

Barriers to Urban Land Records Management and Governance in Nigerian Secondary Cities: A Tripartite Diagnostic Framework for Institutional, Legal, and Technological Analysis

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DOI: <https://doi.org/10.62154/ajesre.2026.023.01014>

Abstract

Institutional, legal and technological barriers continue to undermine urban land records management and governance in Sub-Saharan Africa, threatening tenure security and spatial planning capacity. The study examines these constraints in Akure, Ondo State, Nigeria, a fast-growing secondary city which is largely underrepresented in urban land governance literature. Drawing on the Land Management Paradigm (Enemark, 2005) and the Fit-for-Purpose Land Administration (FFP-LA) model (Enemark et al., 2014), the study adopts a desk-based conceptual synthesis approach grounded in legislative instruments, policy documents, institutional diagnostics, and peer-reviewed literature. The findings suggest that institutional fragmentation, ambiguities within the Land Use Act 1978, and the absence of an integrated spatial digital infrastructure collectively reinforce systemic governance deficiencies in urban land administration. To address these challenges, the study develops and applies the Tripartite Diagnostic Framework for Urban Land Governance (TDF-ULG), comprising twelve institutional, legal and technological indicators for assessing urban land governance performance. Application of the framework indicates Low or Very Low performance across all assessed dimensions in Akure. A limitation of the study is that the desk-based methodology relies exclusively on secondary data and therefore requires future primary fieldwork validation. The study provides a replicable diagnostic tool to guide land governance reform and GIS-based land information system development in secondary cities across Nigeria and sub-Saharan Africa. The study represents one of the first systematic analyses of urban land governance barriers in Akure and proposes TDF-ULG, a diagnostic instrument which combines the two theoretical models of secondary city contexts.

Keywords: Urban Land Governance, Land Records Management, Institutional Barriers, GIS-Based Land Information System, Fit-for-Purpose Land Administration.

Introduction

Urban land governance remains one of the most critical institutional challenges confronting rapidly urbanising regions in Sub-Saharan Africa. The institutional, legal and data systems for land use will determine the outcomes of urbanisation in Sub-Saharan Africa, with a projected urban population of more than 1.5 billion by 2050 (UNFPA, 2019; UN-Habitat, 2020), either for better or worse. Land ownership structures influence tenure security, land valuation systems shape public revenue generation, and planning systems determine whether urban growth occurs in an orderly or fragmented manner. The costs of these systems are borne by ordinary urban citizens, investors, and public finance, which cities require to operate. However, these systems frequently experience severe operational and institutional deficiencies across many Sub-Saharan African cities. Records are sparse and paper-based; there is fragmentation across institutions, outdated and contradictory legislation, and, in most cities, no integrated digital land data infrastructure (Enemark et al., 2014; UN-Habitat, 2020). In general terms, the causes are well known, but the evidence base for understanding how these failures operate in particular urban contexts and for credible responses to them is still relatively sparse, especially beyond the continent's biggest cities.

The situation in Nigeria is particularly serious. Despite being one of the world's most populous and rapidly urbanising countries, Nigerian cities continue to use land administration systems that are structurally fragmented, poorly adapted to institutional needs, largely paper-based and do not meet the needs of an increasingly urban population. The Land Use Act (LUA), 1978, which deprived urban landowners of land ownership rights and established the framework for land administration, received a lot of criticism regarding the massive bureaucratic delays it engenders, its proclivity to informality and its negative impact on effective land markets (Mabogunje, 2010; Nwocha, 2017). These systemic dysfunctions manifest in several ways, including a high level of tenure insecurity, more land conflicts, limited land investment potential, and significant revenue losses from land. Furthermore, deviations from city master plans and non-conformity of developments with those plans have occurred in many cities, resulting from weak enforcement of land administration policies (Popoola et al., 2025). Indeed, this study shows that non-conformance is widespread in Benin City, with about 38% of residential areas and 190% of commercial areas deviating from the master plan (Popoola et al., 2025). Without a functioning urban land information system, authorities struggle to detect violations in real time

This systemic dysfunction is also clearly visible in Akure, the capital of Ondo State, which is an urban development centre in successive national development plans. The land administration system in Akure reflects many of these national-level governance challenges. Cadastral records are often incomplete or inaccessible; institutional mandates

remain contradictory and poorly coordinated; tensions persist between customary and statutory land law; and no integrated land information system with a spatial reference framework exists to support land use planning or valuation decisions. These conditions exist in a city whose urban footprint is growing rapidly, and whose population is estimated at more than 600,000 (Akeh & Mshelia, 2016; Babalola & Igbinomwanhia, 2019) and whose ability to provide equitable land services, generate revenues from land and achieve the objectives of urban governance as outlined in national and global development agendas is compromised by these conditions.

Although these issues are important, Akure has received little scholarly attention as a case study of urban land governance. The current body of literature on land administration in Nigeria focuses on primary cities (mainly Lagos and Abuja), whereas secondary cities, which are in fact the fastest-growing urban settlements in sub-Saharan Africa and where land governance challenges are likely to be keenly felt over the coming decades, are significantly under-researched (UNFPA, 2019; African Development Bank, 2020; Akinlabi & Emoh, 2025).

To fill this void, this paper examines the institutional, legal, and technological challenges to effective urban land records management and governance in Akure. It does this from two theoretical perspectives: the Land Management Paradigm (Enemark, 2005) and the Fit-for-Purpose Land Administration model (Enemark et al., 2014). The study adopts a desk-based conceptual synthesis methodology (detailed in the Materials and Methods section) using legislative instruments, policy documents, institutional diagnostics and academic literature to construct an analytical account of land governance failure in Akure.

In this context, the study has three related aims. The first is diagnostic, providing detailed information on the institutional, legal and technological impediments to effective urban land records management and governance in Akure. The second is constructive, to create a new analytical and policy tool, the Tripartite Diagnostic Framework for Urban Land Governance (TDF-ULG), which can be replicated in other secondary cities with similar governance problems. The third is applied, drawing on the diagnosis to identify specific implications for the development of a GIS-based Urban Land Information System and for the sequencing of land governance reform in secondary cities in sub-Saharan Africa.

Accordingly, the study is guided by three specific objectives: (i) to diagnose the institutional, legal and technological impediments to effective urban land records management and governance in Akure; (ii) to develop the Tripartite Diagnostic Framework for Urban Land Governance (TDF-ULG) as a replicable analytical and policy tool for secondary cities with comparable governance challenges; and (iii) to derive, from the diagnosis, specific implications for the development of a GIS-based Urban Land Information System and for sequencing land governance reform in secondary cities across sub-Saharan Africa.

The paper is organised as follows. In the Theoretical and Contextual Foundations section, the authors use the Land Management Paradigm and the FFP-LA model to provide an overview of the context of urban land governance in global and African dimensions. The research methodology is then presented. The legislative and policy context of land administration in Nigeria and Ondo State is examined next. This is followed by a discussion of the institutional, legal and technological challenges to good land governance in Akure, for the purpose of building the TDF-ULG, a diagnostic application of TDF-ULG to Akure and elaborating on the implications for the development of a GIS-based land information system in Akure. The results are placed in the context of the general theoretical and comparative literature in a special discussion section. Conclusions and policy recommendations follow.

Materials and Methods

The desk-based conceptual synthesis methodology is suitable for research aimed at developing analytical frameworks, generating theory and contributing to policy in fields of governance where empirical evidence is limited or primary data collection is particularly complex (Tranfield et al., 2003; Greenhalgh et al., 2004; Thomas & Harden, 2008). It is a desk-based methodology that systematically draws upon three types of evidence: (i) legislative instruments and policy documents; (ii) peer-reviewed academic literature; and (iii) institutional diagnosis reports and grey literature from international development institutions.

The legislative and policy document analysis mainly focused on the Land Use Act of 1978 and its entrenchment in the 1999 Constitution of the Federal Republic of Nigeria; the National Development Plan 2021-2025; policy framework of the National Geospatial Data Infrastructure (NGDI) under the Office of the Surveyor General of the Federation; and Ondo State policy documents concerning the Ondo State Geographic Information Service (ODSGIS) and the Ondo State Ministry of Lands and Housing. The primary sources were analysed for Akure to determine the formal institutional mandates, legal contradictions, and policy commitments that are related to land records management and governance.

The academic literature review was done by systematic search of the Scopus, Web of Science and Google Scholar databases, using a set of selected search strings which include: 'land administration Nigeria,' 'urban land governance sub-Saharan Africa,' 'GIS land information system developing countries,' 'fit-for-purpose land administration,' 'customary tenure Nigeria,' 'land use act Nigeria,' and 'secondary cities urban governance.' Priority was given to publications published since 2010, as these have significantly shaped contemporary debates in the field. Article screening was informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework adapted for conceptual synthesis (Page et al., 2021), in which the first screening was based on the

articles' titles and abstracts, followed by the full text. Those publications were selected based on the inclusion criteria, which included reports on land administration, tenure systems, land information management, or urban governance in Nigeria, sub-Saharan Africa or similar developing countries. Included works were excluded from the analysis if they did not have an analytical or empirical relevance to the three thematic domains under investigation, were exclusively about rural land administration or were grey literature from sources that did not have institutional authority in the land governance domain. The methodological sources that addressed the development of the conceptual synthesis and diagnostic framework were also added. The database search initially identified 468 records. After removing 83 duplicate records, 385 publications remained for title and abstract screening. Following this screening, 127 articles were assessed in full text, of which 74 studies met the inclusion criteria and were incorporated into the final conceptual synthesis, together with the selected legislative documents, policy instruments, and institutional reports.

Grey literature was sourced from the United Nations (UN) Human Settlements Programme (UN-Habitat), the World Bank, the International Federation of Surveyors (FIG), the Food and Agriculture Organisation of the United Nations (FAO), the African Union Commission and the Ondo State Government, in addition to diagnostic and policy reports from the Nigerian federal agencies. A thematic synthesis approach (Thomas & Harden, 2008) was used for the analytical process, using the two theoretical frameworks as guides. All three source categories were analysed using both inductive and deductive coding (institutional governance, legal frameworks, and technological infrastructure) and linkages across the domains of the code were followed to identify the systemic interactions between barrier categories. This process resulted in the development of the Tripartite Diagnostic Framework for Urban Land Governance (TDF-ULG), which is outlined in the Results and Discussion section.

It is important to note several methodological limitations associated with the study. It is a desk-based synthesis based solely on secondary data, with no primary empirical data gathered in Akure. The diagnostic assessment of Akure's performance in each of the 12 TDF-ULG indicators is therefore data-informed and conceptual and should therefore be interpreted as an indicative analytical assessment rather than a definitive measure of performance. The limitations are mitigated through transparency about the sources of the evidence and by framing the paper's contribution in a theoretical, diagnostic, and policy-oriented manner rather than an empirical one. In particular, future studies are recommended to test and calibrate the framework using primary data collection through key informant interviews, stakeholder workshops and cadastral data analysis in Akure and other secondary cities similar to Akure.

Results and Discussion

Theoretical and Contextual Foundations

This study is based on two interconnected frameworks that offer a systemic, pragmatic analytical framework for examining challenges to land governance in developing urban settings. The frameworks are part of a comparative analysis of global and African urban land governance.

The Land Management Paradigm

The Land Management Paradigm (Enemark, 2005), further elaborated by Williamson et al. (2010), is a new way of thinking about land administration, which moves beyond the conventional approaches of registration and titling towards four interrelated functions of land, namely: security of rights; assessment and taxation; planning and regulation; and infrastructure and environmental management. The paradigm emphasises the need for these to operate in an integrated and reinforcing manner, with support from appropriate data infrastructure, institutional capacity, and legal instruments, to guarantee sustainable urban governance outcomes.

The Land Management Paradigm is used here to diagnose Akure. It shows how failures in one functional domain (for instance, a weak cadastral system affecting land value assessment) affect the other domains, resulting in systemic governance failures that cannot be resolved through isolated interventions within a single domain. Additionally, it highlights the importance of spatial data infrastructure for integrating all four functions and directly informs the analytical focus of this study on barriers to a GIS-based Urban Land Information System.

The Fit-for-Purpose Land Administration Model

The International Federation of Surveyors (FIG) and the World Bank (Enemark et al., 2014) have developed the Fit-for-Purpose Land Administration model, which is pragmatic and flexible in the context of land administration change in developing countries. The FFP-LA model does not recommend a high-precision cadastral system based on those of developed countries, but rather a flexible, inclusive and scalable system that suits the legal, institutional and financial context. It evaluates the fitness of a land rights system across three dimensions: legal, institutional, and technical.

The added value of the FFP-LA model to this study is that it takes a different perspective on governance barriers: rather than viewing them as lacking quality, it considers them to be misalignments between the needs of a city experiencing rapid urbanisation and the existing capabilities of the land administration system. This means the analysis can be drawn more subtly and adapted to the realities of Nigeria rather than idealising other countries.

Integrating the Two Frameworks

These two frameworks, together, provide a system- and action-based analytical structure. The Land Management Paradigm offers a functional image of how the various domains of land administration are interdependent and the importance of integration; the FFP-LA model provides criteria for analysing and assessing the suitability of existing institutions, laws, and technologies to support integration. When combined, they enable the study to not only uncover what is not working in land governance in Akure, but also why and how these failures occur, thereby enabling the development of explicit, prioritised recommendations for reform.

Urban Land Governance in Global and African Context

Ensuring secure land tenure has become a major development policy concern because of its significance for economic development, social equity and environmental sustainability. It is reflected in the SDG 1 (no poverty), in SDG 11 (sustainable cities and communities) and in SDG 16 (peace, justice, and strong institutions) as well as in some of the normative instruments, such as the Voluntary Guidelines on the Responsible Governance of Tenure (FAO, 2012), the Land Governance Assessment Framework (Deininger et al., 2012), and the African Union Framework and Guidelines on Land Policy in Africa (AUC-ECA-AfDB, 2010). Global progress on land-related Sustainable Development Goal indicators nonetheless remains uneven and only partially monitored (UN-Habitat & GLTN, 2019).

Formal land administration systems often co-exist with customary and informal land tenure systems in settings affected by fast-paced urbanisation, insufficient institutional capacity, and colonial legal history in sub-Saharan Africa. Based on estimates by Palmer et al. (2009), less than 10 per cent of land parcels in sub-Saharan Africa are formally registered, and the majority of land transactions take place outside state institutions. This informality is interwoven with the colonial-era land legislation, resulting in very unequal land outcomes in African cities (Obeng-Odoom, 2012).

There have been various reforms in land administration across Africa, some more successful than others. Rwanda's Land Tenure Regularisation programme, which used technology (satellite imagery and participatory demarcation), has been widely praised as an example of land governance reform through technology (Ali et al., 2014; Gillingham & Buckle, 2014). The Ethiopian rural land certification programme (Deininger et al., 2008) and Ghana's Land Administration Project (Bugri, 2012) are additional examples of the potential for reform and also highlight some of the institutional and political obstacles to reform. Despite this, urban land governance reform of a similar magnitude is largely lacking in Nigeria, and evidence-based analytical tools on secondary cities are timely and needed.

Legislative and Policy Environment for Land Administration in Nigeria and Ondo State **The Land Use Act of 1978: Architecture and Contradictions**

The Land Use Act (LUA) in Nigeria, 1978, is the principal legislation governing land tenure and administration issues. The LUA was introduced under the military regime and entrenched in the 1999 Constitution to increase access to land by transferring all urban land to state governors. However, in practice, the Act has generated several structural governance deficiencies that continue to bedevil effective land administration, more than 40 years after its enactment (Mabogunje, 2010; Nwocha, 2017).

One of the most significant governance deficiencies is the statutory right-of-occupancy system, which requires all holders of urban land parcels to obtain a Certificate of Occupancy (C of O) from the state governor, a process that is often slow, costly, and bureaucratic. Abdulai (2006) reported that the average processing time for C of O applications in major cities in Nigeria ranged from 3 to 7 years, a finding confirmed by other studies (Olusanya, 2019). This creates strong incentives for informal land transactions outside the formal land market, thereby undermining the development of a coherent and efficient land market. The LUA has also been widely criticised for its revocation and compensation provisions, as they do not provide sufficient security of tenure, leading to resistance from existing landholders to formal registration (Eze, 2015).

Customary Tenure and Legal Pluralism

In addition to the statutory land tenure framework established by the LUA, customary land tenure systems remain widely practised in much of Akure's residential environment, especially in older and peri-urban neighbourhoods. Typically, customary tenure arrangements are communal, and land rights belong to groups of family or community members; land rights are not registered in any formal Land Register. Customary tenure may offer social legitimacy and community-based security, but may also be ambiguous and conflictual, especially when urbanisation is high, and land values are rising (Chimhowu & Woodhouse, 2006; Ubink, 2008).

In the context of Akure, the coexistence of the statutory and customary systems creates legal pluralism, presenting significant challenges for land administration. There may be several orders of norms that apply to the same parcel at the same time, and overlapping claims can make it hard to establish a clear and uncontested title. This legal ambiguity contributes significantly to land conflicts, affects formal investments and poses significant technical and political challenges for building a comprehensive cadastral database.

National and State-Level Policy Frameworks

Land tenure security, cadastral system development and digital land governance have become priority areas in land administration reform under the National Development Plan

2021–2025 and are increasingly recognised within the federal policy framework in Nigeria (Federal Government of Nigeria, 2021). The National Geospatial Data Infrastructure (NGDI) policy framework of the Office of the Surveyor General of the Federation provides for the development of integrated spatial data systems, although implementation has remained inconsistent and funding has been insufficient (Ayanlade et al., 2008),

The Ondo State Geographic Information Service (ODSGIS) was established as an innovative institutional reform, which was introduced at the state level to integrate the spatial data system with land information management. However, its operational capacity and institutional effectiveness remain significantly constrained. The agency has not yet developed a functional digital land information system (DLIS) for Akure and other urban centres; nor has it achieved meaningful interoperability with the Ministry of Lands and Housing, Office of the Surveyor-General, and local government planning authorities. This is partly due to institutional weaknesses in ODSGIS and to structural constraints on institutional innovations at the subnational level in Nigeria (Babalola & Igbinomwanhia, 2019).

Barriers to Effective Urban Land Records Management and Governance in Akure: Analysis and Diagnostic Framework

The analysis identifies three overlapping and interconnected categories of barriers within Akure's land administration system. Each category is examined in the sub-sections below. The Tripartite Diagnostic Framework for Urban Land Governance (TDF-ULG) is then presented formally. Barrier interactions and interactions between barriers of all three types are then explored. The TDF-ULG is subsequently used diagnostically on Akure. Implications for the development of GIS-based land information systems are also provided.

Institutional Barriers

Institutional fragmentation represents one of the most significant constraints to effective land governance in Akure. Responsibility for land administration is shared across a host of agencies with overlapping responsibilities, including the Ondo State Ministry of Lands and Housing, the Office of the Surveyor-General, ODSGIS, the Akure South and North Local Government Area planning authorities, and traditional land-holding institutions. This fragmentation means that there are no common or shared land information data stores for the various agencies that hold incompatible data on land, land ownership, land transactions, planning permissions, and so on. This has resulted in information being different in many land registers, causing administrative deadlocks and fuelling land disputes (Akeh & Mshelia, 2016; Ugonabo et al., 2023).

Fragmentation is complicated by a lack of capacity. Many land administration offices in Akure are understaffed or lack modern land administration equipment. Limited resources

make it difficult for agencies to invest in upgrading systems, train employees, or maintain data infrastructure. The lack of capacity to manage development control and land use regulation effectively is particularly evident in Local Government Planning Authorities (LGPAs), which have statutory responsibilities in these areas but often have limited capacity to fulfil them (Onyebueke, 2015).

Another barrier is the intra-institutional culture. The opacity of land administration processes fosters rent-seeking behaviour, while prevailing institutional incentives discourage transparency and digitisation initiatives that would reduce land administration discretion. There have been several studies that have documented the existence of informal payments, deliberate delay as a rent-extraction strategy, and a low appetite for reform among officials who benefit from existing inefficiencies in Nigerian land administration agencies (Mabogunje, 2010; Nwocha, 2017; Olusanya, 2019). The vested interests of these stakeholders are a significant political-economic obstacle to institutional shifts to achieve good land governance.

Legal Barriers

Legal challenges to effective land governance in Akure operate at multiple levels. On the most basic level, the tensions and shortcomings in the Land Use Act (as discussed above) pose a structural obstacle to efficient land markets and secure land tenure. The law requires the Governor's consent for all land transactions, the slow and discretionary land registration process by the C of O, and the lack of adequate compensation for landowners collectively create significant disincentives to formal land registration and open-market dealing (Abdulai, 2006; Eze, 2015). A second layer of legal complexity arises from the interplay between the statutory and customary tenure systems. The prevalent informal land registry, the absence of a clear legal basis for the recognition and registration of customary rights, and the lack of formal rules and definitions for local land use result in some areas of the city where the legal status of land use is unclear. Although courts remain the principal mechanism for resolving land disputes, they are found to be costly and difficult for most poor landholders and therefore not feasible as a city-wide dispute-resolution tool (Chimhowu & Woodhouse, 2006; Ubink, 2008).

A third legal challenge relates to data governance and information sharing. The lack of clear legal provisions for data exchange between agencies, privacy rights of landholders regarding cadastral data and the legal validity of digitally recorded cadastral records all contribute to uncertainties about the legal validity of digital land administration systems. This uncertainty can inhibit institutional interest in GIS-based approaches and has been recognised as a broader challenge to the progress of land information system development in developing countries (UN-GGIM, 2020).

Technological Barriers

A third category of barriers affecting land governance in Akure is technological, infrastructural, and systems-related. The city's land administration agencies continue to be heavily dependent on paper records, which are easily damaged, lost and tampered with, and are time-consuming, error-prone, and difficult to access. Where they exist, physical deed registers and cadastral maps often have missing or damaged records and are incomplete. There is a fundamental data management challenge that has not been adequately addressed, particularly the systematic conversion of analogue archives into reliable digital records, with implications for all other governance activities (Babalola & Igbinomwanhia, 2019).

The highest-priority technological deficiency is the lack of a functional spatial data infrastructure. The integrated land governance vision embedded in the Land Management Paradigm requires a common geospatial reference framework that connects parcel boundaries to ownership data, valuation data, land use designations and development permissions. Existing GIS systems within some agencies (such as ODSGIS) are not designed for integration and operate with inconsistent data standards. Furthermore, they are not linked to the administrative systems of other agencies (Akeh & Mshelia, 2016; Tao, 2013).

Another major technological barrier relates to interoperability. While there have been some one-off digitisation projects in agencies, there are no existing sector-wide data standards, exchange protocols, or integration platforms that would enable data sharing and integrated decision-making across the sector. Although interoperability issues have been reported in international land information system development (UN-GGIM, 2020), they are particularly critical in Akure due to institutional rivalry between agencies and technical incompatibilities arising from uncoordinated, fragmented digitisation efforts.

Overcoming these technological barriers requires addressing the underlying structural financial constraints. The public sector investment in a land information system based on modern GIS technology for a city such as Akure, with its population size and rate of development, has been grossly inadequate. The investment of the necessary initial capital, as well as periodic operational investment to maintain a functional Land Information Infrastructure, is a structural issue that cannot be resolved by technical solutions alone.

The Tripartite Diagnostic Framework for Urban Land Governance (TDF-ULG)

Drawing on the Land Management Paradigm, the FFP-LA model, and the three-dimensional barrier analysis presented in the preceding sections, this study proposes the Tripartite Diagnostic Framework for Urban Land Governance (TDF-ULG) as an integrated analytical and policy tool. The TDF-ULG aims to fulfil three purposes: (i) to capture the multi-dimensionality of land governance deficit in secondary cities; (ii) to identify which indicators and processes drive the production and reproduction of these deficits; and (iii) to

offer a structured and replicable framework to sequence and prioritise land governance reform at the institutional, legal and technological level.

The framework is structured around three diagnostic dimensions, each based on a type of barrier identified in the analysis: the Institutional Dimension, the Legal Dimension, and the Technological Dimension. The framework has 12 indicators, divided into 4 for each dimension. These indicators are not intended as stand-alone measures but as components of a reinforcing system; underperformance in one indicator generates feedback effects that can reinforce weaknesses across and within other dimensions, as detailed in the subsection on simultaneity and synergy of barriers.

The normative reference points in the framework are based on the three axes of fitness of the FFP-LA model and the integrated function-spanning spatial data infrastructure principle of the Land Management Paradigm. The TDF-ULG does not use an idealised benchmark from high-income countries, but rather sets minimum standards for capacity to provide integrated, equitable, and accountable land governance in a fast-growing secondary city. These minimum standards provide a pragmatic diagnostic tool grounded in achievable governance standards rather than idealised aspirations.

Replicability is one of the key characteristics of the TDF-ULG. The three dimensions and twelve indicators apply to secondary cities in Nigeria and sub-Saharan Africa, with contextual adaptations. The framework can therefore also be used as a diagnostic tool for Akure and as an analytical tool that can be transferred to other cities in the region to build a comparative evidence base on urban land governance reform. Figure 1 shows that the three diagnostic dimensions each contain four indicators, with feedback loops between dimensions and indicators, such that when a deficit occurs in one dimension, it exacerbates deficits in the other dimensions. The complete structure of the TDF-ULG, including all three dimensions, their definitions, and the four indicators for each dimension, is presented in Table 1.

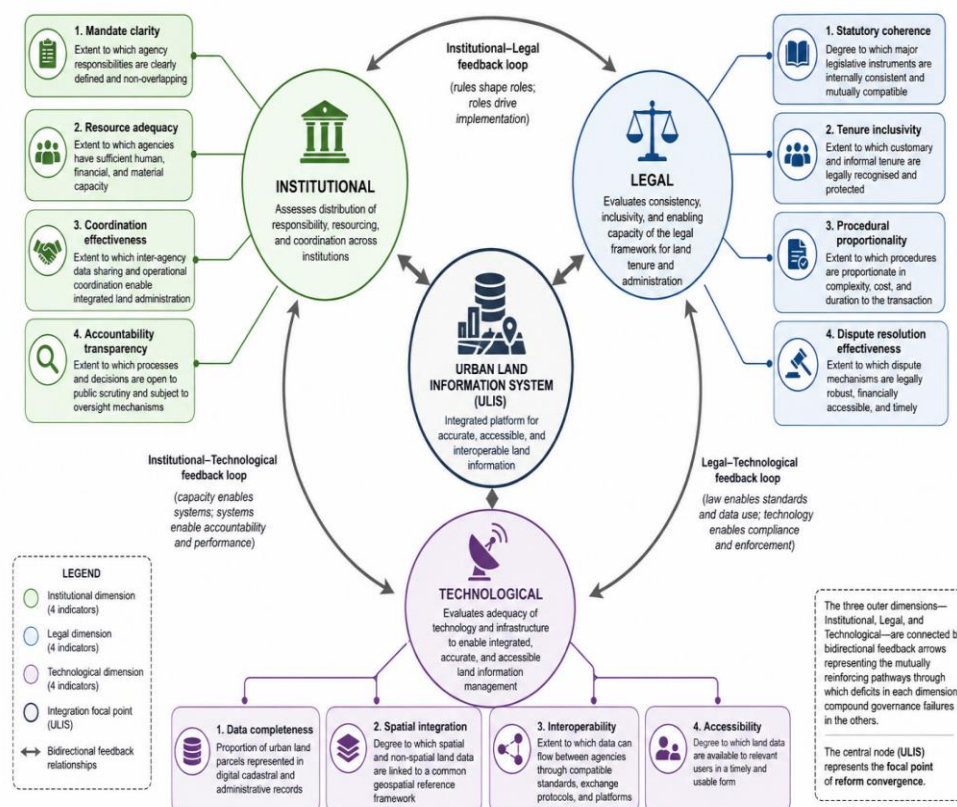
Table 1: The Tripartite Diagnostic Framework for Urban Land Governance (TDF-ULG)

Dimension	Dimension definition	Indicator	Indicator definition
Institutional	Assesses the degree to which responsibility for land administration is appropriately distributed, adequately resourced, and	Mandate clarity	The extent to which agency responsibilities for land administration are clearly defined and non-overlapping
		Resource adequacy	The extent to which agencies possess sufficient human, financial, and material capacity to carry out their mandated functions

Dimension	Dimension definition	Indicator	Indicator definition
	effectively coordinated across relevant institutions	Coordination effectiveness	The extent to which inter-agency data sharing and operational coordination enable integrated land administration
		Accountability transparency	The extent to which agency processes and decisions are open to public scrutiny and subject to oversight mechanisms
Legal	Evaluates the consistency, inclusivity, and enabling capacity of the legal framework for land tenure and administration	Statutory coherence	The degree to which major legislative instruments governing land tenure and administration are internally consistent and mutually compatible
		Tenure inclusivity	The extent to which customary and informal tenure arrangements are legally recognised and accorded protection within the formal land administration system
		Procedural proportionality	The extent to which administrative procedures for land transactions are proportionate in complexity, cost, and duration to the nature and scale of the transaction
		Dispute resolution effectiveness	The extent to which mechanisms for resolving land disputes are legally robust, financially accessible, and timely
Technological	Evaluates the adequacy of available technology and infrastructure to enable integrated, accurate, and accessible land information management	Data completeness	The proportion of urban land parcels represented in digital cadastral and administrative records
		Spatial integration	The degree to which spatial and non-spatial land data are linked to a common geospatial reference framework, enabling integrated analysis
		Interoperability	The extent to which data can flow between agencies through compatible standards, exchange protocols, and integration platforms
		Accessibility	The degree to which land data are available to relevant users, including

Dimension	Dimension definition	Indicator	Indicator definition
			professionals, decision-makers, and the public, in a timely and usable form

Source: Authors' framework synthesis, 2025.



Source: Authors' framework synthesis, 2026.

The three outer dimensions, Institutional, Legal, and Technological, each operationalised through four diagnostic indicators, are connected by bidirectional feedback arrows representing the mutually reinforcing pathways through which deficits in each dimension compound governance failures in the others. The central node represents the integrated Urban Land Information System (ULIS) as the focal point of reform convergence.

Figure 1. Architecture and interdependencies of the Tripartite Diagnostic Framework for Urban Land Governance (TDF-ULG).

The Simultaneity and Synergy of Barriers

One of the main conclusions of this analysis is that the institutional, legal and technological barriers outlined above are not mutually exclusive. They are interdependent and reinforce one another; forming a systemic governance gap requires multi-domain solutions. This is consistent with and can be explained by the Land Management Paradigm and the FFP-LA model, which emphasise the need for integrated, multidimensional approaches to LAR.

There are several reinforcing feedback mechanisms at work in Akure. Fragmentation and inter-agency competition increase the risk that the information sharing and standard-setting required for integrated technological systems will not occur, thereby delaying the development of spatial data infrastructure. Lack of clarity in the law reduces political willingness for institutional reform, as influential actors may benefit from a system characterised by opaque administrative processes. Legal insecurity is, in turn, reinforced by technological deficiencies: lack of clear, verifiable digital records significantly constrains the establishment of clear, enforceable and legally contestable land title. This dynamic, in turn, fuels a vicious cycle of governance failure that is difficult to break with incremental or partial reforms. These implications have policy and practice implications. One-dimensional approaches to reform, such as investments in technology, institutional changes, or legal reforms, are unlikely to lead to lasting reform because they leave the other reinforcing mechanisms unchanged. For meaningful and lasting improvements, a systemic approach is needed that encompasses institutional, legal, and technological barriers, even if executed in a phased, sequenced process.

Applying the TDF-ULG to Akure: A Diagnostic Assessment

The study conducted an evidence-informed diagnostic assessment of Akure's land governance system and evaluated it against the 12 indicators of the TDF-ULG, as presented in Table 2. Based on evidence from policy documents, legislative instruments, institutional diagnostic reports and scholarly literature, performance was assessed across four levels: Very Low, Low, Moderate, and Adequate. This assessment provides a conceptual baseline that should be tested and empirically calibrated through future primary research. The assessment shows that performance across all three dimensions is either low or very low, with no indicator attaining a Moderate or Adequate rating. This Diagnostic Profile indicates that the land governance problem is systemic and that a single-domain approach is unlikely to achieve meaningful improvement.

Table 2: TDF-ULG Diagnostic Assessment for Akure, Nigeria

Dimension	Indicator	Performance level	Evidence basis
Institutional	Mandate clarity	Low	Multiple agencies hold overlapping jurisdiction over land administration, with no formal delineation protocol or single coordinating authority.
	Resource adequacy	Low	Land administration offices are consistently understaffed and under-resourced; LGPAs lack the technical personnel and equipment to execute their statutory mandate.
	Coordination effectiveness	Very Low	No centralised land data repository exists; agencies maintain incompatible records for the same parcels, resulting in recurring conflicts and administrative paralysis.
	Accountability transparency	Low	Administrative processes are opaque; rent-seeking by officials and the deliberate use of delay as a discretionary tool are documented across multiple studies.
Legal	Statutory coherence	Very Low	The LUA contains fundamental contradictions, particularly the gubernatorial consent requirement, that conflict with efficient land market operation and tenure security.
	Tenure inclusivity	Very Low	Customary land rights, which govern the majority of transactions in older and peri-urban Akure, have no formal pathway to recognition in the statutory registry.
	Procedural proportionality	Very Low	C of O processing times of three to seven years are wholly disproportionate to the transaction's scale and complexity, thereby incentivising informality.
	Dispute resolution effectiveness	Low	Court-based dispute resolution is, in principle, formal and accessible, but is slow, costly, and largely unavailable to lower-income landholders in practice.
Technological	Data completeness	Very Low	Land records are predominantly paper-based, incomplete, and deteriorating; no systematic digitalisation programme has been implemented in Akure.
	Spatial integration	Very Low	No common geospatial reference framework connects parcel data, ownership

Dimension	Indicator	Performance level	Evidence basis
			records, valuation data, and land use information across agencies.
	Interoperability	Very Low	Existing digital systems across agencies use conflicting data standards and lack exchange protocols; data sharing between most agencies is not technically feasible.
	Accessibility	Low	Limited public-facing land administration services exist; land data are not available in formats usable for planning, investment, or public governance.

Note: Performance levels -Adequate: capacity meets minimum threshold for integrated governance; Moderate: partial capacity with significant gaps; Low: limited capacity with pervasive gaps; Very Low: capacity absent or negligible. Assessment is evidence-informed and conceptual; empirical validation is recommended.

Implications for GIS-Based Land Information System Development

The TDF-ULG diagnostic assessment has significant implications for the design and implementation of a GIS-based Urban Land Information System (ULIS) in Akure. What is important is that the critical technical advances alone are not enough; without institutional and legal change, the ULIS will fail to deliver governance benefits. Competition between agencies will limit data sharing, legal uncertainty will weaken the power and utility of digital records, and funding for the operational implementation will be lacking.

In contrast, an institutionally embedded and well-designed ULIS can serve as the basis for institutional and legal changes by providing the visibility, transparency and verifiability of land data. This visibility places agencies and political actors under greater public accountability and pressure for reform. Civil society organisations, professional bodies like the Nigerian Institution of Estate Surveyors and Valuers (NIESV) and the Nigerian Institution of Surveyors (NIS) and investigative media are critical drivers of demand for improved land information and for institutional and legal reform that such improvements can support.

Applying the TDF-ULG suggests three practical design principles for a ULIS in Akure. Firstly, the system needs to be designed from the outset to be interoperable, built on open data standards and exchange protocols that enable the integration of existing legacy agency systems stage by stage, not through replacement of the entire system. Second, the legal status of digitally recorded land interests should be explicitly established in legislation before deployment, ensuring that the digital records are legally enforceable. Third, ULIS

governance should be vested in a single coordinating body with a clearly defined mandate, adequate resources, and strong political support. The experience of ODSGIS demonstrates that the absence of any of these elements can significantly undermine implementation effectiveness.

Discussion

The results of this study align with and build on a developing literature on comparative studies of land governance failures in fast-growing secondary cities in the Global South. The systemic governance problem experienced in Akure is similar to what Popoola et al. (2025) reported in Benin City, Bugri (2012) documented in peri-urban Kumasi, and Chimhowu & Woodhouse (2006) documented throughout Sub-Saharan Africa as a whole: in all cases, statutory and customary rights to land co-exist, with poor coordination between the two, resulting in a governance situation that is ambiguous, fragmented, and informally dominated. The TDF-ULG extends these case-specific diagnoses by providing a replicable analytical architecture that makes interdependencies across dimensions visible and measurable through a common set of indicators, thereby enabling systematic city-to-city and national-level comparisons. This positions the framework as a scalable solution for evidence-based land governance reforms at the sub-regional level, in line with UN-GGIM's (2020) call for integrated, data-driven approaches to land administration in developing settings.

Theoretically, the study supports and reinforces the Land Management Paradigm (Enemark, 2005; Williamson et al., 2010) by demonstrating, within the context of the secondary city, how dysfunction in one of the paradigm's functional domains can cascade across the others. Informality is partly driven by the LUA's procedural disproportionality (tenure domain), which affects the valuation and development infrastructure domain, which, in turn, affects cadastral completeness, which negatively affects the spatial planning and development control domain (land use domain). The simultaneity and synergy of barriers are theoretical enhancements of the paradigm's implications for severe institutional undercapacity in secondary cities, as identified in the TDF-ULG. It is also a novel, specific diagnostic tool (TDF-ULG) in terms of indicators, structured and derived from the three axes of fitness in the FFP-LA model (Enemark et al. 2014), suitable for policy implementation.

One of the major findings of this study is that the traditional emphasis on single-sector land administration intervention in Nigeria and similar contexts has proven insufficient. The analysis illustrates those legal reforms without institutional changes (such as proposed changes to LUA without inter-agency coordination mechanisms) are unlikely to help achieve sustainable governance improvements as the technical and institutional feedback mechanisms remain unchanged. This result corresponds to Deininger et al. (2012), who

reached a similar conclusion: that coherent action was needed across the legal, institutional, and technical areas to promote effective land governance. It also supports the political economy argument put forward by Mabogunje (2010) and Nwocha (2017) that entrenched interests, along with the opacity of current systems, constitute a structural challenge to reform that cannot be overcome with technical solutions alone and will require a multi-stakeholder, sustained political commitment and demand generation. In the case of Akure and similarly situated secondary cities in Nigeria, land governance reform should be understood not merely as a technical and/or administrative issue, but a governance issue of the first order.

Conclusions

This paper has adopted a desk-based, conceptual synthesis methodology. It applies a dual theoretical framework comprising the Land Management Paradigm and the Fit-for-Purpose land administration model to analyse barriers to effective urban land records management and governance in the city of Akure, Nigeria. The analysis revealed three barriers that concurrently and interactively create a systemic land governance gap in Akure. These are institutional fragmentation and capacity gaps, legal incoherence and pluralism, and technological inadequacy and interoperability failures. In addition, the study introduced, outlined and applied the Tripartite Diagnostic Framework for Urban Land Governance (TDF-ULG). This twelve-indicator tool is organised into institutional, legal, and technological dimensions, using an evidence-based assessment approach that indicates Akure is at the Low or Very Low level on all twelve indicators.

The paper advances four interdependent policy recommendations, presented in order of feasibility of preparatory action. It is important to emphasise that progress in each area is likely to be more sustainable if pursued simultaneously rather than in isolation. First, the Ondo State Government should commission an institutional audit of the land administration agencies, with a view to formally harmonising overlapping mandates, eliminating duplication, and establishing a statutory protocol for structured information sharing among ODSGIS, the Ministry of Lands and Housing, the Office of the Surveyor-General, and the local government planning authorities. Although politically challenging, such institutional reform is a prerequisite for meaningful technological and legal advancement, as it establishes the governance foundation within which a ULIS can (and should) operate and in which legal reform can (and should) be achieved.

Second, the National Assembly should focus on the urgently needed reform of the Land Use Act, in particular: streamlining the procedure of obtaining the Certificate of Occupancy and reducing processing time significantly; strengthening the compensation provisions for revocation in such a way that they are sufficient and fair; and providing for the recognition of customary tenure interests in the formal land registry in a clear legal way. Such changes

in the law are a critical step toward developing a legal framework in which formal land registration is an incentive, rather than a hindrance.

Third, ODSGIS needs to be properly funded, both in terms of capital investment and recurrent budget, to build a GIS-based Urban Land Information System for Akure that incorporates the interoperability, data completeness, and accessibility principles outlined in the TDF-ULG. The legal status of digitally recorded land rights must be determined through enabling legislation before or in conjunction with the deployment of the system.

Fourth, there should be a sustainable financing mechanism for Land Information Infrastructure based on land-based revenue instruments such as improved property rates and ground rent collection that can provide the recurrent funding needed to sustain a ULIS and benefit those who would benefit from the improved data that the ULIS would provide. This is the revenue spiral that is the most likely to lead to long-run financial sustainability: better data leads to better collection, which leads to better data.

The systemic failure in land governance in Akure calls for a systemic response. This study adds to the existing literature by developing a theoretically driven diagnostic of barriers to overcome and a framework to inform the design and sequencing of integrated reform. The framework should be expanded by future research, using primary empirical research with key informants (land administrators, professional valuers and community representatives) on the ground in Akure, and by using the framework in a comparative study of other selected secondary cities in Nigeria and sub-Saharan Africa, to create an evidence base that is increasingly available to support the urgent need for urban land governance reform in the region.

Acknowledgments

This research is funded by the Tertiary Education Trust Fund (TETFund) under the Institution-Based Research (IBR) Intervention 2025, awarded to the Federal University of Technology, Akure (FUTA), Nigeria (Reference: TEFT/DR&D/CE/UNI/AKURE/IBR/2026). The authors gratefully acknowledge TETFund for its financial support and FUTA for providing the institutional platform and research environment that enabled this study. The authors also thank the Centre for Research and Development (CERAD), FUTA, for administrative facilitation, and the Ondo State Ministry of Lands and Housing for their institutional cooperation.

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