The findings reveal a persistent disjunction between the aspirations of participatory governance and the lived realities of adjacent communities, highlighting critical areas for reform to achieve more equitable and sustainable conservation outcomes.

5.1 Perceptions of equity and benefit sharing

The research found a pervasive sense of dissatisfaction among rural communities regarding the equitable distribution of benefits derived from conservation efforts. While some employment

opportunities were acknowledged, they were largely perceived as insufficient, precarious, and reaching only a small fraction of the population ([Table 1](#)). This aligns with findings from similar contexts in South Africa, where protected areas often fail to deliver substantial socio-economic benefits to local communities, leading to resentment and undermining conservation legitimacy ([Thondhlana and Cundill, 2017](#); [Thondhlana et al., 2016](#)). The unmet expectations regarding infrastructure and skills training, as highlighted by focus group participants, underscore a significant trust deficit between communities and conservation authorities.

Game reserve officials, while acknowledging community needs, often cited resource constraints and their primary conservation mandate as limiting factors. This reflects a common challenge in conservation, where ecological priorities can overshadow social development goals ([Mombeshora and Le Bel, 2009](#)). The observed gap between intentions (e.g., educational outreach, basic health support) and community expectations suggests that current benefit-sharing mechanisms are largely symbolic rather than transformative. Successful participatory models, such as Zimbabwe's CAMPFIRE program, demonstrate that tangible economic benefits, derived from activities like ecotourism and sustainable resource use, can significantly enhance local support for conservation by fostering a sense of ownership and accountability ([Frost and Bond, 2008](#)). This study's findings reinforce the need for Eastern Cape conservation initiatives to implement more robust and inclusive benefit-sharing mechanisms that go beyond token gestures and address the fundamental socio-economic needs of adjacent communities.

5.2 Access to natural resources and land tenure

Restricted access to ancestral lands, water, and traditional livelihood resources emerged as a critical point of contention ([Table 2](#)). The fencing off of areas, the prevalence of wildlife

TABLE 4 Community experiences with climate change impacts.

Respondent code	Climate challenge	Impact description	Quote
INT-F6-AL	Water scarcity	Irregular water deliveries affect daily life	"Sometimes we get water delivered by trucks, but it's not enough."
INT-M7-7F	Agricultural disruption	Crop failure from erratic rainfall	"If there's too much rain, it ruins crops; if there's a drought, it's the same problem."
INT-F5-7F	Food insecurity	Seedlings die due to prolonged dry spells	"We sometimes go without water for a week, which can kill seedlings..."

conflicts, and limitations on traditional practices disrupt established livelihoods and cultural connections to the land. This echoes broader concerns about land dispossession and the marginalization of indigenous knowledge systems in conservation practices (Fernández-Llamazares et al., 2020). The requirement for pre-clearance and security escorts for community members to visit ancestral graves highlights a profound disrespect for cultural heritage and further alienates communities from conservation efforts. This reinforces arguments that conservation, when implemented without considering local rights and cultural values, can exacerbate existing inequalities (Vallet et al., 2020).

The perceived inequity in water access, with reserves utilizing boreholes while communities face municipal supply failures, further underscores the socio-economic disparities. While reserve officials argue for restrictions based on wildlife safety and liability, these measures are viewed by communities as insufficient and indicative of conservation priorities overshadowing human welfare. This calls for conservation initiatives to adopt a more integrated approach to resource management, potentially exploring co-management models for shared resources like water, which could enhance both ecological and human wellbeing, as seen in Tanzania's forest governance reforms (Blomley and Iddi, 2009). Addressing land tenure insecurities is also crucial, as formal land rights can empower communities in negotiations and facilitate more equitable resource-sharing agreements (Nyamahono, 2024).

5.3 Governance and participation

The findings consistently revealed a profound sense of exclusion from decision-making processes among rural communities (Table 3). This lack of meaningful participation in decisions concerning land use, resource allocation, and benefit distribution directly contradicts the core tenets of participatory governance, which advocate for the involvement of all stakeholders, especially marginalized groups, to enhance fairness and accountability (Srinivas, 2023; Speer, 2012). The unilateral decision-making by reserve authorities, as reported by community members, reflects the power asymmetries highlighted in the analytical framework (Vallet et al., 2020).

Despite legal frameworks in South Africa, such as NEM:PAA and NEMBA, stipulating public participation, the practical implementation in the context of private game reserves appears weak (South African Government, 2024, 2014; Biodiversity Law Centre, 2025). The Eastern Cape's fragmented land ownership

and unresolved land reform processes further complicate these dynamics, weakening community bargaining power (Eastern Cape Department of Rural Development Agrarian Reform, 2024). Community suggestions for elected board members and regular public forums align with calls for institutionalized mechanisms for dialogue and representation, which are critical for redistributing power and ensuring that local voices are genuinely integrated into conservation planning (O'Connor et al., 2024). While some reserve officials expressed a willingness to improve engagement, the slow progress in translating policy commitments into tangible participatory frameworks indicates a significant implementation gap.

5.4 Interplay of climate change, resource scarcity, and vulnerability

The study unequivocally demonstrates how climate variability, particularly prolonged droughts and erratic rainfall, exacerbates pre-existing socio-economic vulnerabilities within rural communities (Table 4). Participants reported direct impacts on agricultural livelihoods, leading to crop failures, increased food insecurity, and health concerns (Mthethwa and Wale, 2020; Apraku et al., 2018). The contrast between the reserves' access to boreholes and the communities' reliance on failing municipal water systems highlights a critical disparity in climate resilience. While conservation areas appear to be comparatively buffered from climatic shocks, the adjacent communities bear the brunt of these changes with limited adaptive capacity.

Paradoxically, the region's wealthy elites, driven by climatic stresses like the 6-year drought (as presented in Sub-section 3.1), pivoted from agricultural pursuits to private game reserve ventures. This very transition serves as a powerful testament to the tangible reality of climate change within the study area. This shift, while an "adaptation" for some, starkly illustrates how adaptive capacity is intrinsically linked to socio-economic vulnerability, where those with financial capital can mitigate climate impacts by altering land use, while marginalized communities face amplified hardships. This finding reinforces the vulnerability theory's premise that pre-existing socio-economic conditions amplify the impacts of external stressors like climate change (Adger, 2006; IPCC, 2022). The perception among officials that climate resilience is primarily an ecological issue, rather than one with significant community co-benefits, reveals a crucial blind spot. Integrating climate adaptation strategies into conservation efforts must extend beyond species protection to include supporting local agriculture, enhancing water

accessibility, and building community resilience (Wang et al., 2024; Maphosa and Moyo, 2024). Without such integration, conservation efforts risk deepening community vulnerabilities in the face of escalating climate impacts. The study underscores that participatory governance, by fostering shared responsibility and integrating local knowledge, is essential for developing effective and equitable climate adaptation strategies that benefit both biodiversity and human wellbeing.

6 Recommendations for policy and practice

The findings of this study underscore critical areas where policy and practice can foster more equitable and resilient human-conservation interactions in South Africa, particularly in the face of climate change. These implications highlight the need for systemic shifts toward inclusive governance, formalized benefit-sharing, and integrated climate-conservation strategies.

6.1 Institutionalizing robust benefit-sharing mechanisms for enhanced equity

Current informal or limited benefit-sharing practices by private game reserves are perceived as precarious and inequitable by adjacent communities. To address this, it is imperative to develop formalized benefit-sharing agreements that are legally enforceable, transparent, and subject to regular review. Such agreements should ensure that benefits extend beyond rudimentary employment to include substantial investments in training, infrastructure support, quality education, and sustainable enterprise development, thereby fostering genuine socio-economic upliftment. Crucially, benefit-sharing frameworks must embed community-defined priorities to ensure their relevance, legitimacy, and local ownership, moving beyond symbolic gestures toward tangible, community-driven development outcomes. This approach aligns with broader national development objectives aimed at inclusive economic growth and poverty alleviation, as articulated in plans like the IUDF Implementation Plan 2020–2025 (Department of Cooperative Governance, 2025) and the Department of Forestry, Fisheries and the Environment Strategic Plan 2025/26–2029/30 (Department of Forestry, 2025b).

6.2 Improve access to land, water, and cultural resources

Restricted access to critical resources like land, water, and sacred sites exacerbates community vulnerability, particularly under increasing climate stress. Policy and practice must facilitate negotiated access agreements for traditional land use, ancestral sites, and water sources, particularly during drought periods. Establishing co-managed buffer zones or peripheries around reserves that permit controlled community grazing, subsistence farming, and resource collection can significantly mitigate

livelihood impacts and reduce conflict. This approach recognizes the intrinsic link between human wellbeing and environmental stewardship, necessitating a shift from exclusionary conservation models toward those that embrace communal resource rights and traditional land management practices. The principles of equitable resource management, especially concerning water, are further underscored by recent scholarship (Higgs et al., 2025) which addresses equality, equity, human rights, and social justice in water resource management in South Africa. Similarly, some scholars have discussed exclusionary conservation practices and the imperative for more inclusive approaches, which directly relate to facilitating equitable access to land and resources (Musavengane and Leonard, 2019).

6.3 Strengthen participatory governance structures

The study reveals that governance processes are often opaque and exclusionary, limiting meaningful community participation. To rectify this, conservation management needs to create or revitalize community liaison forums endowed with genuine decision-making power, moving beyond mere advisory status. Guaranteeing direct representation of community members on reserve management boards, particularly from historically marginalized groups, is fundamental for embedding local perspectives and ensuring accountability. Adopting co-management models that promote shared authority and accountability in conservation planning and implementation, aligning with the spirit of programmes like the People and Parks Programme, can lead to more legitimate and effective conservation outcomes (Department of Forestry, 2025a). This institutionalizes participatory approaches, as advocated in recent environmental governance literature focusing on public participation in environmental sustainability (Antwi et al., 2025).

6.4 Align conservation with climate adaptation and community resilience

The impacts of climate variability on local livelihoods necessitate integrating climate adaptation strategies directly into conservation planning. This involves conducting climate vulnerability assessments co-developed with communities to ensure locally relevant and effective responses. Furthermore, investments in community-scale adaptation infrastructure, such as boreholes, water tanks, drought-resistant crops, and early warning systems, are crucial for building resilience. Critically, conservation efforts should be framed not merely as ecological protection, but as a vehicle for building rural resilience under climate change, acknowledging that healthy ecosystems contribute directly to human adaptive capacity. This perspective is reinforced by the urgent need for a holistic approach to community resilience in the face of climate change, as explored in recent studies on vulnerable groups and social work interventions (Nasir and Jaber, 2025). In addition, See et al. (2024) discuss conceptualizing and enacting pathways to transformative climate justice, which often

involves building resilience and integrating adaptation strategies that address structural inequities, directly supporting the framing of conservation as a vehicle for rural resilience.

6.5 Policy reform and legal harmonization

Existing national and provincial conservation policies (e.g., NEM: PAA, NEMBA) require revision to explicitly extend participatory obligations and equity provisions to private reserves. This includes legally enforceable provisions for consultation, benefit-sharing, and community involvement in decision-making processes. Policymakers should also consider incentivizing private reserves through tax benefits or subsidies to adopt inclusive governance practices and contribute demonstrably to community development. Such reforms would not only enhance social justice within the conservation sector but also contribute to the long-term sustainability of conservation initiatives by fostering greater community buy-in and shared responsibility.

7 Conclusion

This study has examined the perceptions of rural communities and game reserve officials regarding equity, access to natural resources, and governance in conservation areas of the Eastern Cape, South Africa, while also assessing how climate variability intensifies socio-economic vulnerability.

The findings reveal that current conservation models particularly within privately owned reserves are experienced by many community members as exclusionary, with limited benefit-sharing and minimal participation in governance processes. Access to critical resources such as land, water, and ancestral sites has been constrained, reinforcing historical patterns of marginalization. While conservation authorities cite ecological imperatives and limited capacity, these do not justify the structural inequities sustained by current arrangements.

Furthermore, climate change compounds these challenges by reducing agricultural productivity, threatening food and water security, and further exposing the inadequacy of existing support systems for adjacent communities. Community resilience is undermined when governance frameworks fail to account for both environmental and social vulnerability.

Ultimately, the study concludes that conservation cannot be socially sustainable without addressing the underlying governance deficits and inequities in benefit and resource distribution. Inclusive, rights-based, and climate-responsive governance approaches are essential to reconcile biodiversity protection with rural livelihood security in South Africa's conservation landscape.

While this study is grounded in the specific socio-ecological and historical context of the Eastern Cape, its findings resonate with broader international debates on private land conservation. Across the Global South, privately owned reserves are playing an increasing role in biodiversity protection—but often without the same participatory safeguards expected in public protected areas (Gooden and 't Sas-Rolfes, 2020; da Silva et al., 2021). This raises urgent questions about how principles of equity, justice, and local participation can be institutionalized across ownership

regimes. The experiences documented here—of symbolic inclusion, land access struggles, and governance asymmetries—underscore the need for global conservation frameworks and national policies to explicitly address private sector accountability. Embedding procedural and recognition equity in private conservation is not only an ethical imperative but also a practical necessity for ensuring long-term legitimacy and resilience of conservation landscapes.

Data availability statement

The original contributions presented in the study are included in the article/[Supplementary material](#), further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by University of Fort Hare Inter-Faculty Human Research Ethics Committee (IFHREC). The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

MM: Writing – review & editing, Writing – original draft, Formal analysis, Conceptualization, Data curation, Investigation, Methodology. KE: Data curation, Writing – original draft, Writing – review & editing, Investigation, Methodology, Formal analysis. PM: Project administration, Supervision, Writing – original draft, Funding acquisition, Resources, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The author(s) declare that no Gen AI was used in the creation of this manuscript.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/frsus.2025.1601933/full#supplementary-material>

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