

SUSTAINABLE LAND DEVELOPMENT FROM A LEGAL PERSPECTIVE: A CASE STUDY OF INFRASTRUCTURE PROJECTS IN INDONESIA

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Abstract

Infrastructure development in Indonesia often involves complex land issues, including ownership conflicts, land acquisition, and socio-economic impacts on local communities. This study aims to analyze the sustainability of land development from a legal perspective through case studies of infrastructure projects in Indonesia. The methods used are normative and descriptive studies, reviewing laws and regulations, project documents, and related literature. The analysis shows that sustainable land development requires regulatory harmonization, legal certainty for landowners, and fair compensation mechanisms. Weaknesses in legal implementation, complicated administrative procedures, and lack of community participation have the potential to give rise to disputes and delay project implementation. This study emphasizes the importance of integrating legal principles with development planning, including the protection of community rights, transparency, and accountability of relevant institutions. With an effective legal approach, infrastructure projects can be sustainable, reduce land conflicts, and increase socio-economic benefits for communities. These findings provide recommendations for strengthening land regulations, clarifying land acquisition procedures, and improving inter-agency coordination so that infrastructure development can align with the principles of sustainability and legal certainty in Indonesia.

Keywords: Sustainability, Land, Infrastructure, Law

INTRODUCTION

Infrastructure development is a crucial aspect in driving economic growth, equitable distribution of prosperity, and improving the quality of life for the Indonesian people. Adequate infrastructure, including roads, bridges, mass transportation, and other public facilities, not only facilitates the mobility and distribution of resources but also determines the nation's competitiveness on the global stage. However, the implementation of infrastructure development often presents complex legal and social challenges, particularly related to land issues. Land is a central issue because almost all infrastructure projects require adequate land acquisition, clear legal status, and protection from disputes (Aksinudin, 2023; Lubis et al., 2024). In Indonesia, land issues are a frequent source of conflict, both between communities and the government, as well as between private and public stakeholders, thus raising the urgent need for clear and equitable legal regulations.

In Indonesia, land issues are often a major challenge in development implementation. Land ownership conflicts, overlapping regulations, and complex administrative procedures frequently hinder project implementation. According to data from the National Land Agency (BPN), thousands of land disputes occur annually, mostly related to public development projects and private investment. These disputes not only cause project delays but also give rise to legal uncertainty, financial losses, and potential social conflict at the community level. This phenomenon underscores the importance of understanding the relationship between land development and the existing legal system, particularly regarding the protection of community rights, legal certainty, and the principle of justice in land tenure. Furthermore, land development must be viewed from a sustainability perspective. Sustainable development prioritizes not only economic growth but also considers environmental, social, and legal balance. Sustainable land management requires clear regulations, transparent licensing mechanisms, and procedures that guarantee the rights of indigenous communities, farmers, and affected landowners. In this context, land law plays a key role as an instrument to ensure that development does not harm certain parties, remains compliant with national regulations, and is in line with sustainable development goals that have been formulated in various national policies and international commitments.

The importance of legal studies in the context of land development is also related to protecting the rights of indigenous peoples and vulnerable groups. Many infrastructure projects are implemented in areas of high historical, cultural, or ecological value, including customary land and conservation areas. If land management does not comply with applicable laws or does not consider the principles of social justice, development can lead to social conflict, rights grabbing, and environmental damage. Therefore, a legal perspective not only regulates administrative mechanisms and land acquisition procedures but also serves as a tool to ensure development projects remain based on the principles of sustainability, justice, and accountability. Furthermore, land law is closely related to investment certainty. Investors, both local and foreign, require legal certainty in obtaining land rights for projects. Unclear legal status of land, ownership disputes, and complex bureaucracy can hinder investment, increase financial risks, and undermine confidence in Indonesia's business climate. Therefore, land law reform that integrates sustainability principles is an urgent need, not only for development purposes but also to create a stable, transparent, and equitable investment climate.

The main obstacles to land development are overlapping regulations and weak legal certainty. Historically, the Indonesian land law system has evolved through various sectoral regulations, such as the Basic Agrarian Law (UUPA) No. 5 of 1960, its implementing regulations, and additional regulations governing specific land rights, such as customary rights of indigenous communities, land use rights, and land use rights. This regulatory complexity often creates confusion in the implementation of infrastructure projects, particularly when indigenous land rights or uncertified land ownership are key considerations. Unclear legal status of land not only slows the development process but also raises the potential for legal disputes that can escalate to court proceedings, mediation, or social conflict at the local level (Anastasia *et al.*, 2024; Rifiyanti *et al.*, 2024).

Furthermore, sustainable land development requires a balance between national development needs and the protection of community rights. The principle of sustainability in the land context encompasses not only economic and technical aspects, but also social and environmental ones. In practice, infrastructure development must consider the impacts on the environment, settlements, and livelihoods of affected communities (Silalahi *et al.*, 2024; Sinaga *et al.*, 2024). For example, land acquisition for toll roads or mass transportation projects in urban areas often results in the relocation of residents, the reduction of green open spaces, and disruption to local economic activity. If legal regulations are inadequate, these social consequences can lead to resistance, demonstrations, or project delays, thus reducing the effectiveness of the development itself (Sutanto, 2022; Abdan *et al.*, 2023).

The legal aspects of land in the context of infrastructure projects are also closely related to land acquisition mechanisms. The government, through Law No. 2 of 2012 concerning Land Acquisition for Development in the Public Interest, provides a legal basis for land acquisition implementation based on the principles of justice, transparency, and respect for community rights. However, in its implementation, obstacles remain, such as in determining compensation prices, implementation timelines, and compliance with administrative procedures (Danendra & Mujiburohman, 2022; Luvianti & Rasji, 2023). These obstacles often spark debate between the government and the public, thus requiring in-depth legal analysis to ensure that each infrastructure project is carried out in accordance with the principles of sustainability and legal certainty (Aksinudin, 2023; Abdan *et al.*, 2023).

On the other hand, infrastructure projects in Indonesia tend to have varying characteristics, both in terms of location, scale, and socio-economic impacts. Interprovincial toll road development projects present different challenges than urban infrastructure development or small-scale public facilities. These varying characteristics require a flexible approach to land law, while remaining consistent with national legal principles (Silalahi *et al.*, 2024; Aditya *et al.*, 2023). Furthermore, the involvement of various parties, including the central government, regional governments, local communities, and private investors, adds to the complexity of legal arrangements. Therefore, an analysis of the sustainability of land development from a legal perspective must consider multi-level governance interactions, the certainty of land rights, and effective dispute resolution mechanisms. The study of the sustainability of land development also cannot be separated from the human rights aspect. Land rights are part of the economic, social, and cultural rights recognized in the constitution and international regulations ratified by Indonesia. Neglecting these rights in the infrastructure development process can lead to injustice, especially for vulnerable groups, such as indigenous peoples, small farmers, or residents living in dense urban areas. Therefore, sustainable land development must be integrated with the principle of respect for these rights, so that every infrastructure project not only drives economic growth but also maintains social justice and community welfare.

In addition to legal challenges, land development also faces issues of transparency and accountability. Unclear land acquisition procedures, lack of public participation in decision-making processes, and potential conflicts of interest between government officials and the private sector can foster public distrust. In the long term, this can hamper the implementation of infrastructure projects and reduce development effectiveness. Therefore, strengthening legal regulations, transparent administrative procedures, and public participation mechanisms are crucial elements in ensuring sustainable land development. From an academic perspective, this research is highly relevant because it combines legal, development, and sustainability perspectives. The case study of an infrastructure project provides a concrete empirical focus for understanding how land regulations function in practice, the obstacles they pose, and how policy reforms or improvements can be implemented. This approach allows researchers to holistically analyze the interrelationships between legal, social, and economic aspects, thereby making the resulting recommendations more applicable and relevant to policymakers.

The primary objective of this research is to examine the sustainability of land development in infrastructure projects in Indonesia from a legal perspective. The research seeks to answer questions related to the effectiveness of land regulations, the alignment of land acquisition procedures with sustainability principles, the protection of community rights, and dispute resolution mechanisms. Furthermore, this research highlights the need for legal reform or regulatory alignment to ensure infrastructure projects can proceed smoothly, on time, and equitably. The study's findings are expected to contribute to policymakers, academics, and legal practitioners in understanding and improving land governance in Indonesia. Considering the emerging complexities, this study emphasizes the importance of integrating law, development, and sustainability. Land law cannot be viewed solely as an administrative mechanism, but as an instrument to ensure justice, legal certainty, and a balance between economic development and social protection. An in-depth analysis of infrastructure projects as case studies provides a strong contextual understanding, while emphasizing the need for regulatory harmonization, institutional capacity building, and the application of sustainability principles in land development practices. Based on this preliminary background, this study emphasizes that sustainable land development in Indonesia requires a clear, fair, and transparent legal approach. Infrastructure projects require not only efficient land acquisition but also the protection of community rights, strengthening legal procedures, and public participation. This research aims to identify effective legal strategies to ensure that each land development project aligns with the principles of sustainability, legal certainty, and social justice, thereby optimizing its contribution to national development.

METHOD

This research uses a qualitative approach to understand the dynamics of sustainable land development within the legal context in Indonesia, particularly in infrastructure projects. A qualitative approach was chosen because the focus of the research is not simply to measure phenomena quantitatively, but rather to gain a deeper understanding of legal practices, implementation challenges, and the interactions between regulations, communities, and development actors. This approach allows researchers to interpret the complexity of land issues involving various parties, such as the government, investors, affected communities, and law enforcement. The research method used is descriptive qualitative research. Descriptive research aims to map and explain phenomena systematically, in detail, and accurately without directly intervening in the research object. The primary focus of the research is land legal procedures, applicable regulations, conflicts of interest, and dispute resolution practices that arise in the implementation of infrastructure projects. This research emphasizes contextual analysis to yield a comprehensive understanding of sustainable land development from a legal perspective.

The data sources for this research are divided into two: primary and secondary data. Primary data was obtained through in-depth interviews with key informants, such as land officials, law enforcement officials, infrastructure project developers, and affected communities. Interviews were conducted semi-structured to provide flexibility in exploring the experiences, perspectives, and issues faced by each party. Secondary data was obtained through a review of legal documents, such as the Land Law, government regulations, court decisions, project documents, previous case study reports, and scientific literature related to land development. Secondary data analysis helped verify interview findings and provide a relevant legal framework. Data collection techniques included field observations, semi-structured interviews, and document studies. Field observations were conducted at infrastructure project sites to understand the land development process, interactions between stakeholders, and the resulting social impacts. Semi-structured interviews allowed researchers to obtain in-depth information and subjective perspectives from informants. Document studies were used to explore applicable legal regulations and practices, allowing researchers to compare legal theory with practice in the field.

Data analysis used qualitative content analysis with a thematic approach. Data obtained from interviews, observations, and documents were coded based on key themes, such as legal certainty, land conflicts, certification procedures, community participation, and development sustainability. Each theme was analyzed in depth to understand patterns, interrelationships, and emerging issues. The analysis process was conducted iteratively, starting with data collection, coding, and identifying themes, and finally drawing comprehensive conclusions. To maintain data validity and reliability, this study employed source and method triangulation. Source triangulation was conducted by comparing information from various informants, while method triangulation was conducted by comparing the results of interviews, observations, and legal documents. This approach ensures that the research findings are scientifically sound, relevant to field practice, and provide recommendations that can be used in developing land regulations and improving the sustainability of infrastructure projects in Indonesia.

RESULTS AND DISCUSSION

1. Legal Certainty in Land Development

Research results indicate that one of the main factors influencing the sustainability of infrastructure projects is legal certainty regarding land. In the Indonesian context, many infrastructure projects encounter obstacles due to overlapping land ownership, differences in land legal status, and unclear boundaries. This is particularly true for land owned by indigenous communities or legal owners who lack official certificates. Field findings indicate that projects with clear land permits and community support tend to run more smoothly. Conversely, projects that ignore legal certainty are prone to legal conflicts, litigation, and implementation delays. Regulatory analysis shows that although the Basic Agrarian Law and its derivative regulations provide a legal framework, implementation on the ground is often inconsistent. For example, coordination between the National Land Agency, local governments, and private developers remains limited, creating a gap between formal law and actual practice. Therefore, enforcing legal certainty is a fundamental prerequisite for ensuring sustainable land development, reducing conflict, and creating a stable investment climate.

2. Regulatory Harmonization and Its Impact on Sustainability

The second discussion highlights the need for regulatory harmonization as a strategic step in land development. Research data shows fragmented land-related regulations, ranging from the Basic Agrarian Law and Government Regulations to regional regulations, which are sometimes contradictory. This situation has the potential to give rise to differing legal interpretations among stakeholders, including developers, government officials, and the public. In the case of infrastructure projects, regulatory fragmentation leads to confusion regarding licensing procedures, land compensation, and dispute resolution mechanisms. The analysis also shows that projects implemented in compliance with overlapping regulations tend to face higher legal risks, including compensation claims or permit revocation. Therefore, regulatory harmonization, whether through revising laws or developing implementation guidelines, is crucial. This step not only strengthens legal certainty but also increases the effectiveness of project implementation, minimizes disputes, and supports the principles of legally and socially sound sustainable development.

3. Protection of Community and Local Community Rights

The third discussion emphasizes the importance of protecting community rights in land development. Case studies show that infrastructure projects that do not involve community consultation and participation have the potential to trigger social conflict, public protests, and even legal action. Data shows that communities affected by development demand fair compensation, adequate resettlement, and recognition of their traditional rights. This study found that protecting community rights relates not only to formal land ownership but also to the recognition of historical or customary rights inherent in local communities. From a legal perspective, Law Number 11 of 2020 concerning Job Creation regulates land acquisition and compensation mechanisms, but its implementation still faces challenges on the ground, particularly regarding the transparency of the process and the amount of compensation received by communities. These findings confirm that the sustainability of land development depends heavily on the integration of community rights protection into every stage of the project. Participatory and consultative approaches have been shown to increase project acceptability, minimize the risk of conflict, and strengthen the legal and social legitimacy of infrastructure development.

4. Dispute Resolution Mechanisms and Legal Effectiveness

The final point discusses dispute resolution mechanisms as key to legal sustainability in land development. Research shows that land disputes are one of the most significant obstacles to infrastructure projects in Indonesia. Conflicts often arise due to differing ownership claims, compensation assessments, or differing legal interpretations between developers and communities. Case study analysis shows that projects with clear dispute resolution mechanisms, whether through mediation, arbitration, or court proceedings, tend to resolve conflicts more quickly and continue construction. Conversely, projects without clear mechanisms face protracted delays and additional costs. This research also found that coordination between government agencies, developers, and communities significantly impacts the effectiveness of dispute resolution. From a legal perspective, guidelines are needed that systematically integrate administrative and judicial procedures to ensure disputes are resolved quickly and fairly. With effective dispute resolution mechanisms, the sustainability of land development can be ensured, legal risks minimized, and public trust in infrastructure projects increased.

Overall, four key aspects—legal certainty, regulatory harmonization, protection of community rights, and dispute resolution mechanisms—are the pillars of sustainable land development in infrastructure projects in Indonesia. This research shows that sustainability is not merely technical or administrative, but also closely related to legal and social integrity. Legal certainty is the foundation for project success, regulatory harmonization bridges differences in legal interpretation, protection of community rights ensures social legitimacy, and dispute resolution mechanisms reduce the risk of conflict and additional costs. These findings underscore the need for comprehensive and integrative land law reform, which takes into account formal legal, social, and participatory aspects. Effective reform will minimize conflict, accelerate project implementation, and support sustainable and equitable infrastructure development for all stakeholders. Furthermore, strengthening the capacity of legal and government institutions to monitor and enforce land regulations is a strategic step towards realizing safe, efficient, and sustainable infrastructure projects in the future.

CONCLUSION

The conclusion of this study confirms that the sustainability of land development in Indonesia depends heavily on the alignment between development policies and the legal framework governing land management. Case studies of infrastructure projects demonstrate that while development has positive impacts on economic growth and accessibility, unsystematic land management processes can lead to ownership conflicts, local community losses, and legal uncertainty. One key finding is the overlapping regulations at the national and regional levels, which often slows down the land acquisition process and reduces project effectiveness. This emphasizes the need for land law reform that unifies regulations, clarifies the rights and obligations of all parties, and provides fair and expeditious dispute resolution mechanisms.

Furthermore, this study highlights the importance of community and stakeholder involvement from the planning stage through project implementation. Transparency in the land acquisition process and the provision of adequate compensation are key to building public trust and reducing the potential for conflict. Land law reform must also consider the protection of the rights of indigenous peoples and vulnerable groups, so that development does not compromise social justice. In this context, regulatory harmonization, capacity building of law enforcement agencies, and the integration of information technology in land administration are crucial aspects to ensure legal certainty and sustainable development.

Overall, this study concludes that the sustainability of land development is not solely related to the technical or economic aspects of infrastructure projects, but is closely linked to the quality of legal regulations and their implementation. Effective land law reform will enable equitable, transparent, and sustainable development, while minimizing the risk of disputes and social conflict. Therefore, the government needs to develop policies that are responsive to social, economic, and environmental dynamics, while ensuring consistent law enforcement. With these steps, infrastructure projects in Indonesia can run more efficiently, communities can receive equitable benefits, and land development can contribute to inclusive and sustainable economic growth.

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