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Original Article

Analysis of Electronic Land Title Deeds and the Issuance of the Electronic Documents in Tanzania Mainland

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ABSTRACT

This study provides an analysis of electronic land title deeds and the issuance of electronic documents in Tanzania Mainland, focusing on the legal, procedural, and technological aspects of digitised land administration. Traditionally, land registration in Tanzania relied on manual, paper-based processes that were slow, susceptible to errors, and vulnerable to fraudulent practices. To address these challenges, the government introduced the Integrated Land Management Information System (ILMIS) to digitise land records, improve efficiency, enhance transparency, and reduce delays in the issuance of land titles. Despite this technological advancement, existing laws, including the Land Act [Cap. 113 R.E. 2025], Village Land Act [Cap. 114 R.E. 2024], Land Registration Act [Cap. 334 R.E. 2023], and Evidence Act [Cap. 6 R.E. 2022] continue to assume paper-based systems, creating gaps in procedural clarity, recognition of electronic documents, dispute resolution, and data security. Using a doctrinal approach, the study critically examines statutes, regulations, policies, and scholarly literature to analyse how electronic land title deeds are issued and the challenges arising from the current legal framework. The findings indicate that statutory recognition for electronic titles remains limited, definitions for digital processes are largely absent, institutional adoption is slow, cybersecurity risks are significant, and legal mechanisms for resolving disputes involving electronic documents are underdeveloped. These issues limit the full operational potential of ILMIS and create uncertainty for landowners, investors, and government institutions. The study highlights the need for legal and institutional reforms to strengthen the issuance of electronic land title deeds. Recommended measures include updating existing land laws to formally recognise electronic titles, incorporating digital procedures into the Registration of Documents Act, amending the Evidence Act to account for electronic records, establishing subsidiary regulations for e-titles, and integrating robust cybersecurity safeguards.

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INTRODUCTION

The documentation and ownership of land in Tanzania has a long and complex history that stretches from pre-colonial customary practices, through colonial statutory systems, and into the post-independence reforms that sought to harmonise tenure security with national development goals. The move from oral recognition of rights to written certificates, and now to electronic land title deeds, represents a continuous search for certainty, efficiency, and transparency in land governance. The introduction of the Integrated Land Management Information System (ILMIS) is the latest step in this trajectory, reflecting both local needs and global trends toward digital land administration.

Despite this progress, the Tanzanian digital land titling system faces serious challenges that undermine its reliability and credibility. The migration of paper-based records into ILMIS has resulted in errors, inconsistencies, and gaps that weaken the accuracy of ownership records. Legal frameworks such as the Land Act, Land Registration Act, and Evidence Act have not been fully updated to recognise digital titles, regulate their authentication, or guide courts in their admissibility. At the same time, institutional resistance, limited training, and reliance on both paper and digital records have slowed effective adoption, while the absence of cybersecurity safeguards exposes ILMIS to vulnerabilities. These weaknesses create uncertainty for landowners, investors, and financial institutions, leading to disputes and eroding public trust in electronic land titles.

The central problem, therefore, is that Tanzania's digital land titling system operates without sufficient legal, institutional, and technical support, leaving its legitimacy fragile and incomplete. To address this, the study pursues three objectives: first, to examine the legal and institutional challenges affecting the recognition and implementation of electronic land titles; second, to analyze the inconsistencies between statutory law, administrative practice, and judicial procedure that create uncertainty in digital land governance; and third, to propose reforms that can harmonize the legal framework, strengthen institutional capacity, and enhance public confidence in electronic land title deeds.

In the period before colonial rule, land in the mainland was largely managed through customary systems, where clans and communities allocated rights of use rather than individual ownership. Elders and chiefs were custodians of land, and people held rights based on belonging to the community. Oral agreements were common, and records were not written down but preserved through collective memory. At this time, land was rarely treated as a commodity that could be traded outside the community. This absence of formalised documentation meant that there was no centralised system for title deeds, and ownership was fluid, often leading to disputes that were resolved locally through customary leaders. The lack of documentary evidence at this stage later

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posed challenges when colonial powers introduced formal systems of land registration.[1]

A major historical development came with the German colonial administration, which introduced the concept of Crown Land in the late nineteenth century. By declaring vast tracts of land as belonging to the state, the German authorities sidelined customary claims. In order to encourage European settlers and companies, the Germans issued certificates of title, a new practice that required written documents to prove ownership. This marked the first instance of land title deeds on Tanzanian soil, though it largely excluded indigenous populations. The British, who took over after the First World War under the League of Nations mandate, retained and expanded these practices. They introduced ordinances such as the Land Ordinance of 1923, which vested all land in the Governor as trustee for the people. This ordinance created the framework for rights of occupancy that could be granted to individuals for specified terms. Under this system, certificates of occupancy became critical documents, demonstrating ownership or user rights in a legal sense. This fundamentally altered landholding by shifting from oral recognition to written documents and bureaucratic registration.[2]

During the colonial period, major historical events such as the expansion of plantations and the introduction of infrastructure projects like the railway lines increased the demand for documented land ownership. Europeans were favoured in acquiring these rights, while African customary rights were largely disregarded. The colonial system of documentation laid the groundwork for post-independence reforms, but also introduced inequalities. Certificates of title were often kept in paper form within land registries, and errors, delays, and manipulation became common. This created a legacy of challenges that continued after independence, as land disputes were frequent due to the lack of recognition of customary tenure and the slow process of formal registration.[3]

After independence in 1961, Tanzania inherited this colonial legal framework but sought to align it with its socialist policies. A major turning point occurred in 1967 with the Arusha Declaration, which emphasised socialism and self-reliance. Land was nationalised, and private ownership was replaced with the notion that all land belonged to the public under the control of the President. The Land Ordinance of 1923 continued to operate until it was replaced by the Land Act and the Village Land Act of 1999. These two laws, the Land Act [Cap 113 R.E 2019] and the Village Land Act [Cap 114 R.E 2019], provided the basis for rights of occupancy and village land rights. They mandated the issuance of certificates to show ownership or user rights, a direct continuation of the colonial practice, but restructured to cover both urban and rural settings.[4]

The Land Registration Act [Cap 334 R.E 2019] further provided for the registration of land titles, including the maintenance of registries for land records. This Act established the foundation for secure title deeds, though in practice, challenges persisted, such as delays, fraud, and corruption within registries. These challenges highlighted the limitations of a paper-based system. To respond to growing inefficiencies, Tanzania began to explore digital solutions. A significant legal development was the Electronic Transactions Act [Cap 427 R.E 2019], which recognised electronic documents and electronic signatures as legally binding. This

[1]Barney L & Laizer A 'Developing an integrated land management information system (ILMIS) for Tanzania' (FIG OICRF Vol 4 No6 2023)4.

[2]Ntongani, E. E. (2023). Landowners' perception on the implementation of Integrated Land Management Information System (ILMIS) in Kinondoni Municipality, Dar es Salaam. African Journal of Law and Public Policy, Vol. 2(1), 1–16. https://journals.iaa.ac.tz/index.php/ajlp-gs/article/view/45804.

[3]Shinyanda, Q., & Chitondo, L. (2022). *Land records management in Tanzania: Opportunities and challenges in the digital era*. *African Conference on Accounting and Informatics*, Vol. 1(1).

[4]Christopher, J. (2023). Land digitalisation a priority as government eyes Sh8 trillion investment. The Citizen Tanzania. https://www.thecitizen.co.tz/tanzania/news/national/land-digitalisation-a-priority-as-government-eyes-sh8-trillion-investment--4247608.

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Act provided the legal environment for shifting from physical title deeds to electronic ones, marking a major step in modernisation.[5]

Historical events in the twenty-first century, such as the government's initiative to improve public service delivery and curb corruption, accelerated this transition. The launching of systems like the Land Information System (LIS) under the Ministry of Lands, Housing and Human Settlements Development marked the start of digitising land records. With the provisions of the Land Act, the Village Land Act, and the Land Registration Act serving as substantive laws, and the Electronic Transactions Act ensuring legal recognition of electronic records, Tanzania established the ground for issuing electronic land title deeds. This process has been further supported by amendments in recent years, where laws governing land and electronic transactions have been revised up to 2023 and 2024 to ensure efficiency and adaptability to technological advancements.[6]

Despite these reforms, the legacy of the precolonial absence of documentation, the colonial introduction of selective title deeds, and the post-independence emphasis on state control has left gaps. Customary tenure is still difficult to integrate fully into the electronic system, and disputes persist over unregistered or overlapping claims.[7] Nevertheless, the specific provisions of the Land Act, Village Land Act, Land Registration Act, and Electronic Transactions Act together illustrate the evolution of land title documentation from oral systems to written certificates, and now to electronic deeds. This long historical trajectory explains why the introduction of electronic land title deeds is not merely a technological change but the latest stage in a struggle to balance efficiency, inclusivity, and security of land ownership in Tanzania.[8]

LITERATURE REVIEW

Hamisi (2022)[9], in the book *Digital Governance and Land Administration in Tanzania (Dar es Salaam University Press),* discusses the institutional, technological, and regulatory aspects of transitioning to digital land governance. Hamisi explores the operational rollout of ILMIS and identifies institutional resistance, lack of training, and inadequate policy support as key obstacles. The book further calls for a reconfiguration of the legal architecture to support a fully digital land administration framework. It enriches the study by demonstrating that legal reform is essential for institutional readiness and public trust in digital land systems. However, Hamis does not deeply interrogate the underlying gaps within the legal framework that perpetuate such resistance, nor does it address how specific statutory provisions could be restructured to align with digital realities. This leaves a significant gap for further exploration into the precise legal reforms necessary to bridge practice with policy.

Msuya (2023)[10], in the article *Towards Legal Certainty in Digital Land Titles:* A Tanzanian Experience" *published in the Journal of African Law,* evaluates the risks posed by overlapping laws and the lack of institutional guidance on electronic records. Msuya recommends statutory recognition of digital deeds and court training in digital evidence. This supports the study by identifying both legal and institutional gaps

[5]Laseko B, Apollo L, Milledrogues A, Roffer C, Burke C (2018) Developing an Integrated Land Management Information System (ILMIS) For Tanzania. 2018 World Bank Conference on Land and Poverty, 19–23.

[6]Christopher, J. (2023). *Land digitalisation a priority as government eyes Sh8 trillion investment*. *The Citizen Tanzania.*

[7]Kombe, C., & Wema, E. F. (2019). Land registration model based on blockchain for developing countries: A case of Tanzania. *Journal of Information Engineering*, 5(6). Retrieved from https://www.iiste.org/Journals/index.php/JIEA/article/download/35154/36160.

[8]Ntongani, E. E. (2023). *Landowners' perception on the implementation of Integrated Land Management Information System (ILMIS) in Kinondoni Municipality, Dar es Salaam*. *African Journal of Law and Public Policy*, Vol. 2(1), 1–16.

[9]Hamisi M, Digital Governance and Land Administration in Tanzania (Dar es Salaam University Press 2022).

[10]Msuya E, 'Towards Legal Certainty in Digital Land Titles: A Tanzanian Experience' (2023) Journal of African Law 15(2) 112.

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hindering digital transformation in land governance. Although these recommendations are valuable, the study falls short of examining the broader inconsistencies between existing land laws and technological practices, particularly how these inconsistencies directly impact tenure security and public trust. This narrow scope creates space for further research into how law and practice interact to either promote or undermine digital transformation in land governance.

Kaseva (2023)[11], In *Land Law and Technological Transformation in Tanzania" (Mkuki na Nyota Publishers)*, investigates the evolution of Tanzanian land law in response to global digital trends. The author critically analyses legal instruments such as the Land Act, Village Land Act, and the Registration of Documents Act, noting their failure to accommodate digital technologies. Kaseva argues for a holistic amendment of these laws to establish legal standards for electronic land documents. This book directly supports the study by advocating for a techno-legal approach to modernising Tanzania's land governance system. The analysis does not explore the inconsistencies in enforcement and the challenges faced by institutions tasked with implementation. This omission creates a gap in understanding how fragmented reforms affect both administrative efficiency and citizens' access to secure digital land services.

Nchimbi P (2022)[12], In *The Legal Uncertainty of E-Titles in Tanzania's Land Sector published in the East African Journal of Legal Studies,* evaluates the legislative gaps that affect the credibility of electronic documentation in Tanzania's land registry. He emphasises the absence of statutory definitions, procedures, or judicial precedents validating digital land titles. According to Nchimbi, this legal vacuum creates confusion among practitioners and undermines the enforceability of e-titles. This article directly relates to the present study by exposing how the failure to amend primary laws like the Registration of Documents Act and the Land Act leads to a mismatch between law and administrative practices. The article does not provide an in-depth discussion of the practical implications of this uncertainty on land disputes, investments, or mortgage transactions. This limitation underscores the need for further scholarly inquiry into how legal ambiguity in digital titling affects broader socioeconomic realities.

METHODOLOGY

This study adopts a doctrinal research approach to examine the laws, regulations, and policies that govern the registration of electronic land titles in Tanzania. The doctrinal approach was chosen because it allows for systematic analysis of legal rules, principles, and judicial interpretations, which are central to understanding the interaction between existing laws and emerging digital technologies. This method also provides a foundation for identifying gaps, contradictions, and inconsistencies within the legal framework, as well as highlighting areas in need of reform to strengthen the recognition and enforceability of electronic land titles.

Data collection relied primarily on secondary sources, including key statutes such as the Land Act [Cap. 113 R.E. 2025], Village Land Act [Cap. 114 R.E. 2024], Land Registration Act [Cap. 334 R.E. 2023], and the Evidence Act [Cap. 6 R.E. 2022]. Policy documents, government reports, and international guidelines on electronic land registration were reviewed to provide contextual understanding of global best practices and local policy directions. In addition, scholarly articles, journals, books, and relevant case law were collected and examined. These materials were not only summarised but critically analysed, with attention paid to points of convergence and divergence between statutory provisions, judicial

[11]Kaseva M, Land Law and Technological Transformation in Tanzania (Mkuki na Nyota Publishers 2023).

[12]Nchimbi P, 'The Legal Uncertainty of E-Titles in Tanzania's Land Sector' (2022) East African Journal of Legal Studies 14(3) 91.

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interpretations, and administrative practices. Ethical considerations were also taken into account throughout the study. Since doctrinal research relies on publicly available materials, ethical integrity was maintained through proper acknowledgement of all sources, adherence to academic citation standards, and avoidance of plagiarism. The study also respected intellectual honesty by critically engaging with both supportive and opposing scholarly views, thereby strengthening the validity and reliability of its conclusions.

FINDINGS AND DISCUSSION

Data Migration Errors

Transferring historical paper-based land records into the ILMIS system is one of the most complex challenges in Tanzania. Many older documents are incomplete, illegible, and contain inconsistencies in names, boundaries, and ownership details. Manual data entry is often required, and staff must make judgment calls to fill in missing information, which introduces errors. These errors can cause discrepancies between the original certificate and the electronic record, potentially leading to disputes between landowners.

The study reveals that one of the most pressing challenges in implementing ILMIS is data migration errors. The process of transferring historical paper-based records into digital form has been undermined by incomplete, illegible, and inconsistent documents, leading to discrepancies between original certificates and electronic records. This aligns with Hamisi (2022), who observed that institutional resistance and lack of adequate technical support weaken the transition to digital governance. However, while Hamisi identified the institutional challenges, this study demonstrates that errors in data migration also generate practical disputes between landowners and complicate verification processes for investors and financial institutions. The policy implication is that without a comprehensive and well-resourced data verification strategy, ILMIS cannot provide reliable proof of ownership, thereby weakening tenure security and reducing trust in digital systems.

Legal Uncertainty Surrounding Digital Land Titles

Even though Tanzania has made progress in digitising land records through ILMIS, the law still does not clearly recognise electronic land titles as legally valid. The Land Act [Cap. 113 R.E. 2025] emphasises certificates of right of occupancy, which are still primarily paper-based. Similarly, the Registration of Documents Act [Cap. 117 R.E. 2002] requires documents to be physically submitted and recorded. There are no clauses or definitions in these laws that provide for digital equivalents or establish the legal effect of electronic land titles. As a result, the ILMIS system cannot be relied upon as the primary legal proof of ownership, which reduces confidence in digital records.[13]

Another critical finding is the legal uncertainty surrounding digital land titles. Existing statutes such as the Land Act [Cap. 113 R.E. 2025] and the Registration of Documents Act [Cap. 117 R.E. 2002] continue to emphasise paper-based documentation, leaving electronic records in a legal vacuum. This finding is consistent with Msuya (2023), who argues that overlapping laws and a lack of statutory recognition hinder legal certainty. Similarly, Nchimbi (2022) highlights the absence of statutory definitions and judicial precedents validating e-titles. This study goes further by showing that the lack of legal clarity forces the continued reliance on hybrid systems, leading to duplication, inefficiency, and administrative contradictions. The implication is that unless legal amendments provide explicit recognition of electronic titles and judicial procedures for their enforcement, ILMIS risks

[13]Sullivan, T., Solovov, A., Mushaija, G., Msigwa, M., & Issa, M. (2019). An innovative, affordable, and decentralized model for land registration and administration at a national scale in Tanzania. *Tenure Security*. Retrieved from https://tenuresecurity.org/research-publication/an-innovative-affordable-and-decentralized-model-for-land-registration-and-administration-at-a-national-scale-in-tanzania-2/.

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functioning only as an advisory tool rather than a legally binding system.[14]

Resistance to Change among Officials

The findings also highlight resistance to change among officials, which contributes to inefficiencies in issuing electronic land titles. Staff reluctance, mistrust of digital records, and preference for paper-based systems slow down adoption. This resonates with Hamisi's (2022) identification of institutional resistance, but the present study emphasises the socio-cultural roots of this resistance, such as hierarchical bureaucratic traditions and the perceived threat to discretionary benefits under manual systems. The policy implication is that legal reform alone is insufficient without addressing institutional incentives, capacity-building, and accountability mechanisms that encourage consistent reliance on digital platforms.

Some land officers and staff resist adopting electronic land systems due to fear of job displacement or unfamiliarity with technology. In offices where staff are accustomed to paper-based processes, introducing ILMIS is perceived as a threat to established routines. This resistance manifests in slow data entry, delayed verification, and reluctance to fully utilise digital functionalities, leading to inefficiencies in issuing electronic land title deeds. Even minor hesitation from staff can disrupt the workflow, particularly in offices that handle a large volume of land transactions.[15]

Absence of Key Digital Concepts in Law

A further challenge is the absence of key digital concepts in Tanzanian law, such as "electronic land title," "digital signature," and "electronic authentication." While Kaseva (2023) critiques the failure of core land statutes to accommodate digital technologies, this study extends the argument by showing how the absence of these definitions undermines consistency across institutions and weakens judicial capacity to handle electronic evidence. Courts remain uncertain about how to treat ILMIS-generated records under the Evidence Act [Cap. 6 R.E. 2022], which slows dispute resolution and disadvantages litigants relying on digital records. This gap underscores the need for harmonised legal definitions and procedures to ensure consistency, reliability, and fairness in land administration.[16]

Moreover, the judiciary currently has no guidance on how to handle electronic evidence. Judges often rely on physical documents, which slows down dispute resolution and disadvantages parties using digital titles. The Evidence Act [Cap. 6 R.E. 2022], though revised, does not fully regulate the admissibility or evaluation of electronic land records. Including clear procedures in laws would give judicial officers tools to assess, verify, and rely on digital documents, making electronic land titles legally credible and easier to enforce.

Institutional Hesitation and Limited Adoption

The study further identifies institutional hesitation and limited adoption as a major barrier to ILMIS implementation. Although statutes such as the Land Act [2025] and Village Land Act [2024] encourage modernisation, they do not impose binding obligations for digital adoption across regions. This fragmented approach allows local authorities to continue prioritising manual records, undermining national progress. Previous works, such as Hamisi (2022) and Msuya (2023), acknowledge weak institutional adoption but do not sufficiently analyse its link to corruption and discretionary practices. This study demonstrates that officials benefiting from paper-based systems

[14]Laseko, K. (2018). Developing an integrated land management information system: The case of Tanzania. *OICRF*. Retrieved from https://www.oicrf.org/documents/40950/0/467_06-05-Laseko-285_paper.pdf/787e0748-9c22-4f47-f959-201f1cb1ecb3.

[15]Babatunde, Ayoola A., et al. "Analysis of the Activities of Land Administration Machineries in Abuja and Minna, Nigeria." IOSR Journal of Environmental Science, Toxicology and Food Technology, vol. 8, no. 1, 2014, pp. 31–38, 10.9790/2402-08163138. Accessed 5 July 2019.

[16]**Kombe, C., & Wema, E. F.** (2017). Land registration model based on blockchain for developing countries: A case of Tanzania. *Journal of Information Engineering*, 5(6).

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have a vested interest in resisting digital reforms. The implication is that digital transformation requires not only statutory amendments but also structural reforms that enforce uniform adoption, limit discretion, and strengthen transparency.

Corruption and resistance to transparency further exacerbate institutional challenges. Manual records provide opportunities for manipulation, rent-seeking, and discretionary actions, which are limited under ILMIS. Officials who benefit from traditional systems may resist full adoption of digital tools. Legal reform and institutional restructuring, including mandatory training, clear policies, and accountability mechanisms, are therefore essential to overcome resistance and ensure ILMIS achieves its intended goals of transparency and efficiency.

Vulnerabilities in Cybersecurity and Data Protection

The findings expand on the literature by showing how these weaknesses interact with broader socio-economic implications, such as undermining tenure security, discouraging investment, and weakening the credibility of government land administration. While Hamisi (2022) and Msuya (2023) primarily diagnose technical and legal gaps, this study goes further by demonstrating the interconnectedness of legal ambiguity, institutional inertia, and technological risks in perpetuating inefficiency. The discussion, therefore, not only situates the findings within the broader scholarly debate but also strengthens the argument that comprehensive legal reforms—particularly amendments to the Land Act, Registration of Documents Act, and Evidence Act—are critical to ensuring that digital land titles become credible, enforceable, and trusted by both the public and private stakeholders.[17]

Current land laws, including the Land Registration Act [2023], do not prescribe technical safeguards such as encryption, audit trails, or secure authentication. This leaves electronic land records open to manipulation, loss, or unauthorised access. While none of the reviewed literature engages deeply with cybersecurity risks, this study highlights them as an urgent legal and policy gap. The practical implication is that without enforceable cybersecurity and data protection standards, ILMIS cannot inspire public confidence, particularly among rural landowners who are already less informed about digital risks.

Inadequate Legal Framework for Resolving Digital Land Disputes

Current laws do not adequately address disputes involving digital land deeds. The Evidence Act [Cap. 6 R.E. 2022] does not fully regulate the use of electronic documents in civil cases. Courts may be unsure whether to treat ILMIS-generated titles as valid evidence. This procedural uncertainty forces litigants to rely on paper documents, weakening the practical utility of digital records and prolonging dispute resolution.[18]

Courts and tribunals are not guided on how to assess ILMIS-generated records, and judges lack technical training on digital evidence. Although Nchimbi (2022) mentions the absence of judicial precedents, this study expands the discussion by emphasising how this gap prolongs dispute resolution, generates contradictory rulings, and undermines the enforceability of digital land titles. The implication is that judicial reforms, including updates to the Evidence Act and capacity-building for judges, are critical for ensuring that ILMIS titles carry the same authority as paper-based ones.

[17]Kombe, C., & Wema, E. F. (2017). Land registration model based on blockchain for developing countries: A case of Tanzania. *Journal of Information Engineering*, 5(6). Retrieved fromhttps://www.iiste.org/Journals/index.php/JIEA/article/download/35154/36160

[18]Sullivan, T., Solovov, A., Mushaija, G., Msigwa, M., & Issa, M. (2019). An innovative, affordable, and decentralized model for land registration and administration at a national scale in Tanzania. *Tenure Security*. Retrieved from https://tenuresecurity.org/research-publication/an-innovative-affordable-and-decentralized-model-for-land-registration-and-administration-at-a-national-scale-in-tanzania-2/.

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SUMMARY OF KEY FINDINGS

The study has shown that Tanzania's transition to electronic land titling through ILMIS is confronted with significant obstacles that weaken its credibility and effectiveness. Data migration from historical paper-based records remains problematic due to errors, inconsistencies, and incomplete information, which jeopardise accuracy and reliability. The legal framework has not kept pace with digital reforms, as laws such as the Land Act, Land Registration Act, and Evidence Act still emphasise paper-based documentation and fail to recognise electronic land titles as legally binding. Institutional resistance and hesitation, particularly among land officers accustomed to manual processes, have slowed down adoption and resulted in parallel systems that perpetuate duplication and inconsistencies. The absence of statutory definitions for digital concepts such as electronic authentication and digital signatures further contributes to uncertainty in interpretation and application. In addition, inadequate judicial preparedness, weak institutional coordination, and the absence of comprehensive cybersecurity safeguards create risks of manipulation, fraud, and inconsistent dispute resolution. Collectively, these findings reveal that both legal and institutional weaknesses continue to undermine the effectiveness of electronic land titles in Tanzania.

CONCLUSION

The analysis concludes that while ILMIS is an important innovation in modernising land governance, its practical utility and credibility are constrained by unresolved legal, institutional, and technological challenges. The lack of statutory recognition of electronic land titles creates uncertainty in their enforceability, while resistance from officials and institutional hesitation weaken implementation and consistency across regions. Without clear legal definitions and adequate judicial guidance, electronic land titles remain vulnerable to contestation, undermining their authority in both administrative and judicial processes. Furthermore, the persistence of data migration errors and the absence of cybersecurity safeguards expose the system to risks that compromise public trust. Overall, the study demonstrates that unless Tanzania strengthens its legal framework, clarifies institutional mandates, and addresses gaps in digital security and capacity, electronic land titling will remain fragmented and legally uncertain, limiting its potential to improve tenure security, transparency, and efficiency.

RECCOMENDATIONS

Recognise Electronic Land Titles in the Land Act [Cap. 113 R.E. 2025]

The Land Act should be amended to explicitly recognise electronic land titles as having the same legal effect as paper-based titles. Suggested wording:

"A land title issued electronically under a government-approved digital land management system shall have the same legal effect as a paper-based title."

This ensures that electronic land titles are binding in all land transactions, including sales, mortgages, leases, and inheritance. Government agencies, banks, and courts should be mandated to accept e-titles for all administrative and legal purposes, eliminating duplication of paper documentation. Clear recognition in the law would remove uncertainties and encourage full reliance on the ILMIS system for both citizens and institutions.

Include Digital Documents in the Registration of Documents Act [Cap. 117 R.E. 2002]

The Act should define terms such as "electronic document," "digital signature," and "electronic authentication", and outline procedures for registering, storing, retrieving, and verifying digital land records. Each electronic title could be assigned a unique identifier, with all modifications logged and traceable through audit trails to prevent disputes and manipulation. The law should provide guidance for local government authorities, land offices, and courts on interpreting digital documents, ensuring uniformity across

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regions and strengthening administrative efficiency.

Update the Evidence Act [Cap. 6 R.E. 2022] for Electronic Land Records

The Evidence Act should explicitly authorise courts to accept digital land documents if verified through certified digital signatures or system records. Suggested wording:

"Any land record generated or maintained under a government-approved electronic system shall be admissible in court if verified by a certified digital signature or system record."

Standards for verification, responsibilities of officials certifying e-records, and penalties for tampering or falsification should be included. Training programs for judges and legal practitioners would ensure proper handling and interpretation of ILMIS-generated records in litigation.

Create Specific Regulations for Electronic Land Titles

The Ministry of Lands should establish detailed regulations governing the issuance, verification, transfer, and cancellation of e-titles. Regulations should clarify institutional responsibilities, monitoring obligations, compliance standards, and reporting requirements. Regular audits of ILMIS data, mandatory annual performance reports, and penalties for misuse or negligence should be enforced. Public awareness campaigns could educate landowners on digital rights and responsibilities, promoting trust and adoption of electronic title deeds.

Add Cybersecurity and Data Protection Measures to Land Laws

Legislation should mandate robust protection for electronic land records, including encryption, multi-factor authentication, backups, and mandatory incident reporting. These measures could be introduced either through the Cybercrimes Act or as specific provisions in the Land Act or Land Registration Act. Additional measures could include mandatory cybersecurity audits, certification of ILMIS systems before deployment, and specialised training for land officers on digital security threats. Public awareness programs would further ensure confidence in the safety and reliability of electronic land title systems.

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