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RESEARCH

The Rural Natural Environment is a Teacher: Embedding Global South Rural Communities' Environmental Experiences in Social Work Education

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Abstract
This paper reflects on encounters with two contrasting Zimbabwean rural communities of Birchenough Bridge and Honde Valley. The study explored rural communities' experiences with Indigenous environment-driven community development. The paper positions the natural environment as a metaphorical teacher and moral educator. Rural communities build knowledge from these environments. The findings were gathered through collaborative Indigenous methodology. The findings show how features like trees, rivers, soils, and herbs shape knowledge, resilience, and ethics. These can inform social work education. Lessons from the communities support decolonizing social work education. The paper argues for incorporating rural environmental experiences into Global South social work curricula. This includes letting students learn from rural environments through supervised and structured rural placements. In conclusion, Social Work training institutions should partner with rural communities. This can help ensure more contextually relevant social work education and practice.

Keywords Environmental social work · Decolonizing social work education · Indigenous environmental knowledge · Rural development · Relational ontology

Introduction

The Global South continues to grapple with social exclusion, driven by entrenched poverty that is increasingly entwined with environmental challenges like resource depletion, climate variability, and ecosystem degradation (Cuesta et al., 2024). These intersecting crises manifest mostly among Indigenous peoples, who bear a burden from diminishing natural resources, overconsumption in wealthier regions, and the exploitation of their traditional lands; factors that have accelerated climate change events and eroded livelihoods, health, and cultural integrity (Billiot et al., 2019). While international development and *'sustainable development'* have sought to enhance wellbeing in both the Global South and North, they fail to deliver effective progress in rural communities because prevailing models of development interventions and sustainable development remain colonial in the contexts where they are implemented (Ndlovu-Gatsheni & Mpofu, 2019). This persistent colonial imprint contributes to the models' limited effectiveness in rural settings, where

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modernization has severed local cultures from reciprocal relationships with the natural environment, dismantling the subsistence lifestyles that historically fostered resilience, ethical knowledge, and cultural continuity (Billiot et al., 2019).

Frameworks such as the Sustainable Development Goals (SDGs) reproduce colonial logics through predominantly human-centric orientation that privileges economic growth and human welfare over the intrinsic wellbeing of the natural environment and Indigenous relational epistemologies (Arora-Jonsson, 2023; Breuer et al., 2023). Grounded in neoliberal and extractive colonial logics, this anthropocentric bias privileges Global North interests, defers environmental justice, and deepens Global South inequalities (Fukuda-Parr & Muchhala, 2020). Social work itself, as a development-oriented profession, remains complicit in this dynamic, having done little to decolonize its frameworks and embed environmental consciousness within mainstream practice and education in the Global South (Rambaree, 2020). As Coates et al. (2006) argue, social work often promotes values and beliefs like universalism, professionalism, and individualism, that directly counter Indigenous worldviews, reinforcing epistemic violence and marginalizing local knowledges. As Gray et al. (2007) and Ibrahima and Mattaini (2019) contend, these globalizing and universalizing forces perpetuate the profession's colonizing tradition, whereby Western social work models have supplanted local, Indigenous approaches and practices. Even though there are growing calls to decolonize development (Tawake et al., 2021), those calls still fail to recognize that the natural environment itself is a source of knowledge and a site of learning. In other words, locally led development may not mean environmentally grounded development.

Across the globe, universities are increasingly working to decolonize social work education by exposing and dismantling the colonial ideologies embedded within curricula (Garrett, 2024). This effort seeks to produce social workers equipped to engage responsively alongside and within marginalized Indigenized communities (Hammond & Miller, 2023), while in other contexts, it aims to increase the relevance and cultural fit of social work practice in rural settings (Meng & Gray, 2025). To fully realize these decolonizing aims, particularly the rural relevance and Indigenous responsiveness that remain underdeveloped in mainstream approaches, social work must adopt an Ecosocial lens (Matthies et al., 2000; Boetto, 2017). According to Boetto (2017), Ecosocial work is not a peripheral specialty, but rather an integrative framework that social work can and must embrace across all levels of practice. As argued by Matthies et al. (2000) and Coates (2003), the Ecosocial lens recognizes the interconnectedness of humans and ecosystems and calls for fair and sustainable stewardship of resources to sustain these relationships and the wellbeing of both people and planet. Since social work has a commitment to transformative social justice for the world's most vulnerable populations like rural communities (Bhagwan, 2017; Meng & Gray, 2025), decolonizing social work education becomes necessary for preparing practitioners who can meaningfully understand and respond to the specific challenges and strengths of rural contexts. It is important to understand and address environmental challenges experienced in rural contexts because a significant proportion of the problems affecting individuals, groups, and communities originate in environmental conditions (Mukurazhizha et al., 2023). For social work to be decolonized, Simpson (2014) insists on a radical break from colonial education systems that continue to produce professionals who unwittingly uphold settler colonialism. Rowe et al. (2015) similarly argue that genuine decolonization of teaching and learning requires curricula and pedagogies to be deeply informed by Indigenous approaches.

Literature increasingly positions the natural environment itself as a vital pathway for decolonizing social work education. According to Simpson (2014), land functions as a living archive that transmits cultural values, histories, and ecological wisdom; for example, Nishnaabeg stories nurture successive generations with the knowledge and skills required to rebuild nations in accordance with Indigenous worldviews. Recent empirical work shows that deliberately incorporating the natural environment into social work learning cultivates environmentally conscious practitioners who understand the inseparable nexus between environmental wellbeing and human welfare (Gallagher et al., 2025). Similarly, direct learning from landscapes proves crucial in identifying practical pathways toward sustainable rural development (Bohnet et al., 2025).

This paper argues that to move beyond campus-bound simulations, decolonizing social work education requires pedagogical shifts toward environmentally grounded engagement that is relational rather than symbolic. The issue is not to romanticize the natural environment as an autonomous instructor, but to recognize that knowledge in rural contexts often emerges through sustained interaction with ecological materiality. Findings from Birchenough Bridge and Honde Valley demonstrate that communities already generate development knowledge through observing drought patterns, soil conditions, river behavior, and species resilience. In Birchenough Bridge, Baobab endurance under arid constraint informed adaptive textile innovation; in Honde Valley, humidity-driven pest cycles shaped chili-pepper-based pest control and preservation practices.

These are not abstract environmental metaphors, but empirically grounded instances of knowledge formation through ecological interaction.

In this sense, referring to the natural environment as a 'metaphorical teacher' does not imply environmental agency; rather, it foregrounds the pedagogical significance of relational interpretation between communities and their ecological surroundings. Embedding such place-based environmental experiences within social work education would therefore involve structured, ethically negotiated rural engagements where students learn how development knowledge is co-produced through human-environment interaction. Drawing on the Zimbabwean cases, this paper argues that integrating these empirically grounded environmental learning processes into curricula can strengthen rural relevance, deepen ecological consciousness, and contribute to decolonizing social work education without essentializing Indigenous knowledge or overstating environmental determinism. This paper contributes to environmental social work scholarship by theorizing epistemic emergence from environmental materiality as a relationally mediated pedagogical framework.

Methodology

This study is grounded in collaborative Indigenous methodology informed by decolonial and relational worldviews that center Indigenous epistemologies, relational accountability, and community sovereignty in knowledge production (Chilisa, 2012; Smith, 2021). Rather than treating Indigenous communities as sites of data extraction, the research was structured as a co-interpretive process in which participants retained interpretive authority over the meanings attributed to their environmental practices. The methodological orientation therefore did not merely reference decolonization normatively; it operationalized it through negotiated consent processes, iterative member validation, reflexive positionality work, and explicit resistance to epistemic appropriation.

Importantly, this methodology distinguishes between ontological relationality and pedagogical interpretation to avoid conceptual slippage. While Indigenous relational ontologies recognize land, water, trees, and other ecological elements as kin within moral worlds (Wilson, 2008), this study does not claim that the natural environment functions as a literal epistemic subject independent of human mediation. Rather, environmental 'teaching' is conceptualized as relationally mediated epistemic emergence: knowledge arises through situated human- environment interaction interpreted within Indigenous cosmologies. Thus, the environment is not anthropomorphized as a cognitive agent but understood as materially and symbolically generative within relational epistemologies (Bishop, 2023; Chew, 2024). This clarification prevents the conflation of metaphor, ontology, and pedagogy identified in environmental scholarship.

Research Sites and Relational Entry

Fieldwork was conducted in two contrasting Zimbabwean rural sites: Ward 33 of Birchenough Bridge (semi-arid lowveld) and Buwu Village of Honde Valley (high rainfall, mountainous ecology). The comparative ecological contrast enabled analytical sensitivity to environmental variability instead of treating 'rural' as homogenous. The lead researcher collaborated with two Zimbabwean social work academics who served as research assistants. Their role extended to functioning as epistemic mediators and relational bridges by ensuring that interpretations remained grounded in community cosmologies. This triangulated interpretive structure mitigated the risk of singular authorial dominance.

Participant Engagement and Power Mitigation

Thirty-eight participants (29 Birchenough Bridge; 9 Honde Valley) were engaged through purposive and snowball sampling to ensure diversity across age, gender, livelihood, and leadership roles. Selection was not based on representativeness in a statistical sense but on experiential authority within environmental practices. The community leaders and community organizers of both communities assisted in the identification of participants that were undertaking environmental practices. As ways to address power asymmetries inherent in researcher-community relations, the researchers put the following safeguards:

1. Collective consent processes:participation was negotiated through community-level discussions rather than individualized extraction.
2. Iterative member reflection sessions: after field walks, the research team and community participants conducted reflection sessions. These became preliminary interpretations that were returned to participants in co-analysis gatherings where participants validated, challenged and reframed meanings.
3. Refusal as data: participants retained the right to withhold or redirect discussion topics for different reasons. For example, one herbalist in Birchenough Bridge refused to go into details regarding how she mixed different Indigenous tree species to treat ailments that she deemed to be influenced by spiritual attacks.
4. Reciprocal engagement: researchers participated in everyday labor such as agricultural tasks during

working discussions and field walks, disrupting extractive observational hierarchies.

5. Non-ownership of knowledge: the researchers did not make proprietary claims over Indigenous environmental practices; findings were returned in accessible community formats in the form of magazines written in Shona (local language).

Relational Environmental Protocols

Environmental protocols were guided by community-defined ethical frameworks. For example, in Birchenough Bridge, discussions under the Baobab Tree followed culturally prescribed respect practices. Rather than treating such acts as romanticized symbolism, the study analytically interpreted them as relational governance regulating knowledge production (Urzedo & Robinson, 2023). Similarly, oozing springs in Honde Valley were approached through community-defined protocols recognizing them as life-sustaining entities. These practices were not taken as proof of literal environmental sentience; rather, they were analyzed as ontological commitments shaping environmental ethics and pedagogical meaning-making (Gould et al., 2023). In this way, *relational consent* extended beyond human participants to encompass culturally mediated environmental respect practices (David-Chavez et al., 2020). The environment's *voice* therefore emerged through interpretive community narration rather than independent attribution of agency.

Data Generation

Data were generated through culturally embedded, place-responsive methods including field walks and ecological observation, walking discussions, a working discussion, and Indigenous knowledge-based dialogues. These methods were selected because they align with embodied, land-situated knowledge transmission. Community members determined the direction and pacing of discussions, allowing themes to emerge inductively rather than through externally imposed questioning frameworks. Rather than treating the environment as a passive backdrop, this study recognizes environmental conditions as materially generative of meaning within Indigenous relational ontologies. Importantly, environmental *participation* is understood here not as independent cognition, but as epistemic emergence mediated through embodied human-environment interaction.

Material and Sensory Environmental Participation

In Birchenough Bridge, researchers and participants consumed local water drawn directly from community sources. The saline taste of the water was not merely described by participants; it was experienced by the research team. This embodied encounter corroborated community accounts of soil salinity, and crop constraints. The environment thus contributed materially to knowledge generation by imposing sensory evidence that shaped interpretation. The finding of salinity was therefore not anecdotal narration but an environmentally mediated confirmation of agricultural limitations in Birchenough Bridge.

Field walks in Birchenough Bridge were conducted under temperatures approximating 34 °C, accompanied by hot, slow-moving winds. These climatic conditions shaped the tempo of movement, the need for shade, and the structuring of discussion pauses beneath leafy Baobab and Mopane trees. Community participants simultaneously narrated seasonal practices of sleeping outdoors during peak summer heat. Here, climatic intensity functioned as material testimony, reinforcing participant narratives about adaptive strategies. The environment *spoke* through thermal constraint, not metaphorically alone, but as lived physiological imposition influencing daily life and development practice.

The ecological composition of Birchenough Bridge, predominantly Baobab Trees, dry stony soils, and sparse ground cover provided visible ecological evidence of aridity. Rather than romanticizing these species, their presence was analytically interpreted as indicators of drought resilience ecosystems. Soil texture and stone density physically constrained agricultural demonstrations during walks, materially illustrating why rain-fed crop production remains precarious. Environmental participation thus occurred through ecological limitations and resilience capacity, both of which structured community livelihoods.

In contrast, Honde Valley's high humidity was immediately perceptible. Moist air, dense vegetation, and continuous evapotranspiration altered bodily comfort and conversational rhythm. Participants explained crop abundance, banana preservation practices, and fungal management techniques in relation to persistent moisture. The environment here contributed not through scarcity but through excess. Humidity was experienced prior to explanation, and interpretation emerged relationally between sensation and community narration.

Similarly, the bellowing sound of a full Pungwe River during field engagement was not treated as poetic imagery. It materially demonstrated hydrological abundance and seasonal stability. Community discussions on water sovereignty, irrigation reliability, and ecological stewardship occurred within auditory proximity to flowing water, grounding abstract conversation in sensory immediacy. The river did not *teach* independently; rather, its material

presence shaped the epistemic frame within which knowledge was articulated.

Analytical Clarification of Environmental Participation

These examples illustrate that environmental participation in this study operated through three mechanisms:

1. Material constraint and affordance: heat, salinity, soil texture, humidity, and hydrology structured livelihood possibilities and shaped discussion trajectories.
2. Embodied verification: sensory experiences (taste, temperature, sound, texture) corroborated or complicated verbal accounts.
3. Relational interpretation: community members interpreted environmental conditions through Indigenous ecological cosmologies, transforming material encounter into pedagogical meaning.

Thus, the environment's role was neither metaphorical ornament nor literal epistemic subjecthood. Instead, environmental conditions functioned as co-constitutive elements in knowledge production. Meaning arose at the intersection of ecological materiality and culturally mediated interpretation.

Reflexive Thematic Analysis and Analytical Rigor

Data analysis followed Braun & Clarke's (2022) six stages of reflexive thematic analysis, supported by NVivo for systematic organization. The analysis combined inductive coding with relational interpretive scrutiny. To address concerns of confirmation bias and ideological overreach, the research team and authors undertook the following steps.

(a) Reflexive journal documented the lead researcher's positional assumptions, particularly regarding environmental advocacy commitments.
(b) Coding decisions were reviewed collaboratively with co-authors to identify potential over-interpretations.
(c) Themes were tested against contradictory data rather than only supportive excerpts.
(d) Comparative ecological validation was undertaken (e.g., Baobab drought resilience cross-referenced with ecological literature) to avoid anecdotal romanticization.
(e) Historical contextualization through Shona oral histories prevented decontextualized celebration of practices.

Themes that were retained were supported by repeated cross-site resonance or clear narrative coherence validated by participants during feedback sessions.

Researcher Positionality

The lead researcher's upbringing in Bikita District shaped relational familiarity with rural environmental realities. Rather than positioning this as neutrality, it was treated as situated positionality requiring continuous reflexive interrogation. This positional proximity enhanced trust but also required disciplined analytical distancing to prevent projection of personal environmental nostalgia onto participant narratives.

Ethical and Structural Constraints

The methodology acknowledges institutional constraints relevant to translating findings into social work education reform. University accreditation standards, safety protocols, and resource inequalities shape feasibility of rural immersion pedagogies. This study does not present rural environmental engagement as inherently decolonial nor campus-based education as inherently colonial. Rather, it analyses environmental relational learning as one potential epistemic reorientation within broader plural pedagogical systems.

Methodological Contribution

By conceptualizing environmental *teaching* as relationally mediated epistemic emergence rather than literal ontological agency, this methodology offers a theoretically disciplined expansion of Indigenous research praxis. It demonstrates how environmental relationality can inform decolonial scholarship without collapsing metaphor into ontology, celebration into analysis, or pedagogy into romanticism.

Findings

Reflexive thematic data analysis resulted in four themes which are: the environment as an Indigenous epistemic source; community knowledge as curricula; relational responsibility and reciprocity in environmental practice; and reflexive co-learning and situated environmental pedagogy.

Theme 1: The Environment as an Indigenous Epistemic Source

In both Birchenough Bridge and Honde Valley, participants consistently affirmed the natural environment as a source of knowledge and moral guidance, actively shaping their adaptive strategies, environmental ethical orientations, and approaches to rural community development. This epistemic role is not abstract or metaphorical in isolation; it

emerges from sustained, embodied interaction with place-specific conditions, where the landscape itself offers lessons through observable ecological cues from which communities derive lessons. In the lowveld of Birchenough Bridge, scarcity and enduring presence of Baobab Trees (Adansonia digitata) emerge as key environmental examples of resilience. Participants articulated this lesson repeatedly during walking discussions:

> *The Baobab Tree teaches us everything about resilience. The Tree stores water for months during dry spells, its leaves and fruit provide nutrition when other sources fail, and its deep roots access underground water unavailable to shallower species. The traits of the Baobab Tree teach us moral and practical lessons: environmental difficulties should never let you down. Stretch yourself further to get what sustains you, store wisely, give generously when possible, and persist through hardships. The Great Tree (Baobab) shows us how to thrive under limitations, turning environmental constraints into lessons for sustainable survival. Therefore, the Baobab Tree is our greatest teacher. And from that Tree, we always teach our children; never let the environment let you down, instead use difficulties as an opportunity to realize your greatest strengths.*

A related insight emerged during field walks in Birchenough Bridge regarding local livestock practices, again voiced directly by participants.

> *The goats here eat the leaves of* minzwa michena *and grow very big. It teaches us that though arid, this environment is conducive for goat breeding as it contains nutrients that are good for goats.*

"Minzwa michena" refers to a thorny, drought-resistant shrub called Vachellia tortilis. As demonstrated by the participants, the growth and health of goats feeding on these Indigenous plants demonstrate the hidden productivity and nutritional value of the arid landscape. Rather than scarcity being limiting, it *"teaches"* adaptive livelihood strategies such as goat breeding.

In contrast, the high-rainfall, fertile red soils of Honde Valley instill environmental discipline through consistent, year-round agroecological engagement. Community members frequently reiterated during working discussions:

> *We have always learnt to rely on ourselves, our climate and soils to get what we want.*

A participant elaborated on this lesson during a field walk:

> *When you look at the red soils in this area, and the high levels of rainfall, then you look at how Indigenous plants like grass and trees grow fast and big, it teaches you that the soil is fertile. We just learn that by observing how naturally growing species grow fast and big here in Honde Valley.*

This submission exemplifies how abundance functions as an epistemic agent: the rapid growth of native vegetation accelerated by consistent moisture and nutrient rich soils serves as a natural demonstration of fertility and productivity. The land itself in Honde Valley shows that abundance is observable in the ecological conditions of the valley, prompting ethical lessons in careful management as another participant highlighted:

> *If the soils and climate give generously, we respond with disciplined care to sustain that giving cycle.*

Another example which demonstrates that natural environment is viewed as a teacher by some of the community members is a statement by the Village Head of Mushati Village in Birchenough Bridge as cited below.

> *In the past, on this hill, there used to reside a harmless cheetah, but it was very rare to come across that cheetah. Whenever the cheetah appeared, it was a message being delivered to the people that they would have done something wrong environmentally like cutting sacred trees or messing at sacred spaces, and such actions disturb rainfall patterns. In this area, there are no cheetahs generally, so the cheetah that stayed uphill there was a sacred symbol. Because people kept on violating our traditional environmental laws, the cheetah finally disappeared years back. Look where we are now, it never rains because we departed from our traditional practices to embrace Christianity.*

The narrative places the sacred cheetah as a relational guardian and environmental moral messenger, embodying Indigenous environmental ethics where human actions provoke ecological consequences.

A similar predictive sign was shared in Honde Valley where one female participant reported:

> *If we see a round brown feature around the sun or moon, it foretells forthcoming rains.*

The lead researcher recalls elders in Bikita teaching similar lessons whereby a prominent halo around the moon or sun signaled forthcoming rains, urging timely planting. In relation to what was learnt in the two communities, as

the main researcher reflects on his childhood in Bikita, he remembers that elders taught us environmental lessons, for example, the cry of a ground hornbill signaled forthcoming rains, and the heavy fruiting of the Baobab Trees foretold a poor rainfall season. This confirms that in rural communities, the natural environment can be understood as an epistemic agent that produces Indigenous ontologies.

Theme 2: Community Knowledge as Curricula

Participants across both Birchenough Bridge and Honde Valley consistently framed knowledge not as something acquired from external institutions or experts, but as emerging directly from lived, iterative interaction with their specific ecological conditions. Community members articulated how they have acquired developmental knowledge through interactions with the natural environment, according to them, their Indigenous environmental knowledges are what they use to advance wellbeing for themselves and their natural environment. In Honde Valley, where high rainfall and humidity create favorable yet pest-prone conditions, participants described adaptive agroecological knowledge developed through direct experimentation. One participant explained:

> *When armyworm comes, we do not use chemicals from the shops. We ferment chili pepper in water and spray. It works for us. We must experiment ourselves.*

Another Honde Valley participant added:

> *In this valley, pests are many because of humidity. We must experiment ourselves and develop the most suitable organic chemicals.*

Such statements reveal communities' Indigenous environmental knowledges as cumulative, context-responsive, and self-generated. The environment does not function as a literal epistemic subject; rather, persistent pest pressure and climatic conditions impose material challenges that compel situated environmentally driven innovation. Community members respond by testing, refining, and transmitting solutions such as chili-based natural pesticides through observation and trial within their fields. In this respect, this illustrates how abundance and ecological intensity can foster disciplined experimentation and practical ecological wisdom.

In Birchenough Bridge, the arid lowveld ecology similarly structures knowledge production through constraint and necessity. An elder stated:

> *Through repeated interactions with the Baobab Tree, our elders observed that this tree has a regenerative fibrous bark. Today, we peel that fibrous bark to develop textiles such as carpets, hats and bags. No outsider taught us this, but we acquired knowledge and just thought that instead of relying on agriculture, which is difficult in this aridity, we can use what is available to us to come up with innovative solutions. Many families survive on selling Baobab byproducts like mats.*

Another participant elaborated:

> *In this dry place, crops fail. But should we die because crops fail? The Baobab survives. Therefore, we have come up with many ways of working with what survives in our own environment. This includes Baobab Trees, and other herbal plants like Musosote, and Marula trees. Whatever we produce from the different trees around us, works for us; be it Indigenous medicines, be it textiles or Indigenous fruit juices.*

These testimonies highlight how drought-prone conditions direct attention toward resilient species and resources. Baobab's regenerative bark and drought tolerance provide the ecological foundation for knowledge in fiber extraction and textile production. To some extent, it also shows that community members interpret the tree's survival as a direct lesson: observe what endures, adapt to what the land offers, and innovate from necessity. In this context, it may mean that knowledge is embodied, environmentally mediated, and shaped by ecological scarcity.

Across both sites, participants implicitly defined poverty in ecological and relational terms rather than purely economic ones. In Birchenough Bridge, one irrigation farmer remarked:

> *When the rains delay, hunger follows. For me as an irrigation farmer, that would mean poverty for that season because I won't be able to earn income from agricultural produce grown within Dewure Irrigation Scheme.*

In Honde Valley, another reflected:

> *Here we can harvest a lot, but if we fail to sell or store well, especially perishable produce like fruits, we will struggle after acquiring losses. Sometimes the market is also flooded with the same agricultural produce. That would mean poverty for that season because oversupply leads to diminished demand.*

These accounts reveal deprivation as environmentally mediated and locally interpreted. In Birchenough Bridge, poverty arises from unreliable rainfall and soil limitations; in Honde Valley, it stems from post-harvest challenges despite abundance. This reflects that poverty is not a uniform condition but relationally constituted through climate, soil fertility, market access, storage capacity, and ecological stability. In a way, this suggests that community knowledge includes sophisticated understandings of how environmental factors intersect with social and economic realities to produce vulnerability.

Theme 3: Relational Responsibility and Reciprocity in Environmental Practice

Across both sites, participants described environmental engagement using language of respect, obligation, and consequence. These descriptions did not constitute a formal or universally shared ethical doctrine. Rather, they reflected patterned ways in which some community members interpret environmental use as relationally accountable.

In Birchenough Bridge, participants spoke of trees and land in terms of reciprocity. One elder stated:

> *We pay respect to the Baobab Tree. For cultural and historical reasons, it's sacred, and that is why we approach it with reverence. We also respect all trees because they give us shade, food, medicine, so we must respect them in return.*

In this account, reciprocity is expressed as a practical orientation toward environmental use. *"Respect"* signals an expectation that access to ecological goods carries obligation. The emphasis is not on extraction but on conduct.

Participants also referred to first-fruits practices under the *Muhacha* (Parinari curatellifolia) tree:

> *In the past, we used to go under a Muhacha tree to leave the first fruits of every harvest. That was for the ancestors. With the spread of Christianity, this is no longer done as people now view it as ancestral worship.*

Such accounts frame harvesting within a structure of gratitude and restraint. Rather than interpreting these narratives as claims about literal environmental causality, this study treats them as culturally mediated explanations that link ecological wellbeing to patterns of human behavior. Participants themselves described these practices as changing over time, indicating that relational norms are historically dynamic rather than fixed.

In Honde Valley, reciprocity was articulated in intergenerational terms. A participant reflected:

> *In the past, our elders understood the value of a tree more than we do… After eating the fruits, they would plant the seed.*

This account links consumption to renewal. Reciprocity is described as a material practice: fruit-taking is paired with replanting to ensure continuity. The contrast between past and present practices suggests internal reflection.

Across both sites, some participants described environmental outcomes, including rainfall variability, in moralized language. In this paper, such statements are interpreted cautiously as community explanations situated within relational cosmologies rather than as assertions of environmental agency. These narratives illustrate how ecological change is understood through frameworks that connect conduct, consequence, and collective memory.

Theme 4: Reflexive Co-Learning and Situated Environmental Pedagogy

The dialogical nature of environmental learning became particularly evident through moments of reciprocal exchange. In both Birchenough Bridge and Honde Valley, the lead researcher remarked, *"Inga chitsva chiri murutsoka"* (what is new lies in the journey), acknowledging that learning emerges through attentive engagement with place. Participants responded, *"Kudzidza hakuperi. Kana nesu tatodzidzawo zvakawanda"* (Learning never ends. We have also learnt a lot from this research). This exchange disrupted conventional research hierarchies. It revealed that environmental knowledge production was not unidirectional, from community to researcher, but reciprocal. Participants did not position themselves as custodians of fixed, timeless knowledge; rather, they recognized their own learning as ongoing and adaptive. The rural natural environment thus functioned as a shared site of inquiry rather than a static repository of tradition.

A similar reflexive moment emerged when participants in Birchenough Bridge asked, "So are Baobab Trees sacred where you come from? What do you use them for?" In explaining that in Bikita, approximately 55 km away, Baobab Trees are primarily valued for fruit and are not accorded with the same Ecospiritual sacredness observed in Birchenough Bridge, an important clarification surfaced. Environmental meanings are not uniform across rural Zimbabwe. Sacredness is locally negotiated and historically situated rather than inherent in the species itself. This variation guards against essentializing Indigenous environmental

knowledge and demonstrates that ecological meanings are shaped by context.

Likewise, learning that banana leaves in Honde Valley are used to preserve bananas from fungal infection illustrated how community knowledge emerges through close engagement with ecological conditions such as humidity and fungal risk. This practice was not presented as mystical tradition but as adaptive experimentation grounded in lived environmental experiences. These moments illustrate relational knowledge formation grounded in ecological engagement.

Discussion

This section interprets the findings through decolonial, environmental and pedagogical perspectives in social work literature. The findings obtained through the collaborative Indigenous research in Birchenough Bridge and Honde Valley, coupled with the lead researcher's own lived environmental experiences in Bikita align with Dominelli's (2021) call for green social work that seeks to restore human-environment reciprocity. The findings also answer Coates & Gray's (2012) call for integration of environmental consciousness in social work. Therefore, Birchenough Bridge and Honde Valley's Indigenous environment-driven rural community development initiatives are examples of relational ontology because they place the natural environment as a teacher and active participant in generation of knowledge that can be used in decolonizing social work education.

Epistemic Emergence from Environmental Materiality

By epistemic emergence, we refer to the generation of development knowledge through sustained, embodied interaction with ecological conditions. As inferred from the findings of Birchenough Bridge and Honde Valley, environmental materiality does not determine social action in a deterministic sense; rather, it conditions interpretive possibilities and shapes how communities read, respond to, and learn from their surroundings.

In Birchenough Bridge, aridity, saline water, stony soils, and the resilience of Baobab Trees prompted adaptive innovation under constraint. Community members described how observing Baobab Trees' endurance in drought conditions reinforced collective commitments to realizing their own environmental capabilities such as developing Baobab textiles. Therefore, it is inferable that this Indigenous environmental knowledge did not emerge abstractly; it was developed through repeated exposure to environmental scarcity, soil conditions, and seasonal variability. In contrast, Honde Valley's humidity, fertile red soils, and riverine abundance shaped different forms of ecological discipline. Participants emphasized pest management, crop rotation, and preservation techniques learned through close monitoring of moisture, fungal risks, and river behavior. In both sites, environmental learning was experiential and iterative. Development knowledge emerged from lived interaction with environmental materiality rather than from attributing autonomous agency to nature itself. These Indigenous environmental practices align with Dominelli's (2021) emphasis on human-environment reciprocity in green social work. However, while Coates and Gray (2012) argue that environmental consciousness remains under-integrated within mainstream social work, the Zimbabwean findings suggest that rural communities already enact environmentally grounded practices from which environmental social work can learn.

Comparable relational interpretations of environmental change have been documented among Quechua-speaking farming communities in Bolivia, where climate variability is understood through intertwined social and cosmological processes rather than as an isolated ecological variable (Boillat & Berkes, 2013). Similarly, Indigenous women's land-water relationships in North America demonstrate knowledge grounded in long-term observation and reciprocal stewardship (Dennis & Bell, 2020). Unlike strands of Northern literature that may portray traditional ecological knowledge as static or timeless (Simpson, 2014), the Zimbabwean findings reveal dynamic, historically negotiated adaptation. Participants described both continuity and erosion of practices, particularly under Christianization, demographic pressure, and shifting land use patterns, complicating static ontological framings.

Tlostanova & Mignolo's (2009) critique of colonial human-nature separations finds empirical resonance in Birchenough Bridge and Honde Valley, where chili-pepper-based pest control, mango seed replanting, and historical first-fruits offerings illustrate how ecological materiality co-constitutes development knowledge. Historically, human societies were highly skilled at reading ecological signs and adapting to climatic variability (McLean, 2010). Indigenous communities have continued to rely on land-based knowledge systems to sustain livelihoods and prepare for environmental change (Dennis & Bell, 2025). However, modernization intensified a progressive alienation from subsistence lifeways and ecological embeddedness (McLean, 2010; Billiot et al., 2019). This separation is not incidental; it reflects colonial and industrial paradigms that positioned land as resource rather than relation, an orientation that contrasts with the relational environmental practices observed in Birchenough Bridge and Honde valley, where ecological materiality remains embedded in everyday development.

Situation Innovation and Decolonial Knowledge Production

The findings indicate that community knowledge in Birchenough Bridge and Honde Valley is generated through sustained ecological interaction rather than externally imposed expertise. In Honde Valley, chili-pepper-based pesticides were developed in response to humidity-driven pest cycles. In Birchenough Bridge, Baobab bark processing emerged through repeated engagement with drought-resilient species within semi-arid conditions. These practices illustrate situated innovation shaped by environmental constraint and opportunity.

In Birchenough Bridge, rainfall unreliability and irrigation limitations contribute to seasonal food insecurity. In Honde Valley, poverty can persist despite agricultural abundance due to market saturation and post-harvest losses. These findings suggest that the meaning and lived experiences of poverty and development are environmentally conditioned and vary across ecological settings. In this respect, the findings reinforce Schleicher et al.'s (2018) argument that the natural environment should not be understood merely as an external determinant of wellbeing and poverty, but as a constitutive element shaping how development and deprivation are defined and experienced within specific contexts.

Indigenous environmental knowledges therefore play a central role in shaping how development and poverty are locally interpreted and negotiated. The Zimbabwean cases resonate with pastoral traditional ecological knowledge in Kenya, where weather forecasting and herd management evolve from environmental cues to enhance resilience amid climatic uncertainty (Naburi et al., 2022). This resonance suggests that ecological knowledge functions as a situated epistemology through which rural communities interpret risk, organize livelihoods and define wellbeing under conditions of environmental uncertainty (Naburi et al., 2022). In this light, the natural environment does not merely influence development outcomes; it co-constitutes the categories through which poverty and progress are understood (Urzedo & Robinson, 2023).

The environmentally grounded understanding of development and poverty also supports Tengö et al.'s (2014) position that Indigenous and local knowledge systems should be recognized as legitimate and complementary sources of knowledge alongside scientific systems. However, the findings do not suggest that such knowledge systems are insulated from structural pressures. Rather, they demonstrate that rural communities engage in forms of environmental observation, experimentation, and adaptation that function as locally grounded research practices. In this sense, communities such as Birchenough Bridge and Honde Valley can be understood as producers of Indigenous environmental knowledge through iterative engagement with ecological variability. This interpretation is consistent with McLean's (2010) observation that human societies historically developed sophisticated capacities to observe, interpret, and respond to climatic variability. Indigenous communities have continued to rely on land-based knowledge systems to sustain livelihoods and prepare for environmental change (Dennis & Bell, 2025). At the same time, modernization intensified processes of alienation from subsistence lifeways and ecological embeddedness (McLean, 2010; Billiot et al., 2019). The Zimbabwean findings reflect this tension: ecological knowledge persists and adapts, yet operates within changing religious, demographic, and market conditions.

Among First Nations communities in Canada, the relationship between women and water is regarded as sacred and deeply spiritual (Dennis & Bell, 2020). The prominence of water protectors reflects not activism alone, but continuity of gendered ecological governance rooted in cosmology and law (Dennis & Bell, 2020). While the Zimbabwean cases do not foreground gendered water governance in the same way, they similarly illustrate that environmental responsibility is embedded within social relations rather than treated as a technical or resource-management issue. For instance, in Birchenough Bridge, participants described historical first-fruits offerings under *Muhacha* trees as a collective obligation tied to ancestral continuity, while in Honde Valley, mango seed replanting was narrated as an intergenerational responsibility transmitted from elders to younger farmers. These examples indicated that ecological practice is mediated through communal norms, moral accountability, and generational transmission rather than treated solely as a technical-management exercise.

Continuity, Erosion, and Negotiation of Relational Ethics

In Birchenough Bridge and Honde Valley, relational ethics and reciprocity appear to structure environmental engagement in context-specific ways. As shown in the findings, practices such as sacred tree restraint, first-fruits offerings under *Muhacha* trees, sacred site protection, and mango seed replanting illustrate forms of mutual obligation embedded within everyday livelihood systems. In some instances, environmental violations (e.g., cutting sacred trees or neglecting ritual obligations) were linked by participants to perceived ecological consequences such as disrupted rainfall. In this study, such accounts are interpreted as culturally mediated explanations of environmental balance rather than empirical claims of direct causality. These findings resonate with McGregor's (2014) articulation of First Nations

traditional ecological knowledge in Canada, where relational environmental norms contributed to species continuity and ecological balance. In both contexts, environmental responsibility operates through informal governance mechanisms grounded in community-defined norms. However, the Zimbabwean cases also introduce complexity. In Honde Valley, for example, mango seed replanting has contributed to the expansion of an introduced species, while in Birchenough Bridge, relational norms surrounding Baobab Trees have supported the continued presence of an Indigenous species. This contrast illustrates that relational environmental practice does not operate within a simple preservationist perspective but interacts with ecological history, species movement, and livelihood adaptation.

The framing of land as relational rather than purely proprietary aligns with Hiller & Carlson's (2018) argument that Indigenous conceptions of sovereignty are inseparable from land-based relationality. Participants' references to sacred sites and ancestral continuity in Birchenough Bridge similarly suggest that land is understood as embedded within governance, identity, and collective memory. Creation stories, oral traditions, and ecological practices discussed by McGregor (2014), Horn-Miller (2016) and Hiller and Carlson (2018) transmit guidance regarding how human beings ought to relate physically, spiritually, and ethically to the natural environment. In the Zimbabwean cases, such guidance was evident in first-fruits rituals, tree reverence, and intergenerational seed transmission. These narratives situate humans within relational ecological systems rather than above them.

At the same time, the findings introduce important nuance. Participants described historical shifts, including Christianization, reducing ritual adherence and commodification of land undermining certain sacred site protections. Relational ethics were neither universal nor unchanging. This guards against essentializing Indigenous environmental practice as static or timeless and directly addresses concerns regarding romanticization. Unlike some Northern contexts where environmental protection is framed predominantly through rights-based and juridical mechanisms (Dennis & Bell, 2020), participants in Birchenough Bridge and Honde Valley emphasized relational obligation embedded within everyday practice. This suggests plural moral frameworks for environmental justice, in which responsibility may be articulated through cosmology and communal norm rather than legal codification alone.

Pedagogical Repositioning and Reflexive Transformation

The findings from Birchenough Bridge and Honde Valley indicate that engagement with ecological materiality repositions not only communities but also researchers and educators. Reflexive moments during fieldwork made this explicit. When the lead researcher remarked, *"Inga chitsva chiri murutsoka"* (what is new lies in the journey), participants responded, *"Kudzidza hakuperi. Kana nesu tatodzidzawo zvakawanda"* (learning never ends. We have learned also learnt many things from this research). Knowledge did not move in a single direction; it emerged dialogically. Both researchers and participants recognized themselves as learners within a shared ecological context.

Participants' question *"Are Baobab trees sacred where you come from? What do you use them for?"*, further unsettled assumptions. In Bikita, approximately 55 km away, Baobabs are valued mainly for fruit but are not accorded with the same Ecospiritual sacredness observed in Birchenough Bridge. This comparison revealed that environmental meanings are locally negotiated rather than inherently fixed. Sacredness is relational and context specific. The academic was therefore repositioned not as knowledge extractor but as co-learner.

Learning that banana leaves in Honde Valley are used to prevent fungal infection under humid conditions similarly demonstrated how Indigenous environmental knowledge emerges through embodied ecological engagement. These practices were adaptive and problem-oriented, grounded in interaction with humidity, pests, and crop vulnerability. Such moments align with Smith's (2021) articulation of relational learning, where understanding arises through situated dialogue rather than unilateral transmission.

Describing the natural environment as a 'metaphorical teacher' does not attribute autonomous agency to nature. Rather, it recognizes that heat, aridity, soil composition, humidity, and plant resilience conditions, are observed, experimented with, and transmitted. Environmental contexts are therefore constitutive, not peripheral, to development knowledge.

This transformation remains partial and negotiated. Institutional regulations and accreditation frameworks continue to shape higher education delivery. As Muzira and Bondai (2020) note, campus-based models such as Education 5.0 innovation hubs remain dominant in Zimbabwe. Decolonization, in this sense, is not a rupture but an ongoing recalibration of how ecological realities are integrated within institutional structures.

By foregrounding ecological materiality, the findings expose the limits of purely anthropocentric social analysis. Baobab Trees' resilience shaping livelihood imagination in Birchenough Bridge, and humidity-driven environmental responses in Honde Valley, illustrate how environmental materiality co-constitutes social knowledge. This insight invites not romanticized rural immersion, but pedagogical

humility and ecological attentiveness within social work education.

Implications for Decolonizing Social Work Education

The preceding discussion interpreted the findings from Birchenough Bridge and Honde Valley through relational, ecological, and decolonial lenses. The implications sections consider how these insights may inform social work education in contextually grounded ways. Rather than proposing a wholesale replacement of existing pedagogical structures, the aim is to identify calibrated reforms that integrate ecological materiality, Indigenous environmental knowledges, and institutional accountability within professional training frameworks.

Research-Informed Environmental Social Work Curriculum Reform

Decolonizing social work education requires more than inserting environmental content into existing syllabi. It requires re-situating theory and practice within the lands on which social work operates (Leduc, 2018). Environmental degradation, climate change, and ecological injustice are not peripheral to the profession; they shape social vulnerability and structural inequality (Drolet et al., 2015). Social workers must therefore act in partnership with communities disproportionately affected by environmental harm (Bent-Goodley, 2015), while educators must equip students to translate ecological ethics into accountable practice (Steinemann, 2003; Jones, 2013).

Environmental social work has gained increasing recognition in Zimbabwe and beyond (Mukurazhizha et al., 2023), and students exposed to green social work pedagogies demonstrate the capacity to connect ecological degradation with political and structural injustice (Daddow, 2024). However, the findings from Birchenough Bridge and Honde Valley indicate that environmental knowledge cannot be incorporated abstractly. Curriculum reform must be informed by systematic research conducted by social work training institutions to understand how ecological materiality shapes development, poverty, and resilience within specific regions.

Research on practices such as drought-adaptive Baobab innovation, humidity-responsive chili-pepper solution pest management, and intergenerational seed transmission would ground curricula in empirically observed ecological realities rather than imported theoretical templates. Such research reduces epistemic marginalization by validating locally generated environmental knowledge (Fricker, 2007) while ensuring it is critically examined within academic frameworks. It also enhances professional relevance in contexts where poverty remains structurally embedded yet environmentally mediated (Cuesta et al., 2024).

Hybrid Situated Rural Field Education

The findings suggest that ecological materiality should not only inform curriculum content but also pedagogical structure. Within Zimbabwe's Education 5.0 framework emphasizing teaching, research, community service, innovation, and industrialization, there is scope to integrate hybrid models of situated social work rural learning. Rather than replacing campus-based learning (Muzira & Bondai, 2020), universities may incorporate structured social work rural field placements alongside classroom instruction. Such placements would allow students to observe how aridity, saline water, soil composition, humidity, and river systems condition livelihood strategies in contexts such as Birchenough Bridge and Honde Valley. This operationalizes relational learning by connecting human and non-human actors within knowledge-building processes (Smith, 2021). It extends experiential learning theory (Kolb & Kolb, 2005) and the social work studio model (Zufferey & King, 2015) beyond simulated environments into ecological contexts. It also resonates with land-based educational approaches that emphasize stewardship and relational accountability (Simpson, 2014).

However, rural placements must remain institutionally regulated. Concerns regarding accreditation standards are legitimate. In Australia, social work field education is governed by the Australian Social Work Education and Accreditation Standards (ASWEAS), which require structured supervision by qualified social workers and formal oversight mechanisms (Australian Association of Social Workers [AASW], 2023). Universities in Zimbabwe and comparable contexts could adopt similar safeguards by employing external qualified social work supervisors and Field Education Liaison Officers to ensure accountability, assessment integrity, and professional oversight. Situated rural learning does not imply that ecological immersion alone resolves structural inequality. Poverty in the Global South remains embedded within broader political-economic systems (Cuesta et al., 2024). However, integrating ecological materiality into field education enhances practitioners' capacity to analyze environmentally mediated vulnerability in context.

Relational and Reciprocal Knowledge Partnerships

Incorporating Indigenous environmental expertise into social work education requires relational rather than

instrumental engagement. Foregrounding Indigenous voices within mainstream social work education has long been identified as necessary for challenging epistemic marginalization (Gray et al., 2007; Leduc, 2018). Inviting Indigenous environmental experts such as herbalists, Indigenous seed custodians, and agroecological practitioners to contribute to lectures and symposia can recalibrate epistemic authority within academic spaces. Such engagement strengthens students' ability to connect ecological practice with structural analysis (Daddow, 2024) and aligns with Ecosocial perspectives that situate human flourishing within ecological systems (Fox & Enari, 2025). It operationalizes relational learning (Smith, 2021) by fostering dialogical exchange between community and academic knowledge systems.

At the same time, safeguards are necessary to prevent epistemic extractivism. Inclusion must not become a performative gesture in which community knowledge is appropriated without reciprocity. Anchoring such partnerships within Indigenous research governance principles (Che, 2025) ensures regulatory oversight, interprofessional collaboration, and respect for community authority. Fair remuneration, co-designed content, and sustained partnerships are essential to maintain relational accountability. In this formulation, decolonization is not symbolic inclusion but structured, reciprocal engagement that preserves institutional standards while expanding epistemic recognition.

Limitations and Scope of the Study

This study advances the argument that rural natural environments can function as pedagogical contexts in social work education; however, several limitations clarify its scope. The formulation of the 'natural environment as teacher' is relational and interpretive rather than an ontological claim that nature possesses autonomous epistemic agency; knowledge emerges through human engagement with ecological materiality, not from the environment acting independently. The findings are context-specific to Birchenough Bridge and Honde Valley in Zimbabwe and should not be generalized uncritically across Global South contexts. While the article proposes stronger engagement between social work education and rural ecological settings, such shifts must operate within institutional requirements and constraints, including accreditation standards, supervision requirements, safety protocols, and resource inequalities; ecological immersion is not inherently or universally decolonial. The integration of Indigenous environmental knowledges into university curricula also carries the risk of epistemic extractivism, requiring ongoing governance safeguards, reciprocity, and accountability to avoid reproducing asymmetrical power relations. Finally, the environmental practices discussed are analyzed as culturally mediated and contextually grounded rather than universally transferable solutions, and the article does not claim to provide a comprehensive theory of decolonization but rather contributes a situated pedagogical dimension to broader structural debates.

Conclusion

This paper examined how rural natural environments in Birchenough Bridge and Honde Valley shape Indigenous environmentally driven rural community development knowledge through sustained, embodied interaction, conceptualized here as epistemic emergence from environmental materiality. The findings demonstrate that ecological conditions condition interpretive possibilities and livelihood practices without being treated as autonomous epistemic agents. Drought-adaptive Baobab innovation, humidity-responsive pest management, seed transmission, and ritualized environmental norms illustrate how Indigenous environmentally driven development knowledge is co-constituted through relational mediation between communities and ecological contexts. At the same time, the study documents continuity, erosion, and historical negotiation of Indigenous environmental ethics, resisting essentialized or romantic portrayals of Indigenous knowledge. By grounding relational ontology in empirical observation while maintaining analytical restraint, the paper contributes to environmental social work scholarship and refines debates on decolonizing social work education. Rather than proposing rupture, it advances a calibrated repositioning in which ecological materiality informs curriculum reform, hybrid field education, and reciprocal knowledge partnerships within institutionally accountable frameworks. In environmentally conditioned contexts of poverty, recognizing ecological materiality as co-constitutive of social life strengthens social work's capacity to address structural vulnerability and socio-environmental injustice.

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Author Contributions C.D. conceptualised the study, designed the research, conducted fieldwork, performed data analysis, and drafted the manuscript.R.M. provided supervisory guidance throughout the research process, contributed to the conceptual framing of Indigenous and decolonial approaches, and critically revised the manuscript for intellectual content.L. K. contributed to methodological and theoretical refinement and provided feedback on structure and clarity, and reviewed subsequent drafts.N. G. M. facilitated local contextual insights, supported interpretation of findings and reviewed the final manuscript.

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Declarations

Competing Interests The authors declare no competing interests.

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