

## RECONSTRUCTING LEGAL CERTAINTY IN DIGITAL LAND REGISTRATION: A NORMATIVE STUDY OF ELECTRONIC CERTIFICATES IN INDONESIA

Kemas Indra Natanegara<sup>1</sup>, Yusriadi<sup>2</sup>, Ana Silviana<sup>3</sup>

<sup>1</sup>Doctoral Program in Law, Faculty of Law, Diponegoro University, Semarang

<sup>2,3</sup>Lecturer in Law, Faculty of Law, Diponegoro University, Semarang

Jl. Prof. Soedarto, SH., Tembalang, Semarang.

[kemasindranatanegara@students.undip.ac.id](mailto:kemasindranatanegara@students.undip.ac.id)

### ABSTRACT

*This study aims to analyze the adequacy of the applicable legal framework in ensuring the legal certainty of electronic land certificates and to formulate a model for reconstructing legal certainty to strengthen the validity and reliability of digital land registration. This research is a normative legal research with a statutory and conceptual approach, using primary and secondary legal materials that are analyzed qualitatively through legal interpretation methods and juridical argumentation.*

*The results of the study show that the existing legal framework has provided a normative basis for electronic certificates, but it has not fully guaranteed comprehensive legal certainty due to the potential for regulatory disharmonization, the regulation of evidentiary strength has not been optimal, and the security standards and state accountability mechanisms have not been rigorous. The reconstruction of legal certainty is needed through the harmonization of regulations, strengthening the legitimacy of proving electronic certificates, integrating cybersecurity standards in the land system, and establishing a transparent digital correction and audit mechanism. With a theoretical approach to legal protection, this reconstruction is expected to be able to realize a valid, reliable, accountable, digital land registration system that guarantees the protection of land rights in a sustainable manner within the framework of the Indonesian legal state.*

**Keywords:** Reconstruction, Law, Registration, Land, Digital, Certificate, Electronic.

## INTRODUCTION

### Background

Digital transformation in land administration in Indonesia is an inevitable inevitability along with the development of information technology and the demand for faster, more transparent, and accountable public services. Land registration as the main instrument for the protection of land rights as mandated in Article 19 of the UUPA occupies a strategic position in ensuring legal certainty for rights holders. In this context, digitalization through the application of electronic certificates is not just an administrative innovation, but part of the reconstruction of the land law system to be able to respond to the dynamics of modern society. However, the shift from a conventional system based on physical documents to an electronic system raises normative issues related to validity, proof, and data security guarantees that must be comprehensively studied within the framework of the state of law.<sup>1</sup>

Legal certainty in land registration is basically oriented towards the implementation of an orderly land administration that provides a guarantee of protection for rights holders and third parties. The negative publication system with a positive tendency adopted by Indonesia has the consequence that certificates are strong evidence, but it is still possible to prove otherwise through a court decision. In the context of digitalization, the characteristics of the publication system must be reconstructed to ensure legal certainty even though the medium of proof has changed to electronic. This change in medium has implications for updating the construction of norms regarding the authenticity, integrity, and accessibility of land data.<sup>2</sup>

The development of regulations through the Regulation of the Minister of ATR/BPN on Electronic Certificates shows that there are normative efforts of the state to adapt the land registration system to the digital era. However, the change in regulations requires a critical analysis of vertical and horizontal synchronization with the UUPA, Government Regulation No. 24 of 1997 concerning Land Registration, as well as laws and regulations in the field of

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<sup>1</sup> Boedi Harsono, *Indonesian Agrarian Law: The History of the Formation of UUPA, Its Content and Implementation* (Jakarta: Djambatan, 2008), p. 468.

<sup>2</sup> Urip Santoso, *Registration and Transfer of Land Rights* (Jakarta: Kencana, 2010), p. 45.

information and electronic transactions. Without adequate harmonization, potential conflicts of norms can undermine the legitimacy of electronic certificates as evidence of land rights.<sup>3</sup>

Digitization of land registration is also closely related to the principles of *good governance* in the implementation of public administration. Transparency, accountability, and efficiency are the main parameters of the success of electronic systems. However, the application of technology without the readiness of legal and institutional infrastructure has the potential to create new uncertainties, especially in terms of personal data protection and cybersecurity. Therefore, the reconstruction of legal certainty must consider the dimensions of comprehensive and risk-based governance.<sup>4</sup>

In the perspective of legal certainty theory, as stated by legal thinkers, certainty requires clarity of norms, consistency of application, and predictability of legal consequences. Electronic certificates as administrative law products must meet these three elements in order to provide a sense of security for the community. When a digital system is vulnerable to technical interference or cyberattacks, the aspect of legal certainty is not only determined by written norms, but also by the reliability of the technological system that supports it.<sup>5</sup>

Normatively, the existence of a certificate as evidence of land rights is a manifestation of preventive legal protection provided by the state to citizens. The transformation into an electronic certificate should not reduce the degree of protection. Instead, digitalization should strengthen the evidentiary system through a more accurate integration of spatial and juridical data. In this case, the reconstruction of legal certainty must ensure that the evidentiary power of electronic certificates is equivalent to even stronger than that of analog certificates.<sup>6</sup>

On the other hand, the practice of land disputes that is still high in Indonesia shows that the issue of legal certainty has not been fully realized in the conventional system. Digitization of land registration is expected to be able to minimize overlap of data and double certificates through the integration of national databases. However, without strict verification

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<sup>3</sup> Maria S.W. Sumardjono, *Land Policy: Between Regulation and Implementation* (Jakarta: Kompas, 2001), p. 112

<sup>4</sup> Ridwan HR, *State Administrative Law* (Jakarta: Rajawali Pers, 2016), p. 312

<sup>5</sup> Sudikno Mertokusumo, *The Discovery of Law: An Introduction* (Yogyakarta: Liberty, 2009), p. 160

<sup>6</sup> Philipus M. Hadjon, *Legal Protection for the People in Indonesia* (Surabaya: Bina Ilmu, 1987), p. 25

and validation mechanisms, potential digital errors can give rise to new disputes in different forms.<sup>7</sup>

The evidentiary aspect in civil procedure law is also relevant in discussing electronic certificates. The recognition of electronic documents as valid evidence under the ITE Law must be associated with the character of the certificate as an authentic deed issued by an authorized official. Normative reconstruction is needed to affirm the position of electronic certificates in the hierarchy of evidence and its evidentiary mechanism in court in the event of a dispute.<sup>8</sup>

The implementation of electronic systems also has implications for state responsibility in the event of a system error or data leak. Within the framework of the state of law, every administrative action must be legally accountable. Therefore, the reconstruction of legal certainty is not only concerned with the validity of legal products, but also administrative and civil accountability mechanisms in the event of losses due to digital system failures.<sup>9</sup>

The cybersecurity dimension is an important element in ensuring the integrity of electronic certificates. Digital land registration systems must be equipped with high information security standards to prevent data manipulation. Legal certainty in the digital context relies heavily on the assurance that stored data cannot be illegally altered. Thus, the technological aspect is an inherent part of the construction of modern land law.<sup>10</sup>

The reconstruction of legal certainty must also consider the principles of usefulness and justice. Digitalization that only benefits certain groups of people and ignores the access of people in remote areas has the potential to create new inequality. Therefore, electronic certificate policies must be designed to be inclusive by taking into account social and infrastructure readiness throughout Indonesia.<sup>11</sup>

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<sup>7</sup> Supriadi, *Agrarian Law* (Jakarta: Sinar Grafika, 2007), p. 198

<sup>8</sup> Subekti, *Evidentiary Law* (Jakarta: Pradnya Paramita, 2008), p. 35

<sup>9</sup> Jimly Asshiddiqie, *Indonesian Constitution and Constitutionalism* (Jakarta: Sinar Grafika, 2010), p. 123

<sup>10</sup> Budi Rahardjo, *Internet-Based Information System Security* (Bandung: PT Insan Infonesia, 2005), p. 78

<sup>11</sup> Satjipto Rahardjo, *Progressive Law: Liberating Law* (Jakarta: Kompas, 2009), p. 54

In the perspective of national agrarian law, land has a social function that contains both public and private dimensions at the same time. Therefore, any change in the land administration system must remain based on the principle of land social function as stipulated in the UUPA. Electronic certificates should not be understood solely as technical instruments, but as part of a system of regulating the control and use of land for the greatest possible prosperity of the people.<sup>12</sup>

Legal certainty in digital land registration also requires synchronization between textual data and spatial data. The integration of geographic information systems in electronic certificates allows for more precise accuracy of land parcel boundaries. However, data differences between digital maps and field conditions can trigger disputes if there is no regular and participatory data updates.<sup>13</sup>

A comparison with practices in several countries shows that land digitalization is generally accompanied by institutional reform and human resource capacity building. Without improving the competence of the apparatus, the digital system will only become an administrative change without an improvement in service quality. Therefore, the reconstruction of legal certainty must include structural and cultural reforms in the land bureaucracy.<sup>14</sup>

The strengthening of the legal basis of electronic certificates also needs to be studied from the perspective of the hierarchy of laws and regulations. If technical regulations have not been fully accommodated in the law, then there is a potential *normative gap* that can be used to challenge the legitimacy of the policy. Thus, regulatory reform at the legislative level is part of the agenda of reconstructing legal certainty.<sup>15</sup>

The presence of technology in the land law system also raises ethical issues and public trust. The public must be assured that electronic certificates have the same legal force and are

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<sup>12</sup> A.P. Parlindungan, *Land Registration in Indonesia* (Bandung: Mandar Maju, 1999), p. 23

<sup>13</sup> Adrian Sutedi, *The Transfer of Land Rights and Its Registration* (Jakarta: Sinar Grafika, 2011), p. 90

<sup>14</sup> Lawrence M. Friedman, *The Legal System: A Social Science Perspective* (New York: Russell Sage Foundation, 1975), p. 15

<sup>15</sup> Hans Kelsen, *Pure Theory of Law* (Berkeley: University of California Press, 1967), p. 221.

not easily hacked or forged. Public trust is an important social capital in realizing legal certainty, because laws that are not trusted will be difficult to enforce effectively.<sup>16</sup>

The reconstruction of legal certainty in digital land registration must also pay attention to the principle of personal data protection which is increasingly strengthening in the Indonesian legal system. Land data contains strategic information that is not only economic, but also social and political. Therefore, electronic systems must ensure data confidentiality and security in accordance with *data protection principles*.<sup>17</sup>

Methodologically, the normative study of electronic certificates requires an in-depth legislative and conceptual approach to assess the consistency of norms and their juridical implications. The analysis must be able to identify legal vacancies, norm conflicts, and the need for regulatory reform in order to strengthen legal certainty in the digital era.<sup>18</sup>

The reconstruction of legal certainty in digital land registration is not just an administrative technical update, but a normative reform that touches on regulatory, institutional, proof, accountability, and data protection aspects. Electronic certificates must be positioned as modern legal instruments that remain rooted in the basic principles of national agrarian law and the Indonesian state of law. This effort requires political commitment, technological readiness, and continuous regulatory reform so that the main goal of land registration, which is to provide certainty and legal protection for all Indonesian people, can truly be realized effectively and fairly.

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<sup>16</sup> Achmad Ali, *Revealing Legal Theory and Judicial Theory* (Jakarta: Kencana, 2009), p. 204.

<sup>17</sup> Edmon Makarim, *Telematics Law in Indonesia* (Jakarta: Rajawali Pers, 2010), p. 147

<sup>18</sup> Peter Mahmud Marzuki, *Legal Research* (Jakarta: Kencana, 2011), p. 93.

### Research Question

1. Is the current legal framework sufficient to guarantee legal certainty in the implementation of electronic land certificates in Indonesia?
2. How should legal certainty be reconstructed to strengthen the validity and reliability of digital land registration?

### THEORETICAL FRAMEWORK

1. The Theory of the State of Law

The main theory that is the basis for the analysis knife in this study is the Theory of the State of Law. The concept of the state of law is inseparable from its own pillar, namely the understanding of the rule of law. This understanding is a teaching that says that the supreme power lies in the existence of law or there is no other power whatsoever, except law. Many formulations are given to the definition of the State of Law to find the same formula, whether it is due to differences in the principles of the State of law that are adopted or because of the conditions of society and the times when the State of law is formulated.<sup>19</sup>

The concept of the state of law based on the area of legal tradition can be divided into two types, namely, the concept of the state of law *rechtsstaat* and the conception of the state of law, *the rule of law*. For the conception of the State, *rechtsstaat* law enforcement means law enforcement written in the Law in accordance with the notion of legalism that law is identical to the Law so that there is 'legal certainty'. For the conception of the state of law *the rule of law*, law enforcement does not mean the enforcement of written law, but the most important thing is the enforcement of legal justice, so that law enforcement does not mean law enforcement written in law alone, even the written law is more acceptable to be deviated by judges if it is felt that it does not meet the sense of legal justice.<sup>20</sup>

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<sup>19</sup> Ias Muhlashin, "The State of Law, Democracy and Law Enforcement in Indonesia," *Al-Qadau Journal: Islamic Family Justice and Law* 8, no. 1 (2021): 87–100.

<sup>20</sup> Jhonny Ibrahim, "Theory and Research Methods of Normative Law Bayu Media" (Surabaya, 2015).

The parameters of the state of law are measured from the fulfillment of various categorical elements, such as *supremacy of law, equality before the law, due process of law*, independence and impartiality of judiciary, and so on.<sup>21</sup> The relationship between law and democracy is that the two elements complement each other. Where the state of law without being equipped with democratic principles will actually lead to efforts to instrumentate the law by the state to repress its people.<sup>22</sup> On the one hand, freedom of opinion can be realized through demonstrations, but on the other hand, demonstrations, especially anarchist demonstrations, are also a violation of the law.

The consequence of the application of the State law is that the basis of the actions of the rulers and the people, the high legal position in a State. The principle of the state of law prioritizes the norms reflected in laws and regulations, while the principle of democracy prioritizes the participation of the community in the administration of government.<sup>23</sup> The fulfillment of elements in the state of law because the constitution is a protection of basic rights for citizens.

The concept of the legal state (*rechtsstaat*) is the main foundation in assessing whether the current legal framework is sufficient to ensure legal certainty in the implementation of electronic land certificates in Indonesia. In the paradigm of the state of law, every government action must be based on lawful, clear, and accountable laws. The application of electronic certificates as a product of land administration cannot be separated from the principle that the authority of state administrative officials is derived from applicable laws and regulations. Therefore, the evaluation of the adequacy of the legal framework must begin with testing whether the regulations

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<sup>21</sup>Satjipto Raharjo, 2007, *Building a Civil Police*, Jakarta: Kompas, p. 12

<sup>22</sup>Frans Hendra Winarta, 2011, *Legal Aid in Indonesia*, Jakarta, PT Gramedia Pustaka Utama, p. 29

<sup>23</sup>Jimly Asshiddiqie, *Constitution as the Foundation of a New Democratic Indonesia, (Points of Thought on the Balance of Executive and Legislative Power in the Context of Constitutional Amendments 1945, Paper, Presented at the VII National Law Seminar*, National Legal Development Agency, Ministry of Justice of the Republic of Indonesia, 1999. pp. 146-147.

governing electronic certificates have strong normative legitimacy in the national legal system.<sup>24</sup>

The rule of law requires the *supremacy of law* as the main principle in the administration of power. In the context of digital land registration, the rule of law requires that every digital transformation policy has a legal basis that does not conflict with higher regulations, including the Basic Agrarian Law and its implementing regulations. If technical regulations regarding electronic certificates do not have an adequate foothold in the hierarchy of laws and regulations, then potential legal uncertainty will arise. Therefore, the principle of the rule of law is the first parameter to test the adequacy of the current legal framework.<sup>25</sup>

One of the important elements of the rule of law is the *legality principle*, which requires that every government action must have a clear basis of authority. The issuance of electronic certificates as a form of state administrative decision must meet the requirements of legal attribution, delegation, or mandate. Without an explicit basis of authority, digitalization policies can be seen as beyond the limits of administrative authority. Thus, the analysis of the adequacy of the legal framework must assess whether the granting of authority to the Ministry of ATR/BPN in issuing electronic certificates has met the principles of legality formally and materially.<sup>26</sup>

In the state of law, legal certainty is a central value that must be realized through clear, unambiguous, and consistent norms. Legal certainty not only means the existence of written rules, but also includes consistency between norms and predictability in the application of the law. In the context of electronic certificates, legal certainty must be reflected in the clarity of the certificate's position as valid and strong evidence as conventional certificates. If the existing norms still give rise to multiple

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<sup>24</sup> Jimly Asshiddiqie, *Indonesian Constitution and Constitutionalism* (Jakarta: Sinar Grafika, 2010), p. 57.

<sup>25</sup> Hans Kelsen, *Pure Theory of Law* (Berkeley: University of California Press, 1967), p. 217.

<sup>26</sup> Ridwan HR, *State Administrative Law* (Jakarta: Rajawali Pers, 2016), p. 98

interpretations of the power of proof or the procedure for its cancellation, then the legal framework does not fully guarantee legal certainty.<sup>27</sup>

The principle of human rights protection is also an integral part of the rule of law. The right to land ownership is a constitutional right that must be protected by the state. The transformation towards an electronic system must not reduce the level of protection of these rights. Therefore, the legal framework of electronic certificates must be able to guarantee that there is no usurpation or loss of rights due to digital system errors. The evaluation of the adequacy of regulations must consider the extent to which the correction and protection mechanisms for citizens have been adequately regulated.<sup>28</sup>

The rule of law also demands a limitation of power through control and supervision mechanisms. In a digital system, control is not only carried out administratively, but also through auditable technological systems. If regulations have not regulated the mechanism for monitoring the integrity of electronic systems, then there are loopholes that can weaken legal certainty. Therefore, the adequacy of the legal framework must be tested from the perspective of whether there is a transparent and accountable supervisory system for the management of digital land data.<sup>29</sup>

The aspect of state accountability is also an important indicator in the state of law. In the event of a system error or data leak that harms rights holders, the state must provide a clear accountability mechanism. Without regulation on administrative and civil liability due to electronic system failures, the guarantee of legal certainty becomes weak. Therefore, the adequacy of the current legal framework must be analyzed from the point of view of whether regulations have explicitly regulated the form and limits of state accountability.<sup>30</sup>

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<sup>27</sup> Sudikno Mertokusumo, *The Discovery of Law: An Introduction* (Yogyakarta: Liberty, 2009), p. 160

<sup>28</sup> Philipus M. Hadjon, *Legal Protection for the People in Indonesia* (Surabaya: Bina Ilmu, 1987), p. 24

<sup>29</sup> Maria S.W. Sumardjono, *Land Policy: Between Regulation and Implementation* (Jakarta: Kompas, 2001), p.

<sup>30</sup> Jimly Asshiddiqie, *Introduction to Constitutional Law* (Jakarta: Rajawali Pers, 2006), p. 143

The state of law also contains the principle of *equality before the law*. The implementation of electronic certificates must ensure that all citizens have equal access to the digital land registration system. If digitalization actually creates discrimination due to limited infrastructure or digital literacy, then the goal of the state of law to realize justice and legal certainty has not been achieved. Therefore, the adequacy of the legal framework must be seen from its ability to ensure accessibility and non-discrimination.<sup>31</sup>

In the perspective of the hierarchy of norms, the state of law requires that any regulation must be in harmony with higher norms. If the regulation of electronic certificates only relies on ministerial regulations without strengthening at the legislative level, then there is a potential for normative vulnerability. Therefore, the adequacy test of the legal framework must pay attention to the vertical and horizontal conformity between regulations so as not to cause conflicts of norms in the future.<sup>32</sup>

Finally, the state of law demands that the law must be able to provide a sense of security and trust to the public. Land certificates, both in physical and electronic form, serve as a guarantee of certainty over the status of a person's rights. If regulations regarding electronic certificates have not been able to foster public trust because there are still normative gaps or regulatory weaknesses, then the legal framework has not fully met the principles of the rule of law. Therefore, the theory of the state of law is the main analytical instrument to comprehensively assess whether the existing legal system has sufficient to guarantee legal certainty in the implementation of electronic land certificates in Indonesia.<sup>33</sup>

## 2. Legal Protection Theory

Legal protection theory is an important conceptual foundation in answering how legal certainty should be reconstructed to strengthen the validity and reliability of digital land registration. In Philipus M. Hadjon's perspective, legal protection for the

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<sup>31</sup> Satjipto Rahardjo, *Progressive Law: The Law of Liberation* (Jakarta: Kompas, 2009), p. 52

<sup>32</sup> Hans Kelsen, *General Theory of Law and State* (Cambridge: Harvard University Press, 1945), p. 124

<sup>33</sup> Achmad Ali, *Uncovering Legal Theory and Judicial Theory* (Jakarta: Kencana, 2009), p. 204

people is a guarantee that government actions are not arbitrary and remain within the legal corridor. Electronic land certificates as a product of state administration must be positioned as a preventive legal protection instrument that provides a sense of security to land rights holders. Therefore, the reconstruction of legal certainty in the digital system must ensure that the mechanism for issuing, storing, and updating land data does not open space for violations of citizens' rights due to weaknesses in electronic systems.<sup>34</sup>

Within the framework of preventive legal protection, the state is obliged to build a digital land registration system that ensures data accuracy from the initial stage of collection and verification. The validity of electronic certificates is highly dependent on the accuracy of the physical and juridical data entered into the system. If there has been input or verification errors from the beginning, then electronic certificates have the potential to cause new disputes that actually erode legal certainty. The reconstruction of legal certainty must therefore start from improving administrative procedures and strengthening information technology-based operational standards.<sup>35</sup>

In addition to preventive protection, legal protection theory also emphasizes the importance of repressive protection through effective dispute resolution mechanisms. In the context of digitalization, repressive protection must include electronic data correction procedures, system audit mechanisms, and public access to legal remedies in the event of digital errors. Reconstructing legal certainty is not enough just to build sophisticated electronic systems, but it must also provide a quick and transparent path of correction in the event of administrative errors or system disruptions.<sup>36</sup>

Legal certainty in digital land registration must also be linked to the guarantee of the power of electronic certificates to prove them. As evidence of land rights, certificates have a central position in civil evidentiary law. The reconstruction of legal certainty must ensure that electronic certificates have the same evidentiary power as

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<sup>34</sup> Philipus M. Hadjon, *Legal Protection for the People in Indonesia* (Surabaya: Bina Ilmu, 1987), p. 2

<sup>35</sup> Urip Santoso, *Registration and Transfer of Land Rights* (Jakarta: Kencana, 2010), p. 52

<sup>36</sup> Ridwan HR, *State Administrative Law* (Jakarta: Rajawali Pers, 2016), p. 328.

analog certificates, both in terms of authenticity and integrity. Without this guarantee, the reliability of digital systems will be questioned in judicial practice.<sup>37</sup>

Legal protection theory also demands that the state be held accountable for every administrative action that causes harm. In digital systems, potential losses can arise due to hacking, data manipulation, or system failure. Therefore, the reconstruction of legal certainty must include clear norms regarding the government's responsibility in the event of losses due to the land electronic system. This principle is in line with the concept of the state of law which places the government as a subject who can be held legally accountable.<sup>38</sup>

Furthermore, legal protection in the digital era requires information security guarantees as an integral part of legal certainty. The integrity and authenticity of land data must be maintained through a reliable cybersecurity system. The reconstruction of legal certainty must integrate digital security standards in land law norms so that the validity of electronic certificates depends not only on the text of the regulation, but also on a secure and tested technological system.<sup>39</sup>

The reconstruction of legal certainty must also pay attention to the aspect of regulatory harmonization so that there is no conflict of norms between land law and information technology law. Legal protection can only be realized if there is harmony between the regulations on land registration and the provisions on electronic documents. Regulatory inconsistencies have the potential to create uncertainty in practice, especially when disputes involving electronic evidence occur.<sup>40</sup>

From a legal protection perspective, public participation is also an important element in strengthening the reliability of digital systems. The public must be given access to check and verify land data online to prevent errors or manipulations. This transparency is a form of preventive protection that allows the public to play an active

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<sup>37</sup> Subekti, *The Law of Proof* (Jakarta: Pradnya Paramita, 2008), p. 41

<sup>38</sup> Jimly Asshiddiqie, *Indonesian Constitution and Constitutionalism* (Jakarta: Sinar Grafika, 2010), p. 135

<sup>39</sup> Budi Rahardjo, *Internet-Based Information System Security* (Bandung: PT Insan Infonesia, 2005), p. 83.

<sup>40</sup> Maria S.W. Sumardjono, *Land Policy: Between Regulation and Implementation* (Jakarta: Kompas, 2001), p.

role in maintaining data accuracy. Without public participation, digital systems are vulnerable to administrative irregularities.<sup>41</sup>

Legal protection in the context of reconstruction must also pay attention to the dimension of social justice. Digitalization must not create exclusion for people who have limited access to technology. Therefore, the state is obliged to provide assistance mechanisms and alternative services so that every citizen continues to receive the same legal protection in the digital land registration system. This principle of justice is important so that legal certainty is not only formal, but also substantive.<sup>42</sup>

In the end, legal protection theory emphasizes that the reconstruction of legal certainty in digital land registration must be carried out comprehensively by combining preventive and repressive protection, proof guarantees, state responsibility, system security, regulatory harmonization, and access to justice for all people. Electronic certificates will only have validity and reliability if all of these elements are integrated in a legal system that is consistent and adaptive to technological developments.<sup>43</sup>

## RESEARCH METHODOLOGY

This research is a normative legal research that focuses on the analysis of the legal norms that govern the application of electronic land certificates in the digital land registration system in Indonesia. Normative legal research was chosen because the main object of study is laws and regulations, legal principles, and doctrines that are relevant to legal certainty and legal protection in land administration. Through this approach, the research does not focus on empirical field data, but on the consistency, coherence, and adequacy of norms in ensuring the validity and reliability of electronic certificates as evidence of land rights. Thus, the focus of the research is directed at the systematic and argumentative evaluation and reconstruction of the existing legal framework.<sup>44</sup>

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<sup>41</sup> Adrian Sutedi, *The Transfer of Land Rights and Its Registration* (Jakarta: Sinar Grafika, 2011), p. 101

<sup>42</sup> Satjipto Rahardjo, *Progressive Law: The Law of Liberation* (Jakarta: Kompas, 2009), p. 60.

<sup>43</sup> Sudikno Mertokusumo, *The Discovery of Law: An Introduction* (Yogyakarta: Liberty, 2009), p. 171

<sup>44</sup> Peter Mahmud Marzuki, *Legal Research* (Jakarta: Kencana, 2011), p. 35

The approaches used in this study include a statutory *approach* and a *conceptual approach*. The legislative approach is carried out by examining the Basic Agrarian Law, Government Regulations on Land Registration, regulations on electronic certificates, and the Electronic Information and Transaction Law to assess the vertical and horizontal harmonization between norms. Meanwhile, a conceptual approach is used to analyze the concepts of legal certainty, legal protection, legal validity, and reliability of digital systems from the perspective of legal theory. The combination of these two approaches allows researchers to identify gaps in norms and potential regulatory conflicts in the digital land registration system.<sup>45</sup>

The types of legal materials used consist of primary, secondary, and tertiary legal materials. Primary legal materials include laws and regulations and court decisions relevant to electronic certificates. Secondary legal materials include textbooks on agrarian law, state administrative law, evidentiary law, and scientific journals that discuss the digitization of public administration. The tertiary legal materials are in the form of legal dictionaries and encyclopedias that help clarify terminology. The collection of legal materials is carried out through systematic and structured literature studies, including searching academic databases and official government documentation.<sup>46</sup>

The technique of analyzing legal materials is carried out qualitatively using legal interpretation methods, including grammatical, systematic, and teleological interpretation. Grammatical interpretation is used to understand the textual meaning of norms regarding electronic certificates, while systematic interpretation aims to assess the relationship between regulations in a complete legal system. Teleological interpretation is used to examine the goals of lawmakers in ensuring legal certainty through the digitization of land registration. Through this technique, the research was able to identify normative weaknesses that affect the validity and reliability of the digital land registration system.<sup>47</sup>

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<sup>45</sup> Johnny Ibrahim, *Theory and Methodology of Normative Law Research* (Malang: Bayumedia, 2006), p. 302

<sup>46</sup> Soerjono Soekanto and Sri Mamudji, *Normative Legal Research: A Brief Review* (Jakarta: Rajawali Pers, 2001), p. 13

<sup>47</sup> Sudikno Mertokusumo, *Legal Discovery: An Introduction* (Yogyakarta: Liberty, 2009), p. 57

The nature of this research is evaluative and prescriptive. Evaluative because it assesses whether the existing legal framework is adequate in ensuring the legal certainty of electronic certificates, and prescriptive because it formulates a more ideal legal reconstruction model to strengthen legal protection and the reliability of digital systems. The reconstruction is carried out by integrating the theory of legal certainty and the theory of legal protection as a conceptual basis in formulating regulatory reform and strengthening the governance of the land electronic system. With this approach, the research is expected to produce systematic and applicable normative recommendations for strengthening the digital land registration system in Indonesia.<sup>48</sup>

## RESEARCH RESULTS

### **The current legal framework guarantees legal certainty in the implementation of electronic land certificates in Indonesia**

The implementation of electronic land certificates in Indonesia is part of the digital transformation of land administration which aims to improve the efficiency, transparency, and accountability of public services. Nevertheless, the fundamental question that must be answered is whether the current legal framework has sufficiently guaranteed legal certainty in the perspective of the theory of the state of law. In the conception of the state of law (*rechtsstaat*), every act of government must be based on clear, written, and accountable law. Therefore, the digitization of land certificates is not only an administrative technical innovation, but must be placed within a framework of the rule of law that guarantees the protection of citizens' rights.<sup>49</sup>

The theory of the state of law asserts that law must be the basis and limit for government actions. In the context of digital land registration, the issuance of electronic certificates by the National Land Agency (BPN) must have strong normative legitimacy. The Basic Agrarian Law (UUPA) and Government Regulation Number 24 of 1997 concerning Land Registration are the main basis of the national land system. However, both regulations were

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<sup>48</sup> Philipus M. Hadjon, *Legal Protection for the People in Indonesia* (Surabaya: Bina Ilmu, 1987), p. 30

<sup>49</sup> Jimly Asshiddiqie, *Indonesian Constitution and Constitutionalism* (Jakarta: Sinar Grafika, 2010), p. 56

born before the digital era, so they have not explicitly regulated the electronic certificate mechanism. This condition raises questions about the adequacy of the legal basis in ensuring the certainty of the digital system.<sup>50</sup>

From the perspective of the formal legal state, legal certainty requires clear written regulations that are not multi-interpreted. Regulations regarding electronic certificates are currently mostly regulated in ministerial regulations, which are hierarchically under the law. The absence of explicit regulation at the legal level has the potential to create a *normative gap* that can be questioned in terms of legitimacy. The rule of law requires that any strategic policy concerning citizens' civil rights has a strong legal basis at the legislative level.<sup>51</sup>

The principle of legality as a pillar of the state of law requires that every administrative action of the government is based on legitimate authority. In the context of electronic certificates, BPN's authority to issue electronic documents must be supported by clear attribution or delegation in laws and regulations. If this authority is only interpreted extensively from the old norms, then there is a potential violation of the principle of legality. Therefore, legal certainty requires the formulation of firm authority in explicit norms governing the digitization of land registration.<sup>52</sup>

The state of law also demands the protection of property rights as part of citizens' constitutional rights. Land certificates are a strong proof of ownership that has great economic and social implications. The change of the form of the certificate to electronic should not reduce the guarantee of protection of these rights. From the perspective of constitutionalism, any policy concerning property rights must be tested for conformity with the principles of human rights protection and legal certainty.<sup>53</sup>

The negative publication system with a positive tendency adopted in the registration of Indonesian land provides strong evidentiary power to certificates. However, this system still opens up the opportunity for lawsuits if there is a legal defect. In the context of electronic certificates, it is necessary to ensure that the evidentiary strength is not lower than that of

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<sup>50</sup> Boedi Harsono, *Indonesian Agrarian Law* (Jakarta: Djambatan, 2008), p. 470

<sup>51</sup> Hans Kelsen, *Pure Theory of Law* (Berkeley: University of California Press, 1967), p. 212.

<sup>52</sup> Ridwan HR, *State Administrative Law* (Jakarta: Rajawali Pers, 2016), p. 98

<sup>53</sup> Jimly Asshiddiqie, *Introduction to Constitutional Law* (Jakarta: Rajawali Pers, 2006), p. 132

conventional certificates. If not, then the principle of legal certainty that characterizes the state of law can be reduced.<sup>54</sup>

From the point of view of the theory of the state of material law, legal certainty concerns not only the formality of norms, but also substantive justice and the effectiveness of its application. Electronic certificate regulations must be able to ensure data integrity, system security, and service accessibility for the entire community. If the digital system is vulnerable to hacking or technical errors, then substantive legal certainty is not fully guaranteed even though written norms are available.<sup>55</sup>

The existing legal framework must also be tested from the aspect of harmonization with the Electronic Information and Transaction Law (ITE Law). The recognition of electronic documents as valid evidence in the ITE Law provides additional legitimacy for electronic certificates. However, this harmonization must be carried out systematically so that there is no conflict of norms in judicial practice. The asynchronization of the arrangement can reduce the predictability of the law which is the main element of the state of law.<sup>56</sup>

In addition to normative aspects, the state of law also demands accountability of government administrators. In digital systems, potential system errors or data leaks must be anticipated through a clear accountability mechanism. Without an explicit regulation of state responsibility, legal certainty for electronic certificate holders can be disrupted if there are losses due to system disruptions.<sup>57</sup>

The transparency aspect is also an important indicator in assessing the adequacy of the legal framework. The state of law requires the disclosure of information so that the public can monitor government actions. In a digital land registration system, public access to land status information must be guaranteed without violating the principle of personal data protection. The balance between transparency and data protection is a normative challenge that must be answered by the existing legal framework.<sup>58</sup>

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<sup>54</sup> Urip Santoso, *Registration and Transfer of Land Rights* (Jakarta: Kencana, 2010), p. 47

<sup>55</sup> Sudikno Mertokusumo, *Legal Discovery* (Yogyakarta: Liberty, 2009), p. 160.

<sup>56</sup> Edmon Makarim, *Telematics Law in Indonesia* (Jakarta: Rajawali Pers, 2010), p. 118

<sup>57</sup> Philipus M. Hadjon, *Legal Protection for the People in Indonesia* (Surabaya: Bina Ilmu, 1987), p. 30

<sup>58</sup> Maria S.W. Sumardjono, *Land Policy* (Jakarta: Kompas, 2001), p. 121.

The current legal framework also needs to be analyzed in terms of procedural certainty. The state of law demands clear, simple, and non-discriminatory administrative procedures. If electronic certificate regulations have not fully regulated procedures for data correction, information updates, or electronic certificate cancellation, then there are loopholes that have the potential to cause legal uncertainty in the future.<sup>59</sup>

In terms of institutional structure, the state of law requires professional and competent institutions in implementing norms. Digitization of land certificates requires human resources who understand legal and information technology aspects at the same time. If institutional readiness is not optimal, then the effectiveness of norms in ensuring legal certainty can be hampered.<sup>60</sup>

Furthermore, the principle of protection of legitimate expectation in the state of law is also relevant. Analog certificate holders who have previously acquired their rights must be assured that the switch to an electronic system does not harm their legal position. Without this guarantee, public trust in the land system can decline and disrupt legal stability.<sup>61</sup>

The state of law also requires a mechanism for testing and supervision of administrative policies. Electronic certificates as a strategic policy must be open to judicial testing if they are considered to be contrary to higher regulations. The availability of this control mechanism is part of the system of checks and balances that ensures legal certainty.

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In practice, there is still public resistance and doubt to electronic certificates. This shows that legal certainty is determined not only by written norms, but also by social acceptance. An effective state of law must be able to build public trust through socialization, education, and security assurance of digital systems.<sup>63</sup>

If reviewed comprehensively, the current legal framework has provided an initial normative basis for the implementation of electronic certificates through a combination of land regulations and information technology regulations. However, from the perspective of

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<sup>59</sup> Adrian Sutedi, *Transition of Land Rights and Its Registration* (Jakarta: Sinar Grafika, 2011), p. 94

<sup>60</sup> Lawrence M. Friedman, *The Legal System* (New York: Russell Sage Foundation, 1975), p. 16.

<sup>61</sup> Achmad Ali, *Revealing Legal Theory* (Jakarta: Kencana, 2009), p. 210.

<sup>62</sup> Jimly Asshiddiqie, *Indonesian Constitution and Constitutionalism*, p. 147.

<sup>63</sup> Satjipto Rahardjo, *Progressive Law* (Jakarta: Kompas, 2009), p. 62.

the theory of the state of law, the basis still needs to be strengthened at the legal level so that the legitimacy and certainty of the law are stronger. The absence of explicit regulations in the UUPA regarding digitalization is one of the structural weaknesses that need to be corrected.

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Strengthening regulations at the legislative level will clarify the attribution of authority, evidentiary power, and state accountability mechanisms. This step is important so that the implementation of electronic certificates is not only administratively legal, but also constitutionally strong. The state of law requires that fundamental changes in the public administration system must be accompanied by a legal basis that is hierarchically equivalent to the norms being changed.<sup>65</sup>

In addition, the harmonization between land regulations and personal data protection needs to be strengthened. Land data has strategic and sensitive value so it requires adequate legal protection. Without strong data protection, legal certainty in digital systems can be threatened by the risk of misuse of information.<sup>66</sup>

Thus, from the perspective of state of law theory, the current legal framework can be said to have provided the initial foundation for the implementation of electronic land certificates, but it has not been fully optimal in guaranteeing comprehensive legal certainty. Strengthening the legal basis at the legal level, harmonizing regulations, and regulating state responsibility are important steps in strengthening the legitimacy and stability of the digital land registration system.

Ultimately, legal certainty in the state of law is determined not only by the existence of norms, but by the consistency, legitimacy, effectiveness, and social acceptance of those norms. Therefore, a critical evaluation of the existing legal framework is an important prerequisite in ensuring that the implementation of electronic land certificates is truly in line with the fundamental principles of the Indonesian legal state.

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<sup>64</sup> Boedi Harsono, *Indonesian Agrarian Law*, p. 489

<sup>65</sup> Hans Kelsen, *Pure Theory of Law*, p. 230

<sup>66</sup> Edmon Makarim, *Telematics Law in Indonesia*, p. 142

## Legal certainty is reconstructed to strengthen the validity and reliability of digital land registration

The reconstruction of legal certainty in digital land registration must be placed within the framework of legal protection theory that places the state as the main guarantor of citizens' rights to land. In Philipus M. Hadjon's perspective, legal protection contains preventive and repressive dimensions that aim to prevent abuse of authority while providing a redress mechanism when rights violations occur. In the context of electronic certificates, legal certainty is not enough to be interpreted as clarity of written norms, but also as a guarantee that the digital system does not cause new losses for land rights holders. Therefore, the reconstruction of legal certainty must ensure that digital transformation remains within the corridor of constitutional protection of property rights and the right to legal certainty.<sup>67</sup>

The dimension of preventive legal protection requires that from the stage of regulatory formulation, the state develops clear, systematic, and non-multi-interpreted norms regarding the position of electronic certificates. Research in public administration journals shows that the digitization of public services that is not accompanied by comprehensive regulations has the potential to cause new uncertainties. In the digital land registration system, legal certainty must be reconstructed through harmonization between agrarian law and information technology law so that there is no conflict of norms regarding the evidentiary power of electronic documents. This reconstruction aims to strengthen the juridical validity of electronic certificates as valid and binding evidence.<sup>68</sup>

Preventive legal protection also requires strict data verification and validation standards in the digital land registration system. Many international studies confirm that the failure of digital land systems often stems from weaknesses in data governance, not just regulation. Therefore, the reconstruction of legal certainty must include the establishment of a legally and technically binding national standard for the integrity of land data. Thus, the

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<sup>67</sup> Philipus M. Hadjon, "Legal Protection for the Indonesian People," *Yuridika* 1, no. 1 (1986): 4–5.

<sup>68</sup> Siti Nurhayati, "Digitalization of Public Services and the Challenge of Legal Certainty," *Journal of Rechts Vinding* 9, no. 3 (2020): 412–414

validity of electronic certificates is not only guaranteed by legal norms, but also by standardized technological systems.<sup>69</sup>

In the perspective of repressive legal protection, the reconstruction of legal certainty must ensure the availability of a fast and transparent mechanism for the correction and cancellation of electronic data. Digital land disputes can arise due to system errors, data duplication, or digital manipulation. Therefore, the legal system must provide effective administrative and judicial procedures to restore the rights of citizens. Objection mechanisms, digital audits, and independent supervision are important parts of repressive legal protection in the digital era.<sup>70</sup>

The reconstruction of legal certainty must also strengthen the principle of state accountability for any failure of the digital system. The theory of legal protection places the government as a legal subject who can be held accountable in the event of losses due to administrative actions. In the digital context, security system failures or data leaks should be positioned as clear administrative responsibilities. Strengthening this accountability norm will increase public trust in electronic certificates as a product of state law.<sup>71</sup>

The reliability of digital land registration also depends on the integrity of the cybersecurity system. International literature shows that digital land registries are vulnerable to cyberattacks that can illegally alter ownership data. Therefore, the reconstruction of legal certainty must integrate legal obligations related to cybersecurity standards in land regulations. With this approach, legal protection is not only normative, but also technological.

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The aspect of public participation is also an important element in the perspective of legal protection. Transparency of access to land data allows the community to exercise social control over the digital system. Comparative studies show that countries with land data disclosure systems have lower dispute rates. Therefore, the reconstruction of legal certainty

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<sup>69</sup> Jaap Zevenbergen and Christiaan Lemmen, "Land Administration Systems: A Review of Developments," *Land Use Policy* 49 (2015): 546–548.

<sup>70</sup> Maria S.W. Sumardjono, "Legal Certainty in Land Registration and Its Benefits for Banking and Property Business," *IUS QUIA IUSTUM Law Journal* 14, no. 4 (2007): 455–457.

<sup>71</sup> Endang Retnowati, "Government Responsibility in Electronic-Based Public Services," *Indonesian Legislative Journal* 17, no. 2 (2020): 233–235.

<sup>72</sup> David Fairlie, "Digital Security and Land Registries," *Computer Law & Security Review* 36 (2020): 105–108.

must include strengthening public access to online land information while maintaining the protection of personal data.<sup>73</sup>

Legal protection in the digital context must also consider the protection of personal data as part of citizens' constitutional rights. Land data contains strategic information that if misused can cause economic and social losses. Therefore, the reconstruction of legal certainty must ensure the integration of data protection principles in the digital land registration system. This will strengthen the validity and public trust in electronic certificates.<sup>74</sup>

Furthermore, the reconstruction of legal certainty must clarify the position of electronic certificates in the civil proof system. The national legal journal emphasizes the importance of explicit recognition of electronic documents as evidence that has the same legal force as physical documents. Without strengthening the norms of proof, the reliability of electronic certificates will continue to be debated in judicial practice. Strengthening the legitimacy of proof is an integral part of preventive legal protection.<sup>75</sup>

The reconstruction of legal certainty must also pay attention to the gap in access to technology in society. Digitalization that is not inclusive has the potential to create new injustices, especially for people in remote areas. The theory of legal protection requires fair and non-discriminatory treatment in public services. Therefore, the state should provide a hybrid service mechanism and legal assistance so that all citizens obtain equal protection.<sup>76</sup>

The reconstruction of legal certainty also requires institutional reform to be able to manage the digital system professionally. International studies show that the success of digital land registry is greatly influenced by institutional capacity and human resources. Without strengthening the institutional structure, good legal norms will not be effective. Therefore, legal protection must be expanded to include land administration governance reform.<sup>77</sup>

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<sup>73</sup> Rohan Bennett et al., "Transparency in Land Administration," *Land Use Policy* 81 (2019): 725–727.

<sup>74</sup> Edmon Makarim, "Protection of Personal Data in Electronic Systems," *Journal of Law & Development* 48, no. 4 (2018): 802–804.

<sup>75</sup> Ahmad Redi, "The Position of Electronic Documents as Evidence," *Constitutional Journal* 16, no. 2 (2019): 356–358.

<sup>76</sup> Tri Hayati, "Social Justice in Agrarian Reform," *Journal of Law & Development* 47, no. 3 (2017): 338–340

<sup>77</sup> Daniel Steudler et al., "Institutional Aspects of Land Administration," *Survey Review* 52, no. 372 (2020): 130–132

Furthermore, the reconstruction of legal certainty must integrate the *prudential principle* in the management of digital systems. This principle demands that every data update be done with multi-layered verification to prevent administrative errors. The prudential approach is a form of preventive legal protection that is very relevant in electronic systems.<sup>78</sup>

The aspect of independent audit and supervision is also an important part of the reconstruction of legal certainty. Digital systems must be auditable on a regular basis to ensure data integrity and consistency. This audit mechanism is a form of repressive legal protection that prevents abuse of authority. With strong supervision, the validity and reliability of digital land registration will be increasingly guaranteed.<sup>79</sup>

The reconstruction of legal certainty also needs to strengthen the principle of spatial and juridical data integration nationally. Many land disputes arise due to inconsistencies between maps and administrative data. Integration based on geospatial technology regulated by law will strengthen the validity of electronic certificates. This approach has proven effective in several countries that implement integrated digital cadastral systems.<sup>80</sup>

Ultimately, the reconstruction of legal certainty in the perspective of legal protection theory must be carried out comprehensively by combining strengthening regulations, system security, state accountability, transparency, and access to justice. Legal protection must not stop at written norms, but must be realized in a secure, accountable, and inclusive digital system. With this approach, the validity and reliability of digital land registration will be built in a sustainable manner and be able to answer the challenges of future technological developments.<sup>81</sup>

## CONCLUSION

The results of the study show that :

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<sup>78</sup> Suyud Margono, "The Principle of Prudence in Government Administration," *IUS QUIA IUSTUM Legal Journal* 25, no. 2 (2018): 211–213

<sup>79</sup> Bambang Eko Suhariyanto, "Electronic-Based Public Administration Supervision," *Journal of Bina Mulia Hukum* 4, no. 2 (2019): 180–182

<sup>80</sup> Abbas Rajabifard et al., "Spatially Enabled Government and Land Administration," *International Journal of Geographical Information Science* 33, no. 1 (2019): 5–7

<sup>81</sup> Jaap Zevenbergen, "Land Administration and the Pursuit of Legal Certainty," *Land Use Policy* 87 (2019): 104–106.

- 1) The existing legal framework has provided a normative basis for the implementation of electronic land certificates through land regulation and electronic document recognition, but it has not fully guaranteed comprehensive legal certainty. There is still the potential for disharmonization of norms, the regulation of electronic certificate proving power has not been optimal, and there is no firm system security standards and state accountability for digital failures. Thus, the available legal certainty is still formal-normative and requires substantive, technical, and institutional strengthening in order to truly provide effective legal protection.
- 2) Legal certainty in digital land registration must be reconstructed through strengthening preventive and repressive legal protection, namely by harmonizing regulations, affirming the position of electronic certificates as strong evidence, integrating cybersecurity standards, and regulating correction mechanisms and state accountability for system errors. This reconstruction must also ensure transparency, accountability, and inclusive access so that the validity and reliability of the digital land registration system is truly able to protect land rights in a sustainable manner within the framework of the rule of law.

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