

AYÍKÁ

ISSN: 2664-3030 (Print)
2664-3022 (Online)

**JOURNAL OF ENVIRONMENT AND
POLITICS IN AFRICA**

AYIKA: JOURNAL OF ENVIRONMENT AND POLITICS IN AFRICA

DOI: <https://doi.org/10.69778/2664-3022/2026/8.1/EN>

Editorial Note

This issue of *AYIKA* brings together a rich and timely collection of scholarship that underscores a central truth: in Africa, environmental questions are deeply political, and political realities are increasingly shaped by environmental change. The contributions in this volume reflect the growing complexity of this relationship, engaging themes that span governance, technology, security, sustainability, and identity across diverse African contexts and beyond.

A defining feature of this issue is its strong engagement with the role of digitalisation in advancing sustainability. From the systematic review on how digitalisation enables decarbonisation, to analyses of agri-tech adoption in Nigeria and South Africa, the volume highlights the transformative potential of technology in addressing environmental challenges. These contributions move beyond optimism, carefully examining the mechanisms and constraints that shape technological uptake. They remind us that digital solutions are not neutral; their effectiveness depends on policy frameworks, institutional capacity, and socio-economic conditions.

Equally prominent is the question of governance, particularly in relation to service delivery and institutional performance. The examination of water service failures in Gauteng Province offers a sobering account of how governance lapses can translate into environmental and public health crises. Similarly, the discussions on public service reform and parliamentary oversight reveal the persistent challenges of accountability and administrative effectiveness across the continent. Together, these studies point to a critical insight: sustainable environmental outcomes are contingent on capable, transparent, and responsive institutions.

The issue also engages deeply with questions of political order, security, and regional cooperation. Analyses of Zimbabwe's political history, hybrid regimes in Central Africa, and border conflicts involving Nigeria reveal how political instability and governance structures shape environmental management and development trajectories. The exploration of indivisible security within the SADC region further highlights the interconnectedness of peace, cooperation, and sustainable development. These contributions reinforce the idea that environmental sustainability cannot be pursued in isolation from broader political and security dynamics.

Another important strand in this volume is the emphasis on economic strategies and livelihoods, particularly in rural contexts. Articles on organic agribusiness, marketing strategies aligned with climate action, and the challenges faced by women in agribusiness illuminate the everyday realities of sustainability. They foreground the experiences of local actors, especially women entrepreneurs, whose resilience and innovation are often overlooked. By examining the socio-economic factors shaping revenue growth and participation, these studies contribute to a more inclusive understanding of development.

The volume also makes a significant intellectual contribution by foregrounding indigenous knowledge systems and alternative epistemologies. The exploration of

Ubuntu as a framework for regional governance offers a human-centred perspective that challenges dominant policy paradigms. Similarly, the critique of epistemic violence in transboundary conservation highlights the marginalisation of local knowledge and agency. These interventions are particularly important in rethinking whose knowledge counts in environmental governance and how more equitable frameworks can be developed. Urban spaces and cultural expressions are not left out of this conversation. Contributions on city branding in Harare and the intersection of art, space, and identity in Durban demonstrate how environmental and political dynamics are experienced and expressed in urban contexts. These studies expand the scope of environmental politics by incorporating cultural and spatial dimensions, offering fresh insights into how cities in the Global South are responding to climate change.

Notably, this issue also extends its analytical reach beyond Africa, with a study on urban climate initiatives in Brazil and a comparative examination of socio-economic vulnerability in Sub-Saharan Africa and the Pacific Islands. These contributions enrich the volume by situating African experiences within a broader global context, encouraging cross-regional learning and dialogue.

Finally, the inclusion of research on language and education, such as the study on tense substitution errors among Tshivenda-speaking students, serves as a reminder of the interconnectedness of knowledge production, communication, and development. It highlights the importance of education in shaping the capacity to engage with complex environmental and political issues.

Taken together, the articles in this issue reflect a vibrant and interdisciplinary field of inquiry. They challenge simplistic narratives and instead offer nuanced analyses that recognise the interconnected nature of environment and politics in Africa. As the continent continues to navigate the pressures of climate change, population growth, and political transformation, the insights presented here are both timely and necessary. This volume invites scholars, policymakers, and practitioners to think more critically and act more collaboratively. It is our hope that the conversations sparked within these pages will contribute to more just, sustainable, and context-sensitive approaches to environmental governance in Africa and beyond.

Managing Editor

Prof. Kayode EEsuola

Institute of African and Diaspora Studies.

University of Lagos, Nigeria

oeesuola@unilag.edu.ng

Editor

Dr. Bamidele Olajide

Department of Political Science

University of Lagos, Nigeria

contactdele@gmail.com

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ANCESTRAL VOICES IN MODERN CRISES: TRADITIONAL LEADERSHIP AND CLIMATE ADAPTATION IN ZIMBABWE

Douglas Nyathi,

School of Public Management, Governance and Public Policy,
University of Johannesburg,
Gauteng, South Africa
douglasnyathi08@gmail.com
dnyathi@uj.ac.za

ORCID ID: <https://orcid.org/0000-0003-1310-627X>

Manase K Chiweshe,

Department of Community and Social Development,
University of Zimbabwe and Department of Sociology,
Rhodes University, Grahamstown,
South Africa

ORCID ID: <https://orcid.org/0000-0002-9781-6633>

Abstract

Climate change presents unprecedented environmental, social and economic challenges, especially for rural communities in Zimbabwe. In Matopo and Lupane districts, traditional leaders have historically played a vital role in community governance and environmental management. However, the increasing impacts of climate change, such as recurring droughts and shifts in planting seasons, have revealed the limits of traditional coping methods. This study explores the role of traditional leadership in climate change adaptation, focusing on how ancestral knowledge, community influence, and cultural authority are mobilised in response to these environmental crises. Guided by Indigenous Knowledge Systems (IKS) theory, this research uses a qualitative case study approach, collecting data from in-depth interviews, focus groups, and key informant testimonies with traditional leaders, community members, and local government officials. The results show that traditional leaders act as essential intermediaries between communities and external entities, facilitating the dissemination of climate-related knowledge, managing communal resources, and enforcing traditional conservation practices. Nonetheless, their efforts are restricted by limited institutional support, restricted access to scientific data, and marginalisation within formal climate policies. This study concludes that traditional leadership remains a crucial yet underused asset in Zimbabwe's climate adaptation strategies. Their deep roots in local culture and governance make them well-placed to promote context-specific, sustainable adaptation measures. Governments and NGOs should bolster collaborations with traditional leaders by integrating indigenous knowledge into national climate plans, offering capacity-building initiatives, and formalising their roles in local climate governance. Recognising and valuing ancestral knowledge systems can strengthen community resilience by grounding climate change adaptation strategies in locally embedded experiences, cultural practices, and

historical environmental understanding. Such an approach enables communities to draw on intergenerational wisdom in managing ecological change while ensuring that adaptation initiatives are context-specific, culturally legitimate, and socially inclusive.

Keywords: *Indigenous Knowledge, Traditional leaders, Climate adaptation, Vulnerability, Resilience*

Introduction

Climate change poses an escalating threat to ecosystems, livelihoods, and cultural heritage globally, with rural communities in sub-Saharan Africa being particularly susceptible due to their dependence on climate-sensitive sectors, such as agriculture and natural resource utilisation (Brown, Hammill and McLeman, 2012). Like many nations in the Global South, Zimbabwe is experiencing increasingly erratic weather patterns, including prolonged droughts, inconsistent rainfall, and rising temperatures. These climatic changes have exacerbated food insecurity, reduced agricultural productivity, and heightened socioeconomic vulnerability, particularly in rural areas (Chagutah, 2010). In this context, the role of traditional leadership in facilitating community-based adaptation has received renewed attention. Traditional leaders, including chiefs, headmen, and village elders, have historically played a crucial role in shaping communal values, managing land and natural resources, and maintaining social cohesion (Logan, 2009). Embedded in Indigenous Knowledge Systems (IKS), these leaders possess profound generational insights into environmental patterns, seasonal cycles, and locally appropriate adaptation strategies (Mapara, 2009). IKS encompasses a holistic understanding of nature, combining empirical observations with cultural

and spiritual interpretations, and is often transmitted orally through storytelling, rituals, and customary laws (Battiste and Henderson, 2000). Despite their significance, traditional leaders are frequently overlooked in formal climate change policy and development planning, which tend to prioritise scientific and technocratic solutions over indigenous approaches (Nyong, Adesina and Osman Elasha, 2007). This marginalisation reflects the broader power dynamics and epistemological biases that undermine the value of local knowledge in global climate discourse (Nhemachena et al., 2014). However, research has increasingly affirmed that the integration of IKS into climate adaptation strategies can enhance their effectiveness, relevance, and sustainability (Mistry and Berardi, 2016). This study contributes to the growing literature on decolonising climate governance by focusing on the lived experiences and practices of traditional leaders. It positions traditional leadership not merely as a relic of the past but as a dynamic and evolving force capable of guiding sustainable, culturally grounded responses to climate change (Nyong et al, 2007). Recognising these ancestral voices is essential for crafting inclusive, resilient adaptation frameworks that are responsive to the needs and wisdom of local communities (Dei, 2011).

The chapter advocates repositioning traditional leadership within climate

policy as a strategy to strengthen grassroots resilience and environmental stewardship in Zimbabwe and similar contexts. This study examines the role of traditional leadership in climate change adaptation in the Matopo and Lupane districts of Zimbabwe. Specifically, it aims to answer the following research questions: What is the role of traditional leaders in community development? How do traditional leaders in the Matopo and Lupane districts perceive and interpret the impacts of climate change within their communities? What Indigenous Knowledge Systems (IKS) and practices do traditional leaders use to guide climate change adaptation and environmental management? How do traditional leaders influence community responses and collective actions towards climate resilience? What opportunities and challenges do traditional leaders face when collaborating with the government and non-governmental stakeholders in climate change adaptation efforts?

Theoretical Framework

Indigenous Knowledge Systems (IKS) theory represents a comprehensive epistemological framework that encompasses the accumulated wisdom, practices, and worldviews developed by indigenous communities over centuries of intimate interaction with their ecosystems. Unlike Western scientific paradigms, which often compartmentalise knowledge into discrete disciplines, IKS is inherently holistic, integrating ecological, spiritual, social, and cultural dimensions into a unified understanding of the world (Battiste & Henderson, 2000). This knowledge is deeply context-specific, shaped by local environmental conditions,

historical experiences, and communal values, and is traditionally transmitted through oral narratives, rituals, and intergenerational mentorship rather than formal institutional structures (Dei, 2011). IKS theory challenges the hegemony of Western epistemologies by asserting the validity and sophistication of indigenous ways of knowing, particularly in the context of environmental stewardship. Central to this framework is the principle of interdependence, the recognition that human well-being is inextricably linked to the health of the natural world (Mapara, 2009). This contrasts with dominant anthropocentric models that often prioritise economic growth over ecological balance. IKS emphasises spiritual and relational dimensions of environmental knowledge, where landscapes are not merely resources, but sacred entities imbued with cultural meaning (Reyes-Garcia, 2023). Such perspectives foster sustainable resource use by embedding conservation ethics in cultural norms and collective memory.

In the context of climate change, IKS offers critical insights into adaptive strategies, including traditional weather forecasting (e.g., observing animal behaviour or celestial patterns), drought-resistant agricultural practices, and community-based natural resource management (Nyong et al., 2007). These methods are not static but evolve dynamically in response to environmental shifts, demonstrating the adaptive capacity of indigenous knowledge. For instance, in rural African communities such as Matopo and Lupane, traditional leaders, as custodians of IKS, leverage this knowledge to guide seasonal farming cycles, water management, and

responses to ecological stressors (Mohan, 2024). Their leadership underscores the role of IKS in enhancing climate resilience at the local level. Despite its demonstrated efficacy, IKS is frequently marginalised in formal climate policy and scientific discourse, which tend to privilege technocratic solutions over community-based knowledge (Dorji et al., 2024). This exclusion not only undermines the potential for culturally appropriate adaptation strategies but also perpetuates epistemic injustice by dismissing indigenous voices as anecdotal or unscientific. IKS theory thus serves as a critical tool for advocating the integration of indigenous knowledge into environmental governance, challenging policymakers and researchers to adopt more inclusive, decolonial approaches (Byskov and Hyams, 2022). This study employs IKS theory as both an analytical lens and a praxis-oriented framework. Analytically, it examines how traditional leaders in Matopo and Lupane utilise indigenous knowledge to navigate climate variability, positioning them as key agents of resilience rather than passive subjects of external interventions. Methodologically, the study aligns with IKS principles by prioritising participatory research methods, such as oral histories and community dialogues, to ensure knowledge co-production (Donovan et al., 2025). The findings advocate for institutional recognition of IKS in climate adaptation planning, arguing that hybrid systems, which integrate scientific and indigenous knowledge, can enhance sustainability while empowering local communities (Ciocoo et al., 2024). By centring IKS theory, this research not only validates

the scientific relevance of indigenous epistemologies but also redefines traditional leaders as pivotal actors in global climate justice movements. Their knowledge systems, rooted in place-based experience and intergenerational wisdom, offer actionable pathways for resilience that are both ecologically sound and socially equitable.

Methods and Materials

This study employed a qualitative case study design to examine the role of traditional leadership in climate change adaptation within the Matopo and Lupane districts of Zimbabwe. The case study approach was chosen due to its effectiveness in investigating complex social phenomena within their natural settings, thereby enabling a thorough understanding of Indigenous Knowledge Systems (IKS) and community-based climate responses (Yin, 2014). Given the culturally embedded nature of traditional leadership and indigenous environmental knowledge, this design facilitated a detailed exploration of how local practices intersect with broader climate adaptation strategies (Creswell, 2013). The study focused on depth rather than breadth, ensuring that the findings were rooted in the lived experiences of the communities while also contributing to theoretical discussions on IKS and climate resilience.

Data collection employed multiple qualitative methods to enhance validity through triangulation (Patton, 2002). Primary data were gathered through thirty in-depth interviews with traditional leaders (chiefs, headmen, and village elders), elders, youth representatives, and household heads.

These semi-structured interviews allowed participants to share detailed personal narratives on climate-related challenges, traditional adaptation practices, and the evolving role of leadership in environmental governance. Each interview lasted between 45 and 90 minutes, was audio-recorded with the participant's consent, and was later transcribed for analysis. To complement individual perspectives, two Focus Group Discussions (FGDs) were conducted, one in each district, involving 8 to 12 participants per session. The FGDs encouraged collective dialogue, revealing shared community perceptions, contested knowledge, and intergenerational dynamics in climate adaptation. Ten key informant interviews were held with local government officials, environmental officers, and NGO representatives to contextualise community-level findings within institutional and policy frameworks.

Participant selection followed purposive and snowball sampling strategies to ensure the inclusion of knowledgeable and experienced individuals (Yin, 2014). Traditional leaders were prioritised as custodians of indigenous knowledge, while household members provided grassroots insights. Snowball sampling further enriched recruitment by leveraging community networks to identify additional key informants (Biernacki & Waldorf, 1981). Data analysis was conducted using qualitative content analysis, which systematically categorised textual data into themes while remaining open to emergent patterns (Krippendorff, 2018). A hybrid inductive-deductive approach guided coding, with initial

themes arising organically from the data, while later interpretations were refined through the lens of IKS theory. Thematic categories included the spiritual dimensions of environmental knowledge, the intergenerational transmission of practices, and the tensions between indigenous and scientific approaches to climate adaptation. To ensure analytical rigour, findings were cross-verified across interview transcripts, FGD notes, and key informant data, enhancing the credibility of interpretations.

Ethical considerations were central to the research process. Informed consent was obtained from all participants, with clear communication about the study's purpose, voluntary participation, and confidentiality safeguards (Israel & Hay, 2006). Anonymity was preserved through pseudonymization, and data were stored securely to prevent unauthorised access. Ethical clearance was secured from relevant institutional review boards, and community entry protocols respected local customs by seeking approval from traditional authorities before commencing fieldwork. Reflexivity was maintained through a research journal documenting the investigator's positionality and potential biases, while peer debriefing sessions provided external validation of analytical decisions (Berger, 2015). Despite its strengths, the study acknowledges limitations, including the contextual specificity of its findings, which may not be universally generalizable; however, they offer transferable insights for similar rural African communities (Mudzengi, 2012). Language barriers were mitigated through professional translation and back-translation of interviews conducted in IsiNdebele and

Shona. By integrating diverse data sources, maintaining ethical integrity, and grounding analysis in IKS theory, this methodology provided a robust framework for examining traditional leadership as a vital component of climate resilience. The approach not only captured the richness of indigenous knowledge but also demonstrated its relevance in contemporary climate adaptation discourse.

Findings and Discussions

Role of Traditional Leaders in Community Development

This study's first research question aimed to investigate the role of traditional leaders in community development, particularly within rural Zimbabwean contexts, where chiefs, headmen, and village elders remain central to governance and social cohesion. Drawing on qualitative data from interviews, focus group discussions, and field observations in Matopo and Lupane districts, four key functions of traditional leadership emerged: custodianship of land and culture, dispute resolution, mobilisation of community resources, and facilitation of development partnerships. Analysed through the theoretical lens of Indigenous Knowledge Systems (IKS), these roles demonstrate how traditional governance structures embody holistic, place-based epistemologies that sustain both ecological and social resilience (Battiste & Henderson, 2000; Dei, 2011).

Custodians of Land and Cultural Identity: Embedding IKS in Development

Traditional leaders function as primary custodians of communal land and indigenous knowledge systems, ensuring that development aligns with cultural and environmental imperatives. In both study sites, participants emphasised that Land allocation, whether for homesteads, agriculture, or communal projects, chiefly relies on authority, as it incorporates historical, spiritual, and ecological considerations. One elder's assertion that "No development can happen without the chief's blessing. He knows the land, its history, and its limits" underscores the IKS principle that land is not merely an economic resource but a sacred trust (Mapara, 2009). This perspective challenges Western neoliberal models of land use by prioritising intergenerational equity and spiritual reciprocity (Reyes-Garcia, 2023). A case in Matopo, where a proposed mine was relocated to protect a heritage site after the intervention of elders, illustrates how IKS mediates between modernity and tradition, resisting extractive development that undermines cultural sovereignty.

Dispute Resolution and Social Cohesion: Relational Justice in IKS

The role of traditional leaders in conflict resolution exemplifies the IKS emphasis on relational harmony and restorative justice. Unlike formal legal systems, which often prioritise punitive measures, traditional adjudication, as described by a Lupane youth, "When people fight over land or cattle, they go to the headman. He listens. He brings peace." This reflects a communal epistemology where justice is participatory and reparative (Mohan, 2024). This approach not only resolves immediate disputes but also strengthens social cohesion, a prerequisite for

collective climate adaptation (Nyong et al., 2007). For instance, in cases where NGO initiatives faced local resistance, traditional leaders mediated tensions by reframing external interventions through indigenous frameworks of trust and collective benefit. Such interventions align with IKS theory's critique of top-down governance, instead affirming community agency in peacebuilding.

Mobilisation of Local Resources: IKS as Participatory Praxis

Traditional leaders' ability to mobilise labour and resources for communal projects, such as borehole repairs or nutrition gardens, demonstrates the IKS principle of collective responsibility. In Lupane, a village head's success in organising land, labour, and management committees for an agricultural project highlights how indigenous governance leverages social capital for tangible development (Ciocoo et al., 2024). This contrasts with externally imposed projects that often fail due to a lack of local ownership. As an NGO officer in Matopo noted, "Without the chief's support, our project would not have reached the people. He introduced us and helped us understand the real needs." Here, IKS acts as a bridge, ensuring external interventions are adapted to local ontologies of cooperation and reciprocity (Donovan et al., 2024; Nyathi et al., 2025).

Facilitation of Partnerships: IKS as a Decolonial Interface

The traditional leaders' intermediary role between communities and external actors (NGOs, government) exemplifies the decolonial potential of IKS. By vetting and contextualising development initiatives, they resist

epistemic marginalisation and recentre indigenous priorities (Byskov and Hyams, 2022). For example, chiefs in both districts selectively partnered with agencies that respected local knowledge, rejecting programmes that disregarded cultural norms. This selective engagement mirrors IKS critiques of "development" that perpetuates dependency, instead advocating for hybrid systems where scientific and indigenous knowledge coexist (Ciocoo et al., 2024). Far from being obsolete, traditional leadership in Matopo and Lupane embodies IKS principles that offer sustainable alternatives to mainstream development paradigms. Their roles as custodians, mediators, mobilisers, and intermediaries reflect a governance model rooted in relationality, ecological stewardship, and cultural legitimacy. Empowering these institutions through policy recognition and capacity-building, while resisting co-optation into bureaucratic systems, could amplify their transformative potential. As climate threats intensify, the IKS-driven leadership documented here provides a blueprint for development that is not only participatory but also epistemologically just.

Traditional Leaders' Perceptions of Climate Change Impacts

The perceptions of traditional leaders in Matopo and Lupane districts regarding climate change reveal a sophisticated integration of empirical observation and Indigenous Knowledge Systems (IKS), offering critical insights into localised climate impacts and adaptation strategies. Through in-depth interviews and focus group discussions, it became evident that these leaders conceptualise climate change not as a distant scientific phenomenon but as a

lived reality manifested through disrupted ecological patterns, agricultural distress, and social upheaval. Their interpretations, grounded in IKS frameworks, challenge dominant climate discourses by centering spiritual, relational, and place-based understandings of environmental change (Battiste & Henderson, 2000; Dei, 2011).

Traditional leaders meticulously documented shifts in weather patterns, emphasising the unreliability of once-dependable environmental indicators. A Lupane leader's observation, "In the past, we could tell the beginning of the rainy season by the blooming of certain trees or the arrival of birds like *inkonjane* (swallows). Now, those signs are no longer reliable" exemplifies the IKS principle of intergenerational ecological literacy, where knowledge is transmitted through sustained interaction with local ecosystems (Mapara, 2009). This disruption of phenological cues underscores the epistemic violence of climate change, which not only alters landscapes but also erodes Indigenous systems of forecasting and timekeeping (Reyes-Garcia, 2023). Where Western climate science prioritises quantitative data (e.g., temperature metrics), IKS privileges relational indicators, the behaviour of species, celestial patterns, and soil conditions, to interpret environmental health. The leaders' accounts thus decolonise climate knowledge by asserting the validity of embodied, place-based ways of knowing (Dorji et al., 2024).

Many leaders interpret climate disruptions as signs of spiritual discord, connecting unpredictable weather to neglect of cultural rituals or environmental transgressions. This

view aligns with IKS's sacred ecology (Ciocoo et al., 2024), which considers humans as custodians rather than rulers of nature. The Matopo headman's lament:

People plant as before, but the rains fail. Harvests are poor. Hunger is now a frequent visitor.

Such anecdotes reflect a cosmological understanding where ecological and spiritual health are interconnected. Such views challenge simplified climate narratives that separate physical causes from cultural and moral factors. IKS theory here highlights the limitations of technocratic adaptation measures (e.g., drought-resistant seeds) that overlook the *ritual aspects* of resilience, such as rainmaking ceremonies or taboos against overharvesting (Mohan, 2024). Leaders insightfully connect the effects of climate change with social fragmentation. Deforestation and soil erosion, linked to population growth and abandonment of traditional land laws, are seen as causes of water shortages and crop failures. The Lupane elder's account, "Young men leave for South Africa because there is no food or work here. Families are breaking up," shows how IKS views climate change as a relational crisis that disrupts not only ecosystems but also kinship networks and community solidarity (Nyong et al., 2007). This comprehensive perspective contrasts with policy responses that treat migration, agriculture, or poverty separately.

While leaders critiqued external interventions ("They come with their ideas, but do not ask us"), they also advocated for the revitalisation of

Indigenous practices as adaptive mechanisms. Proposed solutions communal granaries, rotational grazing, and intercropping, embody IKS principles of collective stewardship and experiential learning (Donovan et al., 2024). These practices are not static but dynamically reinterpreted; for example, some leaders integrated drought-tolerant crops into traditional farming systems, demonstrating IKS's adaptive hybridity (Mudzengi, 2012). The leaders' narratives demand a reconfiguration of climate governance to centre IKS as coequal to scientific knowledge. Their frustration with top-down interventions reflects broader patterns of epistemic injustice (Byskov and Hyams, 2022), where Indigenous perspectives are marginalised in policy spaces. The study highlights the importance of two-eyed seeing (Bartlett et al., 2012), integrating IKS with scientific frameworks to develop culturally grounded, ecologically sound adaptation strategies.

Indigenous Knowledge Systems and Practices in Climate Adaptation

In the Matopo and Lupane districts of Zimbabwe, traditional leaders demonstrate how Indigenous Knowledge Systems (IKS) serve as dynamic frameworks for climate adaptation, blending empirical ecological knowledge with spiritual and communal values. Grounded in generations of place-based observation and cultural transmission (Battiste & Henderson, 2000), these systems challenge dominant climate adaptation paradigms by centring relationality, reciprocity, and ritual as pillars of resilience. Through ethnographic engagement with traditional leaders,

this study documents how IKS operates not as a static relic but as a living, adaptive praxis that negotiates modernity while sustaining ecological balance. Traditional leaders employ sophisticated phenological indicators to interpret seasonal shifts, exemplifying IKS's *embodied climatology*. The Matopo headman's observation, "When the *inkubabulongwe* [beetles] begin to emerge in large numbers, it means that the rains are close", reveals a knowledge system where insects, plants, and celestial patterns form an interconnected forecasting network. This contrasts sharply with imported meteorological models that often fail to account for microclimatic variations (Mapara, 2009). The epistemic tension here mirrors Dei's (2011) critique of scientific imperialism, where Western climate science marginalises Indigenous ways of reading environmental signals. By privileging *amaphane* tree flowering or swallow migrations over satellite data, communities reclaim epistemic agency, asserting that effective adaptation requires situated knowledge.

Rainmaking ceremonies (*amawosana*) illustrate the spiritual-ecological nexus of IKS. Far from mere superstition, these rituals, led by spirit mediums and chiefs, function as psychosocial climate infrastructure. As communal acts of hope and solidarity, they mitigate the trauma of drought by reactivating collective agency. A Lupane elder explained, "The drums call the ancestors, but they also call us to remember our duty to the land." This duality reflects *ritual stewardship*, where ceremonies simultaneously honour spiritual covenants and mobilise practical responses, such as water harvesting (Ciocoo et al., 2024). When

Matopo's 2021 drought prompted leaders to organise *amawosana*, the subsequent digging of *amachibi* (water pits) and seed banking demonstrated how spiritual practice catalyses material adaptation, a nuance often lost in external interventions. The conservation of sacred forests epitomises IKS's *preventive adaptation*. A Lupane leader's assertion, "These forests are not just sacred; they are a source of herbs, fruits, and water", underscores their role as biodiverse refugia and microclimate regulators. Customary taboos against tree cutting (violations of which incur spiritual sanctions) mirror modern conservation ethics but derive authority from cosmological order (Mohan, 2024). These groves serve as *living libraries*, preserving medicinal plants essential for addressing climate-induced health crises. Their deliberate exclusion from state land demarcations, however, reveals ongoing struggles over epistemic territory (Reyes-Garcia, 2023).

Traditional leaders champion Indigenous seed varieties as acts of *agroecological resistance*. Drought-resistant sorghum and millet, exchanged through community seed banks, counter the dependency cycles of commercial hybrids. As one elder noted: "*Our seeds know this soil; they remember the droughts.*" This personification reflects IKS's *relational ontology*, where crops are kin rather than commodities (Kimmerer, 2013). Rotational grazing (*ukusisa*) and other practices further embody IKS's time-tested adaptation, maintaining soil health through microbial diversity, a stark contrast to monoculture-induced degradation. The erosion of IKS due to youth outmigration and the cultural

erasure of formal education poses existential threats. Leaders lament that "the young no longer attend enkundleni [meetings]." Yet storytelling and apprenticeship programs are reclaiming intergenerational transmission.

Traditional leaders critique the "*policy apartheid*" that excludes IKS from formal frameworks. A chief's frustration, "NGOs bring tractors but ignore our seed fairs", exposes the coloniality of climate interventions (Byskov and Hyams, 2022). Cases like Zimbabwe's National Climate Policy, which reduced IKS to complementary status, reveal systemic epistemic injustice. The Matopo and Lupane cases demonstrate that IKS is neither nostalgic nor anti-modern. By treating rituals as resilience strategies, forests as climate archives, and seeds as ancestors, traditional leaders' model of radical hope (Lear, 2006) embodies a refusal to let coloniality dictate the terms of survival. As climate chaos escalates, their insistence that "the land remembers what the satellites forget" demands nothing less than a paradigm shift in adaptation governance.

Traditional Leaders' Influence on Community Responses and Collective Action for Climate Resilience

Traditional leaders in Matopo and Lupane districts embody what Dei (2011) terms embodied community governance, a holistic system of authority that weaves together spiritual, ecological, and social leadership to navigate climate crises. Their role in mobilising collective action demonstrates how Indigenous Knowledge Systems (IKS) operationalise climate resilience through culturally embedded practices

of reciprocity, knowledge transmission, and conflict mediation. This analysis reveals how traditional leaders function as *living institutions* of climate adaptation, their authority rooted in what Battiste and Henderson (2000) identify as relational accountability to both human and more-than-human communities. The *ilima* communal work system exemplifies IKS principles of collective survivance (Vizenor, 2008). When the Lupane headman states, “The chief sends a word, and people come with food, seed or oxen to help the plough,” he articulates a governance model where climate response is an obligation rather than a choice. This contrasts sharply with neoliberal adaptation programs that individualise responsibility through resilience-building workshops. The *ilima* system's effectiveness lies in its embedded reciprocity, and social-ecological memory, where today's helper becomes tomorrow's recipient in cyclical climate crises (Ciocoo et al., 2024).

Traditional leaders' enforcement of contour ridging and wetland protection through *dare* courts demonstrates IKS's jurisprudential sophistication. By fining illegal woodcutters, they enact what Ntsebeza (2005) terms a living constitution, adaptive regulations rooted in observed ecological changes rather than static statutes. The integration of water harvesting pits (*amagodi*) with traditional granaries reveals an IKS approach to climate adaptation as continuous infrastructure, where short-term water capture and long-term food storage are systemically linked. The elder's insistence that “This information is not included in the books. It passes from mouth to ear” underscores IKS as counter-

hegemonic education (Dei, 2011). In an era where school curricula often privilege Western climate science, traditional leaders sustain land-based pedagogies, teaching using planting songs, star narratives, and soil stories (Mudzengi, 2012). This oral transmission constitutes embodied knowledge sovereignty, resisting the epistemicide of colonial education systems (Donovan et al., 2025).

As climate conflicts intensify, traditional leaders' mediation practices exemplify what Nader (1990) terms the harmony ideology, a resolution focused on restoring social-ecological balance rather than punitive justice. Their approach aligns with IKS concepts of dispute-as-diagnosis, where conflicts over dwindling wells or grazing lands reveal systemic climate stresses requiring community-wide adaptation rather than individual punishment. Traditional leaders' fraught engagement with NGOs and government mirrors the indigenous paradox, simultaneously gatekeepers and supplicants in development processes (Byskov and Hyams, 2022). Their ability to align development programs with local needs demonstrates IKS's strategic syncretism, adopting useful external tools while maintaining epistemological sovereignty over adaptation priorities.

The undermining of traditional systems by ward councillors reflects what Quijano (2000) terms the coloniality of power, where modern governance structures deliberately erode Indigenous authority. Youth disengagement reveals the intergenerational epistemic rupture caused by what Thiong'o (1986) calls the cultural bomb of

Eurocentric education. The resilience of the Matopo and Lupane communities ultimately rests on collective continuance, the capacity of Indigenous systems to adapt while maintaining core values (Dorji et al., 2024). As one chief noted:

They bring their climate reports, but we live inside it.

This epistemic privilege of embodied climatology positions traditional leaders not as alternative stakeholders, but as essential architects of Africa's climate futures (Nyathi et al, 2025). Their daily practice of mobilising collective action, resolving conflicts and transmitting knowledge constitutes what Mignolo (2011) would recognise as decolonial climate praxis - an insistence that resilience cannot be imposed, but must emerge from the soil of place-based wisdom.

Opportunities and Challenges in Collaborative Climate Adaptation

The involvement of traditional leaders in climate change adaptation is increasingly acknowledged as crucial, particularly within rural communities in Zimbabwe, such as those in the Matopo and Lupane districts. Nevertheless, their collaboration with governmental and non-governmental stakeholders presents promising opportunities and challenges.

Opportunities for Collaboration

Traditional leaders contribute invaluable, deeply rooted knowledge, trust, and legitimacy to climate-adaptation initiatives. Governmental and Non-governmental Organisation (NGO) actors who engage traditional leaders in the initial stages of program design and implementation frequently encounter smoother community

integration and elevated participation rates. A development officer in Lupane observed the following:

Working through the chief and other traditional leadership structures speeds up project acceptance. People respect them, so if they support the project, the village joins in.

The authority of traditional leaders is acknowledged as crucial in facilitating local engagement, particularly in Community-Based Adaptation (CBA) initiatives, such as afforestation, conservation agriculture, and water harvesting. Their influence ensures that the interventions align with cultural norms, thereby enhancing the sustainability of climate-related projects. There are emerging opportunities for integrating knowledge systems. Several Non-Governmental Organisations (NGOs) have begun to incorporate Indigenous Knowledge Systems (IKS) into project design by collaborating with traditional leaders. For instance, early warning systems are being enhanced by integrating scientific climate forecasts with traditional indicators such as bird migration and plant flowering cycles.

This hybrid approach fosters community trust in climate messaging and promotes locally relevant solutions. Traditional leaders also provide logistical support, including organising community meetings, identifying vulnerable households, and enforcing local environmental bylaws. These contributions alleviate the operational burden on the overstretched state and NGO personnel, while reinforcing traditional governance structures. One participant opined that:

Traditional leaders are a crucial pillar of development and response to climate change and its impacts. Isiphala Senkosi is a grain reserve located within chiefs' homesteads, providing food for vulnerable community members, especially during times of drought. The Isiphala Senkosi programme was traditionally reserved for chiefs, but the government later resolved to extend it to all traditional leaders nationwide. We have seen positive developments in mitigating the impact of droughts, especially amongst vulnerable households, through the government initiative. What has improved the situation of the poor is that Non-Governmental Organisations have come in to support this traditional practice, which the Government of Zimbabwe resuscitated.

This expansion reflects IKS's adaptive communalism (Mapara, 2009), where customary welfare systems are scaled through state/NGO partnerships while maintaining their ethical core. The program's success stems from its embedded moral economy; unlike imported food aid, it operates through existing structures of reciprocity and chiefly accountability (Moha, 2024).

Challenges to Effective Collaboration

Despite these opportunities, traditional leaders encounter structural and systemic obstacles while attempting to collaborate with formal institutions. A significant issue is the marginalisation of traditional authority within national

and local policy frameworks. Climate adaptation programs are frequently designed in a top-down manner with minimal consultation or representation of customary governance structures. As articulated by headman in Matopo:

They make plans in the cities and come here just to tell us. We were not involved from the start.

This lack of inclusion results in fragmented implementation, where traditional leaders may remain uninformed about projects until they are already underway, thereby limiting their ability to provide meaningful influence or support for the initiative. Another challenge involves role ambiguity and competition between traditional leaders and contemporary political figures, such as councillors and government extension officers. Tensions arise when mandates overlap, particularly in resource management or the enforcement of environmental regulations. These overlaps can lead to conflicts or redundancy, thereby undermining the effectiveness of climate programs.

Some traditional leaders lack formal training in climate science or development planning, which limits their ability to engage equally with technical stakeholders. There is also a digital divide, as many leaders lack access to real-time climate information, constraining their capacity to plan and respond effectively. External actors sometimes overlook cultural protocols, bypassing traditional leaders for expediency. This erodes trust and can provoke community resistance, especially when programmes are seen as culturally insensitive or are imposed without consultation. While traditional leaders in Matopo and Lupane have

unique assets for climate change adaptation, such as cultural authority, indigenous knowledge, and community trust, they face significant barriers to full participation in collaborative frameworks. Unlocking the potential of these leaders requires deliberate efforts to formalise their roles, foster mutual respect, and promote inclusive planning that values both traditional and scientific contributions to resilience. Role conflicts between traditional leaders and councillors illustrate what Mamdani (1996) called *bifurcated governance*, a colonial legacy that creates competing legitimacy claims. This is worsened by *the credentialism trap*: traditional leaders' perceived lack of formal training reflects Western epistemic biases favouring classroom learning over intergenerational knowledge transmission (Byskov and Hyams. 2022; Donovan et al., 2025).

Conclusions and Recommendations

This study aimed to investigate the role of traditional leadership in climate change adaptation in the Matopo and Lupane districts of Zimbabwe. Utilising the Indigenous Knowledge Systems (IKS) perspective, this study examined traditional leaders' perceptions of climate change, the adaptive strategies they advocate, their influence on collective action, and the opportunities and challenges they encounter when collaborating with governmental and non-governmental entities. Data were collected through in-depth interviews, focus group discussions, and key informant testimonies, and analysed using content analysis. These findings indicate that traditional leaders possess a nuanced and experience-based understanding of climate change. Although many studies do not

employ scientific terminology, they accurately interpret environmental signals and identify patterns of change based on indigenous knowledge accumulated over generations. They recognised the impacts of climate variability on food security, water availability, migration, and social cohesion.

Traditional leaders actively implement IKS-based adaptation practices, such as rainmaking ceremonies, the preservation of sacred forests, the use of indigenous seed varieties, and the enforcement of local environmental bylaws. These practices, which are deeply embedded in cultural and spiritual belief systems, offer low-cost, sustainable, and community-accepted strategies for managing climate risks. Furthermore, traditional leaders play a pivotal role in mobilising collective action, organising communal labour, mediating conflicts over resources, and educating communities about sustainable land use. Despite these strengths, this study also identified significant barriers to effective collaboration between traditional leadership structures and formal stakeholders. Traditional leaders are often marginalised in climate governance processes, face role conflicts with elected officials, and lack formal training or access to climate data. In some instances, the erosion of cultural values and the influence of modernisation have undermined the authority and relevance of traditional systems.

To strengthen climate resilience in Zimbabwe's rural communities, a multifaceted approach is needed that both empowers traditional leaders and bridges the gap between indigenous and scientific knowledge systems. Central to this effort is the implementation of comprehensive capacity-building programs designed specifically for traditional leaders. These initiatives should provide accessible training in climate science fundamentals, project coordination, and effective engagement with government and development partners. By equipping

leaders with this knowledge while respecting their existing expertise, we create opportunities for more meaningful dialogue between traditional and formal governance structures. Concurrently, there must be a systematic effort to document, analyse, and incorporate Indigenous Knowledge Systems into national climate adaptation strategies. This requires establishing collaborative partnerships between universities, research institutions, and traditional communities to archive and validate indigenous environmental knowledge properly. Such collaborations should employ participatory research methods that position traditional leaders as co-researchers rather than mere subjects, ensuring their knowledge is preserved and transmitted to future generations while informing policy development.

At the community level, adaptation initiatives must be co-designed with traditional leadership to ensure cultural relevance and local ownership. This includes revitalising and supporting proven indigenous practices such as communal grain reserves, rotational agricultural systems, and traditional ecological stewardship rituals. These systems have demonstrated their effectiveness over generations and, when properly resourced, can significantly enhance community resilience to climate shocks. Perhaps most critically, we must foster genuine knowledge exchange between indigenous and scientific communities through carefully designed dialogue platforms. Regular bridging workshops, joint planning sessions, and inclusive monitoring systems can create spaces where different knowledge systems interact as equals, leading to innovative, context-appropriate adaptation solutions. These interactions must be grounded in mutual respect, recognising that both indigenous and scientific knowledge systems have valuable contributions to make.

To ensure the continuity of indigenous knowledge, targeted programs must engage younger generations through culturally

relevant environmental education that instils pride in traditional systems. Intergenerational learning initiatives can help maintain vital knowledge transmission channels while equipping youth with the tools to adapt these traditions to contemporary challenges.

Ultimately, these efforts transcend cultural preservation; they represent a pragmatic strategy for developing climate responses that are both effective and socially inclusive. By properly valuing and integrating indigenous knowledge systems and traditional leadership structures, Zimbabwe can develop more nuanced, culturally grounded approaches to climate adaptation that leverage the wisdom of the past to meet the challenges of the future. This integration of knowledge systems offers a pathway to resilience that is neither purely traditional nor exclusively modern, but thoughtfully hybrid, combining the best of both worlds to address the urgent climate challenges facing rural communities.

The study concludes that traditional leadership is a critical, though underutilised, component of climate change adaptation in rural Zimbabwe. Traditional leaders hold cultural legitimacy and indigenous expertise that complement scientific and policy-based approaches to climate resilience. However, institutional exclusion, limited capacity, and sociopolitical changes pose threats to their participation in adaptive governance. Bridging the gap between indigenous and formal knowledge systems requires a shift from viewing traditional leaders as relics of the past to recognising them as active agents of resilience. Their participation should not be tokenistic, but government agencies and development partners should formally recognise the role of traditional leaders in climate governance. This includes involving them in policy consultations, local climate committees, and disaster risk-planning platforms. Their insights can enhance cultural relevance and community acceptance of adaptation strategies.

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