

Legal Analysis On Smart Contract For Land Registration In Digital Era In Indonesia

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Abstrak:

Pada satu dekade terakhir, kehidupan masyarakat semakin pesat bergerak memasuki era digital yang sering disebut era industri 4.0. Meskipun diawali dari kegiatan bisnis, berbagai aktivitas dalam dunia maya juga mulai dikenal di bidang pelayanan publik seperti e-signature, e-litigation, e-court, e-registration, dukcapil online dan sebagainya. Masifnya berbagai aktivitas elektronik tersebut didorong oleh derasnya arus kemajuan dan inovasi teknologi salah satunya smart contract pada sistem blockchain. Aplikasi smart contract blockchain digadang dapat digunakan selain berkaitan dengan cryptocurrency atau aset kripto, yakni antara lain untuk e-voting atau pemilu, rekam medis dan pendaftaran tanah. Pada tahun 2021, Menteri Agraria dan Tata Ruang/Kepala Badan Pertanahan Nasional RI mengeluarkan Peraturan Nomor 1 Tahun 2021 tentang Sertipikat Elektronik yang mulai berlaku sejak tanggal 12 Januari 2021. Peraturan tersebut memungkinkan dikeluarkannya Sertipikat Elektronik untuk pendaftaran tanah pertama kali atau untuk penggantian sertipikat lama menjadi Sertipikat Elektronik. Peraturan tersebut dapat disimpulkan merupakan implementasi Road Map Transformasi Digital yang dikeluarkan oleh Kementerian Agraria dan Tata Ruang/ Badan Pertanahan Nasional. Pada

Road Map tersebut, salah satu poin yang disebutkan untuk tahun 2022 adalah Implementasi smart contract, smart escrow. Tujuan penelitian ini untuk menganalisis tentang dinamika pengaturan pendaftaran tanah para era digital di Indonesia dan bagaimana potensi penggunaan smart contract untuk pendaftaran tanah di Indonesia. Jenis penelitian ini adalah penelitian yuridis normatif. Metode pengumpulan data yang digunakan adalah studi kepustakaan. Alat yang digunakan dalam penelitian ini adalah data sekunder berupa dokumen yang terdiri dari bahan hukum primer, bahan hukum sekunder, dan bahan non hukum. Data tersebut dianalisis secara kualitatif kemudian disajikan secara deskriptif

Kata Kunci: Smart Contract, Blockchain, Pendaftaran Tanah

Abstract: *During the past decade, people's lives have swiftly shifted towards the digital era, also known as industrial era 4.0. Although it began with business activities, many cyberspace activities, such as e-signature, e-litigation, e-court, e-registration, online Population and Civil Registration, and so on, are now being recognized in the sphere of public services. The massiveness of various electronic activities is driven by the rapid flow of technology developments and inventions, one of which is the smart contract on the blockchain system. Blockchain-based smart contracts are expected to be utilized for purposes other than cryptocurrencies or crypto assets, such as e-voting or elections, medical data, and land registration. In 2021, the Minister of Agrarian Affairs and Spatial Planning/Head of the Republic of Indonesia's National Land Agency issued Regulation Number 1 of 2021 concerning Electronic Certificates, which went into force on January 12, 2021. The regulation permits the issuance of Electronic Certificates for first-time land registrations as well as the replacement of outdated certificates with Electronic Certificates. The regulation is the implementation of the Digital Transformation Roadmap provided by the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency. One of the points listed in the Road Map for 2022 is the implementation of smart contracts and smart escrow. This research aims to analyze the dynamics of land registration regulation in the digital era in Indonesia, as well as the potential use of smart contracts for land registration in*

Indonesia. This type of research is normative juridical research. The data collection method used is a literature study. This research uses secondary data in the form of primary legal materials, secondary legal materials, and non-legal materials. The data is qualitatively assessed and then provided in a descriptive format

Keywords: *Smart Contract, Block chain, Land Registration*

INTRODUCTION

In the last decade, people's lives have swiftly shifted to the digital era called industrial era 4.0. Around the end of 2016, the development of community activities began to experience a shift from conventional to digital technology. Digital technology-based industries are entering various sectors, from accommodation services (including transportation and lodging), peer-to-peer lending-based financial technology, online marketplaces, and expedition services, to online-based people transportation. Industry 4.0 is visualized as a collection of devices, machines, production centers, and products that can independently communicate, exchange information, request actions, and control each other by what is defined as Cyber-Physical Systems (CPS). Key components of Industry 4.0 include 'The Internet of Things (IoT)', 'Internet of Services (IoS)', and 'Cyber-Physical Systems (CPS) [1].

Although it started with business activities, various community activities in cyberspace are also known in the field of public services, such as e-signature, e-litigation, e-court, e-registration, and so on. The massive variety of electronic activities is driven by the swift flow of technological progress and innovation, one of which is blockchain. Blockchain is a decentralized, secure, and invulnerable data storage system [2][3][4]. Since Satoshi Nakamoto first introduced it in 2009 through the Bitcoin cryptocurrency network, blockchain technology has increasingly expanded and developed, ranging from use in finance, and decentralized organizations, to peer-to-peer collaboration [3][5][6].

Blockchain is also starting to be used to build a program to automate the execution of a contract by incorporating a series of device language codes into blockchain technology. This is known as a smart contract [3]. These contracts are used in various fields ranging from trading, insurance, and crowdfunding, to services. Blockchain smart contract applications are expected to be used in addition to cryptocurrencies or crypto assets, including for e-voting or elections, medical records, and land registration.

In 2021, the Minister of Agrarian Affairs and Spatial Planning/Head of the National Land Agency of the Republic of Indonesia issued Regulation Number 1 of 2021 concerning Electronic Certificates, which came into force on January 12, 2021. The regulation allows the issuance of Electronic Certificates for first-time land registration or for replacing old certificates with Electronic certificates. The regulation can be concluded as implementing the Digital Transformation Road Map issued by the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency [7]. In the Road Map, one of the points mentioned for 2022 is the implementation of smart contracts, smart escrow Agency[8].

The purpose of this study is to analyze the dynamics of land registration arrangements in the digital era in Indonesia and how the potential use of smart contracts for land registration in Indonesia is. The urgency of this research is quite important, because the use-case of the current development of smart contract blockchain technology is not only related to crypto currency or crypto assets or in the business field, but it is also possible to use it in public service systems.

METHOD

This type of research is normative juridical research, with the objective of conducting studies and research on the development of land registration arrangements in the digital era and the potential use of smart contracts for land registration. The results of this research are intended to contribute to knowledge and comprehension of topics that are being extensively discussed at both the national and international levels in relation to smart contract use-cases in the field of public land registration services. The data collection method used is literature study. This research uses secondary data in the form of materials that include primary legal materials, secondary legal materials, and non-legal materials. This research will begin by collecting data and information from many library sources to outline the evolution of land registration arrangements in the contemporary digital era, rules as a legal basis, and legal challenges with smart contracts for land registration. The data analysis method used was qualitative data analysis, which involved connecting the results of literature research produced from secondary data. Then the results of the analysis are presented as follows: descriptive method, descriptive method, specifically by explaining, describing, and outlining information related to the development of land registration arrangements in the digital era, and by analyzing the legal basis for the potential use of smart contracts for land registration.

RESULTS AND DISCUSSION

The Dynamics of Land Registration in Indonesia

Land registration in Indonesia is carried out by adhering to a negative publication system, although it still contains positive elements. This can be interpreted that, the Government will guarantee the truth of the data presented in the certificate after 5 years of land registration [9][10]. Time limitation is a form of legal protection for the true land owner, so a lawsuit is possible by parties who feel entitled within 5 years from issuing a valid certificate [9]. Land registration is important to avoid disputes in the future on land that is not registered immediately [11]. However, there are several obstacle factors in the implementation of land registration, namely government policies regarding tax obligations in land registration activities, lack of understanding of the function and use of certificates, stereotypes of land registration which require large costs and a long time, as well as the assumption of reasons for land rights. the land owned is already very strong [11].

Land Registration in Indonesia is regulated under the Law No. 5 Year 1960 concerning the Fundamental of Agrarian Affairs, especially article 19 section (1) which stated that, *"to guarantee legal certainty, the Government is to implement land registration throughout the whole territory of the Republic of Indonesia in accordance with provisions which are to be stipulated by way of a Government Regulation."* The year 1960 was a watershed moment in Indonesian land law because it was the first time the government produced a legal product relating to land development in Indonesia. The government passed the Basic Agrarian Law on September 24, 1960 [12]. This is also based on Article 33 of the 1945 Constitution, which emphasizes that the earth, water, and natural resources contained therein are the gifts of God Almighty to all Indonesian people, are the main points of people's prosperity that are controlled by the State, and are aimed at achieving the greatest prosperity of the Indonesian people. Starting with the article described above, it is apparent that the state is not regarded the owner of property in a state territory, but the state's ability to manage the land is purely for the benefit of the people at large [13].

Prior to the passage of the Basic Agrarian Law, lands subject to Western law might be subject to land registration, such as Eigendom Rights, Opstal Rights, and Erfpacht Rights, with the goal of ensuring legal clarity, and the holders of the rights were issued a token. A deed drawn out by the Name Transferring Official serves as proof (*Overschrijvings Ambtenaar*)[13]. In addition, the inclusion of the colonial land system has changed the system of land ownership in Indonesia, which is generally a system of land ownership, to be dualistic in nature, in which agrarian regulations consist of regulations originating from customary law (law

that has long been embedded in Indonesian society) and the law of the western state government (the law of the western colonial government) this resulted in the indigenous people having to comply with both applicable laws from both customary law and western law, while the Dutch East Indies government did not care about the customary rules which had become the hereditary rules of the indigenous people, the natives were forced to form a new land tenure system adapted to the interests of the colonial government as occupiers, so it is not surprising that many things weakened the original legal foundations of indigenous people [14].

Therefore, the government's effort to provide a form of guarantee for the existence of legal certainty over land ownership for the community is by carrying out a registration of land rights as stated in Article 19 of the Basic Agrarian Law. Therefore, for the implementation of land registration as meant in Article 19 paragraph (1) of the Basic Agrarian Law (UUPA), the Government issued Government Regulation Number 10 of 1961 concerning Land Registration. Government Regulation No. 10 of 1961 opened a new history in agrarian law. This is because, for the first time, Indonesia has an institution that specifically regulates the implementation of land registration [15]. However, about 36 years after the passage of Government Regulation Number 10 of 1961, it becomes apparent that the government's efforts to provide legal certainty guarantees for land have not been optimal and are no longer seen as fully supporting the achievement of more tangible results in national development. As a result, the government feels the need to improve and replace it with a new regulation so that the existence of Government Regulation Number 10 of 1961 has been rendered obsolete. Government Regulation Number 24 of 1997 regarding Land Registration was created as a result.

In 2019, legislators will pass a draft land law. However, this bill did not succeed because of the pressure of the people at that time. The strong reason why the draft law was not passed is because the bill was considered not in favor of the interests of the people [16]. KPA and other civil society groups previously expressed their rejection of the Land Bill because it did not answer the five points of the agrarian crisis and had a number of basic problems which were the main problems of land in Indonesia [17].

From a legal perspective, there were several reasons why the draft land law at that time should not be ratified, such as:

1. There is confusion between the position of land with management rights (referred as HPL), state land, and land with property rights (referred as HM), this can be seen in the granting of use rights (referred as HGU) on HM and HPL land without going through the process of relinquishing rights, indirectly contradicts Article 2 of the

Basic Agrarian Law (referred to as UUPA) and General Elucidation II.2 of the UUPA which in principle stipulates that HPL is the masterpiece of the state's right to control which in its implementation is partially held by the HPL holder [16].

2. The second problem is the perspective of the List of Problems (referred as DIM) to the customary rights of indigenous peoples. The confusion is shown in the case that customary law communities can apply for HPL on their customary land, this creates confusion, because the position of state land, HPL land, and customary rights are each a separate entity [18].
3. The next problem is the regulation of land rights for foreign citizens. The legal construction of land rights for WNA according to the DIM is that an application for land rights for WNA on flats can be granted on a building use right (referred as HGB) which has a period of 30 years, can be extended for 20 years and can be renewed for 40 years. This is not in line with the legal construction of land rights for foreigners according to the UUPA. In the UUPA, land rights that can be granted to WNA are referred to as HP with a limited period of time. If the land being applied for by a foreigner has the status of HM or HGB, it must first be converted into HP, including the application for ownership of flats. Thus, this is contrary to the philosophy in the UUPA which protects Indonesian citizens themselves [16].

In 2021, the Government issued the Government Regulation No. 18 Year 2021 concerning the Management Rights, Land Rights, Apartment Units and Land Registration. The Regulation was the derivatives rules of the Law No. 11 Year 2021 concerning the Job Creation Law. Furthermore, based on the Digital Transformation Road Map issued by the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency, land administration is currently moving towards digital [8]. The digital era is one in which everything in life is made simpler by technology advances that make it more practical and contemporary. This digitalization cannot be implemented in Indonesia due to the aspirations and expectations of the people, who want things to be more practical and efficient [19].

The Minister of Agrarian Affairs and Spatial Planning/Head of the Indonesian National Land Agency has also issued Regulation Number 1 of 2021 concerning Electronic Certificates which will come into force on January 12, 2021. These provisions demonstrate the Government's

commitment to the process of digitizing land administration which of course contains a philosophical basis, a theoretical basis and juridical basis [19]. This regulation was established to achieve the modernization of land services in order to improve community services, and it is required to optimize the use of information and communication technology by adopting electronic-based land services.

Potential Use of Smart Contract for Land Registration in Indonesia

Like blockchain, smart contracts have limitless potential. This makes sense given the limitless possibilities for blockchain development. Nick Szabo, a legal expert, computer scientist, and expert in cryptography, is credited with creating the idea of a smart contract. "A collection of promises, specified in digital form, including protocols within which the parties perform on these promises," he stated is what a smart contract is. Self-executing electronic contracts, or "smart contracts," specify the legal and commercial parameters of a contract between business partners. Business logics that are written and integrated into a transaction record to enable business process automation are known as "smart contracts" in blockchain technology. Such contracts allow transactions and agreements to be executed among various business participants without zengaging the services of a central authority, legal system, or arbitrator. Business process automation is possible by using smart contracts because the transactions in blockchain are trusted, transparent, and immutable [20].

Word processing templates that have been customized by lawyers and other professionals are used to create the majority of current legal contracts. They use standard legal language to define terms and conditions, like in a Word document. Interpretation and enforcement are left to third parties. This procedure wastes time and is redundant. Additionally, the parties to the contract rely on arbitrators and courts to resolve any issues. Additionally, this takes a long time, is difficult to predict, and is costly. A contract that is agreed upon and executed automatically without the parties having to re-agree can overcome this problem. One potential application of smart contracts in the legal field is this.

In the book *Blockchain for Business* by Jai Singh Arun, Jerry Cuomo and Nitin Gaur say that there are at least 23 areas that have the potential

to adopt smart contracts, such as [20] : (1) Banking and Financial Markets; (2) Trade Finance, Digital Identity Verification; (3) Insurance; (4) Complex Risk Coverage; (5) Group Benefits; (6) Healthcare; (7) Patient Consent and Health Data Exchange; (8) Clinical Trials Management; (9) Retail and Consumer Goods; (10) Commerce; (11) Supply Chain Management; (12) Government; (13) **Asset Registration**; (14) Fraud Prevention and Compliance; (15) Media and Entertainment; (16) Advertisement Settlement; (17) Loyalty Programs; (18) Automotive; (19) Mobility Service; (20) Provenance Tracking; (21) Travel and Transportation; (22) Personnel Coordination; (23) Cargo Handling.

One example of the potential use of smart contracts above is asset registration. Asset registration here is a very interesting thing if the process involves a smart contract. If the transfer of assets such as property certificates becomes very easy and quite safe. So the purchase of assets becomes very competitive and even the liquidation process becomes very easy. This is reinforced by the words of the Chairperson of the Indonesian Digital Empowering Community (IDIEC), Tesar Sandikapura, who said that the use of blockchain technology would indeed be effective in preventing duplication of original land certificates by irresponsible parties [21]. In fact, the problem of duplication of land certificates is still a common thing in the community [22]. Thus, smart contracts are a good solution in dealing with the problem of duplication of land certificates and become a technological advancement in Indonesia.

If the transfer of land certificates uses blockchain and smart contracts, of course, land registration must also use blockchain. Thus, the government as land registration supervisor and city governance regulator can monitor the transfer of land certificates to be in accordance with the land governance desired by the government. With the current online system combined with a blockchain platform and smart contracts, the potential for duplication of land certificates would reduced and city governance would easier and secure as well.

In order to bring security and transparency to land registration, a number of European nations, including Poland and Georgia, have already begun taking concrete steps in this direction. Further, the most advanced country in Europe in terms of integrating blockchain technology with its current land register system is Sweden, which might serve as a model for other nations in Europe looking to improve their land registration processes through blockchain technology [23].

Khalid et al. proposed for a conceptual framework of using private blockchain-based land registration system within the Pakistanian land registry system [24]. Blockchain technology and a land registry have the power to completely transform governance. After determining the essential elements, we created a framework based on core ideas used in both traditional and modern record keeping systems. Like now, the origin of land record storage is centralized. Because of this, centralized storage is vulnerable to hacking, forging, and theft, in contrast to our framework's usage of wholly decentralized blockchain-based solutions. We have also called attention to privacy as a legitimate factor. Due to the peculiarities of the decentralized system, certain of the framework's nodes are necessary. In this system, only those who are allowed to interact, such as a block generator or a government employee or officer, can do so [24].

CONCLUSION

Indonesia's land administration is moving towards digital. Land registration is important to avoid disputes in the future. Lack of understanding, stereotypes and a long time period for registering land are obstacle factors. The government has issued Regulation Number 1 of 2021 concerning Electronic Certificates. Land registration is important to avoid disputes in the future. Lack of understanding, stereotypes and a long time period for registering land are obstacle factors. The majority of current legal contracts are written using Word processing, meaning interpretation and enforcement is left to third parties. Smart contracts could help prevent the duplication of land certificates.

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