

Epistemic Justice in Nature Reserves Management

Exploring Intersecting Indigeneity and Politics of Belonging in Dwesa, South Africa

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Abstract

Natural resource management through nature reserves and protected areas has sparked great interest among a variety of stakeholders. Global institutions, as well as national governments and policies, acknowledge the importance of institutionalizing natural resource management to achieve sustainable development goals. However, the literature frequently ignores the consequences of epistemic inequalities caused by stakeholders' varying indigeneity and politics of belonging. These injustices emerge when stakeholders do not have equal control over resource management and exploitation.

This research focuses on two distinct stakeholder groups with opposing views on environment conservation: indigenous peoples and the legally recognized management of Dwesa Nature Reserve in South Africa (referred to as DNR from here onwards). The main aim of this study was to understand how these two sets of stakeholders perceive one another with regards to epistemic disparities, indigeneity, and politics of belonging. This enabled the exploration of the extent to which these perceptions have an impact on DNR management. Data were obtained from 96 community members from four villages located along DNR using focus group discussions. Additionally, one representative from DNR management participated in a key-informant interview offer an 'official' perspective.

The study revealed significant differences in indigeneity, politics of belonging, and epistemic standings among stakeholders. However, these differences do not inherently lead to epistemic injustice in the management of the DNR, as each group views the other as epistemic outsiders, thus balancing potential unfair treatment. Despite their distinct epistemic and cultural backgrounds, all stakeholders engage in nature conservation through different terminologies and frameworks. The study highlights the intersection of Indigenous Knowledge Systems (IKS) and Euro-American Knowledge Systems, demonstrating their interdependence and effective communication within their respective contexts. Both knowledge systems help to achieve the common objective of protecting the DNR.

The study also reveals overlaps between stakeholders' indigeneity and epistemic knowledge, demonstrating that, while their techniques differ, their shared goal is

sustainable conservation. The research advocates for more inclusive conservation frameworks that acknowledge and embrace the diverse epistemic contributions of all stakeholders. Addressing social and epistemic disparities can make conservation initiatives in DNR sustainable.

Keywords: environmental conservation; epistemic justice; indigeneity; politics of belonging; Dwesa-Cwebe Nature Reserve; South Africa

Introduction

Nature reserves, such as the DNR in South Africa, are significant socio-ecological investments and ecological experiments which exemplify how multiple stakeholders who have complex backgrounds interact with one another with an overall aim of conserving the environment. Nature reserves management allows the interaction of different conservation frameworks, with some embedded on institutionalism and while others anchored in traditionalism. Due to these different philosophies, research indicates that nature reserves produce varied outcomes (Nyamahono, 2023). These mixed outcomes arise from diverse stakeholders who have differing knowledge systems and conservational frameworks regarding nature conservation (Baker & Constant, 2020). Achieving epistemic justice – characterized by fair dissemination, recognition, and acknowledgment of various knowledge systems – is crucial for conservation spaces to fulfill their mandates (Baker & Constant, 2020).

Understanding epistemic justice requires comprehension of stakeholders' indigeneity and the politics of belonging. Indigeneity, which signifies originating or occurring naturally in a specific place, ensures that diverse knowledge systems are recognized and valued, contributing to a holistic and inclusive understanding of knowledge (Antonsich, 2010; Fishel, Winter & Burke, 2021; Petersmann, 2021). When one's indigeneity is compromised, for example in instances where the indigenous peoples feel marginalized, Yuval-Davis (2016) and Antonsich (2010) argue that their politics of belonging, or their 'belongingness' tends to be negatively affected. Belongingness of individuals is seen as emotional attachment they have to a place, leading to a sense of 'feeling at home.' This sense must remain neutral to reflect a true state of being (Yuval-Davis, 2016; Antonsich, 2010). When their belongingness is endangered, the 'at home' feeling fades away, politicizing the idea of 'belonging.' Both indigeneity and politics of belonging are thus crucial for achieving epistemic justice. For example, local communities' indigeneity relates to their ancestral lands, while institutional frameworks' indigeneity relates to the motives behind policy enactment.

In this context, the interplay of power dynamics, emotional attachment, social justice issues, and stakeholders' identities significantly influences inclusion or exclusion in conservation efforts (Antonsich, 2010; Fishel et al., 2021; Petersmann, 2021; Baker & Constant, 2020).

These intersections often result in stakeholders holding contrasting views of each other. The literature shows mixed results on this subject. Some studies highlight the positive impacts of collaborative conservation (Koontz, Jager & Newig, 2020), others emphasize the role of institutional practices in harmonizing participation (Börner, Schulz, Wunder & Pfaff, 2020), while others point out contradictory participation dynamics (Nyamahono, 2023).

This study posits that the success of DNR relies on stakeholders' acknowledgment of each other's indigeneity and sense of belonging. It examines how intersecting politics of belonging and indigeneity shape nature conservation, addressing access, inclusion, and representation. By addressing these questions, the study critiques the romanticization of certain participation frameworks and emphasizes the importance of acknowledging diverse indigeneity and politics of belonging as key factors for successful nature reserve management. It demonstrates that effective management of DNR requires stakeholders to recognize their indigeneity differences and belonging while speaking the same conservation language.

Therefore, the main question underpinning this study is:

- How do stakeholders perceive one another in the context of epistemic differences, indigeneity and differing politics of belonging in DNR conservation, and what are the impacts of these perceptions on conservation efforts?

Analysis and Results

Research Method

This study stems from my PhD conducted during the period 2018-2022. The study employed qualitative research methods to understand how stakeholders perceive one another in the context of epistemic differences, indigeneity, and differing politics of belonging and their implications in environmental conservation.

Study Area

The study was conducted in South Africa at DNR and four villages located next to it (see Figure 1). The nature reserve was established in the 1980s through a controversial process involving the displacement of people from their ancestral lands and relocation to designated lands (Tsawu, 2022; Fay, 2008). Since then, the area has become a focal point for issues related to stakeholders' indigeneity and sense of belonging. Data was collected from four villages adjacent to DNR: Ntubeni, Mendwane, Hobeni, and Cwebe.

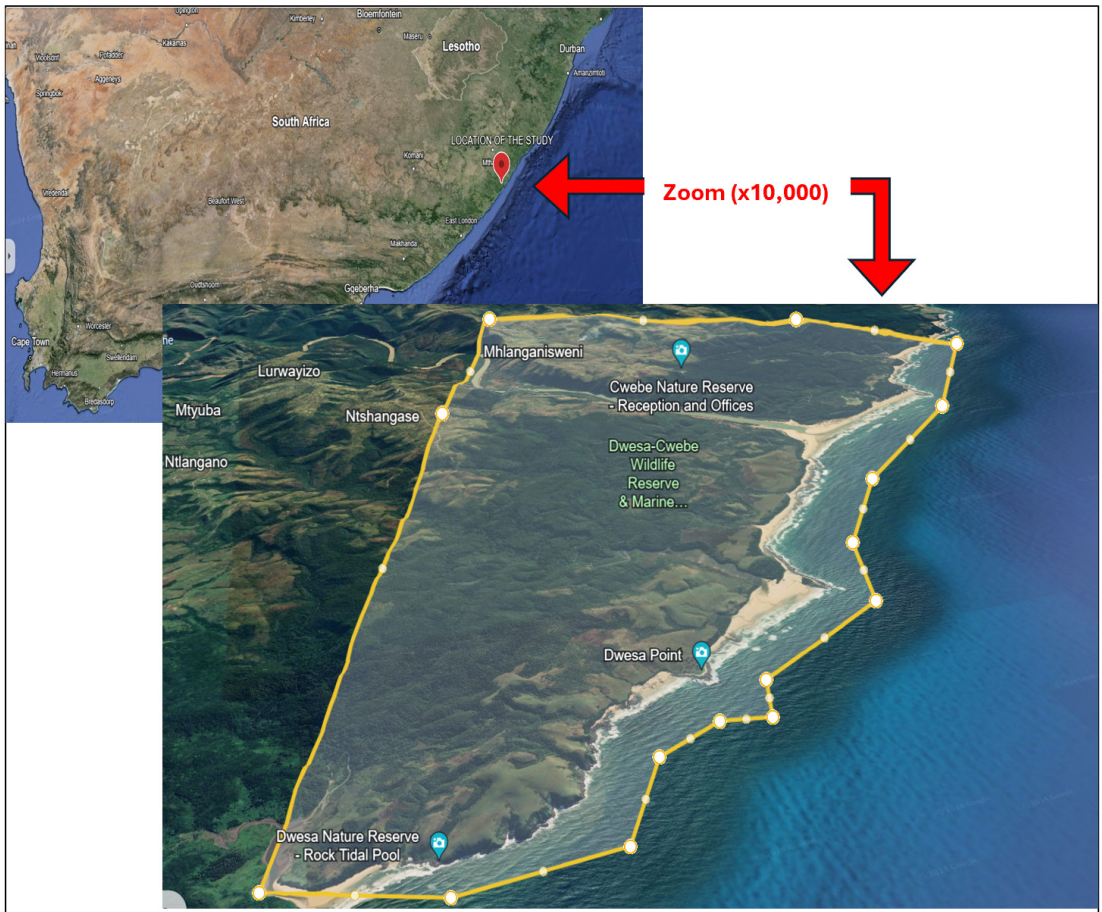


Figure 1: Study Area

Sampling, Data Collection and Analysis

As shown in Table 1, data was collected through three focus group discussions in each village, with each group consisting of eight participants from distinct demographic categories – youth (18-35 years), women, and the elderly (36+ years). This approach resulted in a total sample of ninety-six (96) participants. Key informant interviews were done with one representative from the nature reserve’s management. Data was analyzed using thematic analysis.

Selected Area	Participating Village	Focus Group 1 (The Elderly)	Focus Group 2 (The Women)	Focus Group 1 (The Youths)	DNR Management
Dwesa Area	Ntubeni	8	8	8	1
	Mendwane	8	8	8	
Cwebe Area	Hobeni	8	8	8	
	Cwebe	8	8	8	
Total Participants Per Group	4 villages	32 elders	32 women	32 youths	1 Manager
Grand Total	97 participants from 4 villages				

Table 1: Study Sample
Source: Author

Findings from literature review

As highlighted in the introduction, the management of nature reserves typically involves collaborative participation from various stakeholders, particularly when local communities are engaged. In such multi-stakeholder contexts, issues of epistemic justice become crucial due to the need to address inequalities in knowledge recognition and integration, aiming for a sustainable and inclusive conservation framework. This section reviews the literature on the intersection of epistemic justice, the differing indigeneity of participants, and the varying politics of belonging within the context of environmental conservation through formalized nature reserves.

Fricker (2007) examines the concept of epistemic justice, which focuses on maintaining power balances in knowledge recognition. Fricker (2007) makes a distinction between hermeneutical injustice, which exists when individuals' indigeneity is not well understood, and testimonial injustice which occurs when prejudice undermines individuals' credibility. Hermeneutical injustice usually happens when individuals lack enough resources to make their social experiences known, while testimonial justice describes the case of marginalization which leads to biased and unfair communication (Fricker 2007). Fricker's (2007) exploration underscores how prejudice and power dynamics can undermine an individual's capacity as a knower, highlighting the need for fairness, particularly when dealing with marginalized groups.

Medina (2013) builds upon Fricker's (2007) theory by examining how epistemic injustices are deeply embedded in social systems. The study critically analyzes how marginalized communities experience these injustices and offers recommendations to address such inequalities. The study observes that marginalized groups often develop epistemic resistance to challenge the injustices they face (Medina, 2013). This resistance manifests in various forms, which Medina (2013) refers to as the virtues of epistemic resistance, including epistemic solidarity, open-mindedness, and epistemic humility.

He emphasizes the importance of active resistance, inclusive practices, and collective efforts in combating these injustices. Medina's (2013) theories on epistemic justice highlight how marginalized individuals and groups can leverage different epistemic practices to achieve justice.

Both Fricker (2007) and Medina (2013) provide essential frameworks for understanding and addressing challenges in environmental conservation, especially when multiple stakeholders are involved. Local communities often hold valuable traditional knowledge about environmental conservation through their Indigenous Knowledge Systems (IKS). However, this knowledge is frequently undervalued by institutional stakeholders, who may prioritize Euro-American Knowledge Systems due to their perceived universality and technical rigor. Conversely, local communities may also undervalue institutional knowledge because it lacks relevance to their specific local context.

Medina's (2013) concept of hermeneutical injustice is particularly relevant here, as local communities may lack the conceptual or technical language needed to fully articulate their experiences and knowledge about the natural environment. This gap can marginalize these communities, preventing them from participating effectively in decision-making processes related to conservation. As a result, their valuable insights and contributions are often overlooked, leading to less inclusive and potentially less effective conservation strategies. Addressing these epistemic injustices is crucial for fostering a more equitable and sustainable approach to environmental conservation.

The scholarship of epistemic justice is closely intertwined with that of indigeneity. Smith (2021) examines the role of IKS in conservation, highlighting their importance among indigenous peoples while also noting their historical marginalization by Western ideologies. These ideologies often treat IKS as subjects to be studied rather than as equal partners in environmental conservation. This critique aligns with Akpan's (2011) study, which also condemns Western frameworks for undermining IKS.

Kimmerer (2013) advocates for the integration of different knowledge systems in nature conservation, emphasizing that both indigenous and scientific knowledge can complement each other. The study argues that the combined use of these knowledge systems can create a more effective framework for environmental management. In facilitating a collaborative framework, Kimmerer (2013) acknowledges the indigeneity of local people through their local knowledge and posits that policies protecting indigenous land rights and supporting the use of IKS can lead to highly sustainable conservation practices. Such an inclusive approach can address epistemic injustices and leverage the strengths of both knowledge systems for better conservation outcomes.

Important to note is that the adoption of a collaborative framework tends to be affected by people's belongingness. As noted by Yuval-Davis (2016), individuals have their politics of belonging which are anchored on their cultural, political, and social settings. These

characteristics lead to the construction of boundaries that determine who is included or excluded from participatory frameworks. This inclusion or exclusion is influenced by various intersectional factors, such as power and social standings, which reveal how different forms of oppression and privilege can operate simultaneously, affecting individuals' feelings of belonging and inclusion or exclusion in various contexts.

To conclude these findings, the scholarly incites on the issues of stakeholders' indigeneity (Smith, 2021) and Kimmerer (2013), as well as politics of belonging (Yuval-Davis, 2016) play a significant role in this study. To be precise, this scholarship paves the way for understanding the indigeneity differences that directly, or indirectly influence epistemic justice in natural resources management and distribution of benefits. Smith (2021) and Kimmerer (2013) advocate for the collaboration of indigenous and scientific knowledge, highlighting the importance of respecting diverse epistemologies to sustain the natural environment. Their approach challenges the marginalization of various voices and contributions, aligning with epistemic justice by ensuring inclusive participation in conservation efforts. Yuval-Davis (2016), in the same vein, puts heavy emphasis on the interaction of complex power dynamics that are present when various stakeholders are involved in natural resources management. The power dynamics in turn influence the inclusion criteria of the participants in environmental conservation.

This underscores the need for a comprehensive framework that addresses epistemic justice by promoting equality and inclusiveness in conservation practices. This literature, along with other relevant works, will be instrumental in analyzing the findings on environmental conservation dynamics since it enables a critical examination of the intersections that are inherent between indigeneity, epistemic justice and politics of belonging.

Findings from primary research

This section analyzes and presents results on issues of epistemic justice, indigeneity, and the politics of belonging as they relate to conservation efforts in DNR. The section explores how distinct viewpoints – IKS and formal conservation approaches – have a collision or intersect in the name of environmental conservation. A detailed analysis of these intersections is conducted to have a clear picture of how different perspectives on environmental conservation influence the inclusion, representation, and recognition of diverse stakeholder knowledge systems within the DNR. Additionally, in a bid to unveil these dynamics, literature is reviewed against the findings obtained from primary research. The findings are presented in the form of various themes.

Management of DNR: A Historical Sketch

Understanding the historical background of the DNR is crucial for grasping the prevalent epistemic differences, indigeneity, and politics of belonging among the two main stakeholders: the Cwebe villagers and the nature reserve management.

DNR was opened and instituted in the 1980s during the colonial political era in South Africa. Faced with global conservation challenges and the need to meet protected areas' legislation requirements, the then South African government facilitated the formation of DNR (Fay, 2008). Its creation was marred by violence and controversy, as local communities were forcibly relocated from their ancestral lands to other areas deemed habitable by humans (Fay, 2008; Tsawu, 2022). The relocations forced the victims to abandon everything they were culturally connected to, such as their land, grazing areas, temples, and even the gravesites where their ancestors had been buried for generations.

In 1994, the political situation of South Africa took a turn and democracy was born. This new dawn presented the newly elected leaders with pressure from different groups that represented the previously relocated people throughout the country (Tsawu, 2022). The groups were mainly demanding restoration of the victims' land rights. As a result, a resolution was agreed upon and land had to be restored back to the original owners. The land restoration in DNR was instituted in early 2000 and land was handed over to the 2382 individuals from seven village adjacent to the reserve. These villages were Cwebe, Mendwane, Ntlangano, Mpume, Hobeni, Ngoma, and Ntubeni (Fay, 2008; Tsawu, 2022). This transfer was presided by the Settlement Agreement of 2001 which allowed the transfer of land ownership rights to these beneficiaries but not exclusive rights to use the land as they saw fit. The land had to maintain its status of Nature Reserve and the local communities had to own it like that (Fay, 2008). A local tourism agency was then mandated with the role to manage the reserve on behalf of the local communities – owners – and the Department of Environmental Affairs and Tourism – the state. From a study conducted in the same area, Nyamahono (2023) found that even though land was restored to the victims who were relocated to form the nature reserve, their tenure appears to be a tokenistic one imposed to portray that local communities own the land yet in actuality they do not. The local communities are entitled only to the benefits from the reserve, which remain contentious (Nyamahono, 2023).

This historical sketch sets the foundation for understanding the land ownership dynamics and management frameworks of DNR. These land tenure dynamics are intertwined with epistemic differences, indigeneity, and complex politics of belonging, providing a backdrop for the data analysis and presentation that follows.

Theme 1: Intersection of stakeholders' epistemic knowledge and indigeneity

One of the findings obtained from this study was that there exists a strong relationship between epistemic knowledge and indigeneity among the main stakeholders of this study – local communities and DNR management. This relationship was seen through the intersection of power and emotions within their distinct indigeneity as they relate to the reserve's management. From the findings, each group views itself as the rightful steward of the reserve. The Cwebe communities indicated that their indigeneity was anchored on their belongingness as the indigenous people, while the 'official' management based their claim on the institutional roles mandated to them.

Consequently, each group of participants perceived itself in what is referred to as the 'epistemic insiders' by López-Rivera (2020). Contrary to their belief, López-Rivera (2020) notes that epistemic insiders perceive any other groups that have a different or contesting philosophy as 'epistemic outsiders'. To clarify this state of being, López-Rivera (2020) has it that an insider is an individual who belongs to a particular group and has access to information that is unavailable to outsiders. This concept parallels the notion of indigeneity, where individuals have an inherent understanding of their cultural and emotional ties to a place. Similarly, as highlighted in Matthew's (2022) research on the issue of belongingness in environmental conservation, being an epistemic insider involves an intrinsic understanding of the knowledge systems and practices relevant to one's group.

For instance, understanding indigenous conservation practices requires lived experiences of indigenous peoples, while institutional stakeholders expect others to have formal institutional knowledge. This mutual exclusivity leads to each group viewing the other as 'epistemic outsiders,' or those lacking the qualities associated with epistemic insiders (Hoza, 2012). These dynamics illustrate the differing politics of belonging. Given that stakeholders have different emotions, power dynamics, and beliefs about environmental conservation in the context of DNR, they regard each other as epistemic outsiders, which undermines epistemic justice. The verbatim remarks in Table 2 represent different viewpoints of stakeholders, unveiling the prevalent intersections of social and power dynamics.

INDIGENEITY, POLITICS OF BELONGING AND EPISTEMIC STATUS	
Perspectives of the official management of DNR	Perspectives of the local communities
<i>".....the reserve is owned by the local communities but the management of it cannot be transferred to them because they lack technical skills that can sustain it. If the management is transferred to the communities, the nature reserve would be destroyed".</i>	<i>"The land is rightfully ours from the days we were relocated to enable the formation of the nature reserve. We used to manage the land quite well before we were relocated to where we currently stay now. So, in our right we know how to manage the resources using our own special indigenous ways".</i>
<i>"The income that comes out of the reserve cannot just be placed in the hands of the local communities because they will misuse all of it. It is rather allocated for the continuous development of DNR and all the surrounding villages and institutions that depend on it".</i>	<i>"We know how to use funds because it is part of our livelihoods. We were promised that the land is ours and the money that the nature reserve gets from tourists should be used for the development of the community. We do not really see that. They should be transparent and provide us with the income for development"</i>
<i>"To effectively manage DNR, we ask local communities to be responsible citizens and do their duty of respecting conservation laws. These include all the conservation restrictions placed upon everyone".</i>	<i>"The land is owned by the local communities and our wishes are not being respected. Our wish is to be included in managing the affairs of DNR because we are the owners of it. So, whose law should be respected and obeyed? The outsiders' laws?"</i>
<i>"As the managers DNR, our duty is only to manage the natural resources in the reserve and the areas around. We are not responsible for the ongoing land disputes. That is between the affected communities and the government through the Department of Land Affairs".</i>	<i>"The community lost land and nothing is being done about it. We are even looking for any legislative stakeholders to help us fight our cause. Our people do not have any other choice than just invading DNR so that we can have access to the resources that we need for our survival"</i>
<i>".....this resource is big enough in terms of the coastal and forest resources. We call upon the around communities and other stakeholders to help us manage DNR so that it can take care of everyone. If all stakeholders help manage DNR and refrain from poaching, the successes of the reserve will be credited to everyone"</i>	<i>"We want to benefit from the nature reserve as big as it is... There are enough forest and marine resources in DNR. The problem is, we have a lot of unemployed community members who, by virtue of being owners of the reserve, deserve to be employed there. Unfortunately, local people are sidelined at the expense of other people who are employed but they are not from here".</i>

Table 2: Stakeholders' perspectives on indigeneity and politics of belonging
Source: Author

From these viewpoints, stakeholders believe they are the appropriate epistemic insiders because of their belongingness in and around DNR. The reserve management's argument is based on institutional functions, whereas local communities argue about traditional land tenure systems. As a result, stakeholders have different viewpoints on institutional and traditional indigeneity. Consequently, while the stakeholders perceive one other as epistemic outsider and consider themselves insiders, they both technically speak the same conservation language, but from distinct social systems.

Common intersections were found to be prevalent between these stakeholders amid their epistemic differences.

The study found there are intersections in natural resource ownership systems, albeit defined differently due to socio-political dynamics. Literature reveals that natural resource tenure systems are influenced by several factors, and the state, through eminent domain, shapes the conservation practices among various stakeholders (Klass, 2020). The domination of the state in this regard is in line with Smith (2021) who identified the issue of structural disparities in the management systems. However, as Akpan (2011) notes, this does not preclude local communities from advancing their frameworks based on indigenous knowledge. The intersection of these perspectives shows that both groups consider themselves epistemic insiders, differing in epistemic perspectives, indigeneity, and politics of belonging, as discussed by Yuval-Davis (2016).

Secondly, the study concluded that similar intersections arise in the natural resources management systems. The verbatim presented in Table 2 indicate that the management of DNR is responsible for overseeing the reserve on behalf of the Cwebe communities. Similarly, local communities want to preserve nature for the benefit of their community. The main distinction between these stakeholders is that institutional frameworks are wide and based on globalization, but local communities' frameworks are founded in traditional and cultural practices as well as customary rules (Nyamahono, 2023). Despite the epistemic differences between these management frameworks, both are anchored in the principles of sustainability, economic efficiency, and transparency (Armstrong, 2017). Kimmerer (2013) emphasized that IKS and scientific management systems should collaborate and work in harmony to achieve combined success. The failure to integrate these systems, as seen among the DNR stakeholders, results in ongoing epistemic injustices and conflicts.

Theme 2: Intersection of institutional laws and customary norms

The study also identified intersections between institutional laws and customary norms in nature conservation. Specifically, it found that institutional laws often reflect customary norms, though they are perceived differently from various indigeneity perspectives. One of the interesting findings was that some of the institutional conservation frameworks owe their origins to customary laws and formalities. For example, local communities, being epistemic outsiders in the eyes of institutional indigeneity, have similarly common 'formal' customary conservation frameworks that distinguish good behavior from bad. This intersection of institutional laws and customary norms was exemplified by the establishment of fishing zones within DNR. Primary data showed that local communities had consultations with DNR management

to establish fishing areas and the underlying regulations to control fishing in the region. The following verbatim statements support these developments:

“... Initially, fishing practices were not common in DNR. To enable local communities to practice fishing in a way that also does not compromise the needs of the management of DNR, the local communities and management came up with an amicable solution on how fishing can be done in a sustainable way. The local communities were at the center of deciding the places that they perceived as more favorable based on their needs and the availability of fishing hotspots” (Elderly Focus Group Participant).

This was also corroborated by a young member of the local communities who works as a tour guide for tourists:

“As one of the community members and a tour guard, we are aware of all the fishing spots that can provide significant fish in a short space of time. We decided to make those places known to the management of DNR and they were then instituted into the formalized conservation frameworks. That was the birth of fishing zones in DNR” (Youth Focus Group Participant).

These verbatim statements indicate that the development of fisheries policies in DNR, and the implementation of restrictive measures typical in many fishing activities within nature reserves (Nyamahono, 2023; Sowman & Sunde, 2018), were established through joint participation between the Cwebe communities and the reserve’s management. The United Nations frameworks on protected areas management, such as the UN Convention on Biodiversity, also connect with local knowledge systems, cultures, and traditional artifacts. The architecture of the Convention on Biodiversity owes its origins to IKS and customary epistemic practices (Sowman & Sunde, 2018).

Additionally, to unveil the overlapping institutional laws and customary norms, this study explored the current state of funeral proceedings among the local communities. In many African communities, including Cwebe, gravesites are considered sacred areas. Despite the forced relocations that paved the way for the nature reserve, focus group discussions revealed that the conservation frameworks of DNR still respect traditional funeral practices, burials, and other customary rituals. However, a cultural challenge is that communities must formally inform the reserve management about such proceedings and avoid practices deemed unsustainable for nature conservation by institutional standards. As one of the local community elders noted:

“... Our funeral and almost all the burial proceedings are done in DNR. Our graves are in DNR. To have access to the reserve to perform these practices, we formally ask for permission from DNR management. We are given permission to go ahead and then get instructions not to exploit the natural resources in the reserve, for example, chopping down trees. While refraining from cutting down trees is seen as a sustainable way to maintain the vegetation coverage by DNR management, we see the commands as a

violation of our cultural proceedings because only traditional authorities instruct us what to do and what not to do” (Elderly Focus Group Participant).

To support the findings above, Sunde (2014) identified that a common practice within the customary indigeneity scholarship in communities surrounding nature reserves is the preservation of certain fauna, flora, and community activities deemed sacred for spiritual, cultural, and other beneficial purposes. However, a study conducted by Nyamahono (2023) in the same area found that institutional conservation frameworks often do not acknowledge most of the local communities’ conservation practices. Instead, they frequently categorize these practices as unsustainable for DNR, particularly when they perceive conservation efforts as being threatened. These controversies highlight the current investigation into the implications of epistemic distance, varying indigeneity, and politics of belonging on the management of nature reserves.

A significant takeaway from this study is the correlation between formalized and customary indigeneity, particularly in the realm of knowledge systems where Euro-American Knowledge Systems intersect with IKS. Nkondo (2012) argues that these knowledge systems build upon one another, noting that all knowledge systems are initially local but can become universal through conquest and colonialism. He further suggests that institutional knowledge systems often dominate others because they receive more attention (Nkondo, 2012). This dominance highlights the importance of IKS, which, while not universally applicable, has a strong presence in local settings and is perpetuated through generational acculturation.

However, the role of IKS in collaborative participation faces significant challenges. Akpan (2011) attributes the lack of universalization of IKS to universities, educational systems, and research centers, which often view IKS as divergent from Euro-American Knowledge Systems due to their different foundations. Akpan (2011) argued that the marginalization of IKS at the expense of institutionalized knowledge systems owes its origins from the perpetual undermining of the ‘third world’ countries by the developed Western world. This results in the dominance of Western benchmarking systems, making it challenging to universalize IKS. All these findings reflect Fricker’s (2007) theory on epistemic injustices which notes the perpetual marginalization of the indigenous peoples’ voices and knowledge systems at the expense of scientific knowledge, thereby putting a clear distinction between Third World and Western ideologies.

Due to the common prevalence of contrasting politics of belonging in nature conservation, Ballard (2018) and Al-Mansoori and Hamdan (2023) found that adopting IKS through institutional lenses often risks endangering biodiversity and primitivizing conservation frameworks. Similarly, in a similar study, McCarthy, Shinjo, Hoshino &

Enkhjargal (2018) observed the continual exclusion of Mongolian local communities from managing Khuvsgol Lake National Park because their IKS clashed with formalized systems. All these studies support Kimmerer (2013), who emphasizes the importance of integrating both IKS and scientific knowledge in effective conservation management. However, the inability of local communities to have an influence on the conservation frameworks of DNR due to the state's dominant roles aligns with Smith's (2021) identification of structural disparities in management systems. The identified ongoing contrasting conservation ideologies illustrate the persistent struggle for epistemic justice and underscore the necessity for mutual recognition and dialogue to achieve sustainable environmental conservation.

The findings of this study align with the reviewed literature, indicating that while both knowledge systems convey similar concepts, they are perceived differently due to their distinct epistemic frameworks. This disparity often leads to the perpetual exclusion of local communities, who lack power and influence within the institutional frameworks that dominate nature conservation spaces. Conclusively, the intersection between institutional laws and customary practices reveals that both systems can complement one another. They build on each other, and the domination of one knowledge system over another has significant implications for epistemic justice and the sustainability of nature conservation efforts.

Theme 3: Intersection of epistemic injustice and unsustainable nature conservation

The study critically explores the ramifications of epistemic differences, divergent indigeneity, and contrasting politics of belonging, ultimately revealing a profound lack of epistemic justice. This epistemic injustice is a key contributor to unsustainable conservation efforts. It manifests through the unequal distribution of power, resources, and social systems, which are essential for fostering epistemic justice. The pervasive inequity in resource allocation and social privileges exacerbates this issue, undermining the sustainability of natural resource management (Baker & Constant, 2020; López-Rivera, 2020).

Epistemic injustice is intrinsically linked to the broader context of social justice. The absence of social justice is evident in the disparity of personal and social privileges, as well as the uneven distribution of critical resources necessary for sustainable conservation. This lack of equity not only hinders the effective participation of marginalized communities in conservation practices but also perpetuates systemic inequalities that favor dominant groups. Thus, the study underscores the critical need for addressing these epistemic and social injustices to achieve sustainable conservation outcomes.

The notion of social justice as a psycho-social dimension, rooted in ancient Asian and Western cultures, posits that individuals should receive societal benefits commensurate with their participation in social roles (Armstrong, 2017). However, this theoretical framework fails to be held in practice within the context of institutional stakeholders and the Cwebe communities. These distinct societies lack the necessary resources to engage effectively in nature conservation, primarily due to an environment of tension that impedes full participation and, consequently, the realization of benefits from their involvement.

The local communities perceive their exploitation and utilization of natural resources as being continually threatened by DNR management. Conversely, the management views the persistent incursions by local communities as detrimental to achieving their conservation mandates. This mutual distrust and conflict underscore the profound impact of epistemic injustice, which is exacerbated by differing indigeneity perspectives. The study compellingly argues that this lack of epistemic justice is intricately linked to unsustainable nature conservation. The systemic inequities in resource allocation and participation rights foster a cycle of mistrust and non-cooperation, severely undermining the effectiveness and sustainability of conservation efforts. The conservation frameworks employed by both stakeholders in DNR management exhibit significant inconsistencies, culminating in unsustainable outcomes. These inconsistencies are compounded by a persistent deficiency in social justice regarding the distribution of benefits derived from the nature reserve. This deficiency has been a common issue since the establishment of DNR (Sowman & Sunde, 2018).

A particularly critical observation is that, despite the land being owned by Cwebe communities, their capacity to influence the implementation of conservation frameworks is severely limited by the dominance of state control. This top-down approach marginalizes local communities, depriving them of the agency and participatory rights essential for equitable and effective natural resource management (Smith, 2021; Kimmerer, 2013). The entrenched state power not only contradicts the principles of co-management and inclusive governance but also perpetuates social and epistemic imbalances (Flicker, 2007; Medina, 2013). This disparity in power dynamics and resource distribution critically undermines the viability of conservation efforts in the DNR (Yuval-Davis, 2016).

In many parts of the communities near DNR, local communities have continuously breached the fenced boundary to gain access to and exploit the natural resources within the reserve. These actions are driven by the communities' need for rich grazing lands, which they lack due to perceived unfair epistemic differences and divergent views on sustainable livelihoods between them and the reserve management. DNR management raised significant concerns about these invasions, noting that using the reserve for grazing leads to the spread of pests and diseases. Among the deadly

diseases found in DNR is anthrax and foot-and-mouth which threaten vulnerable species like buffaloes in the reserve and nearby villages. Additionally, the ongoing deprivation of access to the reserve has pushed local communities towards game and fish poaching, further jeopardizing the reserve's ability to meet its institutional mandates. Consequently, DNR perceives these intrusions as environmentally unsustainable, highlighting a fundamental conflict in perceptions of sustainability.

A crucial aspect highlighted by Yuval-Davis (2016), which is particularly relevant to this study, is the creation of bordering practices. These practices establish physical or symbolic boundaries that delineate entities into distinct areas of belonging. In the context of environmental conservation, such as in the DNR, the management implements borders to regulate and control the influx of people into the reserve. This bordering process grants those in power the right to determine who can enter the reserve, who can participate in its conservation practices, and who can make decisions. Consequently, these practices can significantly impact local communities by restricting their access and participation, thereby perpetuating epistemic and social injustices.

Additionally, the financial impact of these incursions has been substantial. According to a study conducted in this area, the continuous destruction of the reserve's boundary has necessitated significant government expenditure, amounting to approximately R16 million (equivalent to USD 1 million when the study was conducted) from 2012 to 2022 (Nyamahono, 2023). This financial burden underscores the broader implications of unresolved conflicts and the need for more inclusive and equitable conservation strategies that address the underlying causes of such disputes.

Furthermore, the intersecting institutional and customary laws, as well as the contrasting indigeneity, underscores the relevance of Smith (2021) and Kimmerer (2013) theories on epistemic justice and indigeneity. These scholars emphasize that integrating IKS with other forms of knowledge is essential for environmental sustainability. However, the absence of the integration of the knowledge systems in DNR demonstrates a failure among stakeholders to acknowledge and respect each other's contributions. This outcome is explained by Fricker's (2007) theory of epistemic injustice, particularly hermeneutical injustice, which highlights how marginalized voices are undervalued in developmental practices. The resistance of the local communities to the institutional frameworks instituted by DNR can be explained by Medina (2013) who notes that due to perpetual marginalization, the victims often resist exclusionary practices and protest to have their voices included in developmental agenda. This resistance signifies a struggle for recognition and inclusion, essential for equitable and sustainable conservation efforts.

Conclusion

Overall, primary research indicated that there is a complex interplay of epistemic differences, varying indigeneity, and diverse standpoints on belonging among stakeholders in and around the DNR. While these differences exist, they do not inherently lead to inequality and epistemic injustice in nature conservation. Instead, the study demonstrates that all stakeholders, despite their distinct perspectives shaped by their epistemic and cultural backgrounds, engage in nature conservation, albeit in different terminologies and frameworks. The study* highlights the intersection of IKS and Euro-American Knowledge Systems, showing that these paradigms, while distinct, are interdependent and communicate effectively within their respective contexts. IKS tends to be formalized in customary dimensions, whereas Euro-American systems are centered around institutional frameworks. Despite these differences, both knowledge systems contribute to the common goal of conserving the DNR. Furthermore, the research identifies the overlapping attributes of stakeholders' indigeneity and epistemic knowledge, indicating that while their methods may vary, the outcomes they seek – unsustainable conservation – are similar. This convergence underscores the potential for integrating diverse knowledge systems to enhance conservation efforts. However, the study also underscores significant linkages between social inequity, epistemic injustice, and unsustainable conservation practices. It becomes evident that inequitable participation and resource distribution among stakeholders contribute directly to the degradation of the natural environment. Addressing these inequities is crucial for fostering sustainable conservation practices. Overall, this study calls for more inclusive conservation frameworks that acknowledge and incorporate the various epistemic contributions of all stakeholders. Addressing social and epistemic inequities can make conservation activities more sustainable and fairer, assuring the sustainability of DNR.

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