

Mechanism of Land Boundary Arrangement as an Effort to Realize Certainty of Land Rights

I Komang Danu Jaya Ambara¹, Erikson Sihotang², I I Gusti Agung Ika Laksmi Mahadewi³

^{1,2,3}Faculty of Law Mahendradatta University, Indonesia



DOI : <https://doi.org/10.61796/ijmi.v3i3.595>



Sections Info

Article history:

Submitted: June 30, 2026

Final Revised: July 22, 2026

Accepted: August 12, 2026

Published: August 29, 2026

Keywords:

Land boundary arrangement

Legal certainty

Land rights

ABSTRACT

Objective: Based on these conditions, this research examines two research questions, namely the mechanism of land boundary arrangement in realizing certainty of land rights and the factors affecting its implementation. **Method:** This research uses an empirical juridical legal research method with a statutory approach and a conceptual approach. Data were obtained through literature studies of primary, secondary, and tertiary legal materials, supported by interviews with informants at the Tabanan Regency Land Office. All data were analyzed descriptively and qualitatively by relating empirical facts to statutory regulations, legal theories, and expert opinions. **Results:** The results show that the land boundary arrangement mechanism is carried out through the stages of fulfilling administrative requirements, installing boundary markers, determining boundaries based on the *contradictoire delimitatie* principle, measurement, and mapping as the basis for land registration and the issuance of land rights certificates. The implementation of land boundary arrangement plays an important role in providing certainty regarding the location, area, and boundaries of land parcels, thereby preventing land disputes and providing legal certainty to land rights holders. Factors affecting its implementation include legal factors, the competence of land officials, facilities and infrastructure, inter-agency coordination, and community participation and legal awareness. The common obstacles encountered include the absence of boundary markers, the absence of adjoining landowners, and the lack of agreement regarding land boundaries. **Novelty:** The implementation of land boundary arrangement plays an important role in providing certainty regarding the location, area, and boundaries of land parcels, thereby preventing land disputes and providing legal certainty to land rights holders.

INTRODUCTION

The implementation of land registration is governed by Government Regulation No. 24 of 1997 concerning Land Registration [1]. Pursuant to Article 1 Point 1, land registration is a continuous, ongoing series of activities comprising the collection, processing, recording, presentation, and maintenance of physical and legal data regarding land parcels [1]. A crucial step in this process is land boundary arrangement, as clear boundaries form the foundation of accurate physical data prior to measurement and title certificate issuance [2].

The legal framework for land boundary arrangement in Indonesia is an integral part of land administration aiming to enforce legal certainty of land rights [3]. This framework originates from the Basic Agrarian Law (UUPA), particularly Article 19, which mandates that the government conduct land registration nationwide to guarantee legal certainty [4]. Within this registration framework, boundary arrangement serves as an essential initial stage to establish the location, area, and boundaries of land parcels prior to surveying and title certification [5].

Beyond being a procedural phase, land boundary arrangement implements the social function principle of land rights, as stipulated in Article 6 of the UUPA, which

declares that all land rights have a social function [6]. This provision implies that land controlled by an individual serves not only the owner's interest but also holds significance for the community and the state [6], [7]. Thus, land usage must align with broader societal interests without nullifying individual rights, serving instead to balance private and public interests [6].

Boundary determination provisions are governed under Articles 17 through 19 of Government Regulation No. 24 of 1997, which specify that prior to measurement, parcel boundaries must be determined with the consent of adjoining landowners [1]. Technical guidelines for boundary determination and surveying are further regulated by Regulation of the Minister of Agraria and Spatial Planning/Head of the National Land Agency No. 16 of 2021 (the Third Amendment to Regulation No. 3 of 1997), which governs the collection and processing of physical data during land registration [8].

Boundary ambiguity remains a primary catalyst for land disputes in Indonesia [6]. Many land disputes arise not over the title status itself, but from uncertainties surrounding parcel location, area, and spatial limits [9]. This demonstrates that legal certainty is shaped not only by certificate issuance, but also by the accuracy of the boundary arrangement mechanism [8]. Meanwhile, the government continues to enhance legal certainty through the Complete Systematic Land Registration (PTSL) program, the success of which relies heavily on accurate boundary definitions for every parcel [10].

Participatory boundary arrangements involving local communities help produce precise spatial data, minimizing overlapping claims and boundary disputes [10], [11]. Successful land administration depends both on statutory frameworks and procedural execution that guarantees object certainty [3]. Therefore, boundary arrangement holds a pivotal position, forming the baseline data recorded in spatial documents and title certificates [2]. In this study, Tabanan Regency was selected as the research location because it actively executes land registration activities to secure legal certainty for its community. However, like many regions, Tabanan Regency faces practical obstacles in boundary arrangement that can impede registration and compromise legal certainty, making it a relevant case study.

Accordingly, the land boundary arrangement mechanism acts as a cornerstone in land administration [12]. Given the operational challenges that risk causing disputes and diminishing legal certainty, this research titled "*Mechanism of Land Boundary Arrangement as an Effort to Realize Certainty of Land Rights*" examines how boundary mechanisms are executed and analyzes the factors that influence their effectiveness.

RESEARCH METHOD

The word "research" derives from the English prefix *re-* (again) and *search* (to look for), signifying to search again [13]. Etymologically, it originates from the Latin *reserare*, meaning to uncover or reveal [14]. Thus, research is understood as an activity to uncover knowledge, assuming that knowledge—whether established or undiscovered—exists

within nature waiting to be revealed. The primary goal of research is to discover accurate knowledge to answer specific questions or resolve ambiguities [14].

The methodology of this paper centers on empirical legal research incorporating statutory and conceptual approaches [15]. Utilizing primary and secondary legal sources, data were analyzed qualitatively through deductive-syllogistic reasoning to evaluate the land boundary arrangement mechanism. The statutory approach (*statute approach*) analyzes relevant legislation governing land surveying, registration, and rights certainty [3], while the conceptual approach (*conceptual approach*) explores legal principles, doctrines, and scholarly views on legal protection and boundary determination [16].

Data collection techniques comprised both library research and field research [13]. Library research involved examining primary, secondary, and tertiary legal materials, including statutes, academic books, scientific journals, legal documents, and official literature [13]. Field research was conducted via semi-structured interviews with qualified officials at the Tabanan Regency Land Office to gather empirical data on field execution, operational bottlenecks, and factors influencing legal certainty. Collected data were systematically analyzed to address the research problems.

RESULTS AND DISCUSSION

Results

The land boundary arrangement mechanism is executed based on Government Regulation No. 24 of 1997 on Land Registration and its implementing rule, Regulation of the Minister of Agraria and Spatial Planning/Head of BPN No. 16 of 2021. These regulations mandate that prior to parcel measurement, boundaries must be established based on physical field verification and the explicit agreement of adjacent land owners. Legal certainty regarding the object of land rights is attainable only when boundaries are clearly demarcated and agreed upon by all interested parties.

The Complete Systematic Land Registration (PTSL) program follows a systematic sequence: land mapping and identification, rights data collection, and certificate issuance. This process integrates modern Information and Communication Technology (ICT), including land management information systems, satellite-based mapping, and electronic registration. Operationally, the boundary mechanism begins with an application submitted by the landholder to the local Land Office. Once administrative requirements are verified, field officers perform pre-survey preparations, site inspections, and instruct applicants to place boundary markers at every corner of the parcel. These markers—typically concrete posts or durable signs—facilitate physical identification during surveying.

According to an interview with I Made Dwi Pranata Sukma Putra, a surveyor at the Tabanan Regency Land Office (conducted June 15, 2026), boundary arrangement serves as the decisive opening phase of land registration. Applicants must install corner markers prior to surveying, and adjacent property owners must be present during boundary determination to give consent under the principle of *contradictoire delimitatie*. Once all markers are verified and no adjacent owners object, surveying proceeds using

technical survey instrumentation. Survey data are processed into field sketches (*gambar ukur*) and parcel maps (*peta bidang tanah*), forming the physical dataset for registration. The surveyor noted that frequent field obstacles in Tabanan Regency include absent adjacent owners, uninstalled boundary posts, and differing perceptions of boundary lines, which require delaying measurements until consensus is reached.

The PTSL program has significantly accelerated land registration in Tabanan Regency. However, its success depends heavily on community participation in placing markers and attending boundary demarcations. Active public cooperation directly accelerates surveying and certificate issuance. Furthermore, clear and agreed-upon boundaries prevent land disputes, ensuring that physical data printed on title certificates match real field conditions.

According to DARMANSYAH, S.ST., M.H., Head of the Survey and Mapping Section at the Tabanan Regency Land Office, institutional capacity significantly impacts operational success. Officer professionalism, technical competence, experience, and precision during survey and data processing are critical. While technologies such as Global Navigation Satellite Systems (GNSS), Electronic Total Stations (ETS), and Geographic Information Systems (GIS) enhance measurement precision, skilled personnel remain indispensable to avoid spatial data errors.

Technical and topographical factors also play a major role. Tabanan Regency features diverse geography ranging from urban settings and agricultural plots to hilly terrains, affecting site accessibility. Heavy rainfall and adverse weather frequently hinder outdoor field measurements, requiring flexible scheduling. Furthermore, coordination between local communities, village administrations, and the Land Office is essential. Village officials assist by providing historical land control data, notifying neighboring landowners, and facilitating dispute resolution. Effective inter-agency coordination speeds up boundary settlement, whereas poor communication delays the collection of both physical and legal data.

Discussion

The effectiveness of land boundary arrangements directly determines whether legal certainty over land rights can be realized. Executing boundary procedures in strict adherence to statutory guidelines yields accurate physical data, protecting titleholders and mitigating potential land disputes. Addressing field obstacles requires coordinated strategies among Land Offices, village authorities, and local landholders.

A primary focus is enhancing the technical competency of land surveyors, who must possess spatial surveying skills, understand land regulations, and communicate effectively with the public. In practice, surveyors do more than take measurements; they explain boundary determination rules and assist in resolving field disagreements. Capacity-building through professional training, continuous education, and formal certification is essential to improving service quality.

The Tabanan Regency Land Office has increased public awareness outreach regarding the necessity of fixing boundary markers before formal surveys take place.

Conducted in partnership with village heads (*perbekel*) and hamlet leaders, these programs remind citizens to install boundary posts and ensure neighboring owners attend boundary setup sessions. Public legal education helps overcome the misconception that boundary setting is merely a technical formality, clarifying its role as a key determinant of legal certainty. Educational campaigns emphasize the legal benefits of land certificates, registration workflows, the *contradictoire delimitatie* principle, and the risks of improper boundary definitions.

Collaborative ties between the Land Office and village administrations streamline field operations. Village officials maintain historical knowledge of land occupancy, local ownership, and administrative boundaries, helping surveyors identify unrecorded land parcels. Strong local cooperation facilitates the attendance of adjacent owners, ensuring the *contradictoire delimitatie* principle is upheld.

In an interview on June 25, 2026, I Putu Udi Antika, Survey Section Coordinator at the Tabanan Regency Land Office, emphasized that public participation directly dictates operational success. Well-informed landholders actively place boundary markers, attend boundary determinations, and prepare required documentation, allowing smooth processing. Conversely, low participation requires rescheduling, delaying certificate issuance. Pre-survey notifications reminding applicants to mark boundaries and invite neighbors have proven effective in reducing delays, highlighting clear communication as a vital operational factor.

CONCLUSION

Fundamental Finding : The mechanism for arranging land boundaries during land registration establishes certainty of land rights through defined stages: boundary determination, marker installation, surveying, mapping, and the integration of physical and legal data in accordance with statutory rules. Guided by the *contradictoire delimitatie* principle, this process relies on mutual consent among adjacent landholders to ensure precise location, area, and spatial boundaries. Implementation is shaped by legal frameworks, technical infrastructure, personnel expertise, documentation quality, inter-agency coordination, and active community participation. **Implication:** Proper boundary arrangement underpins legal certainty by generating reliable physical datasets for title certification, preventing property disputes, and supporting systematic land registration initiatives such as PTSL. Enhancing boundary arrangement effectiveness requires upgrading surveyor competencies, utilizing modern geospatial technologies, strengthening ties between Land Offices and village governments, and increasing public legal awareness regarding boundary demarcation responsibilities. **Limitation:** This study is limited by its focus on the legal and procedural aspects of land boundary arrangement during land registration. It does not comprehensively examine empirical variations in implementation across different regions, particularly differences in land characteristics, institutional capacity, availability of surveying infrastructure, and community participation. The study also provides limited assessment of the effectiveness of modern geospatial technologies in resolving boundary discrepancies and preventing land disputes. **Future research:** should conduct empirical and comparative studies across different regions to examine how legal, technical, institutional, and social factors influence the effectiveness of land boundary arrangement. Further studies should evaluate the use of modern geospatial technologies,

including digital surveying, geographic information systems, and satellite-based mapping, in improving boundary accuracy and accelerating land registration. Research should also examine strategies for strengthening coordination between Land Offices, village governments, surveyors, and communities to support more effective and dispute-resistant land registration.

REFERENCES

- [1] A. Sutedi, *Peralihan Hak Atas Tanah dan Pendaftarannya*. Jakarta, Indonesia: Sinar Grafika, 2018.
- [2] U. Santoso, *Pendaftaran dan Peralihan Hak Atas Tanah*. Jakarta, Indonesia: Kencana Prenada Media Group, 2010.
- [3] Arba, *Hukum Agraria Indonesia*, 2nd ed. Jakarta, Indonesia: Sinar Grafika, 2021.
- [4] B. Harsono, *Hukum Agraria Indonesia: Sejarah Pembentukan Undang-Undang Pokok Agraria, Isi dan Pelaksanaannya*, vol. 1, rev. ed., 1st print. Jakarta, Indonesia: Universitas Trisakti, 2013.
- [5] U. Santoso, *Hukum Agraria: Kajian Komprehensif*, 6th print. Jakarta, Indonesia: Kencana, 2017.
- [6] D. Baho, *Dinamika Fungsi Sosial Hak Atas Tanah: Analisis Kasus Sengketa Tanah dan Implikasi Undang-Undang No. 5 Tahun 1960*. Sulsel, Indonesia: CV. Ruang Tentor, 2023.
- [7] U. S. Sugiarto, Suratman, et al., *Pengadaan Tanah Untuk Kepentingan Umum*. Malang, Indonesia: Intrans Publishing, 2016.
- [8] Ricard and A. Sudradjat, *Teori Dan Praktik Pendaftaran Tanah (Berikut Contoh Draft Akta)*, 1st ed. Jawa Barat, Indonesia: CV Cendekia Press, 2024.
- [9] A. Sutedi, *Peralihan Hak Atas Tanah dan Pendaftarannya*, 10th ed. Jakarta, Indonesia: Sinar Grafika, 2022.
- [10] A. Tehupeior, *Monograf: Pendaftaran Tanah Sistematis Lengkap Dan Perlindungan Hukum Pemegang Hak Atas Tanah*. Jakarta, Indonesia: UKI Press, 2023.
- [11] A. Amalia, *Hukum Agraria dan Penguasaan Hak Atas Tanah*, 1st ed. Jawa Barat, Indonesia: Penerbit Widina Media Utama, 2024.
- [12] A. P. Parlindungan, *Pendaftaran Tanah di Indonesia*. Bandung, Indonesia: Mandar Maju, 1999.
- [13] Sari et al., *Melakukan Penelitian Kepustakaan*, 1st ed. Sukoharjo, Indonesia: Pradina Pustaka, 2025.
- [14] T. Firmanto et al., *Metodologi Penelitian Hukum (Panduan Komprehensif Penulisan Ilmiah Bidang Hukum)*, 1st ed. Jambi, Indonesia: PT Sonpedia Publishing Indonesia, 2024.
- [15] Suteki and G. T., *Metodologi Penelitian Hukum (Filsafat, Teori, Praktis)*, 5th print. Depok, Indonesia: PT Rajagrafindo Persada, 2025.
- [16] S. Laritmas and A. Rosidi, *Teori-Teori Negara Hukum*, 1st ed., 1st print. Jakarta, Indonesia: Kencana Prenada Media, 2024.

I Komang Danu Jaya Ambara

Faculty of Law Mahendradatta University, Indonesia

Erikson Sihotang

Faculty of Law Mahendradatta University, Indonesia

I I Gusti Agung Ika Laksmi Mahadewi

Faculty of Law Mahendradatta University, Indonesia
