
A Legal and Policy Analysis of the Interface of Indigenous Knowledge Systems, Rural Development, and Spatial Equity in the Musina Local Municipality

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Abstract: Rural municipalities continue to experience deep-rooted spatial inequalities and developmental challenges, largely driven by apartheid-era planning systems and the persistent exclusion of Indigenous Knowledge Systems (IKS) from formal governance and planning frameworks. From a legal standpoint, this article explores the role of community-based IKS in promoting rural development and advancing spatial equity in the Musina Local Municipality, Limpopo Province. Despite constitutional recognition of customary law and participatory governance, the contribution of IKS to development planning remains virtually marginalised in practice. The study draws on a desktop-based qualitative research approach and an interdisciplinary perspective that integrates law, spatial planning, and Indigenous epistemologies. It examines whether community-led planning through IKS contributes to sustainable livelihoods, equitable land-use planning, and fair resource distribution in historically marginalised rural communities. The article critically analyses applicable legal instruments, policy frameworks, and governance structures to assess their responsiveness to local knowledge practices and constitutional imperatives for spatial equity. Using Musina as a case study, the article argues for a more inclusive and context-responsive legal approach that meaningfully recognises and integrates IKS into municipal rural development and spatial planning processes. It concludes that strengthening the legal and institutional accommodation of IKS can enhance participatory governance, challenge technocratic and state-centric planning paradigms, and help address enduring spatial inequalities in rural areas.

Keywords: community-based approaches; community-led planning; indigenous knowledge systems; rural development; spatial equity

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Introduction

Background

Globally, inequality is increasingly manifested through spatial discrimination, with unequal access to land, infrastructure, services, and economic opportunities shaping patterns of exclusion (Nyamwanza et al., 2025, p. 62). In South Africa, spatial inequality is particularly acute, reflecting the enduring legacies of colonial dispossession, and apartheid-era spatial engineering. The

Presidency of the Republic of South Africa (2008, p.9) identifies three interrelated dimensions of structural inequality underpinning economic marginalisation: distortions within the economic system, entrenched spatial imbalances, and persistent deficits in human capital development. While post-1994 policy efforts have prioritised spatial transformation, these interventions have generally focused on managing urbanisation and metropolitan growth, often at the expense of rural development and spatial justice (Du Plessis, 2026, p. 2).

Rural communities continue to experience the long-term effects of apartheid spatial planning, manifested in fragmented settlement patterns, limited infrastructure, socio-economic marginalisation, and chronic poverty (Kariuki, 2018, p. 218). Provinces such as Limpopo, Mpumalanga, North-West, Eastern Cape, and KwaZulu-Natal, formerly constituting apartheid “homelands”, remain structurally disadvantaged due to deliberate under-investment and spatial isolation (Evans 2012, p. 117). Spatial inequality operates and manifests at multiple scales: at both the regional level, between urban centres and remote rural areas; and at the metropolitan level, between Central Business Districts (CBDs) and major township zones (Socio-Economic Rights Institute of South Africa 2016, p. 81). These dynamics underscore the importance of place-based and participatory development approaches that recognise the social, cultural, and ecological specificities of rural spaces (Sebola-Samanyanga 2025, p. 99).

Rural development refers to the strategies and initiatives aimed at improving the quality of life in non-urban areas, which are typically characterised by low population density and livelihoods centred on agriculture and resource production (Barrios 2007, p. 3). Evidence suggests that such initiatives are more effective and sustainable when they incorporate community participation and traditional knowledge systems (Department of Rural Development and Land Reform, 2009:36). Recent scholarship, therefore, highlights Indigenous Knowledge Systems (IKS) as a critical but under-utilised resource for advancing rural development and spatial equity, given their grounding in collective land stewardship, environmental sustainability, and social cohesion (Mseleku, 2023, p. 2; Billawer, 2021, p. 1; Ncube et al., 2025, p. 1901). Despite constitutional recognition of customary law and participatory governance in South Africa, IKS remain peripheral in formal spatial planning frameworks. While existing literature addresses participatory development and IKS, a clear gap persists at their intersection within legal and institutional contexts, particularly at the municipal level and in rural localities such as Musina, where customary governance continues to play an influential yet marginalised role (Kariuki 2018, p. 220; Phaswana 2018, p. 62).

The articles draw on a desk-based qualitative research approach and an interdisciplinary perspective integrating law, spatial planning, and Indigenous epistemologies. It examines whether community-led planning through IKS contributes to sustainable livelihoods, equitable land-use planning, and fair resource distribution in historically marginalised rural communities. Against this backdrop, this article seeks to examine the role of community-based IKS in advancing rural development and spatial equity within the Musina Local Municipality; analyse the extent to which South Africa’s legal and policy frameworks recognise and accommodate IKS in rural planning and governance; assess whether community-led planning rooted in IKS contributes to sustainable livelihoods, equitable land-use planning, and fair resource distribution; and propose legal and institutional reform pathways that strengthen the integration of IKS into municipal planning processes. By engaging these objectives, the article contributes to debates on decolonial development, spatial justice, and participatory governance, while grounding the analysis in a concrete rural context.

Historical and legal context

The historical and legal marginalisation of IKS in South Africa is rooted in the country’s colonial and apartheid legacy, during which indigenous governance institutions and epistemologies were systematically undermined (Malapane et al., 2024, p. 1). Prior to colonisation, African communities relied on customary law and traditional leadership systems that regulated land access, managed resources, and resolved disputes through participatory and ecologically responsive practices (Himonga et al., 2021, p. 227; Ncube et al., 2025, p. 1901). These systems were disrupted by the imposition of Western legal frameworks, which delegitimised customary law and reduced the authority of traditional institutions (Himonga et al., 2021, p. 227). The establishment of Bantustans further entrenched spatial inequality by forcibly relocating Black communities to marginalised rural areas lacking infrastructure and investment, thereby institutionalising rural underdevelopment and relegating Indigenous governance systems to peripheral roles within the state (Nyamwanza et al., 2025, p. 62).

Despite democratic reforms since 1994, apartheid-era spatial patterns remain deeply entrenched. Although rural areas have benefited from improved service delivery and social grants, which have enhanced household welfare

(Rogan, 2020, p. 217), structural inequalities linked to historical spatial planning persist. Rural municipalities such as Musina continue to face challenges relating to land access, infrastructure backlogs, limited economic opportunities, and fragmented settlement patterns (Ramaano, 2021b, p. 91; Musina Local Municipality 2024, p. 17). At the same time, Western legal frameworks have continued to marginalise IKS by confining them to largely informal or advisory roles, a tendency reinforced by the Protection, Promotion, Development and Management of Indigenous Knowledge Act 6 of 2019 (IK Act). While the Act marks an important step in recognising the value of IK in development, innovation, and cultural preservation, and introduces mechanisms for documentation, intellectual property protection, and benefit-sharing, it falls short of fully integrating IKS into spatial planning and local governance processes (Metuge, 2024, p. 1).

However, while the Act provides a formal legal foundation, its implementation remains uneven (Raath and Verhoef, 2021, p. 155), and its integration into spatial planning, municipal governance, and rural development practice is scarce. The Act does not adequately address how IKS should be operationalised within local government planning instruments such as Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDFs). Consequently, a gap persists between legal recognition and practical application, reinforcing the marginalisation of IKS in contemporary rural governance, development, and spatial planning. Understanding this tension is essential for advancing spatial equity and reimagining rural development pathways grounded in community agency and constitutional justice.

Theoretical underpinnings

Indigenous knowledge systems

IKS are grounded in epistemologies that emphasise relationality, holism, and experiential ways of knowing, arising from sustained interaction between communities and their socio-ecological environments (Malapane et al., 2024, p. 2). Unlike dominant Western scientific paradigms that privilege universalism, abstraction, and expert authority, IKS are context-specific and embedded within lived cultural, spiritual, and ecological realities (Ncube et al., 2025, p. 1901). Knowledge within Indigenous communities is produced, validated, and transmitted through oral traditions, communal practices, rituals, and intergenerational learning, positioning elders and customary institutions as central knowledge holders (Manthwa, 2024, p. 333). This epistemological orientation challenges hierarchical knowledge regimes and calls for a pluralistic understanding of development knowledge, particularly in rural contexts historically marginalised by colonial and apartheid planning (Barrios, 2007, p. 2).

Decolonial theory provides a critical framework for understanding the systematic exclusion of IK from formal governance and development processes (Manthwa, 2024, p. 333). Colonialism imposed Eurocentric epistemologies that delegitimised Indigenous ways of knowing, resulting in “epistemicide”, the destruction of IKS (Sinthumule and Mashau, 2020, p. 3). In the South African context, this exclusion persists despite constitutional recognition of customary law. Reclaiming IKS within development planning, therefore, represents not merely a technical adjustment but a political and ethical intervention aimed at achieving epistemic justice, restoring Indigenous agency, and contesting state-centric and technocratic planning paradigms that continue to dominate rural governance (Rivers et al., 2023, p. 2).

Participatory development theory, power and agency

Participatory development theory offers an essential bridge between IKS and rural development practice, yet its application requires critical modulation (Boadu et al., 2021, p. 1658). Early participatory theorists such as Chambers (1997, p. 5) conceptualised participation as a means of reversing top-down development by privileging the voices, experiences, and capabilities of the poor (Boadu et al., 2021, p. 1658). Chambers’ work emphasises learning “from below” and situates local communities as active subjects rather than passive beneficiaries of development (Ndlovu and Muringa, 2026:2; Boadu et al., 2021:1658). This orientation aligns closely with IKS, which views communities as producers of legitimate knowledge rather than recipients of external expertise (Bikam and Chakwizira, 2014, p. 142).

However, participation is neither neutral nor inherently empowering. Arnstein (1969, p. 216) using the Ladder of Participation provides a critical lens for examining the depth and quality of community involvement, distinguishing between tokenistic participation (such as consultation and information sharing) and substantive participation that enables citizen control and shared decision-making (Ndlovu and Muringa, 2026, p. 2; Nontlanga, 2021, p.3). Applying Arnstein’s framework reveals that many contemporary rural development initiatives in South Africa remain confined to lower rungs of participation, where Indigenous communities are consulted but rarely

wield decision-making power over land use, spatial planning, or resource allocation. This insight is central to understanding why, despite policy commitments to participation, spatial inequities persist in rural municipalities such as Musina.

A critical limitation in much participatory development literature and in uncritical invocations of IKS is the tendency to overlook power relations and cultural hierarchies, particularly gendered and patriarchal structures that shape access to resources and decision-making (Cornwall, 2008, p. 269). Participation does not occur in a social vacuum; rather, it is mediated by entrenched norms of authority related to gender, age, lineage, and traditional leadership. In many rural contexts, women's access to land and participation in customary institutions are constrained by patriarchal interpretations of custom, despite their central role in agricultural production and household economies (Mudau and Manthwa, 2025, p. 167).

Feminist political economy and critical development studies caution against romanticising IKS without interrogating internal power dynamics (Razavi, 2012, p. 423). Recognising IKS as a resource for spatial equity, therefore, requires a differentiated and reflexive approach, one that acknowledges both its emancipatory potential and its internal exclusions. This perspective strengthens the article's argument by demonstrating that integrating IKS into spatial planning must be accompanied by safeguards that promote inclusivity, gender equity, and accountability, rather than reinforcing existing inequalities.

Spatial equity

Systems theory further complements this analysis by conceptualising IKS as part of a complex, adaptive socio-ecological system, where social, cultural, environmental, and spatial dimensions are interdependent (Amponsah and Agyemang, 2024, p. 67). IKS does not compartmentalise planning, environment, or livelihoods, but treats them as interconnected and evolving. This systems-based understanding is particularly valuable for rural development and spatial equity, as it supports place-based planning solutions that are responsive to local environmental conditions, settlement histories, and livelihood strategies.

Spatial planning plays a central role in integrating cities, towns, and rural areas, making it critical to addressing persistent spatial inequalities and advancing spatial equity (Nyamwanza et al., 2025, p. 62). Scholarship widely associates spatial equity with principles of fairness and justice, emphasising the equitable distribution and accessibility of services, infrastructure, resources, and opportunities across geographic space while accounting for differing local needs and levels of access (Mishra et al., 2019, p. 140; Hao et al., 2025, p. 1). Drawing on participatory development theory, decolonial and feminist, womanist and Bosadi theorisations perspectives, and systems thinking, this study frames spatial equity as a transformative process that elevates community-based IKS from procedural inclusion to substantive governance. Within this framework, the integration of IKS into municipal planning and traditional leadership structures can enhance rural development by aligning interventions with local priorities, strengthening community agency, reducing conflict, and promoting socially just and inclusive spatial outcomes (Hao et al., 2025, p. 1).

Spatial equity entails redressing historical land dispossession and ensuring equitable access to land and resources through legally grounded planning frameworks. In South Africa, this imperative is inseparable from the Spatial Planning and Land Use Management Act 16 of 2013 (SPLUMA), which positions spatial equity and spatial justice as core development principles aimed at correcting apartheid-era spatial exclusion. SPLUMA obliges municipalities to integrate the needs of historically disadvantaged communities, including those under customary tenure, into MSDFs and land-use schemes, thereby preventing the continued marginalisation of Indigenous communities in rural and peri-urban areas. Within this framework, spatial equity is not merely distributive but corrective and transformative, requiring proactive state intervention. The incorporation of community-based IKS into municipal planning is, therefore, legally and normatively justified, as Indigenous spatial knowledge provides context-specific insights into settlement patterns, land-use practices, and communal resource management, which are essential for equitable and inclusive spatial development (Mudau, 2025, p. 14).

From this perspective, spatial equity in rural contexts such as Musina entails more than the redistribution of infrastructure or services. It requires the recognition of Indigenous governance systems, customary tenure arrangements, and community-defined development priorities within formal planning processes. By grounding spatial equity in SPLUMA, the article conceptualises it as a legally mandated, participatory, and context-responsive process. This framing provides the analytical basis for examining how far current the municipal practices

accommodate IKS and whether legal and institutional frameworks enable or constrain the realisation of spatial equity in historically marginalised rural communities.

Community engagement in land-use decision-making is essential to safeguarding Indigenous land rights and preventing displacement, as it ensures that development projects reflect customary claims and local priorities. IKS, which emphasise restorative and community-based approaches, can inform land restitution processes and support sustainable development and resilience (Ramaano, 2022b, p. 235). By offering locally grounded insights into sustainable land use, resource management, and conservation, IKS contributes meaningfully to rural development and spatial equity (Amponsah and Agyemang, 2024, p. 64). Effective engagement, therefore, requires thorough due diligence to identify customary land rights and ensure that development initiatives do not infringe upon them, thereby reinforcing both sustainability and social justice outcomes (Amponsah and Agyemang, 2024, p. 70).

Role of customary law and traditional leadership structures

The intersection of the key variables adopted in this article presents a composite yet promising framework for inclusive governance and sustainable development in rural areas. Law, particularly customary law, serves as a conduit for formalising and protecting IKS. In rural contexts, where state legal systems may be less accessible or effective, customary law provides a locally grounded mechanism for regulating land use, resolving disputes, and guiding community behaviour (Billawer, 2021, p. 116). Recognising and integrating these legal traditions into national frameworks can help bridge the gap between formal governance and lived realities (Himonga et al., 2021, p. 227), fostering spatial equity by ensuring that rural communities are not excluded from legal protections and development opportunities.

IKS constitute a valuable body of ecological, agricultural, and social knowledge that is vital for effective rural development, as they are place-based and shaped by long-term interaction with local environments (Barrios, 2007, p. 2). When legal and policy frameworks recognise and incorporate IKS, development interventions become more responsive and sustainable, drawing on customary practices such as traditional agriculture and water management to enhance food security and environmental resilience (Mseleku, 2023, p. 5). Conversely, the continued marginalisation of IKS in formal planning and law has often produced development models that are poorly aligned with local realities, reinforcing spatial inequalities and weakening community resilience.

Traditional leadership structures are central to translating customary law and IKS into practical rural governance (Mudau and Manthwa, 2025, p. 158). As custodians of cultural heritage and trusted mediators, traditional leaders play a key role in land administration, resource management, and conflict resolution, ensuring that development initiatives are culturally legitimate and locally supported (Tshishonga, 2020, p. 95). Meaningful legal recognition of these institutions, therefore, extends beyond symbolism, enabling more inclusive governance and strengthening participatory development and spatial justice in rural areas historically marginalised by centralised planning (Tshishonga, 2020, p. 95).

Customary law and traditional leadership structures are central to promoting rural development and spatial equity in contexts where formal governance often fails to reflect local realities (Barrios, 2007, p. 2). Grounded in cultural legitimacy and community trust, these institutions play a pivotal role in communal land allocation, conflict resolution, and environmental stewardship, thereby supporting equitable access to land and sustainable settlement patterns (Mudau and Manthwa, 2025, p. 158). Traditional leaders also serve as key intermediaries between communities and external actors, facilitating culturally appropriate and locally supported development initiatives. When supported by clearer legal recognition, policy alignment, and capacity-building, customary institutions can effectively complement state governance and advance inclusive, participatory, and sustainable rural development outcomes (Amponsah and Agyemang, 2024, p. 64).

Although IKS are often promoted as tools for participatory governance, sustainable livelihoods, rural-urban interdependency, and spatial equity, their integration into formal rural development and spatial planning remains complex and contested. Critical scholarship cautions that IKS are embedded in historical and social power relations and are not inherently egalitarian, often reproducing exclusion along gender, age, and status lines (Cornwall, 2008, p. 269). In many rural contexts, patriarchal interpretations of customary norms continue to limit women's access to land and decision-making, despite their key role in rural livelihoods (Razavi, 2012, p. 423; Claassens, 2013, p.71). Without a reflexive, rights-based approach, incorporating IKS into planning frameworks risks reinforcing existing inequalities rather than advancing substantive spatial justice.

Methodology and approach

This article adopts a desk-based qualitative research methodology to examine the intersection of community-based IKS, rural development, and spatial equity within the Musina Municipality. The study draws from an interdisciplinary perspective that integrates law, spatial planning, and Indigenous epistemologies. A qualitative desktop approach is well suited to studies that seek to interrogate normative legal frameworks, policy regimes, and conceptual debates, particularly where the objective is theory development and critical synthesis rather than empirical generalisation (Du Plooy-Cilliers et al., 2014, p. 93; Khumar, 2019, p.4).

The study utilises a systematic review and critical analysis of secondary sources. The selection of sources was guided by predefined inclusion and exclusion criteria: only peer-reviewed journal articles, authoritative books, official legislation, national, provincial and local policy frameworks, including municipal planning instruments such as IDPs and SDFs, and institutional reports published in English were included, while outdated, non-scholarly, and non-verifiable sources were excluded. In total, approximately fifty (50) sources were reviewed, with data saturation deemed to have been reached when no new themes or substantive insights emerged from additional literature.

The validity, reliability, and authenticity of sources were assessed by prioritising peer-reviewed publications, officially published documents, and materials authored by recognised experts or institutions in the relevant field. Credibility and relevance were further ensured through cross-referencing key findings across multiple sources and consistency checks with established theoretical and legal frameworks. This systematic and transparent approach strengthens the methodological rigour of the study, enhances replicability, and supports the credibility of the findings, while the consistent use of scholarly references throughout the study provides an evidence-based foundation for the analysis.

An interdisciplinary analytical lens underpins the research design (de Vos et al., 2011). Hence, the study adopts an interdisciplinary approach that integrates law, spatial planning, and IKS to assess rural development and spatial equity. It analyses constitutional and statutory frameworks governing customary law and planning, examines how planning instruments influence land and resource distribution, and draws on development theory to understand participation, livelihoods, and poverty reduction. Using IKS as a culturally grounded lens, the study evaluates whether community-led planning enhances sustainable livelihoods and equitable land use. Particular attention is given to the role of traditional leadership and the extent to which customary practices are recognised or marginalised within formal municipal governance systems.

The study area

The Musina Local Municipality, situated in the Vhembe District Municipality of Limpopo Province, is a geographically expansive and socio-economically diverse area (Ramaano, 2021b, p. 718). It borders Zimbabwe, Mozambique, and Botswana, and primarily comprises commercial farms and rural settlements shared among the community (Malapane et al., 2024, p. 2). The Municipality is characterised by a mix of formal townships and scattered rural villages, many of which are located in remote and under-developed regions (Ramaano, 2021a, p. 92; Bolt, 2016, p. 1). These rural settlements are often characterised by limited access to infrastructure, services, and economic opportunities, and reliance on traditional governance systems and subsistence livelihoods.

The eastern region of Musina, where many of the rural settlements are concentrated, presents unique developmental challenges. Villages such as Madimbo, Malale, Masea, Matshena, Sigonde, Makavhini, and Tshikhudini are located far from Musina town (Rankoana, 2023, p. 251; Vhembe District Municipality, 2017, p.28), making access to healthcare, education, transport, and waste management services particularly difficult. These areas are also marked by low population densities and vast distances between settlements, which complicates service delivery and spatial planning. Despite these challenges, the eastern region is rich in IKS and traditional leadership structures that continue to play a vital role in community organisation and land management. According to Malapane et al., (2024: 4), villages such as Masisi, Duluthulwa, Bileni, Tshikuyu, Dovho, Tshilamusu, Mukomawabani, Mutele, and Sanari share similar characteristics, including the prevalence of IK, an agricultural-based economy, and rural and remote locations, as they are close to each other. The study area is particularly relevant for examining the potential of community-led planning through IKS to address spatial inequities and promote sustainable rural development.

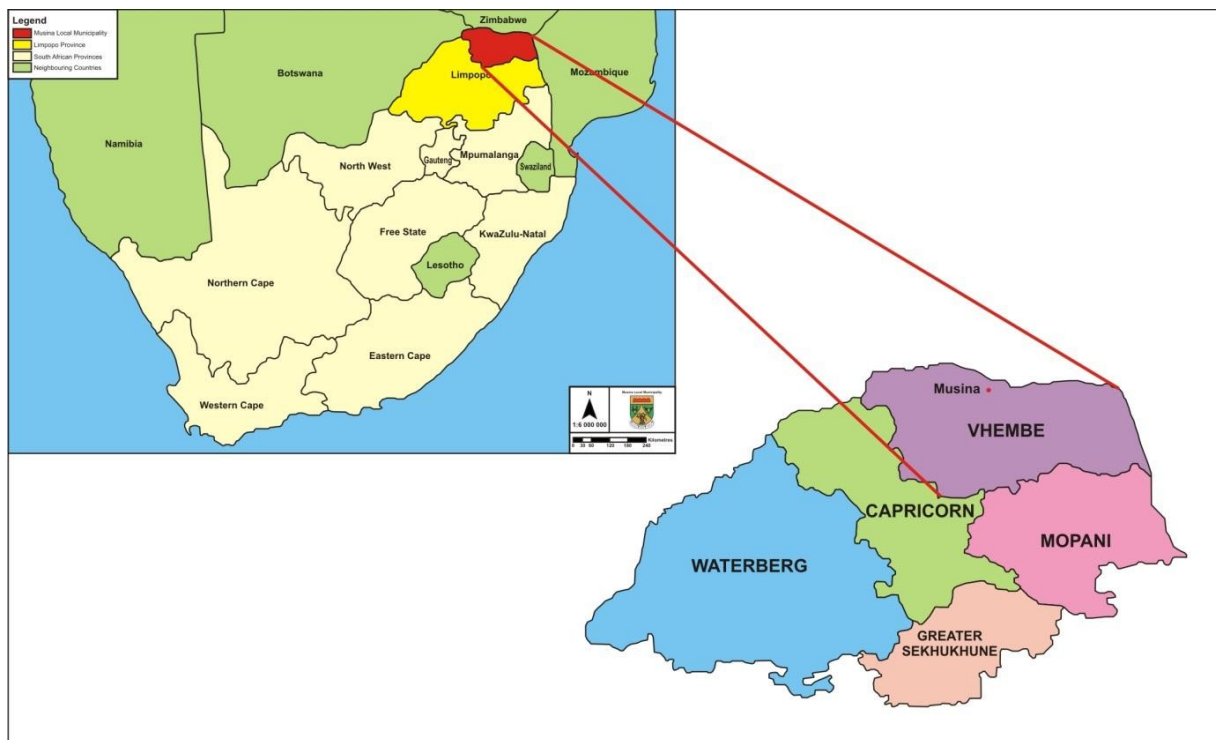


Figure 1. Location of Musina in South Africa. Source: MacDonald, 2014, p. 74.

Source: MacDonald, 2014, p.74.

Methodological limitations and mitigation

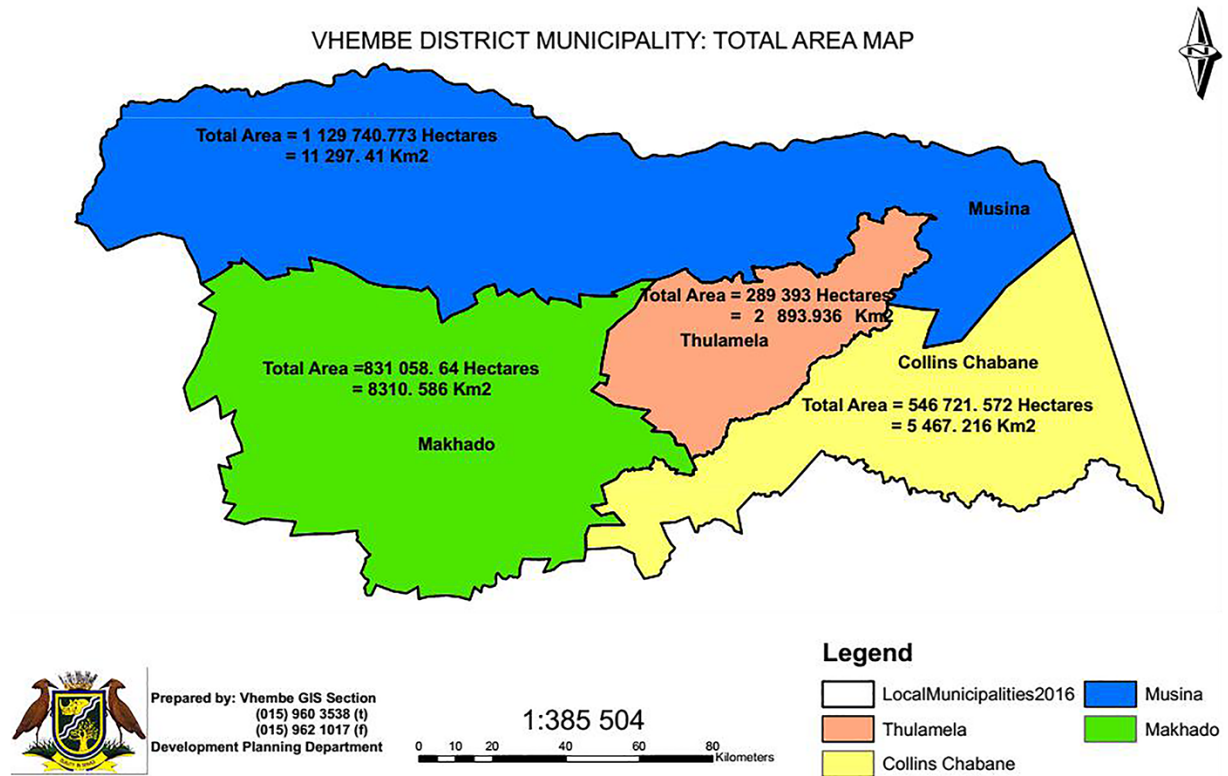
While the desk-based qualitative approach provides conceptual depth and contextual insight, its main limitation is the absence of primary empirical data, such as interviews, focus groups, or participatory observation, which limits the ability to capture lived experiences and the full diversity of community perspectives in Musina. This limitation is mitigated through triangulation of legal, policy, academic, and case-study sources and a critical interpretive approach that examines both the potentials and constraints of IKS integration. This enhances analytical credibility and reduces interpretive bias (Du Plooy-Cilliers et al., 2014, p. 254). Although the study does not aim for statistical generalisability, it achieves analytical generalisability by offering theory-informed insights that contribute meaningfully to debates on decolonial development, spatial justice, and IK within rural planning contexts.

Legal, structural and institutional analysis

Legal frameworks

South Africa's constitutional, legislative, and policy frameworks provides a strong foundation for advancing rural development and spatial equity through community participation. However, its success depends on ensuring that participation mechanisms are meaningful and responsive rather than merely symbolic. The Constitution plays a central role in this regard: Section 9(2) permits measures aimed at redressing historical disadvantage, while Schedule 4 recognises urban and rural development as a concurrent national and provincial legislative competence. In addition, Section 156 enables municipalities to administer assigned functions, including aspects of rural development, thereby reinforcing the shared responsibility across all spheres of government to promote inclusive and equitable development.

Section 4(1) of the Traditional Leadership and Governance Framework Act 41 of 2,003 (TLGFA) assigns to traditional councils a developmental role, including promoting IKS, identifying community needs, facilitating community participation in municipal IDPs, and contributing to policy and legislative processes across all spheres of government. SPLUMA implemented in 2015, seeks to overcome apartheid-era spatial fragmentation by providing for land-use planning authority within municipalities (Du Plessis, 2026, p. 2). This reform is



Source(s): Vhembe District Municipality, 2017

Figure 2. Location of Musina in the Vhembe District. Source: Vhembe District Municipality, 2017, p. 1.

Source: Vhembe District Municipality, 2017, p.1.

particularly significant for rural municipalities such as Musina, as it enables more inclusive and locally responsive planning that can accommodate traditional governance structures and community-based IKS.

Section 7 of SPLUMA establishes key principles, spatial justice, sustainability, efficiency, resilience, and good administration, that guide inclusive and equitable spatial planning in support of rural development. It requires municipalities to prepare SDFs and land-use schemes that integrate rural settlements and address historical marginalisation, providing a legal basis for correcting spatial imbalances in areas such as Musina. Although SPLUMA does not explicitly reference IKS, its emphasis on participatory planning enables the incorporation of customary land-use practices and Indigenous governance, especially when aligned with the IK Act, thereby supporting more culturally grounded and effective development models (Metuge, 2024, p. 1).

The effective implementation of SPLUMA in rural areas depends on strong intergovernmental coordination, adequate capacity building, and meaningful community engagement (Du Plessis, 2026, p. 2). Many rural municipalities face constraints, including limited skills, insufficient funding, and weak institutional support, which undermine inclusive planning. Sustained national and provincial support, alongside the active involvement of traditional leaders and IK holders, is essential to ensure that spatial planning is both legally sound and socially and culturally responsive. When these conditions are met, SPLUMA can play a transformative role in advancing spatial justice and inclusive rural development.

The IK Act establishes a legal framework for the protection, promotion, development, and management of IKS by grounding them in fundamental rights, including dignity, equality, culture, education, and property (Metuge, 2024, p. 3). Section 3(d) of the Act stipulates that one of its objects is to “regulate the equitable distribution of benefits”. The Act promotes the use of IK for socially and economically beneficial innovation, ensures the equitable sharing of benefits arising from its use, and formally recognises Indigenous communities as the rightful custodians of their knowledge through mechanisms such as the National Indigenous Knowledge Systems Office (NIKSO).

The IK Act provides a legal basis for promoting rural development by recognising IKS as a foundation for community-led, culturally appropriate, and environmentally sustainable planning. It enables rural communities, including those in Musina, to integrate traditional governance and knowledge systems into formal development and spatial planning, supporting decentralised decision-making and more equitable land-use outcomes. However, the Act's impact depends on effective implementation, institutional coordination, capacity-building, and meaningful community participation. Without these enabling conditions, its potential remains constrained; when properly operationalised, the Act can contribute meaningfully to decolonising development and advancing inclusive, community-driven rural growth.

Section 81(1) of the Local Government: Municipal Structures Act 117 of 1,998 formally allows traditional leaders to participate in municipal councils, acknowledging their importance in communities governed by customary law. This inclusion has the potential to enhance rural development and spatial equity by incorporating local land-use knowledge, cultural practices, and community priorities into municipal decision-making. However, in practice, such participation is often limited or symbolic, with inadequate mechanisms to translate traditional leaders' insights into concrete planning and development actions.

In addition to the legislative framework, South Africa's rural development policy trajectory, including the Integrated Sustainable Rural Development Strategy (2000), reflects a gradual shift from basic service provision toward integrated and spatially targeted development. Although these early frameworks emphasised participation and coordination, they largely adopted technocratic, state-led planning approaches that marginalised Indigenous governance and knowledge. Integrating community-based IKS into these policies would ground development initiatives in Indigenous land-use practices, ecological knowledge, and customary institutions, thereby improving the relevance and sustainability of rural interventions. Such integration would also enhance spatial equity by aligning development planning with historically marginalised settlement patterns and culturally embedded spatial logic rather than externally imposed economic or administrative criteria.

Later interventions, particularly the Department of Rural Development and Land Reform (2009) and the Integrated Rural Development Sector Strategy (2023), provide stronger entry points for institutionalising IKS within rural governance. These frameworks emphasise coordination, agrarian transformation, and inclusive livelihoods but continue to operate largely within top-down planning paradigms. Embedding IKS within municipal planning instruments such as IDPs and SDFs would reposition rural communities as co-producers of development and spatial knowledge. This approach would advance spatial equity by addressing historical dispossession, strengthening participatory governance, and ensuring that rural development strategies reflect local knowledge systems, lived realities, and constitutional imperatives for inclusiveness and justice.

Gaps in legislation, policy and implementation

Despite notable progress in South Africa's recognition of IKS, significant gaps in legislation, policy, and implementation continue to hinder the full integration of IKS into rural development and spatial equity initiatives. In the context of rural development and spatial planning, the TLGFA plays a crucial role by positioning traditional leaders as key stakeholders in land-use and community development processes. Traditional councils, as recognised under the Act, are often the first point of contact for rural communities regarding land allocation, infrastructure needs, and local disputes. Their involvement is essential for ensuring that development initiatives are culturally appropriate and locally supported. However, the Act does not provide detailed mechanisms for integrating traditional leadership into formal spatial planning frameworks, such as those governed by SPLUMA. This gap can lead to fragmented planning and missed opportunities for leveraging IKSs and customary governance in rural transformation.

While the Municipal Structures Act creates a legal avenue for the participation of traditional leaders, it does not fully integrate customary governance into formal spatial planning systems. This results in a disconnect between policy intent and practice, particularly in rural municipalities such as Musina where traditional authorities play a central role in land administration and social organisation. In the absence of clear mechanisms for collaboration between municipalities and traditional leaders, rural development processes risk remaining top-down and poorly aligned with local realities. Advancing spatial equity, therefore, requires complementary planning frameworks that embed IKS and recognise traditional leaders as co-planners in rural development.

Legal marginalisation is a common obstacle. This is informed by the fact that laws governing spatial planning, land use management, and land development generally prioritise Western frameworks and practices, sidelining

IKS. For instance, SPLUMA's implementation may overlook customary practices due to bureaucratic hurdles. Economic projects, such as mining and the Musina-Makhado Special Economic Zone (MMSEZ), threaten indigenous land rights, underscoring the need for stronger legal protections. While the IK Act provides a legal framework for safeguarding IKS, its implementation has been slow and uneven. The Act establishes mechanisms like the NIKSO and outlines rights for Indigenous communities, but lacks clarity on enforcement, especially in rural contexts.

The Indigenous Knowledge Systems Policy (2004) and related frameworks aim to mainstream IKS in national development, yet they often fall short in operationalising these goals (Ncube et al., 2025, p. 190). Policies tend to be broad and aspirational, lacking concrete strategies for integrating IKS into land use planning, environmental management, and local governance. Additionally, there is limited alignment between IKS policy and other sectoral policies ((e.g.) agriculture, education, climate change), which creates fragmentation and reduces the effectiveness of IKS-based development interventions.

On the ground, the implementation of IKS-related policies is hindered by limited institutional capacity, inadequate funding, and a lack of awareness among local government officials. Traditional leaders and Indigenous practitioners are often excluded from formal planning processes, despite their critical role in community-led development. Furthermore, research and innovation funding for IKS remains concentrated in urban institutions, sidelining rural communities and perpetuating spatial inequities.

There is also a notable gap in the research and documentation of IKS, particularly in agriculture, soil management, and climate adaptation. While ethnomedicine and cultural practices have received attention, other domains crucial for rural livelihoods are underexplored. This limits the evidence base needed to inform policy and practice, reinforcing the perception of IKS as secondary to Western scientific knowledge. Bridging this gap requires interdisciplinary research and inclusive methodologies that centre Indigenous voices and experiences.

The case of the Musina Local Municipality

This section examines the practices, successes, and challenges of integrating IKS into formal rural development frameworks in the Musina Municipality. The Musina Local Municipality Spatial Planning and Land Use Management By-law, 2016, represents an attempt to align municipal land use regulation with the constitutional mandate for municipal planning and the requirements of SPLUMA. While Section 6 of the By-law formally asserts municipal authority over spatial planning through the adoption of a wall-to-wall land use scheme, its treatment of traditionally administered land reveals significant normative and institutional gaps. Although Section 6(2)(c) of the By-law acknowledges the incremental extension of land use management to areas under traditional leadership, this recognition remains largely procedural rather than substantive. It fails to articulate how customary land-use practices, cultural norms, and traditional governance systems are meaningfully integrated into the land-use management framework, thereby privileging statutory planning instruments over customary spatial governance.

The limited role accorded to traditional councils further underscores this marginalisation. Their involvement is confined to a consultative and largely symbolic function through nomination to the Intergovernmental Steering Committee during the preparation or review of the SDF (Section 7(2), Bylaw). This arrangement does not translate into decision-making authority or substantive influence over land use outcomes affecting communal land. Although the By-law recognises that certain land development applications on communal land may have a high impact on traditional communities, it does not establish clear mechanisms through which traditional authorities can shape or veto such developments. The discretion afforded to the Municipality to amend the land use scheme in the interests of disadvantaged communities is thus framed within a municipal-centric paradigm, rather than one grounded in shared governance or cooperative planning with traditional institutions.

Most notably, the By-law's treatment of communal land development is reduced to a single provision requiring municipal approval following "harmony consent" by a traditional leader (Section 61(1), By-law). This narrow formulation effectively instrumentalises traditional authority as a preliminary procedural step, rather than recognising it as a co-regulatory partner in land use management. In contrast to more robust by-laws adopted by other municipalities where prior engagement with Traditional Councils is mandatory and unauthorised development is expressly penalised, the Musina By-law lacks enforceable safeguards to protect communal land from unilateral or inappropriate development. This regulatory deficiency not only weakens the position of Traditional Councils but also creates uncertainty in governance, potentially undermining both customary land tenure systems

and the legitimacy of municipal planning decisions. Overall, the By-law reflects a formal compliance with SPLUMA while falling short of addressing the constitutional imperative to respect customary law and promote meaningful participation of traditional communities in land use governance.

Regarding the participation of Traditional leaders, the IDP for the Musina Municipality (2024:221) stipulates that.

Musina Local Municipality has villages under traditional leadership, and in all the villages, the traditional leaders participate in the Musina Local Municipality Council and are gazetted, serving on Portfolio committees. The Traditional Authorities in all these villages participate in all our community structures, and we also attend their kraal meetings. Our municipality also attends tribal committee meetings representing villages. We have a mutual relationship with our traditional leaders. A Traditional Leaders forum, namely Chiefs and Headmen, has been launched and is operational. They meet with EXCO and the Mayor.

The Municipality is characterised by vast rural expanses, dispersed settlements, and deep-rooted spatial inequalities shaped by colonial and apartheid-era planning. It has approximately 192 rural villages, largely comprising Vhavenda communities (Malapane et al., 2024, p. 1), many of which fall under traditional leadership and customary land tenure systems (Parliament of the Republic of South Africa, 2023). Historically, these rural villages formed part of the former apartheid homeland system, where Black rural communities were relegated to peripheral and under-resourced areas deliberately excluded from infrastructure investment, economic opportunities, and integrated spatial planning (Musina Local Municipality 2024, p. 67). These spatial injustices have endured into the democratic era, with rural settlements remaining fragmented, poorly serviced, and marginalised within municipal development priorities (Musina Local Municipality 2024, p. 67).

As part of high priority focus areas identified as requiring immediate attention, the creation of rural community support co-operatives in Madimbo, Malale, Domboni, Tshikhudini, Tanda, Folovhodwe, Muswodi, Shakadza, Tshipise, Manenzhe, and Masisi (Musina Local Municipality 2024). The Municipality identifies several key issues that are pertinent to local economic development and spatial planning. Regarding access to land for development, it has been revealed that boundary disputes in rural or traditional areas impact development. This challenge is exacerbated in the private sector, where national and provincial governments own vast swathes of land, unlike the Municipality. Its IDP proposes solutions such as to request land release; the Municipality to follow up on government land acquisition applications; utilise land audit findings for district municipality planning; engage with relevant departments (Rural Development and Land Reform; COGHSTA) to resolve boundary disputes; involve Traditional Leaders in dispute resolution; foster close relationships with Traditional Authorities for streamlined land use applications and development; and facilitate smooth development and ensure compliance with SPLUMA regulations (Musina Local Municipality 2024).

Virtually, the Municipality has several rural, unplanned settlements on communal land under different traditional leaderships (Musina Local Municipality 2024, p. 76). The Municipality's four hierarchy of nodes consists of: (a) primary node (Musina Town to Beit-Bridge); (b) tertiary node (Masisi); (c) rural service node (Folovhodwe, Muswodi Dipeni, Tshipise, and Mopane); and tourism node (Pontdrift and Tshipise Resort). According to the Municipality (2024, p. 70), the primary role of a rural node is to deliver essential services at a local level, addressing the immediate needs of rural populations. Additionally, these nodes aim to strengthen the nature and economic vitality of the surrounding rural area.

Access to land for development is one of the Municipality's priority issues. However, one challenge is boundary disputes in traditional/rural areas, which are impacting development in these areas (Musina Local Municipality 2024, p. 344). This points out the general poor coordination between the municipalities and traditional leadership structures, as the alter represents rural communities (Mudau and Manthwa, 2025, p. 161). Indeed, Bikam and Chakwizira (2014, p. 147) argue that previously, Traditional leaders in Musina were influential, serving as key stakeholders in land-use and development-related matters. However, the establishment of a three-sphere government system shifted these functions to local government officials and elected representatives.

Manyaga et al., (2024) vehemently aver that.

Musina boasts a distinctive cultural heritage, upheld through customs such as medicinal plant usage, storytelling, traditional agriculture, natural resource management and cultural

ceremonies. These practices reflect a profound understanding of social cohesion, regional ecology and resource stewardship. It is imperative to document Tshivenda IKS for future generations, enabling the widespread sharing of invaluable knowledge, particularly in the face of threats posed by modernisation and globalisation to the continuity of indigenous practices.

Nonetheless, the Municipality's IDP concedes that "there is a need for the Municipality to develop a heritage database that will be looking at the Indigenous Knowledge System" (Musina Local Municipality 2024, p. 156). This is also compounded by the Municipality's failure to undertake a comprehensive heritage survey of the entire area, resulting in very limited heritage information on record (Musina Local Municipality 2024, p. 156). Section 4(1)(i) of the TLGFA stipulates that Traditional councils have the function to promote IKS for sustainable development and disaster management. The Municipality (2024, p. 413) merely acknowledges that, for pre-disaster risk reduction, it may use IKS to identify all potential hazards. In addition, its IDP simply recommends "capacitate Traditional Authorities about environment legislation" (Musina Local Municipality 2024, p. 550), adopting a top-down perspective that privileges formal, state-driven knowledge while overlooking the value of local and IKS.

The Municipality's four key economic sectors are mining, tourism, agriculture, and transportation (Musina Local Municipality 2024, p. 290). Agriculture is the primary source of employment in the region, engaging up to 50% of the population and contributing approximately 35% to the overall economic output of the Vhembe District Municipality's agricultural sector (Macdonald, 2014). For rural households, agricultural production is crucial for livelihood or income-generating activity (Rogan 2020, p. 223). Nonetheless, there is no agricultural education institution in Musina's rural areas, leaving community members without local opportunities to pursue further agricultural studies (Musina Local Municipality 2024, p. 360). Ramaano, (2021a, p. 719) classifies the Musina Municipality among Limpopo Province's renowned desiccated precincts, which are beset by its poverty-stricken rural populations. Economic growth is bleak in rural areas (Musina Local Municipality 2024, p. 80). As a result, there is an influx of people from rural areas into the Municipality's urban areas. This population growth has created a pressing need to expand housing and essential services to support the development of integrated, sustainable human settlements.

Rural communities in Musina languish with limited access to basic services, including healthcare, education, water, and sanitation, exacerbating spatial inequities (Ramaano, 2022b, p. 220; Musina Local Municipality 2024, p. 341). There is continuous growth of unplanned settlements in rural areas; rural settlements typically have limited access to formal public transport facilities or designated transport hubs; there is no recreational park nor sports grounds within the rural areas; and there is no hospital available to serve the rural communities of Musina, forcing residents to travel long distances to access hospital-level medical care (Musina Local Municipality 2024, p. 350). Many villages are far from medical facilities, underscoring the urgent need for clinics in Gumela, Malale, Masea, Matshena, Sigonde, Makavhini, Tshikhudini, Hajubere/Schuitdrift, Ward 5, Ward 6, Folovhodwe, Mabvete, Domboni, Gumbu, Mukununde, Dambale, Hankotswi, and Muswodi Tshisimani. "Building of clinics in the rural and urban parts of Musina for ease of access by community members is a necessity" (Musina Local Municipality 2024, p. 350). There is also considerable distance between rural areas and the Musina CBD, landfill site, and the fire department, making it financially unfeasible to provide regular services to villages. The Municipality (2024, p. 345) alludes to the need to develop Townships in rural settlements to facilitate the establishment of rural service centers, promote ease of development, and provide guidance on SPLUMA compliance.

There is a recognised need to stimulate local interest in Indigenous resources, yet municipalities often lack coherent policies and programmes that formally support the role of IKS in rural development planning (Ramaano, 2021b, p. 734). This policy gap, coupled with unequal resource distribution and weak planning, undermines efforts to promote spatial equity in rural areas (Sánchez-Mateos and Ruiz Pulpón, 2025, p. 156). Furthermore, limited and ineffective community participation results in development initiatives that fail to reflect local needs and priorities (Ramaano, 2022a, p. 42). Although IKS is increasingly recognised at the national level, fragmented local implementation continues to constrain its potential contribution to spatial equity and rural transformation.

Recommendations and conclusion

Recommendations

The study proposes several key measures to strengthen IKS's role in advancing rural development and spatial equity in Musina. First, it calls for legal reform and harmonisation between statutory and customary law to formally recognise the authority of traditional leaders and Indigenous governance structures in land-use planning. This includes clarifying the legal status of customary law and ensuring traditional leaders can meaningfully participate in municipal decision-making.

Secondly, the study emphasises the need for policy coherence and integration. National, provincial and local development policies and practices should align with IKS-based approaches and provide clear guidelines for incorporating Indigenous knowledge into planning tools such as IDPs and SDFs. Effective implementation requires cross-sectoral collaboration and participatory mechanisms that centre community voices and safeguard Indigenous practices, such as traditional agriculture.

Finally, the study stresses the importance of recognising customary land tenure, engaging traditional leaders in municipal governance, and integrating IKS into environmental management plans. Strengthening collaborative governance between municipalities, traditional authorities, and communities is essential for equitable development. Increased investment in rural areas, as well as in small towns such as Musina and secondary cities, can support livelihoods, promote rural-urban interdependency, prevent land marginalisation, and reinforce IKS-led development pathways.

Conclusion

The article concludes that South Africa's legal frameworks offers significant potential to strengthen community-based IKS as drivers of rural development and spatial equity in the Musina Municipality. By recognising customary law and traditional leadership within statutory planning processes, these frameworks can better align state governance with Indigenous practices, enabling meaningful community participation in land-use decision-making and the protection of land, resources, and cultural rights.

The study finds that IKS supports sustainable livelihoods, equitable land allocation, and environmentally responsible development in historically marginalised rural areas, although its impact is often constrained by legal gaps, fragmented policies, and limited institutional capacity. The Musina case illustrates both the opportunities and limitations of current frameworks, underscoring the need for legal reform, policy coherence, and capacity building. Centring Indigenous governance and community knowledge positions Musina as a potential model for participatory, culturally grounded, and spatially just rural development with broader relevance beyond the municipality.

Declarations

Interdisciplinary Scope: The article adopts a desktop-based qualitative research approach and an interdisciplinary perspective that integrates law, spatial planning, and Indigenous epistemologies to examine the intersection of community-based Indigenous Knowledge Systems (IKS), rural development, and spatial equity within the Musina Local Municipality. The article argues for a more inclusive and context-responsive legal approach that meaningfully recognises and integrates IKS into municipal rural development and spatial planning processes. It advances the strengthening of the legal and institutional accommodation of IKS, which can enhance participatory governance, challenge technocratic and state-centric planning paradigms, and contribute to addressing enduring spatial inequalities in rural areas.

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