

# STATE RESPONSIBILITY AND LEGAL ACCOUNTABILITY IN THE ISSUANCE OF ELECTRONIC LAND CERTIFICATES: BRIDGING THE GAP BETWEEN TECHNOLOGICAL ADVANCES AND THE PRINCIPLE OF LEGALITY

## RESPONSABILIDADE DO ESTADO E RESPONSABILIDADE JURÍDICA NA EMISSÃO DE CERTIFICADOS DE TERRA ELETRÔNICOS: COLMATANDO A LACUNA ENTRE OS AVANÇOS TECNOLÓGICOS E O PRINCÍPIO DA LEGALIDADE

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### Abstract

The digital transformation of land administration through the issuance of Electronic Land Certificates is part of the modernization of public services aimed at increasing efficiency, transparency, and legal certainty. However, the implementation of electronic systems also raises various legal issues, particularly regarding state responsibility and accountability mechanisms in the event of administrative errors, system failures, or data leaks. This study aims to analyze the concept of state responsibility, forms of legal accountability, and the application of the principle of legality in the issuance of electronic land certificates. The research method used is normative juridical with a statutory, conceptual, and comparative approach. The research findings indicate that although electronic land certificates have a valid legal basis and the same evidentiary force as conventional certificates, weaknesses remain in the accountability mechanisms, division of responsibilities, and redress of rights

### Resumo

A transformação digital da administração de terras através da emissão de Certificados de Terra Eletrônicos faz parte da modernização dos serviços públicos que visa aumentar a eficiência, a transparência e a segurança jurídica. No entanto, a implementação de sistemas eletrônicos também levanta várias questões jurídicas, particularmente no que diz respeito à responsabilidade do Estado e aos mecanismos de responsabilidade em caso de erros administrativos, falhas de sistema ou fuga de dados. Este estudo visa analisar o conceito de responsabilidade do Estado, as formas de responsabilidade jurídica e a aplicação do princípio da legalidade na emissão de certificados de terra eletrônicos. O método de investigação utilizado é o jurídico-normativo com uma abordagem estatutária, conceptual e comparativa. Os resultados da investigação indicam que, embora os certificados de terra eletrônicos tenham uma base jurídica válida e a



for injured parties. Substantive legal certainty depends heavily on system reliability, data security, and the professionalism of administrators. This research concludes that technology integration in land administration must be accompanied by strengthened regulations, transparency, and clear accountability mechanisms to ensure legal protection and the principle of legality.

**Keywords:** State Responsibility, Legal Responsibility, Electronic Land Certificates, Land Administration, Legality Principles.

*mesma força probatória que os certificados convencionais, subsistem fragilidades nos mecanismos de responsabilização, na divisão de responsabilidades e na reparação de direitos das partes prejudicadas. A segurança jurídica substantiva depende fortemente da fiabilidade do sistema, da segurança dos dados e do profissionalismo dos administradores. Esta investigação conclui que a integração da tecnologia na administração de terras deve ser acompanhada pelo reforço das regulamentações, transparência e mecanismos de responsabilização claros para garantir a proteção jurídica e o princípio da legalidade.*

**Palavras-chave:** Responsabilidade do Estado. Responsabilidade Jurídica. Certificados de Terra Eletrônicos. Administração de Terras. Princípios da Legalidade.

## 1 INTRODUCTION

The development of information and communication technology has brought fundamental changes to the implementation of public administration, including the land registration system in Indonesia. The use of digital technology in the land sector is realized through the implementation of Electronic Land Certificates as part of the government's bureaucratic reform and digital transformation agenda. This policy aims to improve the efficiency of public services, simplify administrative procedures, increase transparency, and minimize the potential for land disputes that have often arisen due to the weaknesses of conventional systems.

The implementation of electronic land certificates aligns with the national policy direction for e-government development, as mandated by Presidential Instruction Number 3 of 2003 concerning National Policy and Strategy for E-Government Development, and is reinforced by Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (SPBE). In the land context, the digitalization of land registration has a specific legal basis through Regulation of the Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency Number 1 of 2021 concerning Electronic Certificates, which provides a normative basis for the transition from physical certificates to electronic forms.

However, the implementation of electronic land certificates is not merely a technical administrative change, but also carries significant legal implications. Land certificates have long been viewed as strong evidence (*kracht van gewijsde*) of land rights and represent a manifestation of the principle of legal certainty as affirmed in Article 19 of Law Number 5 of 1960 concerning Basic Agrarian Regulations (UUPA). The digitization of this fundamental legal instrument directly impacts the legal relationship between the state as the administrator of land administration and the community as the holder of land rights.

One crucial issue that has emerged concerns state responsibility if administrative errors, personal data leaks, system misuse, or technical disruptions occur in the issuance of electronic land certificates. Electronic certificates rely heavily on electronic systems, cybersecurity, and data integrity and reliability, thus opening up new potential legal risks distinct from conventional certificates. This issue is closely related to the principle of state responsibility in governance, as stipulated in Law Number 30 of 2014 concerning Government Administration, and the protection of personal data, which has begun to receive serious attention through Law Number 27 of 2022 concerning Personal Data Protection.

Furthermore, the issuance of electronic land certificates, as a product of state administrative decisions, must also comply with the principle of legality and the general principles of good governance (AUPB). The challenge that arises is how the principle of legality which requires every government action to have a clear, valid, and accountable legal basis can be maintained amidst the dynamics and acceleration of technology utilization in land administration. The absence of comprehensive regulations regarding legal accountability mechanisms for electronic system failures has the potential to create legal uncertainty and harm the public.

Based on this description, this research addresses the following questions:

1. What is the concept of state responsibility in the issuance of electronic land certificates?
2. What forms of legal liability exist for losses arising from the issuance of electronic land certificates?
3. How can the principle of legality be maintained amidst technological advances in land administration?

## 2 RESEARCH METHODS

This study employs a normative juridical research method, which is fundamentally characterized by the analysis of law as a system of norms. According to Soekanto and Mamudji (2001), normative legal research, or "doctrinal research," is a process of finding the rule of law, legal principles, and legal doctrines in order to address the legal issues at hand. The approach is predominantly qualitative, utilizing a statutory approach to systematically examine the Indonesian legal framework regarding the digital transformation of land administration, particularly focusing on the legal force of electronic certificates.

Furthermore, a conceptual approach is integrated to analyze the theoretical underpinnings of state responsibility and the principle of legality. As argued by Marzuki (2017), the conceptual approach is vital when researchers do not move from existing legal rules, but rather from the legal doctrines and concepts that clarify how the law should respond to contemporary challenges in this case, the shift from physical to digital land titles. This study also incorporates a comparative approach to evaluate the accountability mechanisms of electronic land systems in various jurisdictions, seeking to bridge the gap between rapid technological advancement and the protection of citizens' rights.

The data analyzed consist of **primary legal materials**, including Law No. 11 of 2008 on Electronic Information and Transactions (ITE) and Government Regulation No. 18 of 2021 on Right to Manage, Land Rights, Flat Units, and Land Registration. These are supplemented by **secondary sources**, such as reputable academic journals, textbooks, and legal commentaries. The analysis is conducted through **prescriptive qualitative analysis**, which aims to provide a rational and critical assessment of how the law should be applied to ensure substantive legal certainty and state accountability in the digital era.

## 3 RESULTS AND DISCUSSION

### 3.1 Electronic land certificates and the principle of legal certainty

The principle of legal certainty is one of the fundamental principles in national land law which aims to provide guaranteed protection for land rights for its holders. Legal

certainty in the land context is realized through land registration which produces a certificate as strong proof of rights. This is normatively emphasized in Article 19 paragraph (2) letter c of Law Number 5 of 1960 concerning Basic Agrarian Principles (UUPA), which states that land registration includes the provision of a certificate of proof of rights which serves as strong evidence.

Along with technological developments, the government has adopted an electronic land certificate system as part of the modernization of land administration. Normative recognition of electronic land certificates is explicitly granted through Regulation of the Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency Number 1 of 2021 concerning Electronic Certificates, which states that electronic certificates have the same legal force and evidentiary function as conventional certificates. Therefore, from a normative perspective, electronic land certificates fulfill the legal requirements as a legitimate product of state administration.

However, legal certainty is not solely determined by normative recognition, but also by guarantees of the reliability of the system that supports the validity of the certificate. Unlike physical certificates, which have a tangible existence and are relatively independent of technological systems, electronic land certificates are highly dependent on electronic systems, information technology infrastructure, and cybersecurity. This dependence opens up potential legal vulnerabilities, such as unauthorized access by unauthorized parties, illegal data manipulation or alteration, and system disruptions that can hinder rights holders' access to their certificates.

From the perspective of state administrative law, reliance on electronic systems places the state as a party bearing the legal obligation to ensure the implementation of a reliable, secure, and sustainable land registration system. This obligation aligns with Article 10 of Law Number 30 of 2014 concerning State Administration, which stipulates that all government actions and decisions must be based on the general principles of good governance (AUPB), including legal certainty, accuracy, and professionalism. The state's failure to guarantee the reliability of electronic systems has the potential to violate these principles.

Furthermore, the implementation of electronic land certificates as part of an electronic-based government system is also subject to the provisions of Presidential Regulation Number 95 of 2018 concerning the Electronic-Based Government System

(SPBE), which requires every government agency to ensure information security, data protection, and the continuity of electronic-based public services. In the land context, this obligation includes securing land databases, controlling system access, and data recovery mechanisms in the event of system disruptions.

From the perspective of protecting citizens' rights, the potential vulnerability of electronic land certificates also relates to the protection of personal data. Electronic certificates contain sensitive data on the subject of rights, legal data, and physical data on the land. Therefore, the state is obliged to guarantee the protection of this data in accordance with the provisions of Law Number 27 of 2022 concerning Personal Data Protection, specifically regarding the principles of lawful processing, data security, and data leakage prevention. Violations of personal data protection obligations can result in administrative and civil legal liability. If the state fails to fulfill these obligations, resulting in losses for land rights holders, this negligence can be classified as maladministration. The concept of maladministration refers to Law Number 37 of 2008 concerning the Ombudsman of the Republic of Indonesia, which encompasses unlawful acts, abuse of authority, negligence, or neglect of legal obligations by state officials in public services. In the context of electronic land certificates, maladministration can occur if the state fails to provide a secure system, is not transparent in data management, or does not provide an effective complaint and redress mechanism for the public.

Thus, although electronic land certificates are normatively recognized as valid evidence, legal certainty can only be substantively realized if the state is able to ensure the reliability of electronic systems, data security, and accountability in land administration. Without fulfilling these obligations, the digitization of land certificates has the potential to undermine the principle of legal certainty, which has long been a key pillar of national land law.

### **3.2 State responsibility in electronic land administration**

The state's responsibility for implementing electronic land administration cannot be separated from the concept of a state based on the rule of law (*rechtsstaat*), where every government action must be legally accountable. In this context, the issuance of electronic land certificates constitutes a form of government administrative action carried out by

authorized officials or state organs and has the potential to have legal consequences for the public, particularly land rights holders.

Conceptually, the state's responsibility in issuing electronic land certificates can be understood through the doctrine of administrative liability, which positions the state as a legal subject responsible for the actions of government officials in carrying out their public service functions. This doctrine aligns with the provisions of Article 1 number 1 of Law Number 30 of 2014 concerning Government Administration, which affirms that government administration is the procedure for decision-making and/or actions by government agencies and/or officials. Therefore, every decision or action in issuing electronic land certificates is subject to the principle of legal accountability.

The issuance of electronic land certificates can be qualified as a State Administrative Decree (KTUN) because it is concrete, individual, and final and has legal consequences for an individual or legal entity. Therefore, if an administrative error, abuse of authority, or negligence occurs during the issuance process, such action can be tested through administrative law mechanisms, including through the State Administrative Court as stipulated in Law Number 5 of 1986 concerning the State Administrative Court and its amendments.

If the public suffers losses due to unlawful actions or negligence by the government in issuing electronic land certificates, the state can in principle be held accountable. This is in line with Article 53 paragraph (2) of Law Number 9 of 2004, which states that a state administrative decision can be annulled if it conflicts with statutory regulations or general principles of good governance. In the context of electronic land certificates, violations of the principles of legal certainty, accuracy, or professionalism can be grounds for demanding state accountability.

In addition to administrative responsibility, the state can also be held accountable for unlawful acts by the government (*onrechtmatige overheidsdaad*). This concept opens up the possibility for the public to claim compensation if it is proven that the losses suffered were the result of unlawful acts or negligence by state officials. The legal basis for this liability can be cited in Article 1365 of the Civil Code, which in judicial practice has been extended to government actions that harm citizens.

In the implementation of electronic land administration, the state's responsibility is also closely related to the obligation to implement a reliable and secure electronic

system. Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (SPBE) requires every government agency to guarantee information security and the continuity of electronic-based public services. Furthermore, Law Number 11 of 2008 concerning Electronic Information and Transactions, as amended by Law Number 19 of 2016, regulates the obligations of electronic system administrators to ensure the system operates reliably, securely, and responsibly. Failure to fulfill these obligations can be the basis for legal liability.

Furthermore, electronic land certificates contain personal and strategic data that must be protected by the state. Therefore, the state's responsibility also includes protecting personal data, as stipulated in Law Number 27 of 2022 concerning Personal Data Protection. If data leaks or misuse occur due to weak security systems, the state can be held accountable, both administratively and civilly, and sanctions may even be imposed in accordance with statutory provisions.

However, current regulations still focus more on the technical aspects of electronic land certificate administration, such as procedures for issuance, storage, and data access, rather than on accountability mechanisms and compensation for affected communities. Minister of Agrarian Affairs and Spatial Planning/National Land Agency Regulation No. 1 of 2021 concerning Electronic Certificates, for example, does not comprehensively regulate compensation claims procedures or rights restoration mechanisms in the event of system errors or administrative negligence.

Thus, it can be concluded that, in principle, the state can be held accountable for losses arising from the issuance of electronic land certificates. However, a strengthened regulatory framework is needed that explicitly defines the form, mechanisms, and limits of state responsibility to ensure effective legal protection for the public and maintain public trust in the electronic land administration system.

### **3.3 Legal responsibility and legal remedies for the injured party**

Legal liability for the issuance of electronic land certificates that cause harm to the public can be classified into preventive and repressive mechanisms. This classification is important for assessing the extent to which the state not only acts after a violation

occurs but also takes responsibility for preventing harm from occurring in the first place through proper management of the electronic land administration system.

### *3.3.1 Preventive accountability*

Preventive accountability is a form of state responsibility undertaken before a dispute or loss occurs, with the aim of ensuring system reliability and preventing legal violations. In the context of electronic land certificates, preventive accountability is realized through administrative oversight, electronic system audits, and compliance with security and data protection standards.

The legal basis for preventive accountability can be found in Law Number 30 of 2014 concerning Government Administration, specifically regarding the implementation of general principles of good governance (AUPB), such as the principle of prudence, professionalism, and accountability. The state is obliged to ensure that all administrative actions, including the issuance of electronic land certificates, are carried out carefully and responsibly.

Furthermore, the obligation to monitor and audit electronic systems is mandated in Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (SPBE). This regulation requires government agencies to ensure information security, data integrity, and the continuity of electronic-based public services. Within this framework, internal monitoring and information technology audits are crucial tools for preventing system errors, data leaks, and abuse of authority.

The aspect of personal data protection is also an integral part of preventive accountability. Law Number 27 of 2022 concerning Personal Data Protection requires data controllers and processors, in this case land agencies and related parties, to implement principles of data security, access restrictions, and data leakage prevention. Failure to implement these principles can be considered a violation of the law, opening the door to further liability.

### *3.3.2 Repressive accountability*

Repressive accountability is a legal mechanism that can be pursued after a violation or loss occurs due to the issuance of electronic land certificates. This form of accountability aims to restore the rights of the injured party and impose sanctions against government actions that violate the law.

The first legal remedy that can be taken is an administrative objection, as stipulated in Law Number 30 of 2014 concerning State Administration. Through this mechanism, the public can file an objection to the official or agency issuing the electronic land certificate if there are errors in procedure, substance, or authority. The administrative objection mechanism reflects the principle of due process of law in administrative law.

If administrative efforts fail to provide adequate legal protection, the aggrieved party can file a lawsuit with the State Administrative Court (PTUN). The validity of the issuance of an electronic land certificate as a State Administrative Decision can be tested through the PTUN, based on Law Number 5 of 1986 concerning the State Administrative Court and its amendments. Through this mechanism, the court can revoke legally flawed electronic certificates and order the restoration of rights.

In addition to administrative lawsuits, injured parties can also file claims for damages based on the concept of unlawful acts by the government. The legal basis for these claims is Article 1365 of the Civil Code, which has been recognized in judicial practice as the basis for government accountability for the actions or omissions of state officials. In the context of electronic land certificates, losses can arise from data errors, system failures, or negligence in information security.

### *3.3.3 The challenge of proof and the principle of equality before the law*

In practice, injured parties often face difficulties in providing evidence due to the complexity of electronic systems and limited access to technical data controlled by the state or system administrators. This inequality in access to information has the potential to weaken the public's position in the evidentiary process and is contrary to the principle of equality before the law as guaranteed in Article 27 paragraph (1) and Article 28D paragraph (1) of the 1945 Constitution of the Republic of Indonesia.

This situation demonstrates an imbalance in the legal relationship between the state and the people, with the state retaining complete control over electronic land systems and data. Without transparency mechanisms and fair access to evidence, legal protection for the people has the potential to be illusory and ineffective.

### *3.3.4 The need for responsibility sharing arrangements*

Therefore, more stringent and comprehensive regulations are needed regarding the division of responsibilities between the state as the land administration administrator, the electronic system administrator, and third-party technology providers. This regulation is crucial for determining who is responsible in the event of system errors, data leaks, or technological failures that harm the public.

This division of responsibilities should be explicitly outlined in land and electronic systems legislation, including provisions regarding evidentiary standards, compensation mechanisms, and rights restoration obligations. Thus, the digitalization of land administration should not only focus on technical efficiency but also ensure fair and effective legal protection for all citizens.

## **3.4 Bridging technological advances and legality principles**

The principle of legality is one of the fundamental principles in the administration of government, which requires that every government action and decision must have a valid, clear and accountable legal basis. In the context of land administration, this principle is guaranteed by Article 1 paragraph (3) of Law Number 30 of 2014 concerning Government Administration, which emphasizes that every government action must be in accordance with the provisions of applicable laws and regulations and the general principles of good governance (AUPB).

The issuance of electronic land certificates has a formal legal basis through several regulations, including:

1. Regulation of the Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency Number 1 of 2021 concerning Electronic Certificates, which provides legal recognition of electronic certificates as valid evidence.

2. Presidential Regulation Number 95 of 2018 concerning Electronic-Based Government Systems (SPBE), which regulates the governance of electronic government systems, including data security and the continuity of public services.
3. Law Number 11 of 2008 concerning Electronic Information and Transactions (UU ITE) and its latest amendment, Law Number 19 of 2016, which regulates the principles of electronic document validity and electronic transaction security.

Despite the existence of this legal umbrella, the rapid development of information and communication technology often outstrips the ability of regulations to adapt. This gives rise to several legal issues:

1. A legal vacuum, particularly regarding the mechanism for state accountability for losses arising from electronic system failures or data leaks. Current regulations focus more on the technical aspects of issuing electronic certificates, but do not explicitly regulate the procedures for claiming compensation for those who suffer losses.
2. Legal ambiguity, particularly regarding the division of responsibilities between the state as the administrative organizer, the internal electronic system organizer, and third-party technology providers. The absence of clear regulations can create confusion in upholding community rights.
3. A gap between digital innovation and the protection of community legal rights, where administrative efficiency and service digitization may progress rapidly, but the principles of legality and legal certainty are neglected. This has the potential to create injustice for land rights holders.

To bridge the gap between technological advances and legal principles, several strategic steps can be taken:

#### *3.4.1 Harmonization of digital policy and administrative law*

The state needs to align technology policies, such as the digitalization of land registration, with the principles of state administrative law. Law Number 30 of 2014 concerning State Administration emphasizes the principles of legal certainty, professionalism, and accountability, which must be maintained in every digital innovation. This harmonization can be achieved through:

1. Establishing clear technical guidelines regarding electronic certificate issuance procedures, system error correction mechanisms, and electronic data management.
2. Integrating data security standards and system audits as part of administrative law obligations.

#### *3.4.2 Strengthening accountability mechanisms*

The principle of legality demands a clear accountability mechanism in the event of government error or negligence. Relevant legal bases include:

1. Article 1365 of the Civil Code, concerning liability for unlawful acts.
2. Article 53 paragraph (2) of Law Number 9 of 2004 and Law No. 5 of 1986 concerning the Administrative Court, which opens the opportunity for lawsuits against state administrative decisions.
3. Law No. 27 of 2022 concerning Personal Data Protection, concerning the state's responsibility to protect citizens' personal data.

By strengthening accountability mechanisms, the public has clear access to claim their rights if losses occur due to electronic system failure.

#### *3.4.3 Transparency and access to information*

To uphold the principles of legality and legal certainty, the state must provide transparency mechanisms and adequate public access to information. Article 28F of the 1945 Constitution guarantees everyone's right to information, while Law No. 14 of 2008 concerning Public Information Disclosure emphasizes the government's obligation to provide access to accurate, complete, and accountable information. In the context of electronic land certificates, transparency means the public can verify data, trace administrative procedures, and clearly understand their rights and obligations.

### *3.4.4 Adaptive regulation development*

Rapid technological developments require flexible regulations that remain based on legal principles. Countries need to develop adaptive regulations, namely rules that enable digital innovation while still ensuring legal certainty, rights protection, and administrative accountability. This could include:

1. Standards for periodic electronic system security audits.
2. Procedures for redressing rights in the event of system errors.
3. Division of responsibilities between government agencies, internal system administrators, and third parties.

With these steps, the principle of legality does not become an obstacle to technological progress, but rather a safeguard framework that ensures digital innovation remains based on legal certainty and justice for society.

## **4 CONCLUSION**

Based on the research results, electronic land certificates normatively have a valid legal basis through various laws and regulations and have the same evidentiary power as conventional certificates. However, substantive legal certainty depends heavily on the reliability of electronic systems, data security, and the professionalism of land administration officials. The state's responsibility lies with its role as a public service provider, which includes guaranteeing the validity of procedures, system security, personal data protection, and continuity of services. If administrative errors, negligence, or system failures occur that harm the public, the state can be held accountable through administrative, civil, or administrative courts. Legal accountability can be achieved through preventive and repressive mechanisms, although in practice, there are still obstacles to providing evidence due to limited public access to data and systems. The formal principle of legality has been met, but implementation still faces challenges, particularly regarding compensation mechanisms, division of responsibility, and restoration of rights. Therefore, it is necessary to harmonize digital policies with administrative law, strengthen accountability, increase transparency, and develop

adaptive regulations to ensure legal protection, justice, and legal certainty for land rights holders.

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Civil Code.

### **Authors' Contribution**

All authors contributed equally to the development of this article.

### **Data availability**

All datasets relevant to this study's findings are fully available within the article.

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