Topic: Human Right Issues of Artificial Intelligence (AI) Gaps and Challenges, and Affected Future Legal Development in Various Countries

# Land Registration Policy from a Legal and Human Rights Perspective in The Era of Artificial Intelligence

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**Abstract.** *Inequality in access and use of land for communities, especially those who are vulnerable or disadvantaged, can be caused by land registration policies that are not sensitive to human rights issues. Technological developments with the presence of artificial intelligence (AI) can be a solution to improve the land registration process by automating several stages and reducing administration costs. However, several ethical and legal questions regarding the use of artificial intelligence arise, especially related to data privacy and information security. The formulation of the problem in this research is how to implement a land registration policy that is integrated with human rights principles and the development of artificial intelligence technology and what challenges are faced in developing a land registration policy that combines legal aspects, human rights and the use of artificial intelligence technology. This type of research is normative juridical research. The approach used in this research is philosophical. The research results are that the implementation of a land registration policy that is based on law and human rights principles is the key to creating a land registration policy that is fair, transparent and sustainable. The development of artificial intelligence technology offers new opportunities to improve the efficiency and accuracy of the land registration process. The challenges that arise in developing AI systems are that they are vulnerable to discrimination if they are not designed carefully. Cyberattacks on land registration data can cause injustice in land registration.*

***Keywords:*** *Artificial Intelligence (AI); Human Rights; Land Registration Policy.*

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# 1. Introduction

The state's obligation to guarantee and respect land rights what is given to residents is stated in the form of land registration which will then be issued as proof in the form of a land certificate give it to the rights holder [1]. This is based on the provisions of Article 19 paragraph (1) Law Number 5 of 1960 concerning Basic Agrarian Regulations more known with designation Constitution Tree Agraria, which states "For ensure certainty law by government held registration land in all over region Republic Indonesia according to provisions Which arranged with Regulation Government". Regulation Government Which intended in Chapter 19 paragraph (1) UUPA the Then followed up by Government with its implementation Regulation Government Number 10 of 1961 concerning Land Registration which was later refined with its publication Regulation Government Number 24 year 1997 about Registration Land [2].

Land registration is an important part of land ownership management in a country. In implementing the registration policy there are many problems. The problem of obstacles in regulating ownership of land rights is an internal government problem and an external government problem [3]. The government's internal problems include a shift from a negative publicity system for land registration to a positive publicity system, the division of power between the center and the regions, and granting recognition to indigenous communities. However, the government faces problems from external sources, such as ending the land mafia and community involvement in ensuring legal certainty, causing access to justice in land ownership and use that does not provide legal certainty .

Inequality in access and use of land for communities, especially those who are vulnerable or disadvantaged, can be caused by land registration policies that are inadequate or insensitive to human rights issues. For example, land cases often occur due to the application of law in land registration policies. Land registration which is based on formal procedures in the form of documentation registration causes indigenous groups to always be the ones who suffer losses.

Technological developments with the presence of artificial intelligence *(Artificial Intelligence)* can be a solution to improve the land registration process by automating several stages and reducing administration costs. However, several ethical and legal questions regarding the use

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[1] Aditya, Trias, et al. Validation and collaborative mapping to accelerate quality assurance of land registration. *Land Use Policy* , 2021, 109: 105689.

[2] Sutedi Adrian, 2012 *Certificate Right On Land,* Jakarta, Sinar Gafika p 24

[3] Yubaidi, Ricco Survival. The future of land ownership regulation in Indonesia. *International Journal of Multicultural and Multireligious Understanding* , 2020, 6.6: 712-720.

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of artificial intelligence *(AI)* arise, especially related to data privacy and information security. Therefore, it is important to conduct thorough research to evaluate land registration policies that consider human rights and artificial *intelligence*.

## 2. Research Methods

This type of research is library research. Library research is research carried out by examining secondary data. Secondary data by examining primary legal materials and secondary legal materials. The approach used in this research is philosophical. The philosophical approach in legal research is to examine law at an ideal level. The data source used in this research is secondary data[4].

Data collection techniques were carried out through conventional and online searches. Conventional literature search is the activity of searching library sources to data storage places. Meanwhile, online search is the activity of searching for library resources in cyber space via the internet network. This research uses qualitative data analysis because the data will be presented in a descriptive narrative manner, not in numerical form.

## 3. Results and Discussion

### 3.1. Implementation of land registration policies that are integrated with human rights principles and developments in artificial intelligence (AI) technology

Land registration is an important aspect of the agrarian legal system that determines the rights of owners and encourages sustainable economic development [5]. However, the land registration process is often complex and prone to administrative errors, abuse of power, and human rights violations.

It is important to incorporate human rights into land registration policies to address various issues [6]. All stakeholders, including vulnerable groups, must be guaranteed that land registration policies are fair, transparent and accessible. Minority rights, such as customary land rights to own land are also protected by human rights principles. The purpose of land registration is not only to clarify land ownership, but also to provide legal certainty in order to

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[4] Marzuki, Mahmud. *Legal Research: Revised Edition*. Prenada Media, 2017.

[5] Gultom, Okto Berlin, et al. Legal Certainty in the Land Registration Process Originating from Inheritance. In: *International Conference on Law, Governance and Islamic Society (ICOLGIS 2019)* . Atlantis Press, 2020. p. 145-148.

[6] Murni, Christiana Sri, Bernadus Basa Kelen, and Sumirahayu Sulaiman. "The Legal Certainty of Land Ownership Rights in Registration Context." *International Journal Of Law Reconstruction* 6.1 (2022): 13-28.

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provide legal protection to the owner. Therefore, it is important to implement land registration policies with due regard to human rights principles.

Land registration policies must be based on the principles of openness and access to information, which means that all data relating to land ownership must be available and publicly accessible. This increases community understanding of land ownership status, and provides opportunities for individuals or groups who may be affected to make changes.

Land registration policies must protect the personal and collective rights of every individual or group. This includes the right to own, use and enjoy land peacefully without fear of harassment or threat. Policy implementation must ensure that the registration process does not compromise these rights and does not discriminate against anyone based on gender, ethnicity, religion, or socioeconomic status.

Access to justice must be the main basis for land registration. Registration must be fair to all parties involved, without bias towards certain parties. In addition, there must be a mechanism that allows individuals or groups who feel their rights have been violated to file a lawsuit or appeal in a fair and transparent manner.

Land registration that respects human rights must involve broad public consultation and participation. This allows local communities to participate in decision-making processes that affect their land. Good consultation and public participation can help identify problems, reduce conflict, and create more inclusive and sustainable policies.

States have a responsibility to protect, respect and fulfill human rights, including rights related to land ownership [7]. Therefore, the implementation of land registration policies must be supported by a strong state presence in ensuring that these rights are respected and properly protected. This includes providing legal assistance to individuals or groups who need it as well as enforcing the law against human rights violations that occur during the land registration process.

Land registration carried out by the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency has developed by implementing technological developments including the Touch My Land application and electronic products such as electronic certificates. However, not

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[7] Van Leeuwen, Mathijs, et al. Promoting Land Tenure Security For Sustainable Peace—Lessons On The Politics Of Transformation. *Current Opinion In Environmental Sustainability* , 2021, 49: 57-65.

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everything can be done using online services such as physical land measurement services. As a result, the policies set for online land services have not been fully implemented [8].

The development of artificial intelligence (AI) technology offers new opportunities to increase the efficiency and accuracy of the land registration process to ensure the protection of human rights. AI can be used to analyze data quickly and accurately, spot land ownership conflicts and potential human rights violations. Additionally, artificial intelligence (AI) technology can improve the security and transparency of land ownership records and reduce the possibility of fraud or manipulation.

One of the main challenges in land registration is processing complex and varied documents, such as sale and purchase deeds, land certificates and proof of ownership. By using AI technology, the system can automatically analyze and validate these documents, reducing the time and effort required for manual verification.

Artificial intelligence can be used to detect suspicious or inappropriate patterns in land transactions, such as forgery of documents or double sales. By implementing sophisticated monitoring algorithms, the risk of fraud can be minimized, increasing trust in the land registration system.

Data is a valuable asset in land management. With AI, historical and current data can be analyzed to identify trends and patterns that can help in decision making regarding land policy. For example, data analysis can help identify areas that require updating of ownership documents or remapping of land boundaries.

AI can be used to develop predictive models to determine land values or estimate infrastructure needs in an area. This can help the government and developers in more efficient spatial planning and regional development.

Implementing a land registration policy that is integrated with human rights principles and AI technology also requires an important role from public awareness. Adequate public knowledge about land rights and the land registration process can increase public understanding of the importance of legal land ownership and protection of the certainty of land rights.

Public awareness is also important in supporting land registration policies that support justice and equality. Through outreach campaigns and active community participation in the decision-making process, stigma or distrust of the new land registration system can be reduced. In this

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[8] Wajdi, Farid; Ramadhani, Rahmat. Legal Problems of Land Services Online. *International Journal Regulation & Society (IJRS)* , 2022, 3.1: 19-29.

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way, society can be more open to the adoption of AI technology in land registration, as well as encourage the government to uphold human rights principles in all aspects of policy.

Concrete steps, such as providing training and resources for land registration officials at the local level, as well as inclusive and sustainable communication approaches, can help increase community understanding and support for this policy. Apart from that, the active involvement of educational institutions, civil society organizations and mass media can also expand the reach of outreach and advocacy campaigns.

In the context of globalization and digital transformation, public education and awareness are not only important to support the implementation of inclusive land registration policies, but also to ensure that society can access and utilize AI technology wisely and responsibly. Thus, collaboration between government, the private sector, educational institutions and civil society is key in building a strong foundation for fair, transparent and sustainable land registration.

### 3.2. Challenges faced in developing a land registration policy that combines legal aspects, human rights and the use of artificial intelligence (AI) technology

Land registration is an important legal basis for regulating land ownership, use and utilization. However, the land registration process is often faced with complex challenges which result in various land cases, both in the form of land disputes and land conflicts. Therefore, it is necessary to combine various aspects in land registration policies, namely legal aspects, human rights, and the use of artificial intelligence (AI) technology. Integrating these three aspects in a land registration policy is a challenge that needs to be addressed wisely.

Land registration policies must pay attention to a clear and fair legal framework [9]. This includes creating laws that regulate the registration process, ownership rights, and protection of property rights. The main challenge here is to ensure that the laws created not only meet the needs of governments and investors, but also protect the rights of communities, including indigenous communities who are often vulnerable to land conflicts [10].

Land registration policies must respect and protect the human rights of every individual. Everyone has the right to fair and secure land ownership, without discrimination or abuse of power. Therefore, the policy must pay attention to community diversity and ensure that no

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[9] Rahdania, Aulia Fitri; Djaja, Benny. Implementation of Land Registration Procedures in Indonesia Based on Government Regulation No. 18 of 2021. Journal of Social Research, 2023, 2.7: 2562-2570.

[10] Mashdurohatun, Anis, et al. Registration of Transfer of Land Rights in the Justice-Based Indonesian Legal System. Sch Int J Law Crime Justice, 2023, 6.4: 209-215.

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one is left behind in the land registration process, including those in remote areas or vulnerable communities.

The use of artificial intelligence (AI) technology in land registration can bring various benefits, such as increasing efficiency, accuracy and transparency of the process. However, the emerging challenge is in developing reliable and fair AI systems. AI systems are susceptible to bias and discrimination if not designed carefully.

The use of AI in the land registration process requires a secure system to protect that data from cyber threats. A strong security system must be able to detect and prevent attacks that could result in data leaks or manipulation of ground information. In addition, protection of individual privacy and transaction security are also the main focus in developing an AI-based security system for land registration.

AI system failures can occur due to a variety of factors, including a lack of sufficient data, imperfect algorithms, or even cyberattacks aimed at disrupting or damaging the system [11]. When AI systems used in land registration and property law processes fail, the consequences can be devastating.

One of the direct impacts of the failure of AI systems in land registration is the uncertainty of property ownership. Disrupted or inaccurate land registration processes can lead to ambiguity in property ownership, which in turn can trigger complex and time-consuming legal disputes.

In addition, failures in AI systems can also provide opportunities for fraud or manipulation. If the system is vulnerable to cyberattacks or data manipulation, then the integrity and validity of documents related to land registration and property law may be questioned.

The application of sophisticated data technology and security systems can ensure that the information stored and processed in the land registration process remains protected from unauthorized access. In addition, the use of multiple authentication mechanisms and strict audit logs can help track every access and activity that occurs on the system, thereby minimizing the risk of data misuse.

The government and related institutions must work together to develop appropriate policies and regulations to maintain data security in AI-based land registration. This includes establishing strict data security standards, training for professionals involved in land data management, and implementing strict sanctions for data security breaches. By prioritizing data

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[11] Elpina. Legal Analysis of the Implementation of Artificial Intelligence (AI) Technology in Business Information Systems. *Digital Transformation Technology* , 2024, 4.1: 9-16.

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security, the use of AI technology in land registration can provide significant benefits in increasing the efficiency and accuracy of the process, while maintaining public trust in the integrity of land data.

## 4. Conclusion

Implementing a land registration policy that is based on law and human rights principles is the key to creating a fair, transparent and sustainable land registration policy system. By ensuring openness, rights protection, fairness, public participation and state responsibility, land registration can be a powerful instrument for advancing human rights and inclusive development for all citizens. The development of artificial intelligence (AI) technology offers new opportunities to increase the efficiency and accuracy of the land registration process to ensure law enforcement and protection of human rights. AI can be used to analyze data quickly and accurately, spot land ownership conflicts and potential human rights violations. Additionally, artificial intelligence (AI) technology can improve the security and transparency of land ownership records and reduce the possibility of fraud or manipulation. The use of artificial intelligence (AI) technology in land registration can bring various benefits. However, the challenge that arises is that developing AI systems is susceptible to bias and discrimination if not designed carefully. Cyberattacks on land registration data and bias in algorithms that may exist in land registration data can cause injustice in the land registration process.

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