# Implementation of Electronic Certificates for Land Ownership Rights in the Dynamics of Law and Globalization

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***Abstract***

*The implementation of electronic certificates for land ownership rights in Indonesia is supported by the legal framework such as the Basic Agrarian Law and its derivative regulations, as well as the Electronic Information and Transactions Law. However, it still requires regulatory adjustments, improvements in IT infrastructure, human resource capacity, and cybersecurity. The objective of this research is to analyze the prevailing legal framework in Indonesia in accommodating the implementation of electronic certificates for land ownership rights, as well as to identify the challenges and opportunities in its application. This research employs a normative legal research method with a statutory and conceptual approach. Primary and secondary legal material sources will be collected through literature studies and qualitatively analyzed to provide a comprehensive overview and appropriate recommendations. The research findings elaborate that the legal framework in Indonesia opens up opportunities for electronic certificates for land ownership rights through regulations such as the Basic Agrarian Law, Government Regulation No. 24/1997 on Land Registration, Law No. 11/2008 on Electronic Information and Transactions, and Government Regulation No. 82/2012 on the Implementation of Electronic Systems and Transactions. Although there is no specific regulation, the challenges in its implementation include regulatory harmonization, cybersecurity, information technology infrastructure, and improving human resource capacity. However, electronic certificates have the potential to enhance efficiency, transparency, legal protection, spatial data integration, and support the modernization of the land administration system in Indonesia to increase competitiveness in attracting investment.*

## I. Introduction

Land is one of the natural resources that plays a crucial role in human life. As an agrarian country, Indonesia has a significant land area, making land management and utilization strategic issues in national development. Legal certainty over land ownership is a crucial factor in creating order, justice, and prosperity for all Indonesian people.(Rejekiningsih, 2016) In this context, land certificates play a vital role as evidence of legitimate ownership recognized by law.

Alongside the rapid development of information and communication technology, as well as the demands for efficiency and transparency in land management, there arises a need to adopt a more modern and integrated land certification system. Electronic certificates of land ownership offer a promising solution in efforts to improve the quality of land services and address contemporary challenges. The implementation of electronic certificates aligns with the spirit of bureaucratic reform and the utilization of digital technology in public services in Indonesia.(Sutaryono et al., 2021)

In the dynamics of national law, there are several legislative regulations that serve as the foundation and legal umbrella for the implementation of electronic certificates for land ownership rights. Law Number 5 of 1960 concerning Basic Agrarian Principles (UUPA) is the main pillar in the regulation of land in Indonesia. This law serves as the basis for the recognition and protection of land rights for all Indonesian citizens.(Akmal et al., 2023)

Next, Government Regulation Number 24 of 1997 concerning Land Registration regulates the procedures and methods of land registration in Indonesia. This regulation serves as the basis for the issuance of land certificates as evidence of legitimate ownership. In its development, Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency Regulation Number 9 of 2022 concerning Electronic Certificates specifically regulates the implementation of electronic certificates for land ownership rights.

One of the main principles in the UUPA (Indonesian Agrarian Law) is legal certainty regarding land rights. To achieve this legal certainty, the government issues land rights certificates as strong evidence of ownership. Conventional physical land certificates have several weaknesses, such as susceptibility to damage, loss, or forgery. In addition, the process of issuing and managing conventional land certificates often takes a long time and incurs considerable costs.(Apriani & Bur, 2020) Therefore, the implementation of electronic certificates for land ownership rights is a breakthrough that needs to be thoroughly examined.

In the context of globalization and the development of information technology,

the use of electronic certificates for land ownership rights can provide a more efficient, secure, and transparent solution. Electronic certificates can reduce the risk of damage or loss of physical documents, as well as minimize the potential for forgery. Additionally, the issuance and management process of electronic certificates can be done online, making it faster and cost-effective.(Dong et al., 2023)

The implementation of electronic certificates for land ownership is also in line with the government's efforts to improve good land governance and support agrarian reform programs. This is reflected in Government Regulation Number 24 of 1997 concerning Land Registration, which mandates the utilization of information technology in land data management.(Adinegoro, 2023)

In the context of globalization, the implementation of electronic certificates for land ownership in Indonesia is also in line with best practices and international trends in modern land management. Advanced countries have adopted electronic certification systems to enhance efficiency, transparency, and accountability in land management. By following these global developments, Indonesia is expected to improve competitiveness, attract investment interest, and strengthen legal certainty in the land sector.(Adinegoro, 2023)

However, the implementation of electronic certificates for land ownership rights is not without challenges. One of them is the legal aspect that needs to be adjusted to the development of technology. Law Number 11 of 2008 concerning Electronic Information and Transactions (ITE Law) is one of the legal foundations that regulates the use of information technology in various sectors, including land affairs. In addition, the implementation of electronic certificates for land ownership rights also requires adequate support of information technology infrastructure, as well as the enhancement of human resource capacity in the digital management of land data. Cybersecurity is also an important concern in maintaining the confidentiality and integrity of land ownership data. (Adinegoro, 2023)

Considering the dynamics of law and globalization, the implementation of electronic certificates for land ownership rights is a strategic step that needs to be comprehensively studied. This research aims to analyze the legal, technological, and governance aspects related to the implementation of electronic certificates for land ownership rights in Indonesia. The formulation of the problem in this research is:

a. How does the legal framework in Indonesia accommodate the implementation of electronic certificates for land ownership rights?
b. What are the challenges and opportunities in implementing electronic certificates for land ownership rights in Indonesia?

## 2. Research Method

This research employs a normative legal research method, focusing on the examination of prevailing laws and legal norms. This method was chosen because the research aims to investigate the legal aspects of the implementation of electronic certificates for land ownership in Indonesia. The approach used in this research consists of statutory approach and conceptual approach. The statutory approach is necessary to analyze legislation related to land ownership, land certification, and the use of information technology in the land sector. Meanwhile, the conceptual approach is used to understand relevant legal concepts such as legal certainty, legal protection, land governance, and cyber security.

The legal sources utilized in this research comprise primary and secondary legal materials. Primary legal materials include relevant legislation such as the Basic Agrarian Law, Government Regulations on Land Registration, the Electronic Information and Transactions Law, and other relevant implementing regulations. On the other hand, secondary legal materials encompass books, scientific journals, research findings, and other legal literature discussing related topics. The data collection technique employed in this research is library research. Library research involves gathering, reading, and analyzing relevant primary and secondary legal sources.

After data collection, the data analysis technique used is qualitative analysis. Qualitative analysis involves interpreting and constructing data obtained from library research to provide a comprehensive overview of the legal aspects regarding the implementation of electronic certificates for land ownership in Indonesia.(J. Moleong, 2017) The analysis process is conducted systematically, logically, and critically, taking into account legal principles as well as the dynamics of law and globalization. Through normative legal research methods, legislative and conceptual approaches, relevant legal sources, as well as appropriate data collection and analysis techniques, this research is expected to produce in-depth analysis and appropriate recommendations for the effective and sustainable implementation of electronic certificates for land ownership rights in Indonesia.

## 3. Results And Discussion

### A. The legal framework in Indonesia accommodates the implementation of electronic certificates for land ownership rights.

The current legal framework in Indonesia has provided a basis for the implementation of electronic certificates for land ownership, although further adjustments and harmonization are still needed. Law Number 5 of 1960 concerning the Basic Agrarian Principles or more commonly known as the Basic Agrarian Law (UUPA) is

the main foundation in regulating land affairs in Indonesia. UUPA regulates land rights, land registration, and the issuance of certificates as strong evidence of ownership.(Sutaryono et al., 2021) Although the Agrarian Law (UUPA) does not specifically regulate electronic certificates, the basic principles it adheres to, such as legal certainty and fairness in land ownership and use, can serve as the foundation for the implementation of electronic certificates as a modernization effort and an increase in efficiency in the land administration system.

Government Regulation Number 24 of 1997 concerning Land Registration, which is the implementing regulation of the UUPA, provides space for the utilization of information technology in land data management. Article 32 paragraph (2) of this regulation states that "In addition to being available in the form of land books and survey letters, physical and juridical data of registered land parcels can also be presented in the form of registration maps and land registers." This provision opens opportunities for the presentation of land data in electronic or digital form. Paragraph (3) of Article 33 mentions that "To obtain complete and orderly land registration data, land registration implementation is followed by the maintenance of land registration data, using simple, secure, affordable, up-to-date, and open principles." In the explanation of this article, it is stated that "The use of computer equipment and other information technology in land registration implementation and data maintenance is possible to improve service to the community." (Yulianto & Ratna, 2019)

Law Number 11 of 2008 concerning Electronic Information and Transactions (ITE Law) serves as the main legal basis for the use of information technology and electronic transactions in Indonesia. Although the ITE Law does not specifically regulate electronic certificates for land ownership rights, several principles and provisions within the ITE Law can serve as references in the implementation of such electronic certificates. For example, Article 5 paragraph (1) states that "Electronic Information and/or Electronic Documents and/or their printed results are valid legal evidence." Additionally, the ITE Law also regulates aspects of cybersecurity, electronic signatures, and authentication relevant to the implementation of electronic certificates.(Agustian & Manik, 2021)

Government Regulation Number 82 of 2012 concerning the Organization of Electronic Systems and Transactions is an implementing regulation of the ITE Law which further regulates the organization of electronic systems and transactions, including aspects of security, authentication, and cryptography. In this Government Regulation, it is explained that the organization of electronic systems by State Administrators must meet minimum requirements such as reliability, security, and availability of access. This regulation can serve as a basis for the implementation of electronic certificates for secure and trustworthy land ownership rights.(Indriani et al., 2014)

Besides the aforementioned legislative regulations, there are several policies and technical regulations issued by the Ministry of Agrarian and Spatial Planning/National

Land Agency (ATR/BPN) related to the utilization of information technology in land data management. For example, Minister of Agrarian and Spatial Planning/Head of the National Land Agency Regulation Number 3 of 2018 concerning Electronic Certificate Services for Land Rights. This regulation governs the electronic certificate services for land rights with the aim of improving efficiency, transparency, and accountability in the land certificate issuance process.(Ardani, 2019)

Aside from legal aspects, the implementation of electronic certificates for land ownership rights must also be supported by adequate information technology infrastructure readiness, capacity building of human resources, and good governance. Cybersecurity aspects also constitute important considerations to maintain the confidentiality, integrity, and availability of electronic land ownership data. By considering the existing legal framework and making necessary adjustments, the implementation of electronic certificates for land ownership rights in Indonesia can be carried out effectively and sustainably.(Faramadina, 2023) This is in line with the government's efforts to improve good land governance and support agrarian reform programs, as well as to face the challenges of globalization and the rapid development of information technology.

## B. The Challenge and Opportunity in Implementing Electronic Certificates for Land Ownership Rights in Indonesia

The implementation of electronic certificates for land ownership in Indonesia presents challenges as well as opportunities that need to be carefully considered. Here is an analysis regarding the challenges and opportunities in the application of electronic certificates for land ownership in Indonesia:

Challenge:

1. Harmonization of Regulations
   Although the existing legal framework provides a basis for the use of land data in electronic form, harmonization and adjustment of regulations are still needed to accommodate the implementation of electronic certificates more specifically. Government Regulation Number 24 of 1997 concerning Land Registration and its implementing regulations need to be revised or supplemented with provisions that regulate in detail the procedures for issuance, management, and use of electronic certificates for land ownership rights.(Mukadar et al., 2023)
2. Cyber Security
   The implementation of electronic certificates for land ownership requires a reliable cybersecurity system to protect data from cyber threats such as hacking, data theft, or data manipulation. Law Number 19 of 2016 concerning Amendments to Law Number 11 of 2008 concerning Electronic Information and Transactions regulates cybersecurity, but more detailed technical regulations are still needed to ensure the

security of land data electronically.(Hosseini et al., 2023)

3. Information Technology Infrastructure
   The implementation of electronic certificates for land ownership requires a reliable cybersecurity system to protect data from cyber threats such as hacking, data theft, or data manipulation. Law Number 19 of 2016 concerning Amendments to Law Number 11 of 2008 concerning Electronic Information and Transactions regulates cybersecurity, but more detailed technical regulations are still needed to ensure the security of land data electronically.(Adinegoro, 2023)
4. Resistance to Change
   The implementation of electronic certificates for land ownership represents a significant change in the longstanding land tenure system. Challenges that may be encountered include resistance from various parties reluctant or finding it difficult to adapt to new technology and systems.(Atikah, 2022)
5. Human Resources
   The implementation of electronic certificates for land ownership also faces challenges in terms of human resources. There is a need for capacity building and training for employees within the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) to have the necessary skills and knowledge to manage land data electronically.(Adinegoro, 2023)

Opportunity:

1. Efficiency and Transparency
   Electronic certificates of land ownership have the potential to enhance efficiency and transparency in land data management. The issuance and management processes of electronic certificates can be conducted online, making it faster and cost-effective. Additionally, land ownership data can be accessed centrally and openly, increasing transparency and minimizing the potential for abuse of authority.(Adinegoro, 2023)
2. Legal protection
   With a strong legal basis, electronic certificates of land ownership rights can provide the same legal protection as conventional certificates. Article 5 paragraph (1) of Law Number 11 of 2008 concerning Electronic Information and Transactions states that 'Electronic Information and/or Electronic Documents and/or their printed results are valid legal evidence.' This provides legal certainty for landowners in using electronic certificates as valid proof of ownership.(Nafan, 2022)
3. Spatial Data Integration
   The implementation of electronic certificates for land ownership opens up opportunities for integrating land data with other spatial data, such as spatial planning data, environmental data, and infrastructure data. This data integration can support more effective and sustainable development planning, as well as facilitate the management of natural resources and the environment.(Suhartati et al., 2023)

4. Economic and Investment Opportunities
   An efficient and transparent electronic certificate system can enhance investor confidence and drive economic opportunities and investments in the real estate sector. This aligns with the government's efforts to improve the investment climate and support sustainable economic development.(Assidiqih & Susilowati, 2023)
5. Supporting Agrarian Reform and Good Land Governance
   The implementation of electronic certificates for land ownership can support agrarian reform programs and good land governance in Indonesia. An efficient and transparent system can strengthen legal certainty and protection of land rights, as well as encourage the use of land that is more productive and sustainable.(Alimuddin, 2021)
6. Land System Modernization
   The implementation of electronic certificates for land ownership is a step towards modernizing the land system in Indonesia. This is in line with the government's efforts to improve good land governance and support agrarian reform programs. Modernizing the land system can also enhance Indonesia's competitiveness in attracting investments and supporting sustainable economic development.(Faramadina, 2023)

To address challenges and seize opportunities in the implementation of electronic certificates for land ownership rights, comprehensive strategies and steps are required. This includes regulatory adjustments, enhancing cybersecurity, investing in information technology infrastructure, and developing competent human resources. By optimizing opportunities and mitigating challenges, the implementation of electronic certificates for land ownership rights can provide significant benefits for Indonesia's sustainable and modern development.

## 6. Conclusion

The current legal framework in Indonesia has provided a basis for the implementation of electronic certificates for land ownership through legislation such as the Basic Agrarian Law, Government Regulation Number 24 of 1997 concerning Land Registration, Law Number 11 of 2008 concerning Electronic Information and Transactions, and Government Regulation Number 82 of 2012 concerning the Implementation of Electronic Systems and Transactions. Although there is no specific regulation governing electronic certificates, these regulations open opportunities for the use of information technology in land data management, recognition of the authenticity of electronic documents, and requirements for secure and reliable electronic system implementation.

Challenges in the implementation of electronic certificates for land ownership in Indonesia include regulatory harmonization, cybersecurity, availability of adequate

information technology infrastructure, and capacity building for human resources. However, on the other hand, the implementation of electronic certificates has the potential to improve the efficiency and transparency of land data management, provide strong legal protection, facilitate spatial data integration, and support the modernization of the land system in Indonesia to address globalization challenges and enhance competitiveness in attracting investment.

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