

**JLPH:**
**Journal of Law, Politic
and Humanities**
🌐 <https://dinastires.org/JLPH> ✉ dinasti.info@gmail.com ☎ +62 811 7404 455

E-ISSN: 2962-2816
P-ISSN: 2747-1985

DOI: <https://doi.org/10.38035/jlph.v5i5>
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The Legal Validity of Legal Protection for Holders of Electronic Land Certificates (E-Certificates) in Indonesian Land Law

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Abstract: The digitalization of Indonesia's land administration through electronic land certificates (e-certificates) represents a major innovation toward modern and efficient land governance. E-certificates aim to enhance service efficiency, legal certainty, and the prevention of land disputes. However, questions remain regarding the legal validity and enforceability of e-certificates, particularly due to the lack of explicit provisions in the Basic Agrarian Law (UUPA). This study examines the legal foundation, validity, and legal protection afforded to e-certificate holders, while also identifying potential legal issues arising in its implementation. A normative juridical qualitative method is applied to analyze relevant regulations and legal documents. Findings indicate that while e-certificates are administratively valid under Ministerial Regulation ATR/BPN No. 1 of 2021, substantive legal protection requires regulatory reinforcement and robust digital security systems. Policy recommendations are offered to strengthen public trust and ensure equitable digital-based land governance.

Keywords : Legal Validity, Electronic Certificate, Land Affairs

INTRODUCTION

The advancement of information technology has significantly influenced various aspects of life, including public services and land administration. In Indonesia, the digitalization of public services is part of the government's strategy to build a more efficient, transparent, and accountable bureaucracy. One of the innovations in land administration is the transformation of conventional paper-based land certificates into electronic certificates, or e-certificates. This transformation aims to streamline administrative procedures, reduce the potential for land-related fraud, and accelerate service delivery to the public. Electronic certificates are expected to address longstanding issues in land management, which have often resulted in legal conflicts and uncertainty (Agustina, 2021).

The initial implementation of e-certificates was formally regulated through Ministerial Regulation of Agrarian Affairs and Spatial Planning/Head of the National Land Agency (Permen ATR/BPN) No. 1 of 2021 on Electronic Certificates. This regulation marks the starting point for the implementation of electronic land services, including electronic land registration, data maintenance, and the issuance of digital certificates. E-certificates are claimed to have the same

legal standing as conventional certificates, as they are issued by a state authority, equipped with electronic signatures, and recorded within an official electronic system under the supervision of the ATR/BPN Ministry. Despite these advantages, several challenges remain, particularly in ensuring the absolute legal validity of electronic certificates and the mechanisms for protecting the rights of certificate holders (Lius, 2024).

In practice, the implementation of e-certificates presents legal and technical complexities within Indonesia's land law framework. Discrepancies between physical land data and digital records, limitations in IT infrastructure in remote areas, and public skepticism toward the validity of digital certificates are some of the key issues. Moreover, the shift to electronic land systems introduces new vulnerabilities such as hacking, data manipulation, or even deletion of ownership records. These circumstances raise critical questions about the extent to which the current legal system can provide adequate protection for land rights recorded electronically, particularly in cases of disputes or data misuse by unauthorized parties (Damanik, 2024).

The legal validity of electronic land certificates depends not only on the regulatory framework but also on the adaptability of Indonesia's positive law in integrating land law principles into a digital system. It is therefore essential to examine how Law No. 5 of 1960 on Basic Agrarian Principles (UUPA), as the cornerstone of Indonesia's land law, accommodates the presence of e-certificates. Furthermore, the recognition of electronic land ownership documents may not automatically be accepted in judicial proceedings without a strong and coherent legal framework supporting such evidence. Hence, a more in-depth legal analysis is required to evaluate the legal validity of e-certificates and the mechanisms for protecting the rights of their holders under Indonesian law (Alimuddin, 2021).

From the perspective of legal protection, land certificate holders are entitled to legal assurance of ownership, which must be upheld by the state. When the format of such certificates shifts to digital, the form of legal protection must also evolve. Legal protection for e-certificates involves not only the recognition of their legality but also technological aspects such as data security, the reliability of storage systems, and dispute resolution mechanisms responsive to digital developments. Therefore, the urgency of this study lies in the necessity for the state to provide comprehensive legal guarantees for citizens' land rights—even in digital form (Lafitri, 2020).

Based on the aforementioned background, this study aims to analyze the legal validity of electronic land certificates from the perspective of Indonesian land law and to examine the extent of legal protection afforded to e-certificate holders. It also seeks to address the challenges arising in the implementation of e-certificates and provide policy recommendations to strengthen the legal protection framework for digital land certificate holders. This study is expected to contribute to the development of a more modern, credible, and legally just national land administration system.

METHOD

This study employs a normative juridical approach, a legal research method that is based primarily on written legal materials as its main sources, including legislation, legal documents, and relevant scholarly literature. The researcher analyzes legal norms governing electronic land certificates as well as the principles of legal protection within the Indonesian land law system. Primary legal sources used in this study include Law No. 5 of 1960 on Basic Agrarian Principles, Ministerial Regulation of Agrarian Affairs and Spatial Planning/Head of the National Land Agency No. 1 of 2021 on Electronic Certificates, and other implementing regulations. Secondary legal materials consist of journals, textbooks, and relevant academic articles. The collected data are analyzed using a qualitative-descriptive method to evaluate the legal validity and effectiveness of legal protection for holders of electronic land certificates within the national land administration system.

RESULTS AND DISCUSSION

Legal Foundation and Implementation of Electronic Land Certificates

Legal Basis for Electronic Land Certificates

The implementation of electronic land certificates, or e-certificates, is part of the modernization of the national land administration system initiated by the Government of Indonesia. The legal foundation for this policy originates from the mandate of Law Number 5 of 1960 concerning the Basic Agrarian Law (UUPA). The UUPA stipulates that all land rights must be registered and documented by the state through the land authority to ensure legal certainty and protection for the rights holders. Although the UUPA does not explicitly regulate the electronic form of land certificates, the spirit of administrative reform in land affairs can be interpreted as part of the implementation of general principles of good governance (Asas Umum Pemerintahan yang Baik/AUPB), particularly in the aspects of efficiency and legal certainty (Lestario & Erlina, 2022).

A more specific legal basis governing the existence of electronic land certificates is the Regulation of the Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency (Permen ATR/BPN) Number 1 of 2021 concerning Electronic Certificates. This regulation defines electronic certificates as digital documents containing juridical and physical data of a land parcel, issued through an electronic system and electronically signed by an authorized official. These certificates hold the same legal standing and validity as the conventional physical certificates that have been used to date. Article 6 of this regulation also states that electronic land registration includes the registration of rights, data maintenance, and the provision of integrated land information through a digital system managed by the National Land Agency (Arifin et al., 2019).

In addition to this ministerial regulation, the recognition of electronic documents and electronic signatures is also reinforced by Law Number 11 of 2008 on Electronic Information and Transactions (ITE Law), as amended by Law Number 19 of 2016. Under these provisions, electronic documents that are lawfully created and stored within an information system are recognized as having equivalent legal force to conventional documents, provided that they meet the requirements of integrity, authenticity, and reliability. This strengthens the legitimacy of using e-certificates as legally admissible evidence in administrative proceedings and court litigation. Moreover, the use of certified electronic signature systems in the issuance of digital certificates ensures the authentication of the signatory's identity and the validity of the document's content (Nasution & Ramadhani, 2023).

Furthermore, the security and management of electronic data in the context of land administration are also guaranteed through technical policies issued by the Ministry of ATR/BPN and the Ministry of Communication and Information Technology. These include guidelines for managing electronic systems that are reliable and secure from manipulation or cyberattacks. In this regard, the government holds responsibility not only as the issuer of the certificates but also as the administrator of systems that store public land data. Therefore, the existence of supporting regulations is crucial to ensure that the electronic certificate system is not only legally valid but also effectively implemented and trusted by the broader public.

Although the normative legal foundation for e-certificates is already in place, their implementation in practice remains gradual and limited to certain pilot project regions. This is due to the need for adequate technological infrastructure, the training of human resources, and public outreach regarding the legitimacy and use of digital certificates. In this context, the legal strength of e-certificates will depend greatly on the consistent enforcement of existing regulations and the readiness of the land administration system to embrace digital transformation.

Thus, from a legal standpoint, the existence of electronic land certificates is supported by a robust legal framework, both in terms of land law and administrative as well as cyber law. However, moving forward, there is a need for harmonization and synchronization of more technical regulations, along with assurances from the state that the digital systems employed are

truly capable of guaranteeing the principles of legal certainty, legal protection, and utility for land rights holders.

Validity and Legal Protection

The validity of electronic land certificates (e-certificates) is a critical issue as it directly relates to the guarantee of legal certainty regarding land ownership rights. Within the context of Indonesian land law, the validity of a certificate is determined by two main factors: (1) the legitimacy of the issuing institution, and (2) the conformity of the issuance procedure with applicable regulations.

Although e-certificates are non-physical documents, they substantially contain the same juridical and physical data of land parcels as conventional certificates and are issued by the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN), a legitimate government institution. Therefore, in terms of issuing authority, the validity of e-certificates is not in question, as they are issued by an officially recognized body (Nujuliyani et al., 2023).

However, legal validity must not only be understood from a formal institutional perspective but must also encompass substantive aspects, procedural conformity, and acceptance in legal practice. Accordingly, the discussion of validity and legal protection can be elaborated as follows:

- 1) Legal Validity of Electronic Certificates Based on Statutory Regulations :
 - a. Article 19 of the Basic Agrarian Law (UUPA) stipulates that to ensure legal certainty, the government shall conduct land registration that results in the issuance of a certificate as evidence of rights.
 - b. Ministerial Regulation ATR/BPN No. 1 of 2021 expands the definition of a certificate to include electronic documents that contain digitally stored data, legally recognized under Indonesian law.
 - c. Law No. 11 of 2008 on Electronic Information and Transactions (ITE Law) and Government Regulation No. 71 of 2019 on the Implementation of Electronic Systems and Transactions formally recognize the legal force of electronic documents and digital signatures.
 - d. Constitutional Court rulings (if available) and expert opinions in agrarian law may further reinforce the interpretation that digital certificates are legitimate as legal evidence.
- 2) Technical Aspects of Legality: Electronic Signatures and System Certification
 - a. E-certificates must include a certified electronic signature that verifies both the authenticity of the document and the identity of the issuing official.
 - b. The institution managing the electronic system (in this case, BPN) must meet information security standards, undergo system audits, and ensure data protection in accordance with Ministry of Communication and Informatics regulations.
 - c. Digital security systems such as encryption, firewalls, and cloud-based data storage must be monitored to prevent unauthorized data modification.
- 3) Legal Protection for Holders of Electronic Land Certificates
 - a. Holders of e-certificates enjoy the same legal rights as those with physical certificates, in administrative, civil, and judicial contexts.
 - b. In the event of a land ownership dispute, e-certificate holders may file legal claims or defenses by presenting digital documents as admissible evidence in court.
 - c. The state, through ATR/BPN, is responsible for ensuring the authenticity of land data, including in cases of system failure or external interference.
- 4) Protection Against Misuse and Cybercrime
 - a. A major legal challenge lies in the potential for system hacking, electronic certificate forgery, or data loss due to system malfunctions.
 - b. Legal protection for rights holders includes guarantees that land data can be restored in cases of damage or loss, in accordance with the state's obligation to provide public services.
 - c. Mechanisms must be in place for rapid and fair complaint resolution and restoration of

rights, along with legal sanctions for perpetrators of cybercrime in land affairs.

- 5) Readiness of the Judiciary and Notarial Institutions to Recognize E-Certificates
 - a. Although regulations recognize electronic documents, practical obstacles persist in judicial proceedings, particularly concerning verification of document authenticity and integrity.
 - b. Notaries and land deed officials (PPAT) must also adjust their documentation and deed practices to align with the prevailing electronic systems to avoid legal vacuum.
 - c. System synchronization is needed between judicial institutions, the Ministry of ATR/BPN, and the digital notarial system to prevent legal uncertainty in practice.
- 6) Evaluation of Legal Protection and the Need for Regulatory Reform
 - a. Although e-certificates are already supported by legal frameworks, further regulatory reform is necessary—either through new legislation or revision of the UUPA—to explicitly accommodate electronic certificates.
 - b. Public and legal authority education is essential to prevent misinterpretation or rejection of digital documents.
 - c. The state must also provide mechanisms for regular oversight and technological updates to maintain the reliability and credibility of the electronic land certification system.

In conclusion, the validity and legal protection of electronic land certificate holders are already supported by a fairly strong legal foundation. However, the implementation aspect still requires strengthening in terms of technical infrastructure, institutional readiness, and legal literacy. Legal protection provided by the state must not only be normative but also operational and responsive to digital developments. Fair legal certainty can only be achieved when all stakeholders—from regulators and implementers to landowners—understand and execute the system in a coordinated and accountable manner (Nurhayati, 2017).

Potential Legal Issues and Solutions

Although electronic land certificates (e-certificates) hold significant promise for enhancing administrative efficiency in land affairs and combating land mafia practices, the implementation of this system is not without various legal challenges—normative, technical, and sociological in nature. If not addressed comprehensively, these challenges may undermine the legitimacy of e-certificates and jeopardize the rights of landholders. Therefore, it is imperative to systematically identify the potential legal issues that may arise and formulate appropriate legal, technical, and policy solutions (Ivanca & Firmansyah, 2023).

Normative Legal Issues

1. Absence of Explicit Regulation on Electronic Certificates in the Basic Agrarian Law (UUPA)
The Basic Agrarian Law (UUPA), which serves as the principal legal framework for land law in Indonesia, does not explicitly regulate the existence of electronic land certificates. This legislative gap opens room for legal interpretation regarding what constitutes valid evidence of land ownership. Although Ministerial Regulation ATR/BPN No. 1 of 2021 addresses electronic certificates, ministerial regulations are hierarchically subordinate to statutory law. This can pose a legal vulnerability if the validity of e-certificates is challenged in court and potentially rejected by conservative judges who are reluctant to accept non-physical evidence.
2. Lack of Harmonization or Revision of Procedural Law for Electronic Evidence
In civil litigation concerning land disputes, authentic documents—such as land certificates—are the primary evidence. Although the Electronic Information and Transactions (ITE) Law acknowledges the validity of electronic documents, not all judges have the requisite understanding or technical guidance on how to verify e-certificates as admissible evidence. This may result in inconsistent rulings and potentially disadvantage e-certificate holders in land disputes.

Normative Solutions:

1. Urge the government and legislature (DPR) to amend the UUPA to accommodate digital developments in land administration.
2. Enact new legislation, equal in status to an act of parliament, specifically regulating electronic land matters, including evidentiary procedures in court.
3. The Supreme Court should issue a Circular Letter (SEMA) or technical guidelines to clarify the legal standing of e-certificates in civil evidentiary law.

Technical Legal Issues

1. Cybersecurity Risks and Data Forgery

Electronic systems are inherently vulnerable to security threats. Potential cyberattacks, data manipulation, or identity fraud through system vulnerabilities could result in the loss or alteration of land rights. Even with the use of digital signatures, security gaps remain if BPN's servers are compromised or there is negligence in system maintenance.

2. Dependency on Unequal Technological Infrastructure

The implementation of e-certificates requires stable internet access, sufficient computer infrastructure, and system literacy among both officials and the public. In remote areas, access to information technology remains limited, and the digitalization of land certificates could inadvertently create legal access inequality.

3. Lack of Readiness Among Administrative Personnel

Many land office personnel in the regions have not yet developed adequate technical competencies to optimally operate electronic systems. This may lead to data entry errors, service delays, or inaccuracies in the information contained in digital certificates.

Technical Solutions:

1. Strengthen information security systems through cooperation with the National Cyber and Crypto Agency (BSSN) to conduct periodic system audits and develop national IT infrastructure.
2. Ensure equitable digital infrastructure development through a region-based national land digitalization program, so that communities in remote areas are not left behind.
3. Conduct regular training programs for BPN and PPAT officials on system usage, data security procedures, and updates to the e-certificate application.
4. Provide a public technical support (helpdesk) service for individuals encountering difficulties in accessing or understanding their electronic certificates.

Social and Sociological Legal Issues

1. Public Distrust of Digital Systems

The transition from physical to digital certificates has raised public concern, particularly regarding document authenticity, access rights, and the risk of losing ownership evidence. Many still rely on conventional legal logic, perceiving physical documents as more legitimate and tangible than digital records.

2. Lack of Public Outreach and Digital Legal Literacy

The government has not optimally disseminated knowledge about the existence and legal force of e-certificates. As a result, many individuals are unaware of their rights or are reluctant to convert their physical certificates due to fear of data loss or lack of understanding on how to use the digital system.

3. Emergence of New Forms of Crime

E-certificates may open the door to new types of criminal acts not previously encountered in the conventional land system, such as cyber fraud, phishing, and digital identity theft. This necessitates updates to both criminal and civil law to respond to the realities of the digital age.

Social and Sociological Solutions:

1. Conduct nationwide campaigns on digital legal literacy to educate the public about the existence and legal power of e-certificates.
2. Involve community leaders, PPATs, notaries, and academics in disseminating accurate information about the benefits and security of the electronic system.
3. Establish a dedicated task force or supervisory agency to handle public complaints regarding misconduct or irregularities in the use of the e-certificate system.
4. Develop a temporary hybrid service allowing the public to obtain official printed copies or QR-coded versions of e-certificates to enhance their sense of legal security.

The potential legal issues in implementing electronic land certificates are multifaceted, encompassing normative legal, digital technical, and sociological dimensions. As such, effective legal protection cannot rely solely on regulation but must also be supported by institutional reforms, judicial system updates, and broad-based public education. Solutions must be holistic and cross-sectoral, involving policymakers, administrative implementers, and end users. Through concrete and collaborative action, the e-certificate can serve as a credible and modern legal instrument that guarantees certainty of land rights in the digital era (Damanik, 2024).

Digital Transformation in the National Land System: Opportunities and Challenges

The digital transformation in the national land system is an inevitability in responding to the demands of an era that increasingly emphasizes efficiency, transparency, and legal certainty. The policy of land digitalization through the implementation of electronic land certificates (e-certificates) is not merely an administrative innovation but also a form of modernization of Indonesia's agrarian legal system as a whole. This transformation is rooted in the spirit of bureaucratic reform and public services based on information technology, which has become a national priority in the National Medium-Term Development Plan (RPJMN). The Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) plays a crucial role in realizing data integration, digital spatial mapping, and land ownership transparency through an electronic system (Masri & Hirwansyah, 2023).

The opportunities presented by the digitalization of the land system are vast. First, the electronic system can minimize data manipulation practices and document forgery, which have long been the entry points for land mafia activities. With the existence of a national land database, every change in rights, ownership transfers, and requests for land transactions can be tracked in real-time and historically recorded in the digital system. Second, service speed has significantly increased because applicants no longer need to go through lengthy processes involving physical documents and complex bureaucracy. Third, land data is integrated with spatial information and digital maps, allowing for geo-tagging and cross-sector data coordination, such as with spatial planning offices, regional planning, and even financial institutions.

However, this transformation process also faces significant challenges. One of the main obstacles is regional readiness disparities, as many districts and cities still lack adequate information and communication technology (ICT) infrastructure. In fact, the e-certificate system requires a stable internet connection, specific hardware, and large data storage servers. Additionally, limited budgets and human resources at local land offices result in slow and uneven digitalization progress. Consequently, there is a disparity between regions that have implemented the electronic system and those that still rely on conventional documents (Rehas, 2017).

The digital transformation in the land system also demands a shift in legal and social paradigms. Many stakeholders, ranging from notaries, PPAT (official land deed makers), to the general public, remain skeptical about the electronic system and have not fully understood its legality and usage procedures. In this context, resistance to change often arises not because the system is flawed, but due to resistance to new things that have not been comprehensively understood. Therefore, land system digitalization cannot be effective without support through education, training, and regulatory strengthening that comprehensively underpins this system.

In the long run, the digital transformation of the land system can support the goal of sustainable land governance. With accurate and integrated data, the government can design fairer, more transparent, and inclusive spatial planning policies. Agrarian conflicts are also likely to decrease because land ownership information is open and accessible to the public through online systems. Furthermore, the introduction of e-certificates presents opportunities for integration with other public services, such as taxation, banking, and domicile-based electoral systems (Masri & Hirwansyah, 2023).

For this digital transformation to have a real impact, a progressive and adaptive national legal framework is necessary. Legislation must not only regulate technical and administrative aspects but also guarantee the protection of citizens' constitutional rights to land ownership. The Ministry of ATR/BPN, together with legislative bodies and law enforcement agencies, needs to formulate a legal roadmap that addresses cross-sector challenges, including cybercrime, data recovery, and the right to information. The digital transformation of the land system is not just about replacing certificate forms, but is a monumental effort to build a fair, efficient, and resilient land legal system in the digital era.

CONCLUSION

The electronic land certificate (e-certificate) is an important innovation in the national land system, aimed at strengthening legal certainty, improving service efficiency, and combating land mafia practices. From a legal validity standpoint, the e-certificate has a strong legal foundation through the Ministry of ATR/BPN Regulation No. 1 of 2021 and is supported by the digital legal framework within the ITE Law (Information and Electronic Transactions Law). Although it is not explicitly mentioned in the Basic Agrarian Law (UUPA), the legal recognition of electronic documents and the legitimacy of issuing institutions make the e-certificate a legally valid proof of land ownership.

However, the implementation of e-certificates still faces a number of legal and technical challenges. These include the lack of regulatory provisions at the legislative level, the potential for cyberattacks, the unpreparedness of officials, and unequal digital infrastructure. Additionally, public resistance to electronic documents and the low level of digital legal literacy also hinder the effective legal protection of e-certificate holders. This indicates that land digitalization requires synergy between legal, technological, and public education aspects.

Therefore, to realize a fair and trustworthy electronic-based land system, comprehensive agrarian law reform, strengthened digital security systems, and improved capacity of officials and public legal literacy are necessary. The e-certificate is not merely an administrative transformation but part of a structural reform in the land governance of Indonesia. The state has an obligation to ensure that every land certificate holder—whether in physical or electronic form—receives equal, transparent, and sustainable legal protection.

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