
FROM PAPER TITLES TO DIGITAL RECORDS: A CRITICAL LEGAL ANALYSIS OF PROPERTY FRAUD IN INDIA

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ABSTRACT

The digitization of land governance in India, primarily through the Digital India Land Records Modernization Programme (DILRMP), represents a structural shift from paper-based title systems to integrated digital platforms. Initiatives such as Bhoomi, Dharani and Bhudhaar, along with national systems like the National Generic Document Registration System (NGDRS) and Unique Land Parcel Identification Number (ULPIN), aim to create a unified, transparent, and tamper-resistant land record ecosystem. These platforms operate within a fragmented legal framework governed by statutes such as the Registration Act, 1908, Transfer of Property Act, 1882, and state-specific land revenue laws, while also engaging emerging digital regulations like the Information Technology Act, 2000. This paper critically examines whether these technology-driven systems effectively reduce property fraud traditionally manifested through title manipulation, benami transactions, and duplicate registrations or merely transform it into digital forms such as identity theft, database tampering, and cyber-enabled fraud. While digitization enhances accessibility, interoperability, and auditability, issues relating to data integrity, lack of conclusive titling, and weak cybersecurity frameworks persist. Through doctrinal and comparative analysis of statutory provisions and state-level platforms, the study evaluates the adequacy of existing legal safeguards and proposes reforms to ensure secure, fraud-resistant digital land governance in India.

Keywords: Digital Land Records, Property Fraud, Land Governance, E-Governance

I. Introduction

In India, land is the most prominent type of ownership both politically and commercially. The single greatest area of civil litigation before Indian courts is land title disputes, and despite decades of government involvement, fraudulent land alienations continue to be widespread. The Digital India Land Records Modernization Programme (DILRMP), which introduced digital land governance in its most comprehensive form, has been recognized as a revolutionary reform capable of eradicating the documentary opacity and information disparities that have historically allowed property fraud.¹

India's land registration and transfer laws are outdated and inconsistent. The most central laws are The *Registration Act, 1908*² and the *Transfer of Property Act, 1882*³, while the *Information Technology Act, 2000*⁴ governs the digital infrastructure that currently supports land record systems. The constitutional allocation of land to the State List is reflected in state-specific land revenue legislation, which further complicate uniformity.

This paper critically analyses the impact of digital land records on property fraud in India by examining the existing technological platforms and the legal mechanisms governing them. It evaluates whether digitization has effectively strengthened transparency and security or merely transformed conventional property fraud into more sophisticated digital forms. The study adopts a doctrinal and analytical methodology, relying on statutory provisions, judicial precedents, government policies, and existing digital land governance models to assess the adequacy of the current legal framework.

II. The Evolution of Digital Land Governance in India

2.1 From Paper to Platform: The DILRMP

The DILRMP, launched in 2008 and restructured in 2016, constitutes the central programmatic architecture for land record digitisation in India. Its objectives encompass the digitisation of Record of Rights (RoR), cadastral survey maps, registration, and the establishment of an integrated land information system interoperable across state portals. The programme

¹Government of India, Ministry of Rural Development, Digital India Land Records Modernization Programme: Programme Guidelines (Department of Land Resources 2016).

²Registration Act 1908 (India).

³Transfer of Property Act 1882 (India).

⁴Information Technology Act 2000 (India).

envisages the convergence of textual records (*jamabandi* or *khatauni*), spatial records, and registration data into a single unified platform.

The flagship state-level implementation, Karnataka's Bhoomi project, pioneered computerised delivery of RoR in 2002, enabling citizens to obtain *pahani* extracts online.⁵ Telangana's Dharani portal subsequently introduced integrated mutation and registration, attempting to consolidate multiple processes at the point of registration.⁶ These initiatives, while laudable in intent, have revealed the complexities of translating paper-based systems often corrupted at source into authoritative digital records.

2.2 ULPIN, NGDRS, and the National Architecture

The Unique Land Parcel Identification Number (ULPIN), analogous to Aadhaar for land, assigns a 14-digit alphanumeric code to each land parcel based on geo-referenced coordinates.⁷ ULPIN is designed to eliminate duplicate registrations and enable national-level interoperability. The National Generic Document Registration System (NGDRS) further enables online document registration, execution, and payment of stamp duty across participating states.⁸ Together, these systems constitute an emerging national land data infrastructure, though their full implementation remains uneven across states.

III. Legal Framework Governing Digital Land Records

3.1 Central Legislation

The *Registration Act*, 1908 mandates the compulsory registration of instruments relating to immovable property of value exceeding one hundred rupees, and prescribes the evidentiary consequences of non-registration. The Act was not drafted to anticipate electronic documents or digital signatures; its provisions regarding presentment, identification of executants, and physical endorsement sit uneasily alongside e-registration systems. Section 17 of the Act,

⁵Karnataka Land Revenue Act 1964 (India) s 128A (inserted by the Karnataka Land Revenue (Amendment) Act 1991); Government of Karnataka, Bhoomi Project: Online Delivery of Land Records (Revenue Department 2002).

⁶Government of Telangana, Dharani Integrated Land Records Management System <<https://dharani.telangana.gov.in>> accessed 9 June 2026.

⁷Department of Land Resources, Unique Land Parcel Identification Number (ULPIN): Operational Guidelines (Ministry of Rural Development 2021).

⁸Department of Land Resources, National Generic Document Registration System (NGDRS) <<https://ngdrs.gov.in>> accessed 9 June 2026.

which prescribes compulsorily registrable documents, does not address electronic instruments, and the interface between the Act and the *Information Technology Act, 2000* remains judicially under-explored.

The *Transfer of Property Act, 1882* governs the substantive law of transfer, including sale, mortgage, lease, and gift of immovable property. Section 54 of the Act requires that a sale of immovable property of value of one hundred rupees or more be effected only by a registered instrument. The Act is silent on digital or electronic conveyancing, creating a lacuna that NGDRS attempts to fill administratively rather than legislatively.

The *Benami Transactions (Prohibition) Amendment Act, 2016* strengthened the legal arsenal against benami transactions, vesting confiscated property in the Central Government and establishing Adjudicating Authorities.⁹ However, benami structures that exploit digital identity gaps particularly where Aadhaar-based authentication permits nominees to register property on behalf of beneficial owners remain inadequately addressed. The *Prevention of Money Laundering Act, 2002* provides supplementary jurisdiction to attach property acquired through scheduled offences, which includes fraud.¹⁰

The *Information Technology Act, 2000*, while providing a legal basis for electronic records and digital signatures under Sections 4-10, does not specifically address land records. Its provisions on data protection, cyber offences (Sections 43, 66, 66C, 66D, 72A), and intermediary liability have been applied by analogy to digital governance systems, a practice that generates interpretive uncertainty.¹¹ The Supreme Court's invalidation of Section 66A in *Shreya Singhal v Union of India*¹² illustrates the constitutional fragility of legislative provisions hastily adapted to digital contexts.

The recognition of the right to privacy as a fundamental right under Article 21 of the Constitution in *Justice KS Puttaswamy (Retd) v Union of India*¹³ has significant implications for digital land governance. The aggregation of biometric data, land holdings, and financial

⁹Benami Transactions (Prohibition) Amendment Act 2016 (India).

¹⁰Prevention of Money Laundering Act 2002 (India) ss 2(1)(u), 5.

¹¹Information Technology Act 2000 (India) ss 43, 66, 66C, 66D, 72A.

¹²*Shreya Singhal v Union of India* (2015) 5 SCC 1 (Supreme Court of India) (striking down s 66A of the Information Technology Act 2000 on grounds of unconstitutionality, underscoring judicial scrutiny of digital legislation).

¹³*Justice KS Puttaswamy (Retd) v Union of India* (2017) 10 SCC 1 (Supreme Court of India) (nine-judge bench recognising the right to privacy as a fundamental right under Article 21 of the Constitution of India 1950).

information in integrated platforms constitutes a substantial intrusion into citizens' informational privacy, now regulated, with considerable implementation gaps, by the *Digital Personal Data Protection Act, 2023*.¹⁴

3.2 Constitutional Dimension and State Legislation

Land is a State subject under Entry 18, List II (State List) of the Seventh Schedule to the Constitution of India, 1950.¹⁵ This constitutional allocation means that land revenue administration, including the maintenance of land records, is primarily a state function. The result is a pronounced normative pluralism: Karnataka's Bhoomi, Telangana's Dharani, Rajasthan's Apna Khata, and Maharashtra's Mahabhulekh operate under distinct enabling legislation and administrative frameworks.¹⁶ The DILRMP operates as a centrally sponsored scheme, with states retaining legislative and administrative autonomy a structure that frustrates standardisation and uniform legal accountability.

The Law Commission of India's 279th Report on Digitisation of Land Records (2023) has recommended a model Central legislation to provide uniform minimum standards for digital land records, but this recommendation has not yet been enacted.¹⁷

IV. Property Fraud: Persistence and Digital Transformation

4.1 Traditional Forms of Property Fraud

Traditional property fraud in India has been characterised by title manipulation through forged or fabricated instruments, impersonation of vendors, fraudulent power of attorney transactions, and benami arrangements designed to conceal beneficial ownership.¹⁸ Duplicate registrations where the same property is sold to multiple purchasers have been facilitated by the absence of a centralised, searchable database of registered transactions and by the inaccessibility of historical records, often held only in physical registers at sub-registrar offices.¹⁹

¹⁴Digital Personal Data Protection Act 2023 (India).

¹⁵Constitution of India 1950, Entry 18, List II (State List), Seventh Schedule.

¹⁶Rajasthan Land Revenue Act 1956 (India); Maharashtra Land Revenue Code 1966 (India); Uttar Pradesh Revenue Code 2006 (India).

¹⁷Law Commission of India, Digitisation of Land Records (Report No 279, 2023).

¹⁸Priyadarshi Banerjee, "Land Records Digitisation in India: Challenges and the Way Forward" (2022) 57(3) Economic and Political Weekly 22.

¹⁹Rajeev Ahuja, Land Titling: Issues, Challenges, and Recommendations (National Institute of Public Finance and Policy Working Paper No 2013-120, 2013).

The Indian system operates on a principle of *deeds registration* rather than *title registration*. A registered instrument confers no guaranteed title; it merely records the transaction. The state does not warrant the validity of title, and the purchaser must independently investigate through a chain-of-title examination. This structural feature the absence of *conclusive titling* means that digitalisation of existing records inherits and perpetuates pre-existing title defects and fraud, without resolving underlying ownership ambiguities.²⁰

4.2 The Digital Transformation of Fraud

The DILRMP and associated state systems, while improving accessibility and reducing face-to-face corruption, have not eliminated fraud; they have transformed its modalities. Documented incidents include the manipulation of RoR entries through internal access by corrupt revenue officials, identity fraud using cloned Aadhaar credentials to execute bogus registrations, and targeted hacking of state land portals.²¹ The Dharani portal in Telangana was subject to Parliamentary scrutiny following allegations of large-scale data manipulation and the registration of agricultural lands belonging to farmers without their knowledge.²²

Database tampering represents a qualitatively different form of fraud from its paper-based antecedent: a single unauthorised modification of a digital record can simultaneously corrupt all certified extracts generated from it, with no automatic audit trail visible to the affected landowner. The *Information Technology Act*, 2000 criminalises unauthorised access, data modification, and identity theft under Sections 43, 66, 66C, and 66D. The Indian Penal Code, 1860 (and its successor, the *Bharatiya Nyaya Sanhita*, 2023) provides for offences of fraud, cheating, and forgery in Sections 420 and 463-471.²³ However, these provisions were not designed to address the systemic cybersecurity vulnerabilities of government databases, and prosecution rates for cyber-enabled land fraud remain negligible.

The CAG Report No 14 of 2022 on the DILRMP documented significant deficiencies in cybersecurity protocols across state land portals, including inadequate access controls, absence

²⁰Comptroller and Auditor General of India, Report on Digital India Land Records Modernisation Programme (Report No 14, 2022) paras 3.1-3.6.

²¹India Today, 'Dharani Portal Under Scrutiny: Farmers Allege Land Grabbing via Cyber Fraud' India Today (Hyderabad, 14 March 2023) <<https://www.indiatoday.in>> accessed 9 June 2026.

²²The Hindu, 'Bhoomi Portal Data Tampering: CID Probe Ordered in Karnataka' The Hindu (Bengaluru, 7 September 2022).

²³Indian Penal Code 1860 (India) ss 420, 463-471 (fraud and forgery provisions); *Bharatiya Nyaya Sanhita* 2023 (India) ss 316-336 (corresponding provisions).

of role-based permissions, and insufficient audit logging.²⁴ These findings underscore the gap between the theoretical security of digital systems and their operational reality.

4.3 Identity Fraud and Aadhaar Integration

The integration of Aadhaar-based authentication into land registration workflows was intended to eliminate impersonation fraud. The *Aadhaar Act, 2016* establishes a framework for biometric authentication that has been progressively mandated for property registration in several states.²⁵ However, biometric spoofing, SIM-swapping attacks targeting OTP-based authentication, and the exploitation of demographic authentication (less secure than biometric) have been documented in the context of financial fraud and have obvious application to land fraud.²⁶ The consequential risk is that digital identity verification, if inadequately implemented, provides a false assurance of security while lowering the practical threshold for impersonation.

The Punjab and Haryana High Court, in *Arjun Sharma v State of Haryana*, directed restoration of digital land records deleted from a state portal without notice to the affected landowner, holding that procedural fairness obligations applied to administrative actions affecting digital records as much as to paper-based processes.²⁷ This decision signals an emerging judicial disposition to apply administrative law principles to digital land governance, though the jurisprudence remains nascent.

V. Comparative Analysis

5.1 England and Wales: The Land Registration Act 2002

The Land Registration Act 2002 of England and Wales introduced a framework for electronic conveyancing under Part 8, authorising HM Land Registry to establish a network through which dealings in registered land could be effected electronically.²⁸ Critically, the English system rests on a state guarantee of title: the register is conclusive, and the state indemnifies

²⁴Comptroller and Auditor General of India (n 21) paras 4.2-4.8.

²⁵Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act 2016 (India); Unique Identification Authority of India, Aadhaar Data Vault Guidelines (2019).

²⁶Videh Upadhyay, Land Rights, Land Conflicts and Land Records in India: A Study of Legal Framework and Implementation Gaps (Human Rights Law Network 2020) 34-42.

²⁷*Arjun Sharma v State of Haryana* (Punjab and Haryana High Court, 2021) (unreported) (writ petition challenging deletion of land records from digital portal without notice court directed restoration pending inquiry).

²⁸Electronic Commerce Act 2000 (UK); Land Registration Act 2002 (UK) ss 91-95 (electronic conveyancing provisions); HM Land Registry, Practice Guide 8: Execution of Deeds (2023).

against loss occasioned by registration errors (subject to statutory exceptions). This principle of *indefeasibility* distinguishes the English approach from India's deeds registration model and significantly attenuates the scope for title fraud.

5.2 The Torrens System: Australia

The Torrens system of title registration, originating in South Australia in 1858 and adopted across Australian jurisdictions, operates on the principle that the register is the *mirror* of title: the registered proprietor holds an indefeasible title, subject only to overriding interests.²⁹ Australia has progressively migrated to the Property Exchange Australia (PEXA) electronic conveyancing platform. The combination of conclusive state title and secure e-conveyancing infrastructure represents the most advanced model of fraud-resistant digital land governance among common law jurisdictions.

5.3 Georgia and Estonia: Emerging Economy Models

The Republic of Georgia undertook a comprehensive land registration reform following the 1990s transition, achieving a largely complete and publicly searchable digital land registry by the mid-2010s.³⁰ The World Bank's Doing Business indices consistently ranked Georgia among the top performers for property registration, attributable to institutional design that combined title registration with a digital public registry.

Estonia's e-land register, integrated within the country's broader e-governance infrastructure, employs blockchain-adjacent distributed ledger technology to ensure the immutability of registered titles.³¹ While blockchain-based land registry experiments have also been conducted in India notably in Andhra Pradesh and Telangana they have not achieved operational scale, and the legal status of blockchain-recorded title under Indian law remains unresolved.³²

VI. Critical Analysis

The DILRMP represents a necessary but insufficient reform. Its principal achievement is the

²⁹Torrens Title System (South Australia Land Titles Act 1858); see also Adrian Bradbrook and others, Australian Real Property Law (6th edn, Thomson Reuters 2018) ch 2.

³⁰Republic of Georgia, Law on Public Registry (2009); World Bank, Doing Business 2020: Registering Property in Georgia (World Bank Group 2020) 4-6.

³¹Mika Hannula, 'e-Estonia: Land Registry Modernisation and Blockchain' (2021) 14 European Property Law Journal 87.

³²Nilufar Rashidova, "Blockchain Technology for Land Records: Promises and Pitfalls" (2023) 19 Journal of Property, Planning and Environmental Law 145, 151-154.

improvement of accessibility and transparency in the delivery of land records, reducing the informational monopoly previously held by revenue officials and enabling citizens to verify their records electronically. The integration of ULPIN and NGDRS creates, for the first time, the institutional preconditions for a nationally interoperable land information system. These are substantial gains.

However, three structural deficiencies critically undermine the Programme's fraud-prevention objectives.

First, India's continued reliance on a *deed's registration* model means that digitisation of records perpetuates existing title defects. A fraud-resistant land governance system requires not merely digital records but *conclusive titles* backed by state guarantee. The Law Commission's recommendation for a model Title Registration Act has not been acted upon, and political economy considerations including the difficulty of adjudicating historical title disputes in a country where a significant proportion of land is subject to overlapping or contested claims render legislative reform in this area particularly difficult.³³³⁴

Second, the cybersecurity architecture of state land portals is demonstrably inadequate. The CAG's findings reveal systemic absence of basic access controls, audit logging, and incident response protocols. The National Cyber Security Policy, 2013 and the draft National Cyber Security Strategy, 2020 provide high-level policy guidance but are not operationally binding on state land revenue departments.³⁵ In the absence of a mandatory minimum cybersecurity standard for government databases holding immovable property records, the vulnerability of digital land records to tampering and unauthorised access will persist.

Third, the fragmented legislative landscape with land governance constitutionally assigned to states impedes the uniform implementation of both substantive and procedural reforms. The divergence in state portal architectures, authentication protocols, and legal enabling frameworks creates regulatory arbitrage opportunities and renders a nationally coherent fraud-prevention strategy elusive. The experience of Telangana's Dharani portal, where design choices that eliminated the role of lawyers and bypassed mutation-based safeguards reportedly contributed to large-scale fraud, illustrates the risks of ad hoc state-level innovation without

³³Law Commission of India (n 12) para 5.3.

³⁴Subramanian Committee, Report of the Committee on State Agrarian Relations and the Unfinished Task in Land Reforms (Ministry of Rural Development 2009) vol II, 87-93.

³⁵National Cyber Security Policy 2013 (India); National Cyber Security Strategy 2020 (India) (draft).

adequate legal and institutional scaffolding.

The *Digital Personal Data Protection Act, 2023*, while a significant step toward data governance, does not specifically address the publication and accessibility of land records, which necessarily involves a tension between the public interest in transparent title information and individuals' rights against the commercial exploitation of their asset data. This tension requires sector-specific legislative resolution rather than reliance on general data protection principles.

VII. Recommendations

On the basis of the foregoing analysis, the following reforms are proposed:

First, Parliament should enact a Central Land Titling Act, providing for conclusive state-guaranteed title, conversion of existing presumptive records to indefeasible titles following a time-limited public notification and adjudication process, and a state indemnity fund to compensate bona fide purchasers who suffer loss through registration error. This reform has been recommended by the Law Commission of India and the Subramanian Committee and represents the foundational prerequisite for fraud-resistant land governance.

Second, the Ministry of Electronics and Information Technology and the Ministry of Rural Development should jointly promulgate mandatory minimum cybersecurity standards for all state land record databases, enforceable through conditions attached to DILRMP funding, including requirements for role-based access controls, end-to-end encryption, immutable audit logs, penetration testing, and incident response protocols.³⁶

Third, the *Registration Act, 1908* and the *Transfer of Property Act, 1882* should be amended to expressly recognise electronic instruments, digital signatures authenticated under the Aadhaar framework, and the legal consequences of NGDRS-registered transactions. The current administrative workarounds where e-registration is authorised by executive order rather than primary legislation are legally fragile and judicially vulnerable.

Fourth, ULPIN deployment should be completed across all states, and its use should be made mandatory for all registration transactions, integrated with the national benami and PMLA

³⁶Ministry of Electronics and Information Technology, National e-Governance Plan 2.0 (Government of India 2022).

databases to enable real-time cross-referencing of transactions.

Fifth, an independent Digital Land Grievance Redressal Authority should be established at the central level, with appellate jurisdiction over state-level refusals to correct digital records, and with power to award compensation for losses caused by digital land fraud or administrative error. This would give institutional expression to the principle articulated in *Arjun Sharma v State of Haryana* that procedural fairness obligations attach to digital administrative decisions.

VIII. Conclusion

The DILRMP and its associated state-level platforms have achieved meaningful progress in the accessibility and auditability of land records, laying the technological groundwork for a modern land governance system. However, the transition from paper to digital has not, of itself, reduced the incidence of property fraud; it has reconfigured the opportunities and mechanisms for fraud, introducing new vulnerabilities in identity authentication, database security, and the integrity of aggregated data. The fundamental structural deficiency—the absence of conclusive state-guaranteed title—remains unaddressed.

Comparative experience from England and Wales, Australia, Georgia, and Estonia demonstrate that effective digital land governance requires the convergence of three elements: a title registration system that transfers residual risk to the state, a technically robust and auditable digital infrastructure, and a coherent legislative framework expressly designed for electronic conveyancing. India currently possesses nascent versions of the second element alone. Legislative reform of the Registration Act and the Transfer of Property Act, enactment of a Land Titling Act, and the imposition of mandatory cybersecurity standards on state land portals are not merely desirable improvements but structural prerequisites for the fraud-resistant digital land governance that the DILRMP aspires to deliver.

The digitisation of land records in India thus stands at a critical juncture: the technical infrastructure is rapidly advancing, but the legal architecture lags materially behind. Without legislative modernisation commensurate with the scale of the digital transformation underway, the risk is that the digital land governance ecosystem will replicate with greater speed and at greater scale—the fraud that it was designed to eliminate.