

The Vulnerabilities of Electronic Land Certificates and Legal Adaptation in Indonesia's Land Registration System

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Abstract

In the era of rapid technological advancement, the proper adaptation of legal frameworks and secure technologies is crucial to ensure legal certainty in land ownership. The National Land Agency (Badan Pertanahan Nasional or ATR/BPN) plays a central role in managing the issuance of electronic land certificates. This research aims to investigate the role of electronic land certificates in providing legal protection in Indonesia and analyze the challenges and vulnerabilities that arise with the development of information technology. Employing a normative legal method, this study focuses on the analysis of norms and legal regulations governing the use of electronic land certificates in the land registration system. The research approach includes a legislative approach, a conceptual approach, and the use of primary and secondary legal materials. The results emphasize the importance of careful adaptation to information technology developments to maintain legal certainty in land ownership, highlighting the central role of the ATR/BPN and the necessity of appropriate regulations, data security, legal validity, technical requirements, and technology utilization, including data encryption and network security measures, to address vulnerabilities. Adequate awareness and training are also deemed essential for all stakeholders involved.

Keywords: Electronic Land Certificate, Legislative System, Data Security, Information Technology Adaptation.

Introduction

The Fourth Industrial Revolution is a phenomenon where every aspect of industrial production undergoes a transformation through the integration of digital technology and the internet with conventional industries. This phenomenon brings significant changes in various aspects of life, including public services based on digital technology. One form of public service in this context is the transformation of manual or analog services into digital services using electronic certificates (Mina-Raiu & Melenciuc, 2022; 23-25. Zainuddin & Ramadhani, 2021; 243-252. Thamrin et al., 2021; 235). This is a crucial step in modernizing government

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services and providing convenience in doing business and serving the public. Before the Fourth Industrial Revolution, government services related to land were generally manual or analog-based. In this regard, land registration was done manually using paper and physical documents. However, with the advancement of digital technology and the internet, government services in the land sector have undergone transformation (Fahmi et al., 2023; 137).

The government in Indonesia has started adopting electronic systems for land-related services, including the use of electronic land certificates or e-certificates as a form of land ownership proof. This system allows land registration and certificate issuance to be done electronically, replacing the previous manual methods (Indrawan & Munandar, 2022; 39-56. Rachmawati et al., 2021; 217-232). The advantages of this change include increased efficiency, accessibility, and service speed. Landowners can easily access electronic land certificates and conduct land transactions online (Sari et al., 2021). This also helps enhance legal certainty for landowners. Furthermore, the use of digital technology in land registration also assists the government in better managing land data. All land-related information can be stored in an easily accessible and manageable electronic database (Kusmiarto et al., 2021;120. Widiyono & Khan, 2023; 128-147).

Electronic services in Indonesia's land sector have been in place since 1997 through the Land Office Computerization (LOC) program, which later evolved into Land Activity Computerization (KKP). This transformation significantly changed the way government services in the land sector are conducted. KKP then evolved into a web-based application known as KKP-web, bringing even greater changes in efficiency and accessibility of services. One of the main advantages of this transformation is that services that previously required time-consuming manual processes, such as certificate verification, land registration, and building usage rights management, can now be accessed, and performed electronically (Saptomo & Sihombing, 2020; 297. Tho, 2023; 197-208). Furthermore, the use of digital technology also assists in land data management. All information regarding land ownership and related transactions can be easily stored in an electronic database, allowing the government to track and manage this data more effectively (Fahmi et al., 2023; 134-140).

After the enactment of Law No. 11 of 2020 on Job Creation in Indonesia, there are important provisions related to proof of land and property rights. This law includes provisions stating that evidence of land ownership, apartment units, usage rights, mortgages, and other land-related documents can be in electronic form. This means that documents that were previously only available in physical or analog form can now be issued and stored in electronic form (Permadi, 2023; 47-61. Saptomo & Sihombing, 2020; 297-307). To further regulate the implementation of

these provisions, the Indonesian Government issued Regulation of the Minister of Agrarian and Spatial Planning/Head of the National Land Agency No. 1 of 2021 concerning Electronic Certificates. This Ministerial Regulation outlines the process of using electronic land certificates as evidence of land and property rights (Wajdi & Ramadhani, 2022; 19-29. Nugraha et al., 2022). Electronic land certificates are evidence of land rights issued in electronic form, no longer in physical or paper form. This reflects a significant change in how proof of land ownership is managed and presented in Indonesia (Sari et al., 2021). The use of electronic land certificates is expected to enhance efficiency, accessibility, and security in land and property transactions. With electronic land certificates, landowners can easily access, store, and transfer their rights through electronic platforms. This also helps reduce the potential for conflicts and misuse in land transactions (Mina-Raiu & Melenciuc, 2022; 22-35. Widiyono & Khan, 2023;128-147).

The issuance of Regulation of the Minister of Agrarian and Spatial Planning/Head of the National Land Agency No. 1 of 2021 (Permen ATR/BPN No. 1/2021) is normatively in line with the policies of the Indonesian government as outlined in Presidential Regulation No. 86 of 2020 concerning the Government's Work Plan for 2021. This Government Work Plan is prepared considering efforts to accelerate economic recovery and social reform in response to the impacts of the COVID-19 pandemic. The basis for issuing Permen ATR/BPN No. 1/2021 is to realize the modernization of land services (Haryowardani, 2022). This modernization aims to improve business ease indicators and public services to the community. One of the ways taken to achieve this goal is through the optimization of information and communication technology (Syarief, 2021; 5-9. Suyanto, 2021; 9649. Saptomo & Sihombing, 2020; 299). By implementing electronic-based land services, such as electronic land certificates, it is expected to provide ease in doing business and serving public needs related to land rights. Electronic land certificates are one essential aspect of this land service modernization. Rachmawati et al. (2021) mention that with electronic land certificates, permitting processes, transactions, and land-related monitoring can be done more efficiently and quickly. This also helps improve data security and reduce potential land rights-related conflicts.

This research focuses on legal issues arising in connection with changes in the land registration system related to the use of electronic land certificates. The study aims to examine the position of the Regulation of the Minister of Agrarian and Spatial Planning/Head of the National Land Agency No. 1 of 2021 (Regulation of the Minister ATR/BPN No. 1/2021) on Electronic Certificates within the legal system of Indonesia. This research attempts to analyze whether the provisions in Law No. 11 of 2020 on Job Creation automatically repeal the existing provisions in

Law No. 5 of 1960 on Basic Agrarian Principles (UUPA) and Government Regulation No. 24 of 1997 on Land Registration. Additionally, this research will also evaluate whether Regulation of the Minister ATR/BPN No. 1/2021 replaces the roles and provisions existing in Government Regulation No. 24 of 1997. The introduction of electronic land certificates represents an adaptation to technological advancements and an effort to enhance legal certainty in the land registration process. This raises questions about how these adaptations affect the existing legal framework, especially in terms of the hierarchy of laws and regulations governing land registration. Therefore, this research aims to examine the role of electronic land certificates in providing legal protection in Indonesia, as well as to analyze the challenges and vulnerabilities that arise with the development of information technology.

Research Method

This research aims to understand the role of electronic land certificates in providing legal protection for the community. The research adopts a normative legal research method, which focuses on the analysis of norms and legal regulations as a system that governs various aspects of changes in the land registration system, especially related to the use of electronic land certificates. This research uses a legislative approach, a conceptual approach, and relies on primary and secondary legal materials. The primary legal materials used include Law No. 5 of 1960 on Basic Agrarian Principles (UUPA), Government Regulation No. 24 of 1997 on Land Registration, Law No. 11 of 2020 on Job Creation in Indonesia, Presidential Regulation No. 86 of 2020 on the Government Work Plan for 2021, and Regulation of the Minister of Agrarian and Spatial Planning/Head of the National Land Agency No. 1 of 2021 on Electronic Certificates. Secondary legal materials are used to provide further explanations about the context and implications of legal changes related to the use of electronic land certificates in land registration. Secondary materials are drawn from relevant literature, journals, and previous research findings.

Vulnerabilities of Electronic Land Certificate Issuance Regulations in Indonesia

The issuance of electronic land certificates plays a crucial role in providing legal protection to certificate owners or land rights holders (Indrawan & Munandar, 2022; 39-56. Mahardika et al., 2022; 248-256). It creates a sense of security and comfort for the owners, guarding against potential disruptions or legal claims that could arise from other parties. The primary objective of land registration within the legal framework is to achieve legal certainty. This is the government's effort to

ensure that land ownership and rights are recognized legally and unequivocally. It aligns with the provision of Article 19 paragraph (1) of Law No. 5 of 1960, which states that land registration is conducted across the Republic of Indonesia to guarantee legal certainty. The National Land Agency (BPN) is responsible for implementing this land registration as an institution or authority managing land offices in accordance with Government Regulation No. 24 of 1997 on land registration (Widiyono & Khan, 2023; 128-147. Syarief, 2021; 5-9. Kusmiarto et al., 2021; 120).

With the enactment of Government Regulation No. 24 of 1997 (GR No. 24/1997), the provisions contained in Government Regulation No. 10 of 1961 (GR No. 10/1961) were officially declared no longer applicable. Although GR No. 10/1961 was declared no longer applicable, all legal products that were produced based on that regulation still have legal validity. Further explanations about the validity of existing legal products can be found in Article 64 of GR No. 24/1997. This article stipulates that all laws and regulations that previously implemented GR No. 10/1961 remain valid, as long as there are no contradictions or changes imposed by new regulations. This reflects the understanding that the transition from GR No. 10/1961 to GR No. 24/1997 was made because the previous regulation was unable to provide satisfactory results. Factors such as budget constraints, equipment, human resources, and objective conditions regarding land also influenced the need to adopt new regulations. Additionally, GR No. 10/1961 did not provide adequate legal grounds for expeditiously conducting land registration.

The issuance of electronic land certificates is an integral part of the land registration legal framework governed by Government Regulation No. 24 of 1997 (GR No. 24/1997) in Indonesia. GR No. 24/1997 is a government regulation that oversees the entire land registration process, from data collection to the issuance of land certificates. In the context of electronic land certificates, Article 31 paragraph (6) of GR No. 24/1997 grants authority to the Minister to determine the form, content, method of filling, and signing of land certificates. The Minister referred to in this provision is the Minister of Agrarian and Spatial Planning/Head of the National Land Agency (ATR/BPN). The ATR/BPN Ministry plays a pivotal role as the implementing authority in the land registration system in Indonesia. Therefore, in the context of implementing electronic land certificates, the ATR/BPN Ministry has issued Regulation of the Minister of ATR/BPN No. 1 of 2021 concerning Electronic Certificates. This Ministerial Regulation provides further guidance and directives related to electronic land certificates, including technical provisions concerning the use of electronic land certificates in the land registration system (Sari et al., 2021; 873).

However, in the context of electronic land certificate issuance, vulnerabilities emerge in several critical aspects. Data security vulnerability is a significant concern because electronic land certificates rely on information technology for storing and exchanging data related to land ownership and rights (Permadi, 2023; 50). This opens up potential serious threats, such as data breaches or theft. Data security is a critical aspect that must be managed carefully since the information contained in these certificates is an integral part of proof of ownership and land rights. Threats to data security can potentially compromise the integrity of electronic land certificates and, in the worst-case scenario, can be exploited for fraudulent or counterfeit purposes (Wahyuni et al., 2023; 101-105). Furthermore, legal vulnerabilities are a serious concern in the use of electronic land certificates. The validity and evidentiary value of electronic land certificates in legal proceedings are crucial. Recognizing electronic certificates as valid evidence in property transactions and disputes requires clear regulations and legal guidelines. The strength of certificate evidence in court is a key component in creating legal certainty (Gunarto et al., 2023; 67-71). Courts and the judicial system need to acknowledge electronic land certificates as valid evidence, and there should be explicit regulations addressing this. In this regard, the role of the government and authorized institutions in formulating appropriate rules is of utmost importance (Ramadhani, 2021; 67-70. Syarief, 2022; 32-40).

Moreover, there is the potential for procedural vulnerabilities in the issuance of electronic land certificates. Technical errors such as inaccuracies in recording relevant information or data inaccuracies in the certificate issuance process can jeopardize legal certainty. Therefore, careful management and accurate processes are essential in minimizing these procedural vulnerabilities (Hulu & Gunarto, 2023; 140-153. Mashdurohatun et al., 2023; 209-215). Finally, the use of technology in electronic land certificate issuance also presents the risk of abuse. This includes the forgery of certificates or identities. Digital technology enables unauthorized individuals to attempt to forge certificates or related data, which can be used for fraudulent purposes or property speculation (Mofu, 2023; 88-93). Therefore, safeguarding electronic land certificates from forgery and technology abuse is a vital focus in maintaining legal certainty (Roswandi & Wahyuningsih, 2023; 110. McCarthy et al., 2022; 92-100).

Adaptation to Legal Certainty and Development of Information Technology

The legal basis for the issuance of electronic certificates in Minister of Agrarian and Spatial Planning/National Land Agency Regulation No. 1 of 2021 is the Law No. 11 of 2008 on Electronic Information and Transactions (ITE) and Law No. 11 of 2020 on Job Creation. Article 5 paragraph (1) of the ITE Law deals with

the legality of electronic documents. Article 147 of the Job Creation Law provides the legal foundation that states that proof of land rights, apartment units, land management rights, and mortgages, including land sale and purchase deeds and other documents related to land, may take the form of electronic documents (Noor, 2021;). Substantially, land registration within the implementation of the electronic land registration system as regulated by Minister of Agrarian and Spatial Planning/National Land Agency Regulation No. 1 of 2021 involves significant changes. The legal products of the land registration process under Government Regulation No. 24 of 1997 (GR No. 24/1997) were in the form of physical or analog certificate books. However, with Ministerial Regulation No. 1 of 2021, the legal products take the form of electronic certificates. This reflects a significant shift in the processing and provision of land titles and adjustments to the digital era and information technology development (Rachmawati et al., 2021; 217-232).

The issuance of Ministerial Regulation No. 1 of 2021, which functions as the implementation of Government Regulation No. 24 of 1997, only refers to the provisions of Article 31 paragraph (6). However, substantial differences exist in the meaning and changes introduced by this Ministerial Regulation. This is because of the primary legal source for land registration in Indonesia, the Basic Agrarian Law (UUPA), along with its implementing regulations. UUPA and its implementing regulations hold a higher position in the legal hierarchy compared to the Law on Electronic Information and Transactions and the Job Creation Law. Therefore, substantial changes introduced by Ministerial Regulation No. 1 of 2021 in the form of electronic certificates must be carefully considered, especially if these changes are seen to have implications for higher norms.

Ministerial Regulation No. 1 of 2021 acknowledges its existence and legal authority as provided in Article 8 paragraph (2) of Law No. 12 of 2011. In the context of regulation formation, there are two doctrines of authority to consider: the authority to enact and the delegation of legislative authority. The authority to enact refers to the creation of laws based on attribution or direct authorization provided by higher laws (Suyanto, 2021; 9650). On the other hand, the delegation of legislative authority occurs when higher laws delegate authority to lower-level institutions or authorities to issue implementing regulations. In the context of the formation of Ministerial Regulation No. 1 of 2021, contextually, the regulation is made based on an order from higher-level regulations, as mentioned in the considerations or references to the Basic Agrarian Law and its implementing regulations. This is also related to the Law on Electronic Information and Transactions and the Job Creation Law, which establish the legal basis for the issuance of electronic land certificates as part of the land registration reform.

In an era where information technology continues to advance, adaptation to these changes is imperative, especially in the context of issuing electronic land certificates in Indonesia. The government and relevant institutions, particularly the National Land Agency (ATR/BPN), bear the primary responsibility for ensuring that the land certificate issuance process remains effective, efficient, and within a strong legal framework (Ramadan et al., 2022; 7-19). ATR/BPN plays a crucial role in monitoring and regulating the land registration process, which is the foundation of legal certainty in land ownership. Proper regulations are also a key element in coping with these technological developments. These regulations encompass critical aspects such as data security, legal validity of certificates, and technical requirements that need to be enforced. Additionally, it's important to ensure that electronic land certificates are legally recognized in the judicial process (Shadikhodjaev, 2021; 1221-1227). This requires close cooperation with the judicial system and courts to ensure that these certificates can be used as valid evidence in legal proceedings (Taufan & Salim, 2021).

The use of technology is also a vital tool in addressing vulnerabilities that arise in the use of electronic land certificates (Ameyaw & de Vries, 2023; 106485). This includes the use of robust data encryption technology, efficient network security measures, and the implementation of secure electronic signatures to protect the integrity and authenticity of certificates (Mofu, 2024; 83-98). Furthermore, it's essential to provide adequate training to stakeholders, including land registration officers and end-users, to ensure that this technology is used correctly and an understanding of potential risks (Adhi et al., 2022; Roswandi & Wahyuningsih, 2023; 108-114). By combining strong regulations, appropriate technology, and increased awareness, the adaptation to legal certainty and information technology developments in the context of issuing electronic land certificates in Indonesia is expected to strengthen the land registration system, provide better efficiency, and uphold justice in land ownership and rights (Syarief, 2022; 32-46. Mora-Navarro et al., 2022; 1107).

Conclusion

The issuance of electronic land certificates plays a crucial role in providing effective legal protection to landowners in Indonesia. In an era where information technology continues to advance, adapting to technological developments is a necessity. The National Land Agency (ATR/BPN) plays a central role in managing the issuance of electronic land certificates and ensuring legal certainty in land ownership. Appropriate regulations covering aspects such as data security, legal validity, and technical requirements are vital to maintaining the integrity of electronic land certificates. Moreover, the role of technology in addressing

vulnerabilities that arise in the use of electronic land certificates should not be underestimated. The use of data encryption technology, network security measures, and secure electronic signatures are key steps in maintaining certificate security.

This study proposes several recommendations as follow:

- Adequate education and training are also necessary for stakeholders to ensure proper use and an understanding of potential risks. Therefore, the Indonesian government is expected to continue its efforts to strengthen the electronic land certificate issuance system with strong regulations.
- It's important to maintain close cooperation between ATR/BPN, the judiciary, and other stakeholders to ensure that electronic land certificates are recognized and reliable in legal processes.
- Awareness of the importance of data protection and cybersecurity must also be increased. By maintaining proper adaptation to technological developments, Indonesia can achieve better efficiency, transparency, and justice in land ownership and rights, which, in turn, will bring significant benefits to the public.

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