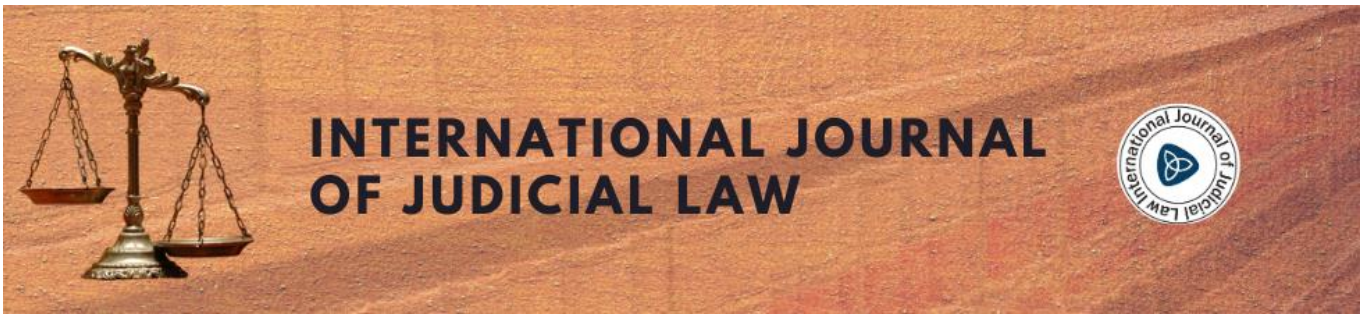




Electronic Land Certificates from the Perspective of Constitutional Land Rights Protection

Asih Janu Ariyanto ¹, Julio Hutagaol ², Ahmad Syaafi ^{3*}

¹⁻² Master of Laws Study Program, Faculty of Law, Lambung Mangkurat University, Banjarmasin, Indonesia

³ Faculty of Law, Lambung Mangkurat University, Banjarmasin, Indonesia

* Corresponding Author: **Ahmad Syaafi**

Article Info

ISSN (online): 2583-6536

Volume: 04

Issue: 06

November - December 2025

Received: 07-09-2025

Accepted: 09-10-2025

Published: 05-11-2025

Page No: 12-16

Abstract

This study examines the implementation of electronic land certificates in Indonesia within the framework of constitutional protection of land rights. Using a normative legal research method through statute and conceptual approaches, it analyzes the legal foundation, validity, and constitutional implications of the digitalization of land administration. The transition from physical to electronic certificates aims to enhance administrative efficiency, transparency, and accuracy while minimizing forgery and bureaucratic delays. However, the adoption of electronic systems also introduces challenges related to data security, cyber threats, and potential violations of citizens' property rights. Findings reveal that while the legal framework—rooted in the 1945 Constitution, the Basic Agrarian Law (Law No. 5 of 1960), and Ministerial Regulation No. 1 of 2021—supports digital transformation, ensuring legal certainty and data protection remains a significant concern. The research underscores that the implementation of electronic land certificates must strictly adhere to constitutional principles of justice, legal certainty, and the protection of ownership rights. Strengthening cybersecurity systems, improving digital literacy, and establishing robust regulatory oversight are essential to guarantee that the modernization of land administration upholds rather than undermines citizens' constitutional rights in the digital era.

DOI: <https://doi.org/10.54660/IJL.2025.4.6.12-16>

Keywords: Electronic Land Certificate, Constitutional Protection, Legal Certainty, Data Security, Land Rights.

1. Introduction

Indonesia is an archipelagic nation with a land area of approximately 1.9 million square kilometers, stretching from Sabang to Merauke. Its geographical location along the equator contributes to relatively high soil fertility. Indonesia's geological location, located along the Pacific Ring of Fire, also contributes to the formation of mineral-rich volcanic soil. This soil diversity offers significant opportunities for agriculture, plantations, and the utilization of other natural resources. This potential has been a crucial foundation for the development of an agrarian-based national economy since the early days of independence ^[1]. Indonesia's soil richness encompasses not only its area but also its quality and diversity. Various soil types, including alluvial, laterite, regosol, and andosol, are found across many large and small islands.

Each soil type has characteristics that support specific uses, for example, andosol soil is highly fertile for horticultural crops in mountainous areas. Tropical climate factors with high rainfall also accelerate the process of fertile soil formation. This diversity gives Indonesia a comparative advantage in the agricultural sector ^[2]. The availability of vast and diverse land resources is often a strategic factor in determining the direction of national development policies.

¹ Budi Santoso. (2018). Geografi Indonesia. Jakarta: Rajawali Pers. p. 45.

² Nurhayati. (2020). Ilmu Tanah Tropis. Yogyakarta: Gadjah Mada University Press. p. 62.

The agriculture, plantation, and forestry sectors utilize land as the basic production capital to meet the population's food needs.

Increasing land productivity through intensification and extensification programs is a government priority for maintaining food security. Land also serves as a foundation for infrastructure development, industrial areas, and even residential areas.

Land rights in Indonesia are guaranteed by the constitution as stipulated in Article 33 paragraph (3) of the 1945 Constitution of the Republic of Indonesia, which states that the land, water, and natural resources contained therein are controlled by the state and used for the greatest prosperity of the people. Legal certainty over land rights is realized through the land administration system regulated in Law Number 5 of 1960 concerning the Principles of Agrarian Law.

Land certification is a key instrument for securing ownership, preventing disputes, and strengthening legal legitimacy. Conventional systems based on physical documents have limitations in terms of speed, accuracy, and vulnerability to forgery. Digital transformation through electronic land certificates is presented as a solution to these problems.

The electronic land certificate policy was first regulated through Regulation of the Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency Number 1 of 2021 concerning Electronic Certificates. This regulation stipulates that physical land certificates will be gradually replaced by electronic documents. This step is seen as increasing efficiency, reducing the risk of forgery, and accelerating public services in the land sector.

In practice, electronic land certificates have generated both pros and cons, particularly regarding data security, legal validity, and potential vulnerability to cybercrime. The public questions whether the legal protection inherent in physical certificates can be fully guaranteed in digital form. The potential for agrarian disputes could actually increase if regulations, infrastructure, and oversight mechanisms are not yet mature.

Although its implementation still faces obstacles in the form of a lack of socialization, limited digital infrastructure, and public concerns about the vulnerability of electronic systems to hacking, which could potentially give rise to new disputes. The urgency of reviewing electronic land certificates from the perspective of protecting constitutional land rights lies in the relationship between state interests, public interests, and developments in legal technology. The state is obligated to ensure that any policies concerning people's rights do not harm or weaken the position of landowners before the law. Digital-based land reform must be aimed at achieving efficiency without compromising constitutional protections.

2. Research Methodology

This is a qualitative research employing normative legal-research variety. Normative legal-research is a procedure of scientific research in order to find the truth based on the logic of legal science, especially its normative side^[3]. Normative legal research is legal research that aims to analyze written legal norms and the legal system as a whole, including legal principles, legal concepts, and legal doctrines^[4].

In order to achieve the purpose of the research, this research employs statute approach and conceptual approach.

The legal materials used in this research include primary legal-material in forms Indonesian laws and regulations related to this research. In addition to that, there are secondary legal-materials and tertiary legal-materials. The three collected materials are processed and analyzed by way of juridically qualitative method in order to answer the problems of the research.

3. Discussion

3.1. Legal Basis for the Implementation of Electronic Land Certificates in Indonesia

The development of the land law system in Indonesia is inextricably linked to the need to adapt to the increasingly rapid advancement of information technology. The transformation to an electronic land titling system is part of an effort to modernize land administration to make it more efficient, transparent, and accurate.

The implementation of electronic land certificates requires strong legal legitimacy to ensure legal certainty and protect citizens' constitutional rights in every aspect of its implementation. Legislation is the primary foundation for determining the extent to which this digitalization policy can be implemented without neglecting the basic principles of national agrarian law^[5].

The introduction of electronic land certificates represents a legal innovation in the land sector, oriented toward a digital-based administration system. Every step toward change in the land administration system must have a legal basis to be accepted as a valid legal instrument. This is directly related to the constitutional mandate that guarantees land ownership and use for the greatest possible prosperity of the people.

A clear legal basis serves as a strengthening instrument to maintain data authenticity, avoid overlapping ownership, and affirm the state's position as the regulator and manager of agrarian resources.

Electronic land certificates are inextricably linked to the hierarchical and integrated national legal system. From the constitution to implementing regulations, all legal instruments form a unified system that guarantees the validity of electronic certificate issuance. Legal regulations in the land sector must also address alignment with human rights principles, particularly the right to ownership, which is recognized and protected by the state. Strengthening regulatory aspects in this area is crucial to ensure there are no gray areas in the implementation of the land certificate digitalization policy^[6].

The legal aspects of implementing electronic land certificates also encompass the relationship to regulations in information technology and personal data protection. Digital transformation in the land sector requires guarantees of cybersecurity, the validity of electronic documents, and the protection of rights holders' personal data^[7].

The constitutional basis is the starting point in understanding the legitimacy of the implementation of electronic land certificates in Indonesia. Every policy related to land management and registration must be based on the principles contained in the 1945 Constitution of the Republic of

³ Johnny Ibrahim. (2010). *Teori dan Metodologi Penelitian Hukum Normatif*, Cetakan ketiga, Malang: Bayumedia Publishing. p. 57.

⁴ Peter Mahmud Marzuki. (2005). *Penelitian Hukum*, Jakarta: Kencana Prenada Media Group. p. 60.

⁵ Boedi Harsono. (2016). *Hukum Agraria Indonesia: Sejarah Pembentukan Undang-Undang Pokok Agraria, Isi, dan Pelaksanaannya*. Jakarta: Djambatan. p. 45.

⁶ Ibid.

⁷ Ahmad M. Ramli. (2020). *Hukum Siber Indonesia: Aspek Hukum Teknologi Informasi dan Komunikasi*. Bandung: Refika Aditama. p. 54.

Indonesia. Article 28H paragraph (4) and Article 33 paragraph (3) provide a guarantee that land ownership and use are part of the constitutional rights of citizens that must be protected by the state. These constitutional norms serve as the philosophical and legal basis for all legal instruments in the land sector, including in the transformation process towards an electronic land certificate system that guarantees certainty and protection of land rights digitally.

The Constitution places land ownership within the framework of the state's responsibility towards its people. Article 33 paragraph (3) of the 1945 Constitution of the Republic of Indonesia affirms that the land, water, and natural resources contained therein are controlled by the state and used for the greatest prosperity of the people. This provision implies that the state has an obligation to regulate the distribution, use, and management of land in order to create a balance between public interests and individual rights. Land may not be monopolized by certain groups that could potentially lead to social inequality, because the social function of land must always be prioritized.

This view shows a close relationship between the principle of social justice and constitutional rights to land.

This constitutional basis serves as a guideline for lawmakers in designing land policies that guarantee legal certainty and protection. The principle of state control is not intended to eliminate individual rights, but rather to ensure that all land use remains in the public interest^[8].

The state plays a regulatory and supervisory role in land use to ensure it does not deviate from the goal of shared prosperity^[9]. Within the national agrarian legal system, this role is realized through various policies governing land ownership, registration, and transfer of land rights.

The implementation of electronic land certificates is a continuation of the constitutional mandate to guarantee the protection of citizens' ownership rights. The principle of legal certainty contained in Article 28D paragraph (1) of the 1945 Constitution of the Republic of Indonesia is also closely related to land administration management.

Law Number 5 of 1960 concerning Basic Agrarian Regulations (UUPA) is the primary legal basis governing the structure and principles of land ownership in Indonesia. UUPA affirms that all land, water, and airspace, including the natural resources contained therein, are controlled by the state and used to the greatest extent possible for the prosperity of the people. This principle is a manifestation of the spirit of Article 33 paragraph (3) of the 1945 Constitution of the Republic of Indonesia, which places land as a vital element for social welfare.

UUPA provides direction for the implementation of land registration as an effort to guarantee legal certainty for rights holders^[10].

Land registration, as stipulated in the UUPA, was further implemented through Government Regulation No. 24 of 1997 concerning Land Registration. This regulation emphasizes the importance of registering land rights as a means of ensuring legal certainty and protecting rights holders. Every registered plot of land will be issued a certificate as valid evidence recognized by the state.

Digital transformation in the land sector then began to be

directed at strengthening this system to make it more effective, transparent, and easily accessible to the wider community.

Modernizing the land system through digitalization aligns with the principle of legal certainty that is at the heart of the UUPA. This digitalization does not change the substance of agrarian law, but rather updates the land administration implementation mechanism to be more adaptive to technological developments.

The relationship between the UUPA and the electronic certificate policy reflects efforts to harmonize traditional agrarian legal norms with the demands of the digital era.

Regulation of the Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency Number 1 of 2021 concerning Electronic Certificates marks a significant milestone in the renewal of the national land administration system. This regulation comprehensively regulates the implementation of digital land certificates, replacing the physical certificates that have been used for decades.

The electronic land certificate policy as regulated in this ministerial regulation is an implementation of the mandate of Law Number 11 of 2008 concerning Electronic Information and Transactions and its amendments which provide legitimacy to electronic documents as valid legal evidence.

Digitally managed electronic land certificates serve not only as legal documents but also as electronic data subject to national cyber law. The validity, security, and authenticity of electronic certificates depend on the application of legal principles governing electronic transactions and the management of citizens' personal data.

In addition to ensuring the legality of digital documents, the implementation of electronic land certificates is also closely related to the protection of personal data. All data on land ownership, rights holder identities, and transaction histories stored in electronic systems are considered personal data that must be protected by the state. Law Number 27 of 2022 concerning Personal Data Protection ensures that all data collection, storage, and management processes within the land system are conducted in accordance with the principles of prudence and security.

3.2. Implementation of the Electronic Land Certificate System from the Perspective of Constitutional Rights to Land

The development of an electronic-based land system in Indonesia has brought fundamental changes to the way the state guarantees citizens' land rights as part of their constitutional rights.

The implementation of electronic land certificates is not only related to administrative and technological aspects, but also has a legal dimension closely linked to the principle of protecting citizens' rights as guaranteed by the 1945 Constitution of the Republic of Indonesia.

The implementation of an electronic land titling system needs to be assessed based on the basic principles that underpin the protection of citizens' constitutional rights to land. Every policy related to land ownership and registration is not merely administrative in nature but also contains dimensions of justice and legal certainty that directly relate to individuals'

⁸ Yusril Ihza Mahendra. (2005). *Teori dan Politik Konstitusi*. Jakarta: Gema Insani. p. 77.

⁹ Soetandyo Wignjosebroto. (2002). *Dari Hukum Kolonial ke Hukum Nasional: Dinamika Sosial-Politik dalam Perkembangan Hukum di Indonesia*. Jakarta: RajaGrafindo Persada. p. 144.

¹⁰ Maria S.W. Sumardjono. (2008). *Kebijakan Pertanahan antara Regulasi dan Implementasi*. Jakarta: Kompas. p. 42.

fundamental rights to property.

The principles of protecting constitutional rights in land ownership are as follows:

1. The Principle of Protection of Constitutional Rights in Land Ownership;
2. The Principle of Justice in the Protection of Land Ownership Rights;
3. The Principle of Legal Certainty in the Protection of Constitutional Rights to Land;
4. The Principle of Benefit in the Regulation and Protection of Land Rights.

These principles are interrelated and form a complete unity in the implementation of land law in Indonesia.

The development of electronic land certificate systems has created new dynamics in the management and protection of land data. Digital transformation brings efficiency and transparency, but also presents significant risks, particularly related to information security and the protection of citizens' rights.

Land data previously stored in physical form is now stored electronically, vulnerable to cyber threats. The potential for misuse of access, information leaks, and data manipulation are serious issues that could threaten the constitutional guarantee of land ownership.

Data security is a crucial part of protecting constitutional rights, as land ownership information impacts citizens' economic and social rights. When an electronic-based land system is implemented, potential violations can arise due to weak control and oversight mechanisms for digital data stored within the national land system^[11].

The implementation of electronic land certificates requires a high level of system reliability to ensure that data integrity is maintained against manipulation attempts.

If the system lacks adequate security layers, the validity of land data could be questioned. This risk will disrupt legal certainty in land transactions and threaten citizens' constitutionally guaranteed ownership rights.

Land data protection is a strategic issue because it relates to the state's legitimacy in ensuring the security of public assets. The electronic system used for land certificates must be able to uphold the principle of non-repudiation, ensuring that any data changes are made by a legitimate and legally accountable party. When the system is unable to accurately identify the party making the changes, the validity of the data is weakened and potentially gives rise to legal disputes. Such a situation can violate citizens' constitutional rights to legal certainty and a sense of security regarding their land ownership.

Cybersecurity, system integrity, and official accountability are crucial elements in ensuring that the land digitization process does not create new loopholes for citizen rights violations. Therefore, legal protection for electronic land data must be continuously strengthened to prevent the primary goal of electronic land certificates, namely efficiency and transparency in land administration, from becoming a threat to the public's constitutional rights^[12].

The implementation of electronic land certificates requires a strong digital security and authentication system to guarantee authenticity and prevent falsification of land data.

The government's efforts to strengthen legal protection for landowners through electronic systems are part of a national strategy to encourage more efficient and integrated land governance.

Strengthening cybersecurity systems, regulating data access, and improving public digital literacy are fundamental to preventing potential misuse or information leaks. The implementation of this policy also demonstrates the government's commitment to balancing technological advancement with protecting citizens' agrarian rights. Continuous evaluation of legal and technical mechanisms is necessary to ensure the electronic certificate system remains compliant with constitutional principles.

4. Conclusion

The implementation of electronic land certificates in Indonesia has a strong legal basis and comprehensive regulatory support, ensuring legal validity and certainty for landowners. The integration of this system with information technology and personal data protection reflects progress in land administration. However, potential risks of data leaks and misuse of access still need to be addressed through increased oversight, cybersecurity, and public education and outreach to ensure the safe, effective, and sustainable implementation of electronic certificates.

5. References

1. Abdul Kadir. *Keamanan siber dan perlindungan data elektronik di Indonesia*. Jakarta: Rajawali Pers; 2022.
2. Ahmad M Ramli. *Hukum siber Indonesia: Aspek hukum teknologi informasi dan komunikasi*. Bandung: Refika Aditama; 2020.
3. Ahmad Redi. *Hukum agraria: Politik dan kebijakan pertanahan di Indonesia*. Jakarta: Kencana; 2020.
4. Boedi Harsono. *Hukum agraria Indonesia: Sejarah pembentukan Undang-Undang Pokok Agraria, isi, dan pelaksanaannya*. Jakarta: Djambatan; 2016.
5. Budi Santoso. *Geografi Indonesia*. Jakarta: Rajawali Pers; 2018.
6. Johnny Ibrahim. *Teori dan metodologi penelitian hukum normatif*. 3rd ed. Malang: Bayumedia Publishing; 2010.
7. Maria SW Sumardjono. *Kebijakan pertanahan antara regulasi dan implementasi*. Jakarta: Kompas; 2008.
8. Nurhayati. *Ilmu tanah tropis*. Yogyakarta: Gadjah Mada University Press; 2020. p. 62.
9. Peter Mahmud Marzuki. *Penelitian hukum*. Jakarta: Kencana Prenada Media Group; 2005.
10. Soetandyo Wignjoebroto. *Dari hukum kolonial ke hukum nasional: Dinamika sosial-politik dalam perkembangan hukum di Indonesia*. Jakarta: RajaGrafindo Persada; 2002.
11. Yusril Ihza Mahendra. *Teori dan politik konstitusi*. Jakarta: Gema Insani; 2005.

How to Cite This Article

Ariyanto AJ, Hutagaol J, Syaafi A. Electronic land certificates from the perspective of constitutional land rights protection. *Int J Judicial Law*. 2025;4(6):12–16. doi:10.54660/IJL.2025.4.6.12-16.

¹¹ Ahmad Redi. (2020). *Hukum Agraria: Politik dan Kebijakan Pertanahan di Indonesia*. Jakarta: Kencana. p. 135.

¹² Abdul Kadir. (2022). *Keamanan Siber dan Perlindungan Data Elektronik di Indonesia*. Jakarta: Rajawali Pers. p. 119.

Creative Commons (CC) License

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.