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PUBLIC INFORMATION DISCLOSURE IN THE PROCESS OF PROVIDING LEGAL CONSIDERATIONS BY THE ATTORNEY GENERAL'S OFFICE: A LEGAL COMPARISON BETWEEN INDONESIA AND INDIA

Redemptus Denaryo
Faculty of Law
Brawijaya University Malang
65145, 10-11 Jl. Veteran Str., Malang,
Indonesia
e-mail: rdmptsdenaryo@student.ub.ac.id
https://orcid.org/0009-0000-4000-5007

Tunggul Anshari Setia Negara
Faculty of Law
Brawijaya University Malang
65145, 10-11 Jl. Veteran Str., Malang,
Indonesia
e-mail: tunggul@ub.ac.id
https://orcid.org/0000-0001-8445-4832

Shinta Hadiyantina
Faculty of Law
Brawijaya University Malang
65145, 10-11 Jl. Veteran Str., Malang,
Indonesia
e-mail: dyahwidh@ub.ac.id
https://orcid.org/0000-0001-7413-7008

Abstract

Land boundary determination is a fundamental aspect of land administration in Indonesia, aimed at ensuring legal certainty and preventing disputes among landowners. Recent technological advancements, including the use of drones and photogrammetry as regulated in Permen ATR/BPN No. 3/Juknis-HK.02/III/2023, have significantly improved efficiency in land measurement processes. These technologies enable accurate data collection even in inaccessible locations and produce digital maps supporting the modernization of land administration. However, their application raises critical legal issues, particularly regarding violations of the rechtszekerheid principle (legal certainty) and contradictory delimitation, which require the direct presence of landowners and bordering parties. This study employs a normative juridical method, focusing on statutory and conceptual approaches. The findings indicate that while drones and photogrammetry enhance efficiency, the absence of direct stakeholder involvement undermines the legitimacy of measurement outcomes. Regulatory revisions are necessary to integrate field validation, ensuring compliance with legal and technical standards. The conclusion emphasizes harmonizing technological advances with legal principles to create an efficient, transparent, and equitable land administration system that aligns with Indonesia's systematic land registration goals by 2025.

Keywords: Land boundaries; drones; legal certainty; land administration; photogrammetry

1. Introduction

Land plays a fundamental role in human life, not only as a place of residence but also as an economic asset and a symbol of identity governed by law. In the context of land administration in Indonesia, land boundary regulation is a crucial element aimed at providing legal certainty for landowners while minimizing the potential for conflicts and disputes.

The Basic Agrarian Law (UUPA) Number 5 of 1960, as the legal foundation of agrarian law in Indonesia, emphasizes the importance of land registration to provide legal assurance of land ownership. This provision is reinforced through Government Regulation Number 24 of 1997 on Land Registration, which regulates the fundamental principles of land administration, including the determination and designation of land boundaries. In practice, the principle of contradictoire delimitatie, which requires the presence of landowners along with their neighbors during the boundary determination process, serves as an essential step to ensure the accuracy and validity of land boundary data.(Kaarhus & Dondeyne, 2015, p. 193)

However, in its implementation, various issues often arise, such as differences in the interpretation of regulations, the use of technology without the involvement of landowners, and discrepancies between field data and measurement results. For instance, recent regulations, such as the Technical Guidelines for Complete Systematic Land Registration (PTSL), allow the use of drones or photogrammetric methods.(Jahani Chehrehbargh et al., 2024, p. 22) In boundary measurements conducted without direct designation, there is a potential conflict with the principle of contradictoire delimitatie as stipulated in Government Regulation Number 24 of 1997. This situation may trigger legal disputes between landowners and the authorities, ultimately disadvantaging the community as rightful landowners.

This case involves a land dispute in Labokke Hamlet, Puty Village, Bua District, Luwu Regency, which originated from the Plaintiff's possession of the land since 1972. After purchasing the land, the Plaintiff utilized it for farming and rice fields. In 1991, the land was certified under a Certificate of Ownership in the name of Subaedah (Plaintiff I) Palopo District Court Decision Number: 25/Pdt.G/2014/PN Plp. However, in 2012, without the Plaintiff's consent, Defendant I took control of part of the land, which had previously been used in a new rice field development project by the Luwu Regency Government. Additionally, Defendant I trespassed by planting rice and harvesting timber belonging to the Plaintiff. Attempts to resolve the issue by the village and subdistrict governments were unsuccessful, leading to the case being brought before the Palopo District Court. The land measurement conducted by Defendant II (Land Office) sparked controversy due to discrepancies with field data, disregard for pre-existing land boundaries, and alleged violations of applicable regulations. Consequently, the Plaintiff sought justice for their encroached land rights and procedural violations by the parties involved.

Additionally, weaknesses in supervision and coordination among relevant agencies during the land boundary designation process have also contributed to the rising number of land dispute cases.(Wardani et al., 2023, p. 100042) As an illustration, several court rulings reveal that inaccuracies in determining land boundaries often trigger prolonged conflicts, which not only hinder the land administration process but also undermine public trust in the government. Legal facts indicate that, apart from disputes over measurements and land boundaries, the implementation of land registration, particularly within the Complete Systematic Land Registration Program (PTSL), faces several fundamental legal issues. One of these issues is the differing interpretations regarding the mechanisms for implementing PTSL, which can generally be carried out through two approaches: the establishment of separate PTSL service posts independent of the land office or integrated services directly within the land office. In the first mechanism, PTSL service posts are designed to focus on registration

activities without disrupting routine services at the land office. However, this mechanism often leads to overlapping authorities if not accompanied by adequate coordination. Meanwhile, the second mechanism, integrated services with a «door-to-door» approach, offers convenience for the public but carries risks if there is no strict supervision of field officers. In practice, both mechanisms require sufficient and qualified human resources (HR). However, the implementation of PTSL often faces challenges due to the limited availability of competent HR, considering the involvement of various parties, including civil servants from the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN), Licensed Cadastral Surveyors, Non-Permanent Employees, and even high school/vocational students undertaking internships. The disparity in competence among these parties can lead to inaccurate measurement data and procedural violations. This reflects a lack of harmony between the implementation mechanisms and the need for optimal HR, ultimately triggering disputes and legal issues in land administration in Indonesia

The issue of land boundary designation often leads to legal conflicts due to the disharmony between fundamental principles of land law, such as the principle of contradictoire delimitatie, and the application of modern technology in land measurements that exclude the direct participation of landowners. Additionally, differences in the implementation mechanisms of the Complete Systematic Land Registration Program (PTSL) and the limited availability of competent human resources also serve as contributing factors to disputes.(Cienciała et al., 2022, p. 4412) Therefore, it is essential to formulate an appropriate legal framework to regulate land boundary designation, aiming to prevent legal conflicts and provide fair legal certainty for all

2. Materials and Methods

This study employs a normative juridical method, a legal research approach that focuses on the analysis of legislation, concepts, theories, and relevant legal principles. (Irwansyah, 2021, p. 17) This study aims to understand and analyze legal issues related to land boundary designation by comparing Article 18 of Government Regulation Number 24 of 1997 with Ministerial Regulation of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) Number 3/Juknis-HK.02/III/2023.

The approaches used in this study include the statutory approach and the conceptual approach. The statutory approach involves examining the applicable laws and regulations to understand how the law governs land boundary designation. Meanwhile, the conceptual approach is used to explore doctrinal perspectives or evolving legal doctrines to construct a legal framework capable of preventing conflicts in the regulation of land boundary designation.(Amirudin & Asikin, 2016, p. 112)

The legal materials used in this study consist of primary and secondary legal materials. Primary legal materials include directly applicable regulations, such as Law Number 5 of 1960 on Basic Agrarian Principles, Government Regulation Number 24 of 1997 on Land Registration, Government Regulation Number 18 of 2021, and the Technical Guidelines for Complete Systematic Land Registration Number 3/Juknis-HK.02/III/2023. Secondary legal materials include literature, books, journals, and previous relevant studies, which provide additional context and assist in analyzing the primary legal materials.

The process of collecting legal materials involves steps such as identifying legal instruments, analyzing and eliminating irrelevant elements, and conducting an in-depth review of the legal issues central to the research. The legal material analysis techniques used include grammatical interpretation and systematic interpretation. Grammatical interpretation aims to understand legal provisions through the analysis of language and sentence structure in legal texts, while systematic interpretation is employed to link the analyzed regulation with other related regulations to achieve a more comprehensive understanding.

3. Results and Discussion

3.1. Land boundary designation in Indonesia: Legal principles, technological advancements, and challenges

Land boundary designation is one of the fundamental elements of the agrarian legal system in Indonesia. As part of land administration, this process aims to determine and establish the physical boundaries of land owned by individuals or legal entities. Land boundary designation is not only related to the technical aspects of measurement but also holds significant legal dimensions, namely providing validity and certainty regarding the status of the registered land (Ansar et al., 2021). In the context of agrarian law, land boundary designation serves as a crucial initial step to ensure the clarity of land rights as stipulated in Article 19 of the Basic Agrarian Law (UUPA) Number 5 of 1960, which mandates land registration to guarantee legal certainty for landowners.

The process of land boundary designation in Indonesia involves several legal principles, one of which is the principle of contradictoire delimitatie as outlined in Article 18 of Government Regulation Number 24 of 1997 on Land Registration. This principle requires the active involvement of landowners and their neighbors in determining land boundaries on-site.(Arief, 2018) The presence of both parties aims to ensure that the designation of boundaries is accurate, transparent, and mutually agreed upon.

With the advancement of technology, the use of modern methods such as drones or photogrammetry in land boundary measurements has introduced new challenges. While these technologies enable efficiency in land registration processes, they often disregard the direct participation of landowners as mandated by existing legal principles. (Buana et al., 2024) In this context, the relevance of land boundary designation becomes increasingly significant, not only as an administrative tool but also as an instrument to prevent disputes and protect the legal interests of landowners.

The relevance of land boundary designation within the context of agrarian law in Indonesia is inseparable from its primary function as a tool to ensure clarity of land rights while preventing potential conflicts often arising from discrepancies in physical data on the ground. From the perspective of land administration, land boundary designation is not merely a technical process but also reflects the integrity of the legal system aimed at safeguarding ownership certainty. This becomes increasingly crucial in the context of rising population density and the growing complexity of land needs, where the risk of overlapping ownership claims is significantly heightened.

On the other hand, land boundary designation also plays a key role in strengthening the function of land registration. As regulated under Government Regulation Number 24 of 1997, land registration not only serves to provide legal certainty but also acts as a primary instrument for the efficient and equitable management of land resources. Accurate boundary designation is a prerequisite for land registration to ensure that recorded data align with actual conditions on the ground.(Menon, 1979) In this context, land boundary designation is not only declarative but also constitutive, as it serves as the foundation for legal recognition of landowners' rights

In Indonesia's agrarian legal system, land registration serves as the primary instrument to provide legal certainty and protection of land rights for every citizen. Government Regulation Number 24 of 1997 on Land Registration acts as the legal foundation governing the mechanisms and procedures for systematic land registration. (Çağdaş et al., 2023) One of the key elements regulated in this provision is the principle of contradictoire delimitatie, which aims to ensure clarity and validity of land boundaries through a process that directly involves the relevant parties.

Article 18 of the regulation specifically emphasizes the importance of land boundary determination with the presence of landowners and adjacent parties. This process not only serves as the foundation for establishing physical land data but also plays a crucial role in preventing potential disputes. The principle of contradictoire delimitatie reflects

an effort to integrate technical and legal aspects into land administration, fostering transparency and accountability to support a fair agrarian system.(Adler, 2001)

Technological advancements have brought significant changes to various aspects of land administration, including land measurement methods. One of the latest innovations is the use of drones and photogrammetric methods, as regulated in the Ministerial Regulation of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) Number 3/Juknis-HK.02/III/2023 on Technical Guidelines for Complete Systematic Land Registration (PTSL).(Sohl & Mahmood, 2024) This regulation offers efficiency in the land registration process, particularly in boundary measurement, by enabling the use of modern technology to expedite the accurate collection of physical land data.(Polkowska, 2023)

The implementation of this Ministerial Regulation of ATR/BPN raises critical questions regarding the legal principles underlying land boundary designation. Article 18 of Government Regulation Number 24 of 1997 on Land Registration stipulates that boundary designation must directly involve landowners and adjacent parties as part of the principle of contradictoire delimitatie. This principle aims to ensure the accuracy and validity of land boundary data while preventing future disputes. In practice, the use of technology without the direct participation of landowners has the potential to conflict with this principle.(Deliry & Avdan, 2021)

The discussion on the analysis of Ministerial Regulation of ATR/BPN Number 3/Juknis-HK.02/III/2023 and its conflict with Article 18 of Government Regulation No. 24 of 1997 will be outlined in two separate subchapters. The first subchapter will focus on an in-depth analysis of the content and objectives of the regulation in the Ministerial Regulation of ATR/BPN. The second subchapter will critically examine the conflict that arises between the principle of contradictoire delimitatie in Government Regulation No. 24 of 1997 and the use of modern technology regulated in the Ministerial Regulation of ATR/BPN, as well as its impact on legal certainty and dispute prevention. This structured discussion is expected to provide a comprehensive overview of the issues raised.

3.2. Analysis of Ministerial Regulation of ATR/BPN Number 3/Juknis-HK.02/III/2023

Ministerial Regulation of ATR/BPN Number 3/Juknis-HK.02/III/2023 was issued as a strategic step to support the acceleration of the Complete Systematic Land Registration (PTSL) program, a national initiative aimed at ensuring legal certainty over land rights in Indonesia. In this context, the regulation offers an innovative approach by integrating modern technologies such as drones and photogrammetric methods into the processes of land measurement and mapping. These technologies provide a more efficient alternative compared to conventional methods, which have historically required significant time and resources.(Serafinelli, 2024) With the capability to produce high-quality mapping data in a relatively short time, this regulation is expected to accelerate the land registration process across Indonesia, particularly in remote and hard-to-reach areas.

Drones and photogrammetric methods outlined in this regulation are designed to address common technical challenges in land measurement processes, such as limited access to certain locations or difficulties in conducting manual surveys. This technology enables the capture of images and measurements with high precision, which are then processed into digital maps that serve as a foundation for land administration. These advantages significantly contribute to operational efficiency, particularly in helping the government achieve its ambitious target of registering all land parcels in Indonesia by 2025. Furthermore, the adoption of this technology presents an opportunity to modernize the land administration system, which has long been regarded as rigid and overly manual.

Under this regulation, the use of drones is permitted for photogrammetric land

measurements without requiring direct boundary designation by landowners and their neighbors. This method is considered a modern solution to technical challenges in land measurement, particularly in areas difficult to reach with manual methods. Drones can map large areas at high speed and produce high-quality digital maps that accurately reflect the physical conditions of the land. These advantages make drones an efficient tool for accelerating the land registration process, especially in the Complete Systematic Land Registration (PTSL) program, which has the ambitious target of completing the registration of all land parcels in Indonesia by 2025.

Despite its technological advantages, this approach raises significant legal issues. One of the primary concerns is the potential violation of the contradictoire delimitatie principle as stipulated in Article 18 of Government Regulation Number 24 of 1997 on Land Registration. This principle emphasizes the importance of the direct presence of landowners and adjacent parties during the boundary determination process. Such presence not only ensures the validity of land boundaries but also provides an opportunity for all parties to reach agreements that can prevent future disputes. By excluding landowners' direct involvement in drone-based measurements, the resulting data could be considered invalid or fail to reflect the consensus required by this legal principle.

The use of modern technologies such as drones and photogrammetric methods in land measurement, as regulated by Ministerial Regulation of ATR/BPN Number 3/ Juknis-HK.02/III/2023, represents an innovation aimed at enhancing efficiency in the implementation of the Complete Systematic Land Registration (PTSL) program. This regulation allows land measurements to be conducted without requiring direct boundary designation by landowners and their neighbors, as traditionally mandated by the contradictoire delimitatie principle. However, this approach raises legal issues that require thorough analysis, particularly regarding the harmonization between technological efficiency and adherence to agrarian legal principles.

Article 18 of Government Regulation Number 24 of 1997 on Land Registration emphasizes that land boundary designation must involve the presence of landowners along with their neighbors as part of the contradictoire delimitatie principle. This principle aims to ensure the validity of land boundaries through direct agreement among the parties, so that the resulting data can be accepted as legitimate evidence in land administration. The exclusion of the physical presence of the relevant parties during drone-based measurements raises questions about the validity of the results. This situation potentially violates the principle of pacta sunt servanda, which underscores the obligation to adhere to agreements or consensus in legal processes.

Another challenge that arises concerns the operational standards of drones, licensing, and the protection of public privacy. The use of this technology requires strict oversight to ensure that the data collected does not violate individual rights or lead to potential misuse.(Permadi et al., 2023) In addition, regulations governing the use of drones must align with the principles of public law and administrative law to ensure accountability in the implementation of the Complete Systematic Land Registration (PTSL) program.

The use of modern technologies such as drones and photogrammetric methods in land measurement, as regulated by Ministerial Regulation of ATR/BPN Number 3/ Juknis-HK.02/III/2023, represents an innovation aimed at enhancing efficiency in the implementation of the Complete Systematic Land Registration (PTSL) program. This regulation allows land measurement to be conducted without requiring direct boundary designation by landowners and their neighbors, which is traditionally mandated by the contradictoire delimitatie principle. This principle requires the direct involvement of relevant parties in determining land boundaries to ensure the validity and legitimacy of the process. In this context, the principle not only reflects the doctrine of pacta sunt servanda the obligation to honor and execute agreements among parties but also

supports the principle of transparency in land administration.

However, this technology-based approach raises significant legal issues, particularly due to its potential violation of the principle of rechtszekerheid or legal certainty. Without the direct involvement of landowners, the validity of boundary measurements obtained through drones may be called into question, posing a risk of triggering legal disputes in the future. This situation could also undermine public trust in the land administration system, which is expected to provide clear and equitable legal protection for all parties involved.

3.3. Conflict Between Article 18 of Government Regulation No. 24 of 1997 and Ministerial Regulation of ATR/BPN No. 3/Juknis-HK.02/III/2023

The conflict between Article 18 of Government Regulation No. 24 of 1997 on Land Registration and Ministerial Regulation of ATR/BPN No. 3/Juknis-HK.02/III/2023 reflects a disharmony in the regulation of land administration, particularly in the process of land boundary determination. Article 18 of Government Regulation No. 24 of 1997 establishes the contradictoire delimitatie principle, which mandates the direct presence of landowners and adjacent parties during boundary designation. This principle aims to ensure the validity of land boundary data through direct agreement among the interested parties, thereby minimizing the potential for conflicts and disputes.

The contradictoire delimitatie principle, as stipulated in Article 18 of Government Regulation No. 24 of 1997, serves as a fundamental principle in land boundary determination for land registration in Indonesia. In its implementation, this principle requires the direct presence of landowners and adjacent parties during the boundary designation process. The primary objective of this approach is to ensure that the established land boundaries align with the factual conditions on the ground and have been mutually agreed upon by the involved parties.(Ficriyanta et al., 2024) This process provides legitimacy to the land boundary data produced, making it a valid basis for the issuance of land certificates.(Permadi et al., 2023)

Thus far, the implementation of this principle has been carried out through measurement mechanisms involving the Adjudication Committee for systematic land registration and the Head of the Land Office for sporadic land registration. The interested parties are officially invited to attend the boundary designation, which is typically conducted at the location of the land.(Hendriatiningsih et al., 2019) They are required to indicate their land boundaries, provide approval, and ensure there are no overlapping claims with neighboring land. The measurement results are then recorded in a land parcel map, which becomes an official document in land administration.

The implementation of this principle often encounters various challenges in the field. A primary issue is the absence of landowners or adjacent parties during boundary designation, which may arise due to a lack of awareness about the importance of the process, ongoing disputes, or logistical difficulties in bringing all relevant parties together. Such absences can render the resulting land boundary data invalid, necessitating repetition or adjustments to the process.

In several cases, non-compliance with the contradictoire delimitatie principle has led to disputes in the future. For instance, when boundary designation is conducted without the presence of one party, the resulting measurements may be considered inaccurate or fail to reflect mutual agreement, resulting in overlapping claims on the land. A case study of a land boundary dispute in Labokke Hamlet, Puty Village, Bua District, Luwu Regency, illustrates the challenges in implementing the contradictoire delimitatie principle during boundary determination. In this case, Article 18 of Government Regulation No. 24 of 1997, which mandates the presence of landowners and adjacent parties during boundary designation, was not fully applied, leading to conflicts between the landowner, neighbors, and the authorities.

The dispute began when a land remeasurement requested by the certificate

holder was not conducted in accordance with the existing physical data and disregarded the presence of relevant parties, including neighboring landowners. Moreover, the measurement extended beyond the boundaries recorded in the certificate, crossing a small river that should have served as the natural boundary. The absence of the involved parties during the measurement process became the root of the issue, as the results were deemed to not reflect the factual conditions and failed to comply with the contradictoire delimitatie principle.

The use of modern technology, such as drones, to expedite the land measurement process as regulated by Ministerial Regulation of ATR/BPN Number 3/Juknis-HK.02/III/2023, could exacerbate the situation if not accompanied by the direct involvement of relevant parties. In the Labokke case, if drones were used without on-site verification by the landowners and adjacent neighbors, the measurement results could further aggravate the legal uncertainty surrounding the land.

3.4. Legal construction of land boundary designation to prevent legal conflicts

The legal construction of land boundary designation to prevent legal conflicts requires a harmonious approach that integrates agrarian legal principles with the efficiency of modern technology. Fundamentally, the contradictoire delimitatie principle, as stipulated in Article 18 of Government Regulation No. 24 of 1997, remains a core element to ensure the validity of the land boundary designation process. This principle guarantees that land boundaries are established through the direct involvement of relevant parties, making the results legally recognized as a valid basis for land registration. However, with the introduction of technologies such as drones and photogrammetric methods, as regulated by Ministerial Regulation of ATR/BPN Number 3/Juknis-HK.02/III/2023, there arises a need to design regulations that can bridge the efficiency of technology with the existing legal principles.

To achieve harmonization between the efficiency of modern technology and the principles of agrarian law, regulatory revisions and procedural updates are needed to systematically and measurably integrate both aspects. A revision to Article 18 of Government Regulation No. 24 of 1997 could include provisions requiring that measurements conducted using technologies such as drones and photogrammetry be validated through an on-site meeting involving landowners and adjacent parties. This validation must be a mandatory part of the process to ensure the legitimacy of land boundaries in accordance with the contradictoire delimitatie principle.

The proposed implementation begins with an initial measurement using drones to quickly and accurately collect land boundary data. The results of these measurements are then presented at the land location, involving landowners and adjacent parties to validate the data's accuracy. Agreements among the parties are documented in an official report (berita acara), which serves as the legal foundation for the data's validity. Finally, the validated data is used in the process of issuing land certificates, ensuring that legal certainty is maintained.

Second, Ministerial Regulation of ATR/BPN Number 3/Juknis-HK.02/III/2023 needs to be adjusted by incorporating protocols that require the direct involvement of relevant parties in the final stages of measurement. The regulation should stipulate that initial data collected using drones cannot be used as the sole basis for issuing land certificates without manual verification in the field. This is crucial to uphold the principle of rechtszekerheid (legal certainty) for landowners and adjacent parties.

The use of drones in land measurement, as regulated by Ministerial Regulation of ATR/BPN Number 3/Juknis-HK.02/III/2023, represents a modern approach to enhancing the efficiency and accuracy of land registration. However, this regulation requires refinement to ensure that technological efficiency aligns with agrarian legal principles, particularly rechtszekerheid (legal certainty) and contradictoire delimitatie.(Ávila, 2016)

One of the main shortcomings of this regulation is the absence of mandatory provisions requiring on-site manual verification by landowners and adjacent parties. This raises the potential for violations of the principle of legal certainty, as the data produced by drones, while technically accurate, cannot fully represent the factual conditions that require agreement among the parties involved.

Regulatory refinement can be achieved by introducing protocols that mandate the direct involvement of relevant parties in the final stages of measurement. Initial data collected using drones should be treated as preliminary data that requires validation through field verification. In this process, landowners and adjacent neighbors must be present to confirm the validity of the measured land boundaries, under the observation of the Adjudication Committee for systematic land registration or officials from the Land Office for sporadic registration.(Aditya et al., 2020) Their agreement must be documented in an official report (berita acara), which serves as the legal basis for the issuance of the land certificate.

Third, the development of Standard Operating Procedures (SOPs) governing the use of modern technology is essential, including standards for measurement accuracy, drone usage permits, data protection, and field implementation oversight. These SOPs must be supported by clear accountability mechanisms, including administrative sanctions for violations.

Fourth, public outreach and training are needed for both the community and land officials to emphasize the importance of the contradictoire delimitatie principle and new procedures integrating technology. This education aims to increase public awareness of their rights and obligations in the land boundary designation process.

Fifth, implementation oversight must be strengthened by involving independent institutions to ensure that the new regulations are carried out in accordance with the principles of accountability and transparency. Through these measures, the proposed harmonization can deliver efficiency in land registration without compromising legal legitimacy and fairness for all parties involved.

4. Conclusion

Land boundary determination in Indonesia's land administration is a fundamental element that not only provides legal certainty for landowners but also prevents potential disputes that could harm the community. Article 18 of Government Regulation No. 24 of 1997 underscores the importance of the contradictoire delimitatie principle, requiring the direct presence of landowners and adjacent parties during the boundary determination process. This principle aims to ensure the validity of land boundary data through mutual agreement among the parties involved. However, with the introduction of technologies such as drones and photogrammetry, as regulated in Ministerial Regulation of ATR/BPN Number 3/Juknis-HK.02/III/2023, new challenges arise in harmonizing technological efficiency with agrarian legal principles.

The case study in Labokke Hamlet, Puty Village, Bua District, Luwu Regency, illustrates the implications of disregarding the contradictoire delimitatie principle. In this case, land measurement was conducted without the presence of the relevant parties, resulting in measurement outcomes that did not reflect the actual field conditions and triggering disputes between the landowner and adjacent parties. This case demonstrates that without the direct involvement of the parties, measurement results—even with modern technology can be questioned for their validity, leading to legal uncertainty and social conflict.

A proposed solution to address this issue involves regulatory revisions that integrate modern technology with the contradictoire delimitatie principle. Data obtained through drones can be used as preliminary data but must be validated through field verification involving landowners and adjacent parties. This validation must be witnessed by land officials and documented in an official report (berita acara). Furthermore, regulations

must establish operational standards for technology use to ensure transparency and accountability in land measurement.

Harmonizing modern technology with agrarian legal principles is key to creating an efficient land administration system while ensuring legal certainty. This approach not only leverages the advantages of technology but also safeguards the rights of the public as landowners, thereby supporting the overarching goals of the Complete Systematic Land Registration (PTSL) program to promote justice and welfare for all parties involved.

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