

Analysis of the Use of Electronic Certificates in Preventing Land Certificate Forgery

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Abstract. *This study aims to analyze the use of electronic land certificates in preventing land certificate forgery, to analyze the obstacles and solutions to the use of electronic certificates in preventing land certificate forgery. The approach method used is the legislative approach. This type of research is normative juridical research. The type and source of this research data are secondary data. The data analysis method is prescriptive. The results of the study indicate that in dealing with certificate forgery through electronic certificates in the Regulation of the Minister of ATR/BPN No. 1 of 2021 as a form of land modernization. This digitalization is to increase efficiency, transparency, data security, and public trust, while strengthening legal protection and land governance that is more modern and free from illegal practices. In bureaucratic reform, electronic certificates by ATR/BPN are a step in land digitalization to increase efficiency, transparency, and accountability. Its success is influenced by socialization, digital literacy, and apparatus readiness, with challenges such as infrastructure inequality and data security issues. Implementation needs to be gradual and in accordance with the principles of good governance to create modern, safe, and publicly trusted land governance.*

Keywords: *Certificates; Counterfeiting; Electronics.*

1. Introduction

Indonesia is a state based on the rule of law, where all legal values and norms aim to achieve justice and the welfare of the nation and state. Indonesia is a state based on the rule of law that adheres to the concept of a welfare state. As a state based on the rule of law that aims to realize general welfare, every activity must be oriented toward the goals to be achieved, based on applicable laws that govern state, government, and social activities. The state is required to

play a greater role and intervene in aspects of community life to achieve welfare.¹

Land certificates issued by the National Land Agency (BPN) serve as legal proof of ownership in any land dispute or other issues related to land ownership. To ensure legal certainty, registering land rights is essential. This ensures legal certainty for land rights holders and other parties with an interest in the land.²

In order to strengthen legal certainty in the land sector, the government has demonstrated its commitment to continuously updating and improving the land administration system, particularly through adaptation to the demands of the globalization era. Rapidly developing technological advances have impacted various aspects of life worldwide. These changes are accelerating the transformation of organizational structures and social dynamics, making information technology, media, and telecommunications play an increasingly crucial role in supporting the modernization of land administration.³

The purpose of issuing electronic certificates is for efficiency and transparency in land registration, namely the management of archives and land documents will be more guaranteed, the level of service will increase, running in line with the increasing number of registered land through Complete Systematic Land Registration, the development of modernization and the demands of the economic, social and cultural ecosystem towards industry 4.0, this has been proven successful in several other government agencies and other private sectors in modernizing the service system, while increasing the value of Registering Property to improve Indonesia's Ease of Doing Business ranking, it will also reduce the obligation of the community to come to the land office by up to 80%.⁴

¹ H. Jawade Hafidz, S.H., M.H., 2018, "Malfungsi HAN dan Upaya Rekonstruksi Sistem Hukum yang Ada menuju Hukum yang Melayani", *Jurnal Hukum*, Vol.28, No. 2, hal. 845, https://scholar.google.com/citations?view_op=view_citation&hl=id&user=VSG3mPQAAAAJ&pagesize=100&citation_for_view=VSG3mPQAAAAJ:3fE2CSJlrl8C accessed on August 9, 2025 at 12.00 WIB

² Chintya Agnisya Putri et al., 2018, Efektivitas Pengecekan Sertifikat Terhadap Pencegahan Sengketa Tanah Dalam Proses Peralihan Hak Atas Tanah, *Jurnal Akta*, Vol. 5, No. 1, hal. 267, <https://jurnal.unissula.ac.id/index.php/akta/article/view/2611/1965> accessed on November 15, 2025 at 16.00 WIB

³ Qitshi Fauziyyah Sugianto & Widhi Handoko, 2019, "Peluang dan Tantangan Calon Notaris dalam Menghadapi Perkembangan Disrupsi Era Digital", *Jurnal Notarius*, Vol. 12, No. 2, hal.657 <https://ejournal.undip.ac.id/index.php/notarius/article/download/29004/16772> accessed on August 9, 2025 at 21.00 WIB

⁴ Risti Dwi Ramasari & Shella Aniscasary, 2022, "Tinjauan Yuridis Kekuatan Hukum sertipikat Tanah Elektronik Berdasarkan Peraturan Menteri Agraria dan Tata Ruang Nomor 1 Tahun 2021", *Jurnal Hukum dan Etika Kesehatan*, Vol. 2, No. 1, hal. 9-10, <https://jhek.hangtuah.ac.id/index.php/jurnal/article/view/38/24> accessed on August 9, 2025 at 21.00 WIB

The issuance of this regulation has sparked controversy within the community. Many residents expressed anxiety and confusion after receiving millions of analog land certificates through the Complete Systematic Land Registration (PTSL) program, only to be asked to replace them with electronic certificates. This situation has given rise to the perception that government policy is inconsistent, poorly planned, and not systematically structured. Ideally, the government would first complete the land registration program comprehensively throughout Indonesia, considering that land certificates are proof of rights issued at the final stage of the registration process. Only after all land parcels are registered can modernization of land services, including the implementation of electronic certificates, be implemented more effectively. Various land registration acceleration programs have been implemented by land authorities, such as the Land Administration Project (PAP), the Land Management and Policy Development Project (LMPDP), the Adjudication program, Larasita, the National Agrarian Program (Prona), and PTSL. However, land registration coverage in Indonesia is still incomplete. Based on the performance report of the Ministry of ATR/BPN, as of 2019 the number of registered land plots had only reached 67,345,894 plots.⁵

Land certificate forgery is a serious problem that not only causes losses to land owners but also has the potential to disrupt the stability, security, and legal certainty of the national land system. This illegal practice undermines public trust in land administration and opens the door to protracted disputes. To address this issue, the government has begun adopting electronic certificates as a form of digital innovation in legal document management. Electronic certificates are designed using cryptography technology, digital signatures, and a multi-layered verification system that guarantees the authenticity, integrity, and security of data. Through the application of this technology, the risk of forgery can be minimized, administrative processes become more transparent, and legal protection for land rights is strengthened. The implementation of electronic certificates also encourages the realization of modern, efficient, and adaptive land governance to developments in information technology.⁶

The Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) initiated a policy of transformation from Conventional Land Certificates to Electronic Land Certificates not merely as a form of adjustment to the development of the digital era, but as a strategic response to the increasing complexity of land issues. Various cases such as forged land title certificates, the issuance of two certificates with different rights holders for the same plot of

⁵ Mujiburohman, D. A. (2018). Potensi Permasalahan Pendaftaran Tanah Sistematis Lengkap (PTSL). *BHUMI: Jurnal Agraria dan Pertanahan*, Vol. 4, No.1, hal. 89

⁶ Najwa Nashifa Azhar & I Made Pria Dharsana, 2024, "Efektivitas Penggunaan Sertipikat Elektronik dalam Mencegah Pemalsuan Dokumen Tanah", *Jurnal Ilmu Hukum, Humaniora dan Politik*, Vol. 5, No. 2, hal. 1081, <https://dinastirev.org/JIHHP/article/view/3323> accessed on July 24, 2025 at 19.30 WIB

land, and various other forms of land disputes indicate fundamental weaknesses in the conventional land administration system. The use of Electronic Certificates is considered to be able to resolve various land problems that exist in society. However, the use of electronic certificates also creates new problems and new inequalities in society, and in this case becomes an obstacle to the realization of electronic certificates in society.

This study aims to determine, study and analyze the use of electronic certificates in preventing land certificate forgery.

2. Research Methods

This type of legal research is conducted in a normative juridical manner. This research uses a statute approach. This research utilizes secondary data sources. This research uses document study and literature study as data collection techniques. This research uses a prescriptive analysis method.

3. Results and Discussion

3.1. Analysis of the Use of Electronic Certificates in Preventing Land Certificate Forgery

The granting of land rights by the state to individuals, community groups, or legal entities aims to establish a clear and concrete legal relationship between the parties utilizing the land and the land object. The existence of this concrete legal relationship can prevent illegal land acquisition and affirm the rights and obligations of rights holders to maintain and use the land in accordance with regulations. Therefore, a legal instrument is needed that can provide adequate protection for land rights holders so that this legal relationship can be effectively maintained and protected.⁷

Problems in land administration often trigger various land disputes within the community. One of the most common issues is the practice of falsifying land title certificates. This practice not only harms legitimate landowners but also creates complex administrative issues later on. Weak administrative systems and minimal oversight also open up opportunities for cases such as the issuance of duplicate certificates for a single plot of land or the loss of certificate data that should be recorded at the land office. This situation demonstrates that ineffective land administration management can lead to legal uncertainty that is detrimental to various parties. Therefore, comprehensive reform measures and

⁷ Syamsur et al, 2023, Analisis Hambatan Pemberlakuan Sertifikat Elektronik Serta Upaya Penyelesaiannya Di Kota Makassar, *Indonesian Journal of Legality of Law*, Vol. 6, No.1, hal. 99 <https://journal.unibos.ac.id/ijlf/article/view/3817/1913> accessed on August 9, 2025 at 20.00 WIB

increased transparency in the land administration system in Indonesia are needed.⁸

In social reality, public understanding of the significance of land title certificates as evidence with the highest legal force in resolving land disputes remains relatively low. This condition is influenced by the existence of various types of land certificates circulating in the community, such as Land Certificates, Land Cultivation Letters, and other information documents issued or authorized by local government officials. In fact, the provisions of the Basic Agrarian Law (UUPA) and Government Regulation Number 24 of 1997 expressly stipulate that land certificates are strong evidence in order to provide legal certainty regarding land ownership, whether in the form of ownership rights, building use rights, use rights, or other rights included in land registration objects. However, these provisions do not negate the validity of other documents as evidence. However, certificates still have higher evidentiary power as long as the physical and legal data contained therein are consistent with the relevant measurement letter and land book.⁹

Thus, a Land Certificate, a document granting land ownership rights to individuals, groups, or legal entities, is the final step in the land registration process. A land certificate is a crucial document to ensure legal certainty for every citizen or legal entity, as stipulated in Law Number 5 of 1960 concerning Basic Agrarian Regulations (UUPA). Therefore, it is crucial for every citizen or legal entity to register their land to obtain legal certainty of land ownership rights.

The government through several regulations has made changes to the land registration system to provide benefits and provide solutions to land problems to every land rights owner with an electronic system. Regulation of the Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency of the Republic of Indonesia Number 7 of 2019 concerning the Second Amendment to the Regulation of the Minister of State for Agrarian Affairs/Head of the National Land Agency Number 3 of 1997 concerning Provisions for the Implementation of Government Regulation Number 24 of 1997 concerning Land Registration, Regulation of the Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency of the Republic of Indonesia Number 1 of 2021 concerning Electronic Certificates, and Regulation of the Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency of the Republic of Indonesia Number 3 of 2023 concerning the Issuance of Electronic Documents in Land Registration Activities.

⁸ Anatami dan Darwis, 2017, Tanggung Jawab Siapa, Bila Terjadi Sertipikat Ganda Atas Sebidang Tanah, *Jurnal Hukum Samudera Keadilan*, Vol. 12, No.1 hal 10

⁹ Arifin Bur dan Desi Apriani, 2017, Sertipikat Sebagai Alat Pembuktian Yang Kuat dalam Hubungannya Dengan Sistem Publikasi Pendaftaran Tanah, *UIR Law Review*, Vol. 01, No.2, hal.132-133

The transformation of electronic progress has shifted the land registration system from a paper-based process to an electronic one. In Indonesia, the use of information and communication technology is progressively transforming market transactions and public services from analog (manual) to electronic-based services. In line with the developments in the era of the 4.0 industrial revolution, the government is making new breakthroughs to keep pace with the increasingly complex dynamics of society. Otherwise, legal stagnation will occur, as is known, the law will always lag behind developments.¹⁰

One of the goals of land certificate digitization is to increase the efficiency and effectiveness of the ownership transfer process by making it faster, safer, and more convenient for all parties involved. Through the implementation of a digital system, administrative processes can be conducted more transparently and accurately, thereby minimizing the potential for disputes and errors in land transactions. This digitization is also expected to save time and resources, while supporting the modernization of land services in the era of digital transformation. Furthermore, land certificate digitization aims to ensure the protection of privacy and landowner rights through the application of ethical principles and a robust security system. Implementing data protection measures and monitoring access to information are crucial to maintaining system integrity. Thus, land certificate digitization not only improves administrative efficiency but also builds public trust and transparency in data management and property transactions in Indonesia.

According to Gustav Radbruch, ideal law must fulfill three basic values: legal certainty (*rechtmatigheid*), legal justice (*gerechtigheid*), and legal utility (*zweckmatigheid* or *doelmatigheid* or utility). These three values serve as benchmarks for assessing the extent to which a regulation can guarantee a legal order that is just, certain, and beneficial to society.¹¹

Thus, it can be concluded that the policy of converting conventional certificates to electronic certificates, as stipulated in Regulation of the Minister of ATR/BPN No. 1 of 2021, aligns with the basic principles of legal certainty. This policy embodies a systematic effort to achieve public welfare by simultaneously increasing legal certainty, justice, and benefits.

3.2. Obstacles and Solutions to the Use of Electronic Certificates in Preventing Land Certificate Forgery

The development of technology and information is an unavoidable phenomenon, as progress in these fields is dynamic and continually innovates. Failure to keep

¹⁰ Muhd.Nafan, 2022, *Kepastian Hukum terhadap Penerapan Sertipikat Elektronik sebagai Bukti Penguasaan Hak Atas Tanah di Indonesia*, Jurnal Pendidikan Tambusai, Vol. 6 No. 1, hal. 3344

¹¹ Mishbahul Munir, 2023, *Sertipikat Elektronik sebagai Bukti Hak Kepemilikan atas Tanah Ditinjau dari Teori Kepastian Hukum dan Maqasid Asy-Syari'ah*, Jurnal Of Islamic Business Law, Vol. 7, No. 3, hal. 13

pace with this pace can result in lagging behind in various sectors of life and give rise to complex social, economic, and cultural problems. Specifically, technological advances have transformed the way people interact, communicate, and carry out their daily activities. Information technology and electronic transactions are now key pillars supporting globalization, accelerating the process of integration between countries, and expanding the reach of human interaction without geographical boundaries. Furthermore, the development of digital technology has triggered a convergence between information technology, media, and telecommunications, ultimately transforming organizational structures, work patterns, and social relations in modern society. Therefore, adapting to technological developments is not only a necessity but also a crucial strategy for maintaining sustainability and competitiveness in an increasingly competitive global era.¹²

Digital literacy skills are a crucial aspect that every individual must possess to participate effectively in modern society. Digital literacy encompasses not only the ability to use technological devices but also a critical understanding of information obtained through digital media, including the ability to assess the reliability of sources, maintain the security of personal data, and maintain ethical communication in the digital space. With increasing reliance on information and communication technology, society is required to adapt to these rapid and complex changes. The government, educational institutions, and the private sector have a crucial role to play in preparing adaptive, creative, and integrated human resources capable of utilizing technology productively. Thus, mastery of technology is not only a means for economic progress but also a foundation for building an intelligent, inclusive, and sustainable society in the digital era.

Land registration systems worldwide have undergone significant modernization through the application of information and communication technology. This modernization effort aims to increase efficiency, transparency, and accuracy in land data management. One major achievement of this process is the availability of public access to online land registration information, allowing the public to easily obtain data on land ownership and status without having to go through complicated manual procedures. Furthermore, the introduction of digital infrastructure to support the electronic land registration process is also a step forward in realizing a faster, safer, and more integrated land administration system. This innovation demonstrates the commitment of many countries to adapt to technological developments to provide better public services in the land sector.¹³

¹² Dikdik M. Arif Mansur dan Elisatris Gultom, 2011Cyber Law, Aspek Hukum Teknologi Informasi, Cetakan ke-11, Refika Aditama, Bandung, hal. 122.

¹³ Dian Aries Mujiburohman, 2021. "Transformasi dari Kertas ke Elektronik: Telaah Yuridis dan Tekhnis Sertipikat.Tanah.Elektronik." .BHUMI:Jurnal.Agraria.dan Pertanian,Vol.7,No.1, hal.58

Lack of public awareness is one of the obstacles to the use of these certificates to prevent land certificate forgery. Since the news of the introduction of electronic certificates to replace analog certificates, there has been a lot of negative news about analog certificates being withdrawn from owners if they don't immediately convert to electronic certificates. While this news is simply a false negative, it is occurring in the community due to a lack of public awareness of a policy that will be and has been implemented nationally. Socialization is a fundamental process that individuals, consciously or unconsciously, undergo in their daily lives. Socialization can be understood as the open dissemination of information, including regulations, programs, and decisions, from one party as the program owner to another party, namely the wider community. This process also includes elements of community empowerment, which is expected to foster changes in attitudes and behavior and increase critical public awareness. Essentially, the practice of public policy socialization is a form of communication. This communication process can be carried out through various media, including mass media, face-to-face communication, and, in the context of current technological developments, through social media. In general, communication can be defined as the activity of conveying messages from one party to another, whether to individuals, groups, organizations, both formal and informal, or to a wide audience.¹⁴

Socialization serves not only as a means of conveying information, but also as an effort to build public participation and awareness so that they can participate in the development process. Through effective communication, whether through mass media, direct communication, or social media, the messages conveyed are expected to transform public perspectives and behavior in a more constructive direction. Therefore, the success of socialization depends heavily on the transparency of information, clarity of messages, and the government's ability to adapt communication methods to the characteristics of the target community.

Data security and privacy are fundamental aspects of digital system development in the modern era. This principle also applies to the implementation of the policy of transforming physical land certificates into electronic certificates. As Indonesians' digital literacy increases, public awareness and concerns about the security of electronic systems have also increased, giving rise to various forms of doubt. In this context, the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) emphasized that the digital system being developed has a high level of reliability and is equipped with security guarantees. However, some people continue to express concerns, particularly by linking the digitalization process of electronic certificates to the previously widely reported e-KTP data leak incident. These concerns are understandable, given that Indonesia remains in a vulnerable situation regarding personal data

¹⁴ Djoko Waluyo dan Syarifuddin, 2022, *Praktik Sosialisasi Kebijakan Publik Pada Era Digital*, Majalah Semi Ilmiah Populer Komunikasi Massa, Vol. 3, No. 1, hal. 1-2

protection. In May 2021, the public was shocked by an alleged e-KTP data leak, reportedly involving 279 million residents, which was traded on online platforms. The Ministry of Home Affairs subsequently clarified that the population data managed by the Directorate General of Population and Civil Registration (Dukcapil) had not been leaked and no indication of suspicious activity was found. However, an investigation by the Ministry of Communication and Informatics (Kemenkominfo) revealed a different finding: approximately 1,000,002 data samples were indeed leaked, although this number is much smaller than initially suspected. Kemenkominfo also indicated that the leak likely originated from 2013 General Elections Commission (KPU) data, with data structures that show similarities to BPJS Kesehatan data. This incident has deepened public doubts and further undermined public trust in the security of government-managed digital systems.¹⁵

Solutions to Data Security and Privacy Issues in Land Certificate Digitalization, namely the government, especially the Ministry of ATR/BPN, needs to ensure that the electronic land certificate system is built with the highest cybersecurity standards, ATR/BPN employees and related agencies must receive regular cybersecurity training, the public needs to be provided with digital socialization and education on how to access, store, and protect their electronic certificates, Information transparency will increase public trust in the digitalization of land data. The digitalization of electronic land certificates is a strategic step towards efficiency and transparency of public services. However, its success is highly dependent on security and public trust. Through strengthening technology, regulations, literacy, transparency, and cross-sector collaboration, the government can ensure that digital transformation in the land sector is not only efficient, but also safe, reliable, and sustainable.

The implementation of electronic certificates issued by the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) is highly relevant. The implementation of electronic certificates is part of the effort to create a more transparent, accountable, efficient, and secure land system. Certificate digitization is expected to reduce the potential for data manipulation and document forgery, and accelerate public service delivery in the land sector. In terms of security, the Ministry of ATR/BPN's electronic certificate system is designed with a multi-layer security system. All land ownership data is stored in a computerized, encrypted format to prevent unauthorized access. This data is periodically backed up and synchronized with a central server accessible only to authorized personnel within the Ministry. Furthermore, the system is equipped with Disaster Recovery Center (DRC) technology, which functions as a backup center to rescue and duplicate data from the main site to another data center in

¹⁵ Aa Muhammad Insany Rachman dan Evi Dwi Hastri, 2021, Analisis Kendala Implementasi Peraturan Menteri ATR/BPN Nomor 1 Tahun 2021 Tentang Sertipikat Elektronik, Mulawarman Law Review, Vol. 6, No. 2

the event of a disruption or failure of the main system. This additional layer of security is achieved through the use of digital signatures encoded using modern cryptographic algorithms, hash codes, and unique QR codes. This mechanism ensures that every electronic certificate has an unforgeable digital identity. Document authentication and verification processes can be carried out quickly and accurately by authorities, without the need for manual validation as with physical certificates. Furthermore, this system supports the government's efforts to build land governance that adapts to developments in digital technology and the needs of modern society. Therefore, the transformation to electronic certificates is not merely an administrative innovation, but also a strategic step toward an integrated, trusted, and sustainable land ecosystem in the digital era.¹⁶

4. Conclusion

Land registration serves to ensure legal certainty and protection, but various administrative weaknesses such as certificate forgery and land mafia practices have eroded public trust. To improve governance, the government implemented an electronic certificate policy through a Regulation of the Minister of ATR/BPN as part of the modernization of land administration. This policy aligns with the values of legal certainty, justice, and expediency, and aims to improve data accuracy, transparency, and service efficiency. The digital transformation is being carried out in stages and supported by security technologies such as hash codes, QR codes, and electronic signatures. Overall, the digitization of land certificates is expected to strengthen the integrity of the land system, reduce disputes and land mafia practices, and increase public trust in land services. The electronic certificate policy is a step towards modernizing land administration to improve the efficiency, transparency, and security of public services. Its successful implementation depends on clear policy objectives, effective outreach, public digital literacy, apparatus readiness, and guaranteed data security. Another challenge, the imbalance in technological infrastructure, requires gradual and adaptive policy implementation. Overall, the digitalization of land certificates can only be successful through a comprehensive approach and the principles of good governance in order to realize modern, safe, and reliable land services. Before making a policy, the government must consider the current realities and conditions. This ensures that a policy is not merely a way to keep up with technological advances and the ease of access to information. It must also be fully developed when implemented in the community. The Land Office must be more proactive in promoting electronic certificates, providing information on their benefits, and conveying the policy's objectives. This will ensure that misinformation is not misrepresented and that no one is left behind. The public

¹⁶ Reza Andriansyah Putra dan Atik Winanti, 2024, "Urgensi Penerbitan Dokumen Sertipikat Tanah Elektronik Pasca Peraturan Menteri ATR/BPN Nomor 3 Tahun 2023", *USM Law Review*. Vol. 7, No. 2, hal. 226

should be more aware of the widespread fraudulent land certificate practices, and that all land rights matters should be handled by authorized land authorities, such as the Land Office and Land Deed Officials (PPAT).

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