



Land Registration Policy and the Absence of Gender Justice in North Sumatra

M Nazir Salim^{1*}, Trisnanti Widi Rineksi², Rohmat Junarto³, Dwi Wulan Pujiriyani⁴, Westi Utami⁵, Rosye C. Vilanova⁶, Dian Aries Mujiburohman⁷, Kusmiarto⁸, Mujiati⁹, Tatag Bagus Narendra¹⁰, Annisa Nur Aisyah¹¹, Lutfia Nursetya Fuadina,¹² Sarjita,¹³ Millennia Duta Ramadhana¹⁴, Berlian Imani Putri¹⁵

¹⁻¹³Sekolah Tinggi Pertanahan Nasional

¹⁴⁻¹⁵ Student of Sekolah Tinggi Pertanahan Nasional

*Correspondence: nazirsalim@stpn.ac.id

| ARTICLE INFO | ABSTRACT |
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| <p>Keywords: Land Registration, Gender Justice, PTSL, Patrilineal, Spatial Data</p> <p>Date logs: Received: Feb 28, 2026 Reviewed: March 6, 2026 Accepted: March 12, 2026 Published: March 26, 2026</p> <p>How To Cite: Salim, M.N., Rineksi, T.W., Junarto, Pujiriyani, D.W., R., Utami, W., Vilanova, R.C., Mujiburohman, D.A., Kusmiarto, Kusmiarto, Mujiati, Narendra, T.B., Aisyah, A.N., Fuadina, L. N., Sarjita, Ramadhana, M.D., Putri, B.I. (2026). Land Registration Policy and the Absence of Gender Justice in North Sumatra. <i>Marcapada: Jurnal Kebijakan Pertanahan</i>, 5(2), 207-232. https://doi.org/10.31292/mj.v5i2.199</p> | <p>Gender inequality in formal land ownership remains evident, particularly within indigenous communities, even though land rights are legally guaranteed equally for all citizens. This study evaluates the distribution of land ownership based on gender and to analyze the effectiveness of land registration programs, particularly the Complete Systematic Land Registration program, in North Sumatra Province. Using a mixed-methods approach, the research combines legal ethnography with quantitative analysis. Data were collected through field observations, focus group discussions, interviews with relevant stakeholders, and a literature review. Geographic Information Systems (GIS) were used to visualize the spatial distribution of land ownership. legal ethnography examined tenure systems and legal-cultural practices in the study sites. The research was conducted in two locations representing different socio-spatial contexts: Samosir Regency (rural-traditional) and Deli Serdang Regency (sub-urban). The findings reveal gender inequality in land ownership. Spatial analysis indicates that men dominate land ownership with 50.52%, while women account for 38.76%, and the remaining 10.72% of the data lack gender identification. The legal ethnographic analysis further shows that the patrilineal system and administrative barriers in land registration—such as the absence of gender-disaggregated data—continue to sustain the marginalization of women in obtaining equal land rights. The study concludes that regional transitions from rural to sub-urban settings provides greater opportunities for women to access land ownership. However, current government programs remain gender-neutral in design, which may inadvertently reinforce existing inequalities.</p> |

A. Introduction

Inclusive land governance constitutes a fundamental foundation for sustainable development and social justice ([Jahani Chehrehbargh et al., 2025](#)). As a legal and administrative instrument of the state, land registration policy should function to guarantee the rights of every citizen regardless of social background or gender. However, within the socio-political reality of Indonesia—particularly in North Sumatra Province—access to secure land rights still demonstrates significant gender inequality. The Basic Agrarian Law (Undang-Undang Pokok Agraria/UUPA), Law No. 5 of 1960, Article 9 paragraph

(2), explicitly guarantees that men and women have equal opportunities to obtain land rights. Nevertheless, its implementation in practice often encounters substantial barriers created by customary norms and administrative practices that tend to be gender biased ([Aditya, 2025](#)).

In North Sumatra, where a patrilineal kinship system remains strongly maintained by a large proportion of Batak communities, land is not merely an economic asset. Rather, it represents a symbol of clan sovereignty and identity that is transmitted exclusively through the male lineage ([Firmando, 2021](#); [Simanjuntak, 2015](#)). Consequently, women are frequently excluded from formal land ownership documents and are placed in a more vulnerable position in both tenure security and economic conditions ([Goldman et al., 2016](#); [Martial et al., 2023](#)).

The issue of gender justice in agrarian policy is increasingly urgent because property ownership, particularly land, tends to possess a “masculine” character. Empirical administrative data in North Sumatra indicate that women own less land than men (38.76% women, 50.52% men, and 10.72% with the owner’s gender not yet identified). In fact, women constitute crucial actors in ensuring household welfare and food security ([Gultom, 2024](#)). Granting land ownership in women’s names is therefore not merely an administrative matter but also a significant effort toward empowerment ([Simbolon et al., 2019](#)). Women who hold land certificates in their own names tend to have stronger bargaining power in both domestic and public negotiations, face a lower risk of violence, and are better able to secure the future of their children. Without gender-sensitive policy interventions, national strategic programs such as the Complete Systematic Land Registration (Pendaftaran Tanah Sistematis Lengkap/PTSL) and Land Redistribution programs may instead reinforce existing gender inequalities rather than reduce them. Therefore, accelerating inclusive land governance becomes imperative to ensure that the principle of no one left behind in sustainable national development can be realized concretely at the local level ([Rammohan & Johar, 2009](#); [Rihi, 2025](#)).

Batak communities, which traditionally adhere to a patrilineal kinship system ([Dua Osa et al., 2023](#); [Nugaheni, 2021](#); [Rabbani et al., 2024](#)), demonstrate a significant level of gender inequality, particularly in relation to civil rights and asset ownership, especially land. Within customary perspectives, men are positioned as the successors of lineage and the holders of ancestral continuity. Consequently, they inherit productive assets—considered symbols of clan sovereignty—almost exclusively. As a result, most land certificates list male names, while women can access land primarily through non-inheritance mechanisms such as grants (Pau Seang or Holong Niroha). These mechanisms largely depend on the goodwill and approval of male relatives. Paradoxically, despite these limitations in formal rights, Batak women carry a considerable cultural burden as the backbone and primary managers of household life ([Lubis, 2011](#); [Pasaribu, 2023](#); [J. P. R. Siregar et al., 2023](#)). Women are also expected to ensure the success and prosperity of the family, commonly expressed through the values of *Hamoraon*, *Hagabeon*, and *Hasangapon*.

Nevertheless, processes of modernization in many contexts have gradually encouraged convergence and transformation within customary systems. These dynamics have stimulated women’s struggles for greater recognition and have produced pragmatic solutions that seek to promote justice amid strong patriarchal traditions ([Irianto, 2005](#); [Simamora et al., 2015](#); [Situmorang, 2021](#)).

In Batak customary values and cultural understanding, land possesses profound meaning. It is regarded not merely as a place of residence or a means of production but also as an identity marker and a symbol of social status ([Ashmarita et al., 2022](#)). In this sense, land is perceived as a

representation of ancestral identity. It also constitutes a central point of attachment to ancestral lineage. Among the Batak Toba, for instance, land is often described as *tanah bermarga* (clan-based land), reflecting the social standing of a lineage and functioning as a symbol of inherited identity ([J. P. R. Siregar et al., 2023](#)). From an anthropological perspective, land is viewed by the Batak as a philosophical life objective; therefore, it must be owned, controlled, and managed in order to realize personal and collective aspirations. These aspirations correspond to the well-known Batak philosophical principles of *hamoraon* (wealth), *hagabeon* (descendants), and *hasangapon* (honor) ([Simangunsong, 2018](#)).

This philosophical orientation is further expressed through the proverb “*lulu anak lulu tano*” (to seek children and to seek land), which symbolizes the strong orientation of clan identity as the holder of land rights. As explained by Sembiring, within Batak—particularly Karo—interpretations, land is not only a symbol of status but also a form of power. Therefore, transferring land to another party can be understood as transferring a portion of the power possessed by the Batak individual or clan (Interview with Sembiring, 2025).

Several previous studies on land registration have primarily focused on aspects of technical efficiency ([Dewi & Susantio, 2024](#); [Suhadi et al., 2022](#); [Sumanto, 2020](#)), the acceleration of the number of registered land parcels ([Jahani Chehrehbargh et al., 2024](#); [Permadi & Herlindah, 2023](#); [Supriyanto & Krismantoro, 2020](#); [Sutrisno et al., 2025](#); [Yubaidi et al., 2022](#); [Yuniawan & Sulistyaningrum, 2025](#)), or the macroeconomic impacts of land certification ([Krismantoro, 2024](#); [Sugiyanto et al., 2008](#)). From these studies, a clear analytical gap emerges in understanding how the diversity of legal cultures—such as the patrilineal system in North Sumatra—affects the spatial and juridical distribution of land ownership. Land registration programs are often assumed to be gender-neutral. However, the existing procedures do not yet provide adequate gender-disaggregated data to evaluate the policy impacts on women. In North Sumatra, particularly in Deli Serdang, a significant data anomaly shows that approximately 61% of land ownership records have not been defined by the owner’s gender. This condition reflects a systemic neglect in recording the subject of land rights. Moreover, the mechanisms of land registration frequently remain top-down in nature and insufficiently consider women’s domestic responsibilities as well as geographical barriers that limit their participation in outreach activities and in the processes of physical and juridical data collection.

This article addresses this gap by proposing an approach that integrates legal ethnography with GIS-based spatial analysis to document the distribution of gender-based land ownership more accurately. In contrast to purely normative approaches, this study explores how living law—the law as practiced within Batak patrilineal communities in Samosir and Deli Serdang Regencies—interacts with national law. The article highlights the deep-rooted causes of inequality, where daughters are often perceived as “reproductive assets” who will eventually leave their natal clan and therefore are considered not entitled to ancestral land. This perception contrasts with state law, which formally guarantees full gender equality ([Firmando, 2021](#); [Fredriko, 2024](#); [Siburian, 2021](#)).

The article seeks to formulate strategies to affirm gender justice in land registration through three levels: the provision of information, the facilitation of participation, and the prevention of disputes. The authors argue that land registration should transform from a merely technical procedure into an empowerment instrument that is responsive to gender concerns. One possible approach is through the implementation of Gender-Responsive Budgeting schemes and the adoption of joint title

policies that recognize shared ownership between spouses. By analyzing gender issues through the Gender Analysis Pathway (GAP), this article provides concrete recommendations for policymakers within the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (Kementerian ATR/BPN). Specifically, it recommends improving the Land Office Computerization System (Komputerisasi Kantor Pertanahan—KKP) to automatically capture gender-disaggregated data. In addition, the system should record individual land ownership holdings to support regulatory mechanisms that ensure equitable access to land right. Ultimately, this article aims to inform land governance reforms that not only provides legal certainty but also ensures gender-equitable social justice in Indonesia.

B. Research Methods

This study employed a mixed-methods approach combining qualitative and quantitative methods to examine gender inequality in land registration ([Jenkins et al., 2023](#)). Specifically, the qualitative component applied a legal ethnography approach, while the quantitative component analyzed land ownership patterns. The study integrated legal ethnography with GIS-based spatial analysis. Legal ethnography examined tenure systems and living legal-cultural practices (living law within a socio-legal perspective) across regional contexts ([Afandi, 2022](#)). Meanwhile, GIS analysis documented and visualized the distribution of gendered land ownership in a precise and systematic manner ([Read & Lam, 2002](#)). From a theoretical perspective, this research can be classified as an ex-post policy evaluation study, which assessed the impact of implemented land registration policies on gender equality ([Fischer & Miller, 2017](#)).

The research was conducted in North Sumatra Province, where strong legal-cultural traditions reflect the Batak patrilineal kinship system. The research focused on two areas: Samosir Regency as a representation of a rural area that still strongly maintains customary traditions, and Deli Serdang Regency as a representation of a sub-urban area with more heterogeneous social characteristics.

Quantitative Data Collection and Spatial Analysis

The collection and spatial analysis of quantitative data regarding the number and distribution of gender-based land ownership were conducted through collaboration with the Center for Land and Spatial Planning Data and Information (Pusat Data dan Informasi Pertanahan dan Tata Ruang—Pusdatin) of the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN). The process of obtaining spatial data involved querying the Land Office Computerization System (KKP) database managed by Pusdatin in order to separate land ownership records between men and women. The stages of spatial data processing included the following steps:

1. Collecting spatial data on land parcels that had been registered within the Ministry of ATR/BPN up to October 2025;
2. Processing spatial data using GIS software;
3. Producing thematic maps of gender-based land ownership;
4. Developing a WebGIS platform using ArcGIS Pro to present gender-based land ownership information in an interactive format.

The main challenge in collecting these data arose from the absence of a mandatory requirement to record gender automatically within the land registration system prior to 2022. Consequently, some ownership records still appear as “undefined” in terms of gender.

Qualitative Data Collection and GAP Analysis on Gender Issues

Qualitative data were collected through in-depth interviews with various experts in anthropology, practitioners of agrarian law, customary leaders, and community members at the study locations. To analyze land registration policy, this research applied the Gender Analysis Pathway (GAP) framework. The GAP analysis was conducted by examining four dimensions of inequality—Access, Participation, Control, and Benefits—across each stage of the land registration program, particularly the Complete Systematic Land Registration (PTSL). These stages included planning, public outreach activities, the collection of physical and juridical data, and the final delivery of land certificates. The procedures were confirmed directly through consultations with staff members and officials at local land offices. The results of this analysis were subsequently used to formulate a draft Gender-Responsive Budget and to develop technical recommendations for inclusive land governance.

C. Results and Discussion

1. Gender Inequality in North Sumatra: A Spatial Analysis

Spatial data from the Pusdatin database of the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) confirm the dominance of men in registered land ownership within patrilineal regions. In Samosir Regency, approximately 76% of registered land parcels were recorded under male ownership, while women accounted for only 23%. A similar pattern was observed in rural areas such as Pangururan District, where land access is largely controlled by male heads of households.

In contrast, sub-urban areas such as Deli Serdang Regency reveal a significant administrative challenge. Approximately 61% of land ownership records lack gender identification. This suggests that earlier land registration systems did not record gender-disaggregated data, making it difficult to evaluate gender equity in land access.

To provide a clearer overview of the distribution of land ownership by gender within the community, the authors conducted a spatial data analysis covering one city and five regencies in North Sumatra Province. The results of this analysis are presented in Table 1 and in Bar Chart 1. This approach enables a more systematic comparison across regions, highlighting disparities in gender representation and revealing patterns of data incompleteness that may influence policy formulation and the effectiveness of gender-responsive land administration programs.

Table 1. Number of Land Ownership by Gender in Some Areas of North Sumatra Province (1 city & 5 districts)

| Gender | Pematang Siantar City | Simalungun Regency | Samosir Regency | Karo Regency | Humbang Hasundutan Regency | Deli Serdang Regency | Quantity | % |
|----------------|-----------------------|--------------------|-----------------|--------------|----------------------------|----------------------|----------|--------|
| Male | 26.584 | 81.819 | 17.070 | 57.441 | 3.005 | 11.661 | 197.580 | 50.52% |
| Female | 34.788 | 60.335 | 4.939 | 38.670 | 1.245 | 11.593 | 151.570 | 38.76% |
| Unknown Gender | 2.104 | 1.738 | 242 | 1.450 | 121 | 36.255 | 41.910 | 10.72% |
| Quantity | 63.476 | 143.892 | 22.251 | 97.561 | 4.371 | 59.509 | 391.060 | 100% |

Source: Processed data from the Data and Information Center (Pusdatin), Ministry of ATR/BPN, 2025

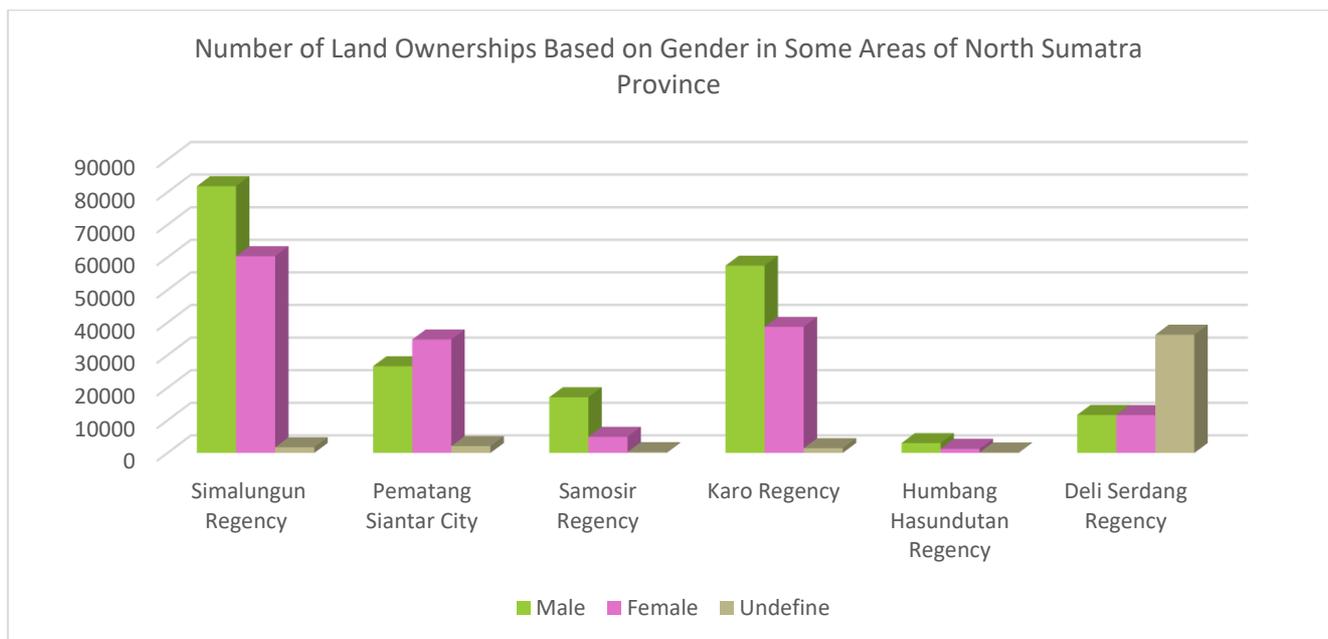


Diagram 1. Number of Land Ownerships by Gender in Selected Areas of North Sumatra.

Source: Processed data from the Data and Information Center (Pusdatin), Ministry of ATR/BPN, 2025

Based on Table 1, land ownership in North Sumatra generally remains dominated by men, with a proportion reaching 50.52%, while women account for 38.76%. This dominance appears particularly pronounced in rural areas that still strongly maintain Batak customary traditions. For instance, in Samosir Regency, land ownership recorded under male names reaches 76%, compared with only 23% under female names. Similar disparities are also observed in Simalungun, Karo, and Humbang Hasundutan Regencies, which demonstrate a pattern of land control largely concentrated in the hands of male heads of households. In contrast, an anomaly appears in the urban area of Pematang Siantar City, where the representation of female ownership is higher, reaching 58%, compared with 38% for men.

Analysis of sub-urban areas such as Deli Serdang Regency reveals a major administrative limitation. Approximately 61% of land ownership records lack gender identification. This indicates that earlier land registration systems did not adequately capture gender-disaggregated data, complicating the evaluation of equitable land access for women. Visualization through distribution maps and bar charts further emphasizes the variation in land ownership patterns between traditional rural areas and more heterogeneous urban or sub-urban regions. These findings also provide an important basis for developing more inclusive agrarian policies in the future.

To examine these patterns further, this study analyzes land ownership distribution in North Sumatra's patrilineal context focusing on Samosir Regency and Deli Serdang Regency as the primary study areas. In addition to mapping ownership distribution and parcel-based percentages, this study also examined the distribution of certified land area recorded under male and female ownership. This approach presents a more detailed picture of field-level policy practices that remain insufficiently sensitive to gender considerations.

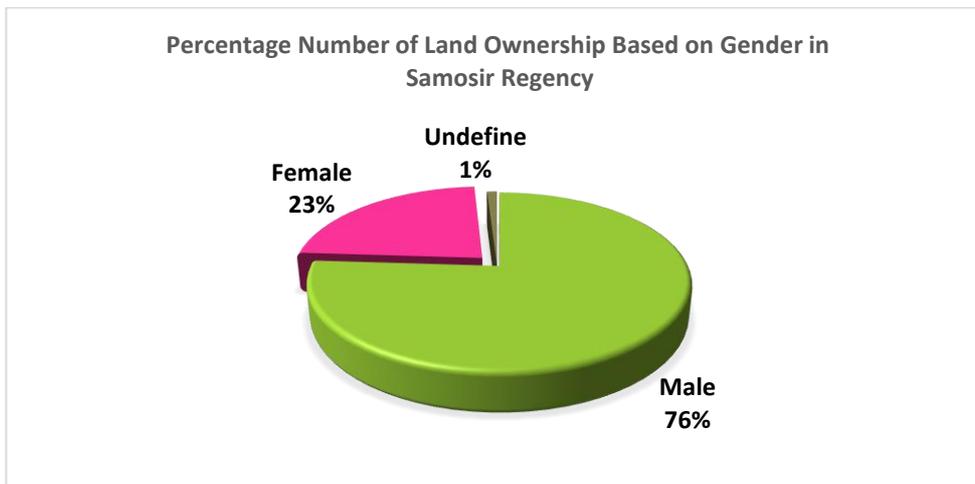
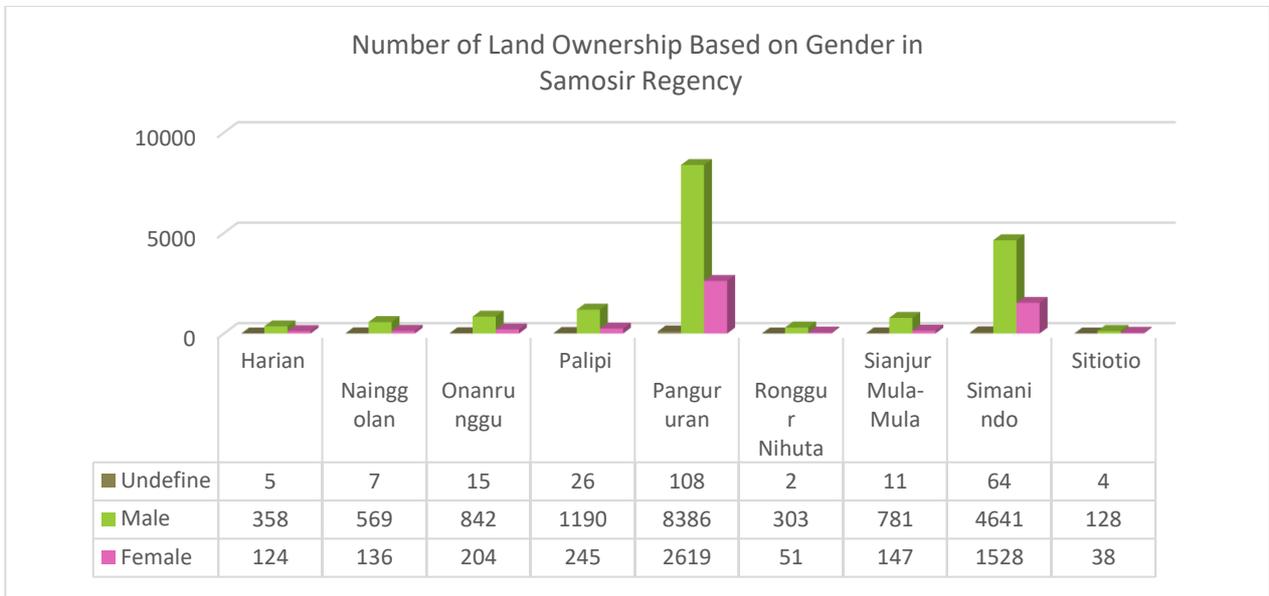
a. Samosir Regency

Samosir Regency consists of nine districts: Harian, Nainggolan, Onan Runggu, Palipi, Pangururan, Ronggur Nihuta, Sianjur Mula-Mula, Simanindo, and Sitio-Tio. The total area of Samosir Regency is

137,595.74 hectares. Among these districts, Harian District constitutes the largest territorial area, while Sitio-Tio District represents the smallest. The regency capital is located in Pangururan District, which functions as the main center of activities within the regency.

According to data from the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) (Pusdatin, 2025), out of 100% of land parcel ownership records categorized by gender in Samosir Regency, only 1%—equivalent to 242 certificates out of a total of 22,532 parcels—remain without defined gender identification for the owner. A total of 17,198 land parcels, or approximately 76%, are certified under male ownership. Meanwhile, 5,092 parcels, representing about 23%, are certified under female ownership. Overall, these data provide a general illustration of the distribution of land ownership between men and women in a region that adheres to a patrilineal kinship system. Table 2 and Pie Chart 2 present the number and percentage of land certificates registered under male and female ownership in Samosir Regency.

Table 2. Number of Land Parcel Ownerships by Gender in Samosir Regency

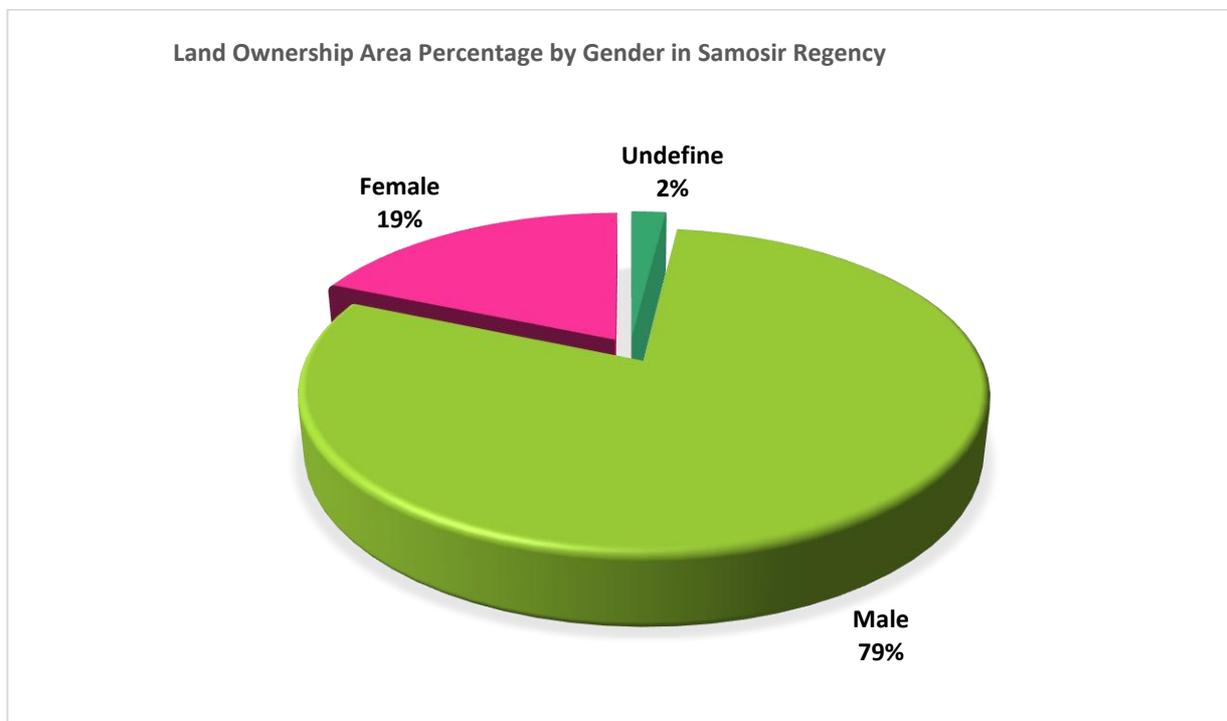
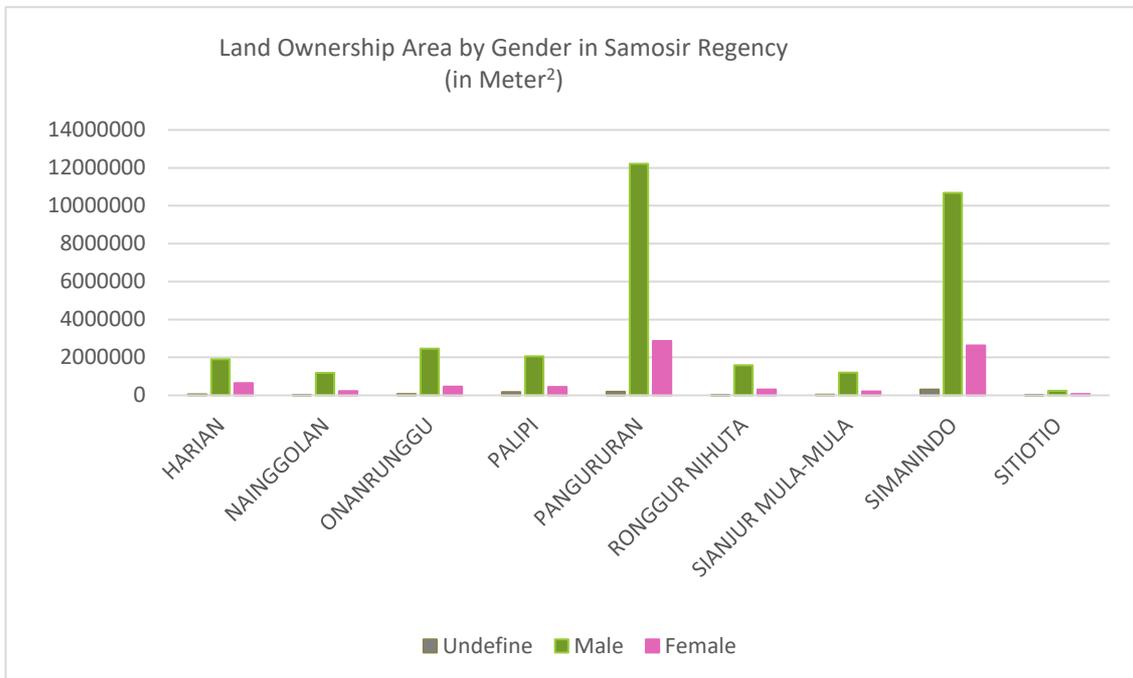


Source: Processed data from the Data and Information Center (Pusdatin), Ministry of ATR/BPN, 2025.

Consistent with the number of land certificates categorized by gender in Samosir Regency, the distribution of land ownership area in this regency is also dominated by male residents, as illustrated in Table 3 and Pie Chart 3.

Table 3. Total Area of Land Certificate Ownership in Samosir Regency by Gender (m²)

| Gender | Harian | Nainggolan | Onanrunggu | Palipi | Pangururan | Ronggur Nihuta | Sianjur Mula-Mula | Simanindo | Sitiotio | Total |
|-------------|-----------|------------|------------|-----------|------------|----------------|-------------------|------------|----------|------------|
| Undefine | 54.688 | 2.936 | 66.857 | 180.070 | 181.858 | 2.805 | 29.468 | 309.523 | 1.871 | 830.076 |
| Male | 1.908.449 | 1.190.185 | 2.461.916 | 2.066.192 | 12.206.506 | 1.585.628 | 1.191.848 | 10.686.764 | 239.929 | 33.537.417 |
| Female | 646.421 | 226.626 | 450.263 | 437.504 | 2.867.504 | 306.494 | 209.078 | 2.635.245 | 64.412 | 7.843.547 |
| Grand Total | 2.609.558 | 1.419.747 | 2.979.036 | 2.683.766 | 15.255.868 | 1.894.927 | 1.430.394 | 13.631.532 | 306.212 | 42.211.040 |



Source: Processed data from the Data and Information Center (Pusdatin), Ministry of ATR/BPN, 2025

Based on the graph displaying both the number and the total area of land ownership, Pangururan District and Simanindo District—recognized as the main centers of activity in Samosir Regency—show a larger number of certificates as well as a greater total land area compared with other districts. Figure 1 presents a map illustrating the distribution of land ownership based on the number of land parcels in North Sumatra Province, with particular focus on Samosir Regency.

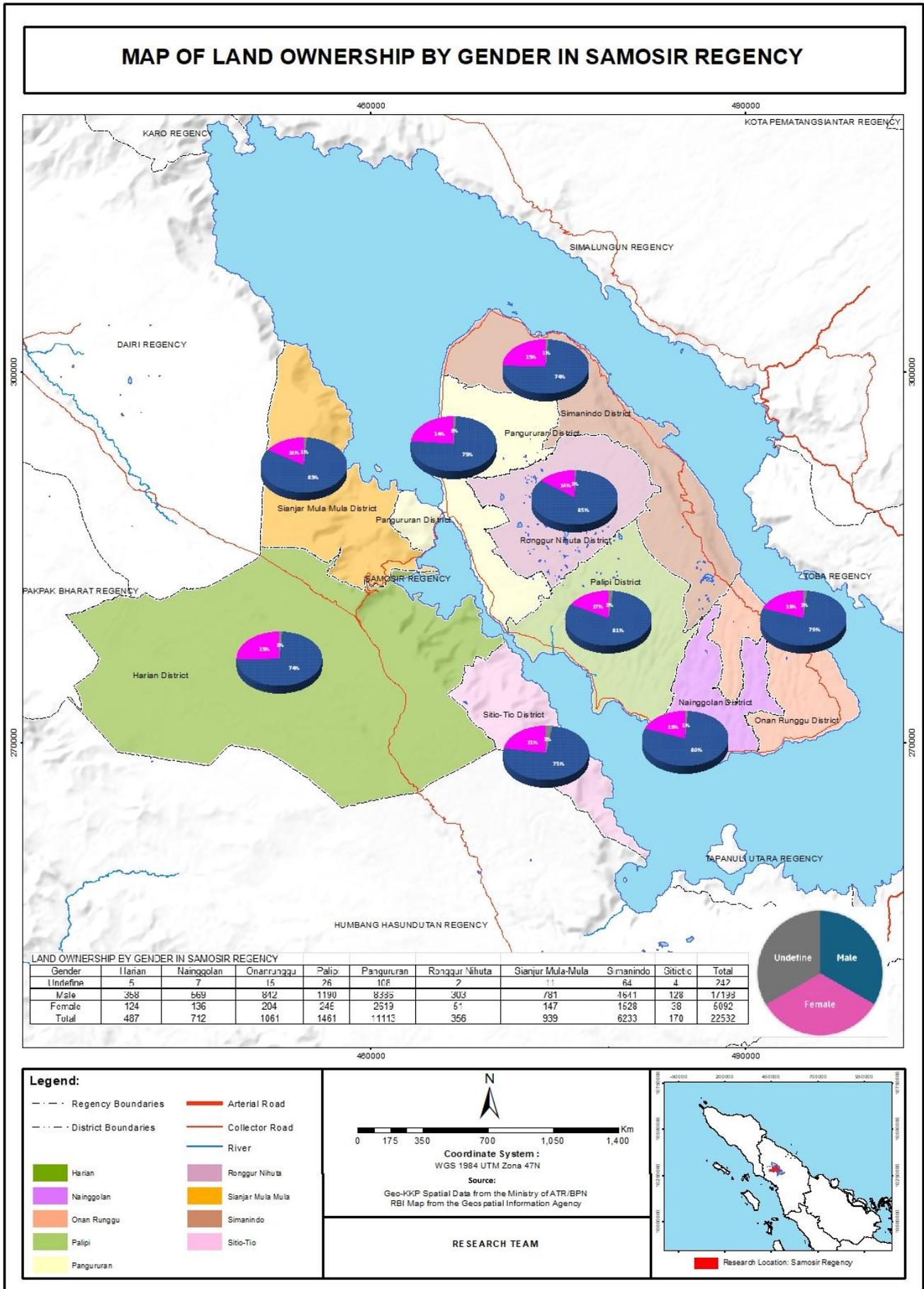


Figure 1. Map of Land Ownership Distribution Based on the Number of Land Parcels in Samosir Regency, North Sumatra Province
 Source: Processed data from the Data and Information Center (Pusdatin), Ministry of ATR/BPN, 2025

Based on Figure 1, land ownership in Samosir Regency demonstrates a very strong male dominance, which corresponds closely with the patrilineal cultural system practiced in the region. Out of a total of 22,532 recorded land parcels, 17,198 parcels are owned by men, while women control only 5,092 parcels. This disparity becomes even more apparent when examined in terms of the total area of land ownership. Men control 33,537,417 m² of land from the total recorded area, far exceeding the land owned by women, which amounts to 7,843,547 m².

From a spatial perspective, the largest concentration of land ownership is located in Pangururan District and Simanindo District, which function as the principal centers of activity in the regency. In Pangururan District alone, men control land covering an area of 12,206,506 m², compared with 2,867,504 m² owned by women. Similarly, in Simanindo District, male ownership reaches 10,686,764 m², whereas women own 2,635,245 m². The distribution map of the number of land parcels also confirms a similar pattern across all districts, including areas with fewer parcels such as Sitio-Tio District, which still shows a high proportion of male ownership at approximately 75%.

Table 4. Comparison of Land Ownership in Samosir Regency

| Districts | Male Total Area (m ²) | Female Total Area (m ²) | Male Total Parcels | Female Total Parcels |
|-------------------|-----------------------------------|-------------------------------------|--------------------|----------------------|
| Pangururan | 12.206.506 | 2.867.504 | 8.386 | 2.619 |
| Simanindo | 10.686.764 | 2.635 | 4.641 | 1.528 |
| Onan Runggu | 2.461.916 | 450.263 | 842 | 204 |
| Palipi | 2.066.192 | 437.504 | 1.190 | 245 |
| Harian | 1.908.449 | 646.421 | 358 | 124 |
| Ronggur Nihuta | 1.585.628 | 306.494 | 303 | 51 |
| Sianjur Mula-Mula | 1.191.848 | 209.078 | 781 | 147 |
| Nainggolan | 1.190.185 | 226.626 | 569 | 136 |
| Sitio-Tio | 239.929 | 64.412 | 128 | 38 |
| Total | 33.537.417 | 7.843.547 | 17.198 | 5.092 |

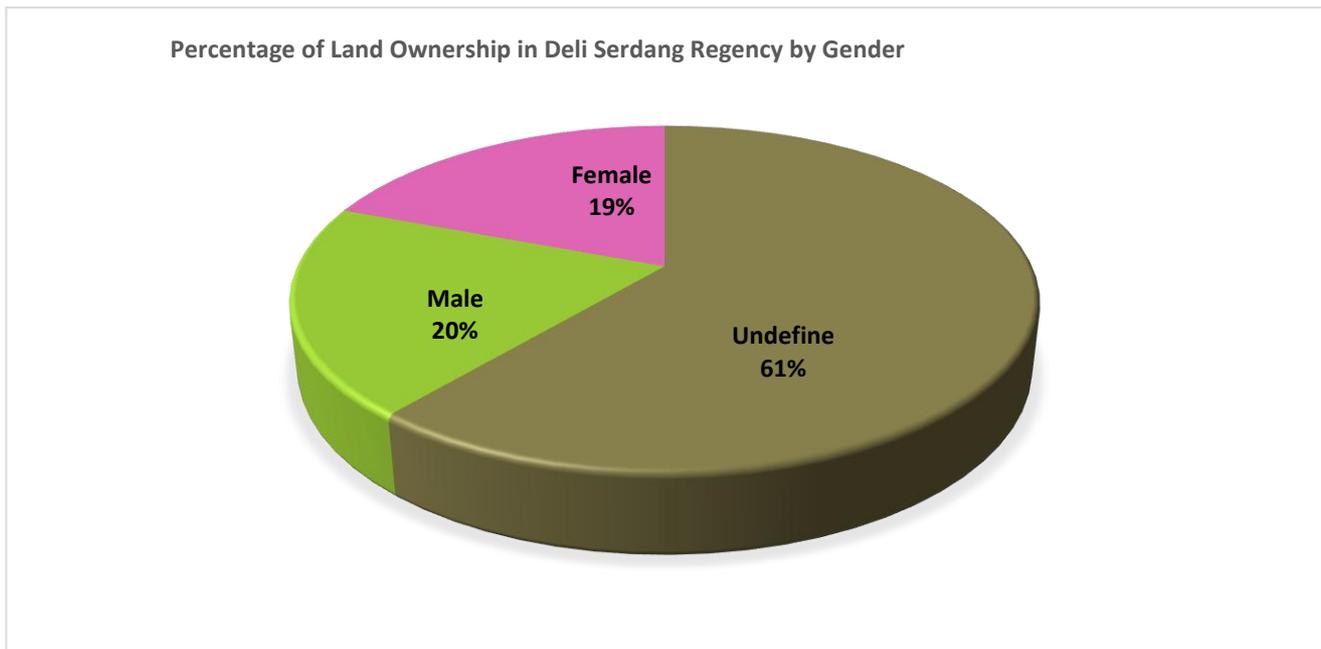
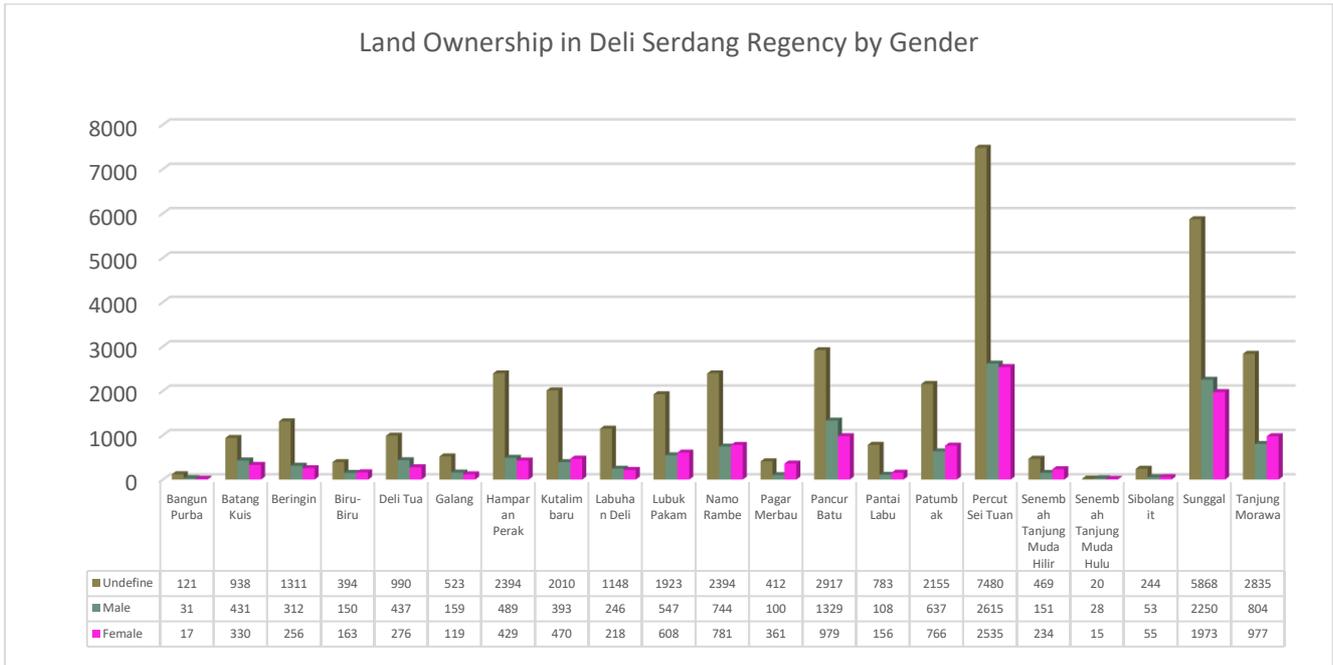
Source: Processed data from the Data and Information Center (Pusdatin), Ministry of ATR/BPN, 2025

b. Deli Serdang Regency

Deli Serdang Regency consists of 22 districts and 394 villages/urban administrative units (*desa/kelurahan*). The districts include Bangun Purba, Batang Kuis, Beringin, Biru-Biru, Deli Tua, Galang, Gunung Meriah, Hamparan Perak, Kutalimbaru, Labuhan Deli, Lubuk Pakam, Namo Rambe, Pagar Merbau, Pancur Batu, Pantai Labu, Patumbak, Percut Sei Tuan, Sibolangit, Senembah Tanjung Muda Hilir, Senembah Tanjung Muda Hulu, Sunggal, and Tanjung Morawa. The regency covers a total area of approximately 2,497.72 km². Among these districts, Hamparan Perak constitutes the largest area, while Deli Tua represents the smallest.

According to data from the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) ([Pusdatin, 2025](#)), the distribution of the number of land ownerships in Deli Serdang Regency appears relatively balanced between men and women. However, approximately 61% of ownership records lack gender information. Consequently, the available data cannot yet provide an accurate representation of land certificate ownership based on gender in Deli Serdang Regency.

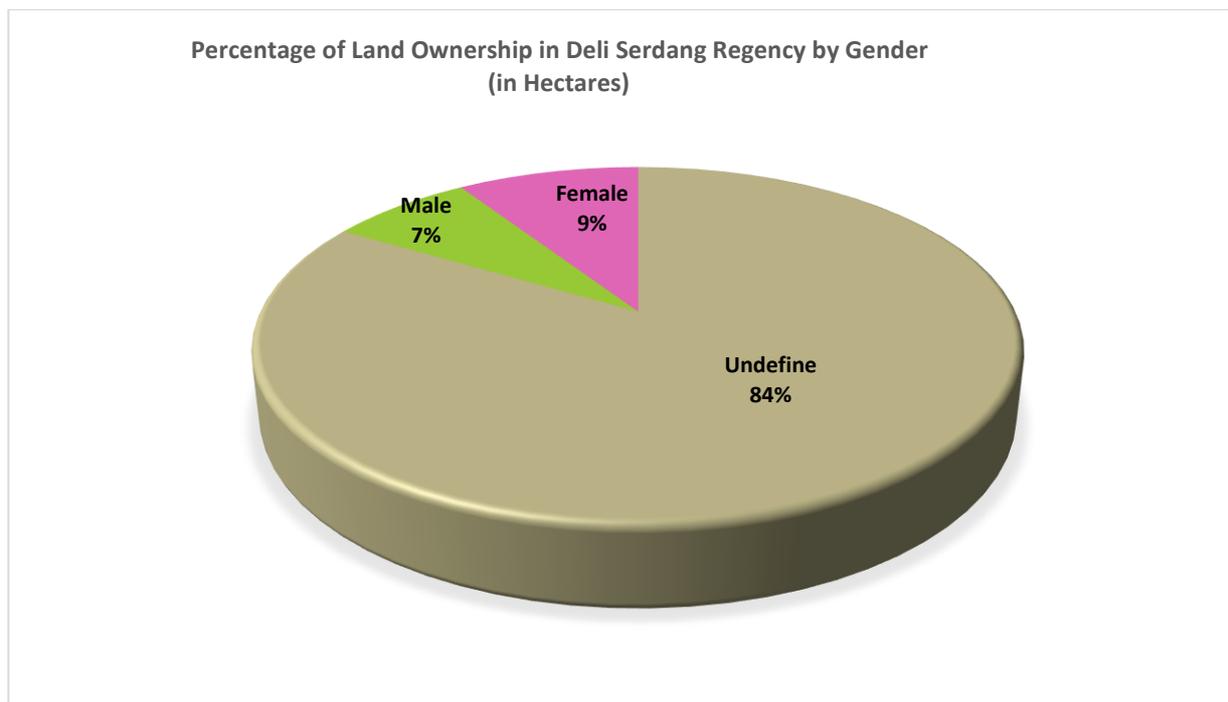
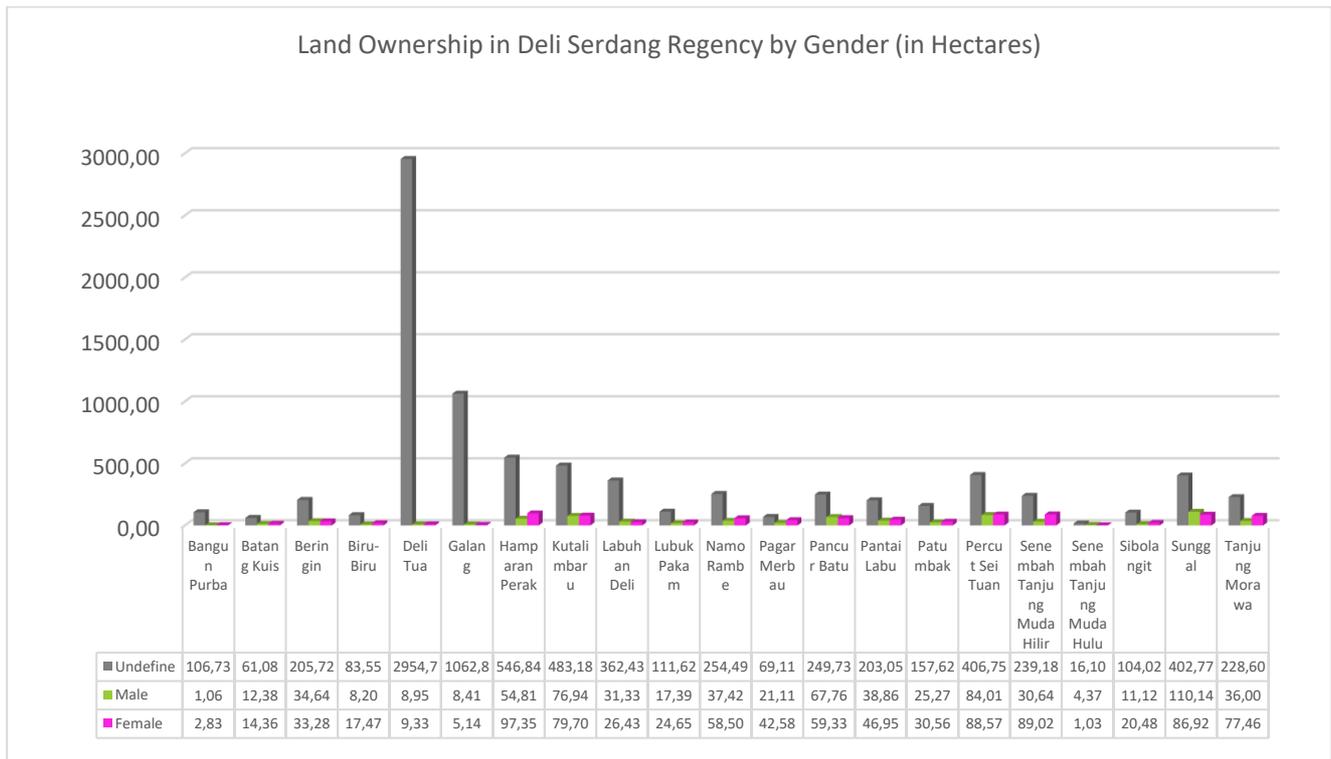
Table 5. Number of Land Ownerships by Gender in Deli Serdang Regency



Source: Processed data from the Data and Information Center (Pusdatin), Ministry of ATR/BPN, 2025.

Similar to the condition of the percentage of land ownership by gender, the total land area recorded in land certificates in Deli Serdang Regency also remains largely undefined in terms of gender. Approximately 84% of the total land area has not yet been identified according to the owner’s gender. Meanwhile, the remaining 16% that has been defined is distributed as follows: 9% of the land area is owned by women, while 7% is owned by men. This pattern contrasts with the percentage distribution based on the number of land parcels by gender. In other words, although the number of certificates registered under male names in Deli Serdang Regency is higher than those registered under female names, the total land area associated with male ownership is smaller than the land area recorded under female ownership.

Table 6. Percentage of Land Certificate Ownership Area in Deli Serdang Regency by Gender (in hectares)



Source: Processed data from the Data and Information Center (Pusdatin), Ministry of ATR/BPN, 2025

Based on the graph showing both the number and the total area of land ownership, Deli Tua District—despite having the smallest territorial area—has a cumulative certified land area that exceeds that of Lubuk Pakam, the capital of Deli Serdang Regency. Meanwhile, when considering the number of certified land parcels, Percut Sei Tuan District records the highest number of certified parcels. Figure 2 presents a statistical map illustrating gender-based land ownership in Deli Serdang Regency.

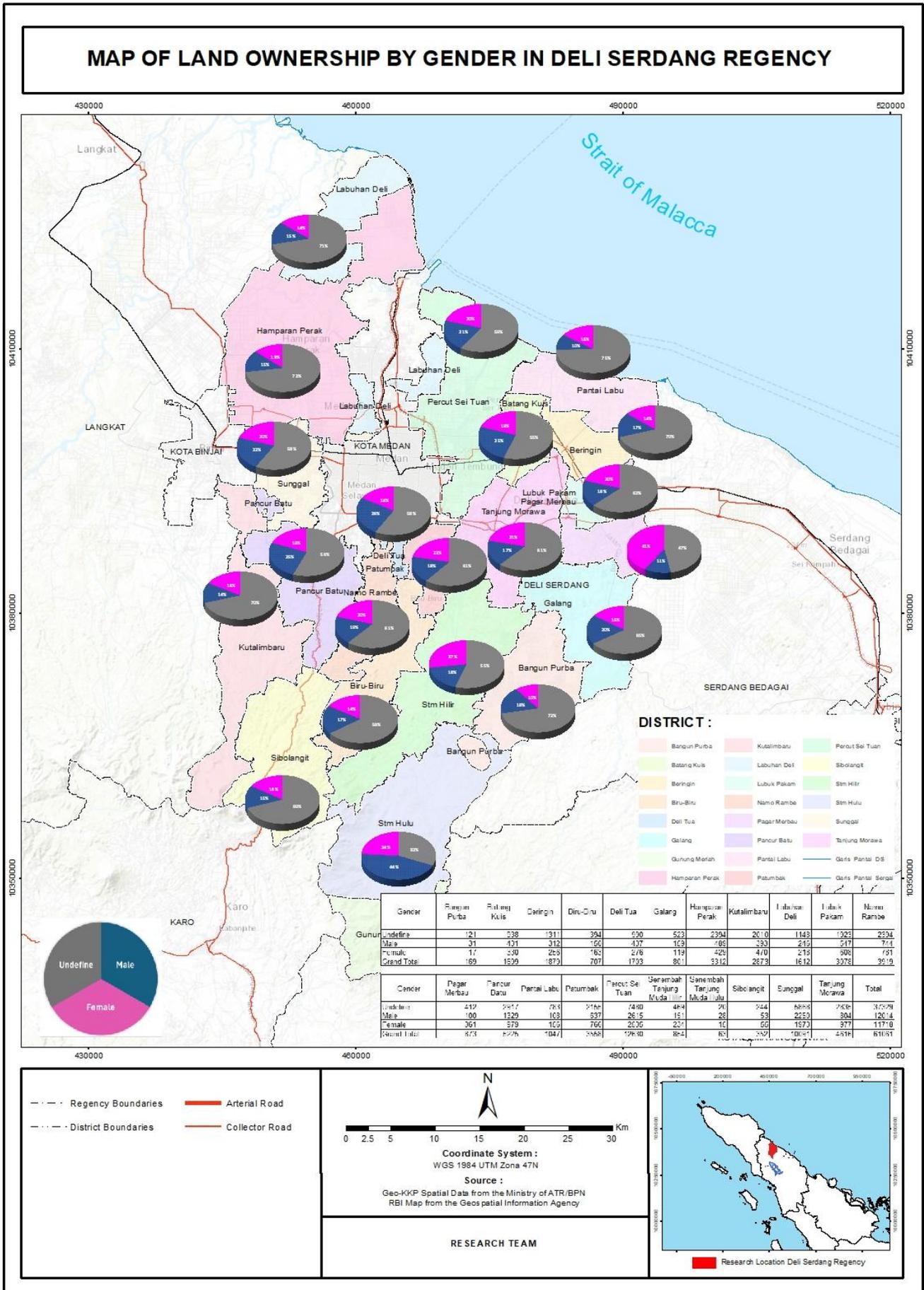


Figure 2. Statistical Map of Land Ownership Based on the Number of Land Parcels in North Sumatra Province, with a Focus on Deli Serdang Regency
 Source: Processed data from the Data and Information Center (Pusdatin), Ministry of ATR/BPN, 2025

Spatial data analysis indicates land ownership records in Deli Serdang Regency are characterized by substantial uncertainty in gender identification. Approximately 61% of the total number of land parcels and 84% of the total land area lack gender information for the registered owner. This situation means that the available data cannot yet provide a fully accurate representation of the distribution of land ownership based on gender in practice. Nevertheless, within the identified records, an interesting anomaly can be observed. Although the number of certificates registered under male names (20%) is slightly higher than those registered under female names (19%), in terms of total land area, female ownership is actually larger, reaching 9%, compared with male ownership at only 7%.

From a regional perspective, the highest number of certified land parcels is recorded in Percut Sei Tuan District, which has the largest number of certified land parcels. Meanwhile, Deli Tua District records the highest cumulative certified land area, surpassing Lubuk Pakam—the capital of the regency—even though geographically Deli Tua represents the smallest district. Spatial mapping also indicates that in several districts, such as Hamparan Perak and Kotalimbaru, the land area owned by women consistently exceeds that owned by men. These findings suggest that in sub-urban regions such as Deli Serdang, women may have relatively greater access to large-scale land assets than is typically observed in more traditional rural regions. Table 7 below presents a comparison of land ownership in Deli Serdang Regency.

Table 7. Comparison of Land Ownership in the Main Areas of Deli Serdang

| Districts | Male Total Area (Ha) | Female Total Area (Ha) | Male Total Certificates | Female Total Certificates |
|-----------------|----------------------|------------------------|-------------------------|---------------------------|
| Sunggal | 110,1 | 86,9 | 2.250 | 1.973 |
| Percut Sei Tuan | 84,0 | 88,6 | 2.615 | 2.535 |
| Kotalimbaru | 76,9 | 79,7 | 393 | 470 |
| Hamparan Perak | 54,8 | 97,4 | 489 | 429 |
| Pancur Batu | 67,8 | 59,3 | 1.329 | 979 |
| Tanjung Morawa | 36,0 | 77,5 | 804 | 977 |
| Deli Tua | 8,9 | 9,3 | 437 | 276 |
| Lubuk Pakam | 17,4 | 24,7 | 547 | 608 |

Source: Processed data from the Data and Information Center (Pusdatin), Ministry of ATR/BPN, 2025.

c. Regional Influence on the Distribution of Gender Inequality

Based on spatial data and field findings, this study analyzes how regional characteristics influence gendered land ownership distribution. In particular, the study compares the characteristics of sub-urban areas (Deli Serdang Regency) with those of rural areas (Samosir Regency).

Sub-urban Regional Dynamics: Deli Serdang as a Transitional Area

Deli Serdang Regency demonstrates strong sub-urban characteristics due to its role as a hinterland for Medan City. Its strategic location along major transportation routes including Kualanamu International Airport has gradually shifted from a traditional agrarian base toward an economy increasingly oriented to industry and services ([Lindarto H et al., 2018](#); [Purba et al., 2024](#)). This transformation has significantly influenced patterns of land control, producing a more heterogeneous structure of land ownership. The population heterogeneity, consisting of multiple ethnic groups including Malay, Batak, and Javanese communities, has contributed to the emergence

of a more urban-oriented culture that is relatively flexible toward external influences, including women's ownership of economic assets.

Administratively, although gender information for approximately 61% of land parcels in Deli Serdang remains undefined, available data indicate a trend toward greater gender balance than in rural areas. In sub-urban districts such as Beringin, the diversification of livelihoods into service sectors and micro, small, and medium enterprises (MSMEs) has encouraged greater participation of women in asset ownership (D. Siregar et al., 2024). A notable pattern appears in Sidodadi Ramunia Village and Sidoarjo II Ramunia Village, where the total land area certified under female ownership exceeds that registered under male ownership. This pattern suggests that in sub-urban areas, commercial economic factors and accessibility often play a more dominant role than traditional gender norms in determining land asset ownership.

Characteristics of Rural Areas: Samosir and the Persistence of Patrilineal Tradition

In contrast to Deli Serdang, Samosir Regency represents a rural area that continues to strongly maintain the customary traditions of the Batak Toba community. Characterized by a landscape dominated by hilly terrain and an economy largely based on horticultural agriculture and inland fisheries, the social structure of the community remains heavily influenced by a patrilineal system. This pattern is directly reflected in land control practices, where inheritance is generally granted to sons, and the management of agricultural land is primarily carried out by men as heads of households.

Spatial data from Samosir Regency indicate a very strong dominance of male ownership, reaching 76% of the total number of recorded land parcels. Even in Pangururan District, which functions as the regency capital and the main center of activities, land control remains concentrated among men. Areas such as Lumban Suhi-Suhi Dolok and Parbaba Dolok record some of the largest certified land areas, the majority of which are owned by men. These conditions demonstrate that even when a rural area functions as an administrative center, the influence of traditional value systems and local cultural norms in determining the legal status of land assets remains far stronger than the influence of urban modernity.

Synthesis: Regional-Based Gender Disparities

The comparison between these two regions reveals that suburbanization functions as a catalyst in reducing gender disparities in land asset ownership. In Deli Serdang, the expansion of industrial and commercial areas has created opportunities for women to possess land with relatively significant size. In contrast, in the rural area of Samosir, land is not merely an economic asset but also a form of customary identity transmitted through the male lineage. Consequently, women's access to land ownership remains limited.

Nevertheless, a major challenge faced by sub-urban regions such as Deli Serdang lies in administrative data issues, where 84% of the total land area has not yet been identified according to the gender of its owner. This situation creates a "blank spot" in agrarian policy formulation. This condition differs from that in Samosir, where the data are far more clearly defined (with only about 1% remaining unidentified), although the records still reveal a clear gender imbalance. Overall, the transition from rural to sub-urban contexts tends to expand women's access. However, this progress requi-

res support from a more systematic land registration administration that is both orderly and sensitive to gender considerations.

Table 8. Comparison of Regional Factors Influencing Gender-Based Land Ownership

| Factors | <i>Sub-urban area (Deli Serdang)</i> | <i>Rural area (Samosir)</i> |
|---------------------------------|---|---|
| Regional Characteristics | A strategic and heterogeneous buffer area (hinterland). | A rural area dominated by volcanic landscapes and strong traditional values. |
| Economic Base | Economic transformation from an agrarian structure toward industry, services, and trade. | Dominance of the horticultural agriculture sector and inland fisheries. |
| Cultural Influence | Urban-oriented culture that is flexible and open to external influences. | A strong patrilineal system in which inheritance is transferred to sons. |
| Women's Access | Relatively high; in certain cases, the land area owned by women may exceed that owned by men. | Limited; land ownership and management are dominated by men as heads of households. |
| Drivers of Change | Infrastructure development (Kualanamu International Airport) and industrial investment. | Community life that continues to preserve traditions and customary norms. |
| Data Quality | Low; 61% of land parcels and 84% of land area have no recorded gender identification. | High; only about 1% of the data lack gender identification. |

Source: Field data analysis from Deli Serdang and Samosir, 2025

A shift in paradigm has occurred, as observed in Deli Serdang, where land functions as a more fluid commercial asset. As a result, female ownership can emerge in a significant manner, such as in Sidadadi Ramunia Village, where land registered under women's ownership reaches 10.3 hectares. A different situation is found in Samosir, where traditional patterns remain relatively stagnant. In this context, land represents a form of customary identity. Male dominance in land ownership reaches approximately 76% overall, since land is regarded as property belonging to the male lineage that must be preserved across generations.

2. Gender Bias: Contradictions Between Customary Law and National Law

Field findings reveal a clear legal dualism between the state's gender equality principle and persistent patrilineal customary practices. Article 9 paragraph (2) of the Basic Agrarian Law (UUPA) guarantees equal rights for men and women to own and use land. In contrast, authoritative studies show that Batak customary law positions land as a communal clan asset that is inherited exclusively by sons as successors of the agnatic lineage ([Irianto, 2005](#); [Sibeth et al., 1991](#); [Simanjuntak, 2015](#); [Vergouwen, 2004](#)).

Empirical evidence from the field demonstrates that a strong contradiction still exists between Indonesian State Law—based on principles of equality and civil/agrarian legal frameworks—and Batak Patrilineal Customary Law, which is grounded in male lineage. At its core, this tension reflects differing philosophical foundations governing ownership and inheritance rights, as explained in the following table.

Table 9. State Law and Customary Law (Living Law)

| Aspects | Indonesian State Law (Agrarian Law & Civil Law) | Batak Customary Law (Patrilineal) |
|--------------------------|--|---|
| Main Principle | Gender equality (egalitarian): every citizen has equal rights to property ownership, including land, regardless of gender (1945 Constitution, Basic Agrarian Law/UUPA 1960, Law No. 1 of 1974 as amended by Law No. 16 of 2019). | Patrilineal dominance: rights and inheritance (particularly ancestral land) are transmitted exclusively through the male lineage (marga or clan). |
| Position of Women | Women possess full legal rights to own, inherit, and register land under their own name or jointly with their husband. | Restricted or excluded: daughters (boru) are considered to leave the clan's inheritance rights to land after marriage. They may receive assets in the form of customary gifts (ulos sibolang) or grants (pau seang), but not as inheritance rights to ancestral land (tano pusaka). |
| Objective | To provide legal certainty and procedural justice for individuals through formal land certification. | To preserve the integrity of the clan (marga) and ensure the continuity of ancestral land ownership (bona ni tano) within the male lineage. |

Source: Results of in-depth discussions with anthropologists from Universitas Sumatera Utara and Universitas Negeri Medan (Sembiring & Baiduri), agrarian practitioners (Lubis), as well as community members and customary leaders in Samosir (Simalango), 2025

Within customary norms, sons hold symbolic significance as guarantors of the continuity and formal identity of the clan (marga). In contrast, daughters—although formally associated with the transfer of clan identity after marriage—carry a moral significance that requires the principle of justice based on familial affection (equity through affection principle) from their family of origin. Studies by Baiduri, Sembiring, and Lubis indicate that social realities have gradually changed over time due to modernization and the influence of contemporary education. As a result, the position of Batak women outside the formal customary domain has experienced many positive developments. Nevertheless, at the formal level, the distinction between the roles played by sons and daughters within Batak families continues to persist in the collective mindset of Batak society ([D. Siregar & Gulo, 2020](#)).

Table 10. Status of Sons and Daughters in Batak Society

| Aspect | Male (Ama) | Female (Borua) |
|--------------------------------|--|---|
| Lineage | Heir and continuation of the clan (marga) lineage. | Receives the husband's clan name and does not continue the father's lineage. |
| Leadership | Head of the family, primary decision-maker, and responsible for parental care. | Manager of household affairs, executor of family decisions, and caretaker of parents. |
| Formal Customary Roles | Main speaker and principal actor in customary ceremonies. | Serves and supports in customary ceremonies (in the role of boru). |
| Inheritance of Property | Primary heir of immovable property (land and house). | Heir to movable property and specific ceremonial assets (Ulos Tondi). |

Source: Processed data from interviews with Lubis, Sembiring, Baiduri, and Simalango, 2025

This inequality originates from the perception that sons represent “productive assets” and guardians of clan sovereignty, whereas daughters are often regarded as “reproductive assets” who will elevate the status of their husband's family (mora). Consequently, women frequently lose access

to ancestral land because families fear that such assets may be transferred to another clan through marriage.

In general, the Batak ethnic group consists of several sub-ethnic groups. Despite these variations, the broader system of Batak patrilineality remains strongly reflected across these groups. Therefore, examining the differences among the various Batak sub-ethnic groups becomes necessary in order to understand the processes of change and development, particularly in relation to women's rights.

Table 11. Differences in Customary Land Law within Batak Society

| Aspect | Batak Toba Customary Law (Strict Patrilineal System) | Batak Karo (More Flexible System) | Batak Mandailing (Strong Islamic Influence) |
|--------------------------------|--|---|---|
| Inheritance System | Absolute patrilineal system: inheritance is transferred to sons. Daughters (boru) are excluded from inheriting tano pusaka (ancestral land), although they may receive gifts such as ulos sibolang or sinamot. | Patrilineal but less absolute: sons remain the primary heirs. However, in certain situations, unmarried daughters or daughters who marry into the anak beru kinship system (in Karo society) may inherit part of the property when there are no sons. | Patrilineal tradition with Islamic influence: although historically patrilineal, the strong presence of Islam has encouraged the adoption of faraid (Islamic inheritance law), which follows a bilateral principle by granting inheritance rights to both sons and daughters, although in different proportions (2:1). |
| Position of Wives/Women | The wife (inang) is placed under the authority of the husband (amang) in matters related to land and clan affairs. She does not inherit her husband's land; instead, she maintains the inheritance for their sons. | Although the system remains patrilineal, Karo women—especially wives—are often considered to have relatively higher status in certain ritual and deliberative contexts compared to Batak Toba society. | Daughters possess formally recognized inheritance rights through Islamic law, although ancestral land (huta) may still be prioritized for sons in practice. |
| Main Contradiction | Strongest contradiction. Egalitarian state law directly conflicts with Batak Toba customary norms that clearly reject daughters' inheritance rights to ancestral land. | Present but less rigid. Because some flexibility exists for women to inherit property, the contradiction with state law is easier to mediate, although the patrilineal principle remains dominant. | Weakest or transformed contradiction. Since Islamic law—recognized within Indonesian state law through the Compilation of Islamic Law (Kompilasi Hukum Islam/KHI)—grants inheritance rights to women, the tension between customary law and state law has gradually shifted toward harmonization between customary norms and Islamic/state law. |

Source: Processed data from interviews with Lubis, Sembiring, Baiduri, and Simalango, 2025

Based on interviews, surveys, and in-depth discussions conducted by the authors in Medan, Samosir, and Deli Serdang with academics, practitioners, customary leaders, and community members, as well as a literature review of authoritative works by Vergouwen, Irianto, Sibeth, and Siregar, the authors conclude that one of the fundamental causes of inequality in land ownership

within Batak society lies in the living law that operates within the social system, both consciously and unconsciously. The unequal distribution of land assets—particularly the dominance of male ownership—has marginalized women. This condition has strong roots in Batak society, which follows a patrilineal system. Table 12 below presents the pattern of land access among the Batak Toba indigenous community in Samosir Regency.

Table 12. Customary Land Access among the Batak Toba Community

| Category | Batak Toba Customary Norms | Relevance of the Contradiction |
|---------------------------|---|---|
| Inheritance System | Absolute patrilineal system. Inheritance, particularly tano pusaka (ancestral land), is transferred exclusively to sons. The youngest son (siampudan) often receives a privileged position. | Daughters (boru) are explicitly excluded from the status of heirs to land. Any transfer of property to daughters is limited to expressions of affection (keleng ate) or gifts/grants (pau seang), rather than formal inheritance rights. |
| Position of Women | Women do not possess the right to speak or to make decisions in customary deliberations related to land. Customary norms also socially restrict them from becoming owners of clan land. | State law claims: Batak Toba women who seek inheritance rights must file claims through formal courts under state law to challenge customary provisions, as documented by Irianto (2012). |
| Driving Factors | The system aims to preserve the integrity of the clan (marga) and ancestral land so that it does not transfer to another clan through marriage. | Land is not perceived solely as an economic asset but also as a symbol of identity and ancestral ties for the clan. Consequently, this symbolic function must be maintained so that land does not “leave” the male lineage (Vergouwen, 2004). |

Source: Processed data from interviews with Lubis, Sembiring, Baiduri, and Simalango, 2025

From philosophical, cultural, and everyday practical perspectives, the norms prevailing in Batak society—as a form of living law that continues to operate within the community—indicate the persistence of gender inequality. In several contexts, this condition is perceived as unjust and has generated resistance and opposition, as some groups challenge a system they consider inequitable (Irianto, 2005).

3. Gender Gap Analysis (GAP) in the Land Registration Program

With regard to the availability of gender-disaggregated data, the authors propose the application of gender gap analysis through the Gender Analysis Pathway (GAP) framework and the implementation of Gender-Responsive Budgeting within the Complete Systematic Land Registration (PTSL) program in North Sumatra as part of efforts to promote equitable access to land.

a. Gender-Disaggregated Data Analysis and Gender Gap Analysis

The PTSL program, implemented since 2017, aims to provide legal certainty regarding land rights. However, findings from Samosir and Deli Serdang Regencies indicate that this program has not yet been fully gender-responsive in either field implementation or regulatory design. Through the Gender Analysis Pathway framework, the study found that land registration programs—particularly PTSL—have not consistently integrated gender responsiveness at every stage of their implementation.

Condition of Gender-Disaggregated Data

- 1) Access to information: Women often receive limited information regarding land law due to socialization schedules that conflict with domestic responsibilities or because of the long distance to information venues.
- 2) Participation: Male dominance remains evident in the administration of land registration documentation. In Samosir, the patrilineal system reinforces the inheritance of assets through the male lineage. Consequently, although women may attend outreach sessions in relatively high numbers, the formal subjects of land registration remain predominantly male.
- 3) Control: Decisions concerning the use of land assets are mostly determined by men as heads of households. At the institutional level, only 5 out of 28 members of the Adjudication Committee are women, and most occupy administrative roles rather than decision-making positions.
- 4) Benefits: Women receive fewer economic benefits because they are often not formally registered as legal owners. As a result, they face difficulties accessing credit facilities or capital assistance from financial institutions.

Gender Gap Factors within the Stages of PTSL Implementation

Based on the Gender Analysis Pathway that has been verified at the land office level, gender disparities emerge at each technical stage of the program:

- 1) Planning: No targets exist for gender-disaggregated land parcels, and there is no risk analysis specifically addressing female-headed households.
- 2) Collection of Physical and Juridical Data: Documents such as land possession statements and proof of rights have not yet incorporated gender classification. Data control largely remains in the hands of village officials, who often request signatures without providing adequate explanations to women.
- 3) Verification of Juridical Data: Adjudication Committees dominated by male members often show limited sensitivity in identifying land status that may in fact belong to widows or female heads of households.
- 4) Registration and Bookkeeping: The computerized system used by the Land Office has not yet automatically detected gender information from population data, which makes it difficult to monitor the proportion of female landowners.

b. Accommodation of Gender Norms in Land Registration

Field findings from both Samosir and Deli Serdang indicate the need for strategies to address these disparities. The gradual accommodation of gender norms within land registration practices is therefore essential and should become a strategic priority for relevant stakeholders in the coming years.

Table 13. Strategy for the Implementation of Gender Norms in Land Registration

| Level of Difficulty | Primary Focus | Strategic Actions |
|---------------------|-----------------------|---|
| Low | Information Provision | Address cultural perceptions that land ownership belongs primarily to men; provide targeted assistance for women to prevent potential disputes. |

| | | |
|-----------------|--------------------------------|--|
| Moderate | Facilitation and Participation | Involve women in the process of determining land boundaries; simplify procedural requirements; provide mobile land registration services in rural areas. |
| High | Legal Reform | Implement joint ownership certification; introduce a gender identification field in electronic land certificates; develop specific policies for female-headed households; apply regulatory limitations to ensure equal rights in land ownership. |

Source: Field data analysis, 2025

c. Gender-Responsive Budgeting (GRB) Scheme

An analysis conducted across several land offices indicates that, at present, no specific budget allocation exists for gender-responsive initiatives. Budgeting formats remain general in nature, typically organized as standardized packages per land parcel and designed as gender-neutral allocations. Therefore, the development of a Gender-Responsive Budgeting (GRB) framework in North Sumatra is necessary in order to integrate principles of equity into the budgeting system. The following technical formulation for budget planning is proposed:

- 1) **Inclusive Outreach Activities:** Allocate funds for resource persons and educational modules that are accessible and responsive to women, with a minimum target of 50% female participants. The planned budget should also include childcare services so that women can participate in outreach activities without domestic constraints.
- 2) **Inventory of Customary Land Typologies:** Allocate funding to map the inheritance structures of customary land systems that have historically marginalized women.
- 3) **Provision of Women-Friendly Facilities:** Allocate resources to establish private consultation spaces for women so that they can safely and comfortably express concerns or provide information related to land issues.
- 4) **Integration of Population Data:** Allocate funds for cross-sectoral focus group discussions (FGDs) involving the National Land Agency and the Civil Registration Office (BPN–Dukcapil). These discussions aim to ensure that family lineage records include female descent lines so that women’s land rights are not overlooked.

From a technical perspective, the implementation of this planning framework requires several operational strategies:

- 1) **Timing:** Outreach activities should be scheduled in the afternoon or evening rather than in the morning to enable women who work in agricultural or domestic sectors to attend.
- 2) **Location:** The number of outreach locations should be expanded to the hamlet level in order to address barriers related to geographical distance.
- 3) **Human Resource Capacity:** At least two officers in each Land Office should receive training to develop competencies in serving the specific needs of vulnerable groups, including women, elderly individuals, and persons with disabilities.

The implementation of Gender-Responsive Budgeting together with inclusive technical strategies represents a key approach to addressing disparities in agrarian access. Through strengthening human resource capacity, providing women-friendly facilities, and integrating accurate data systems, land registration programs are expected to promote legal equity and more equitable welfare outcomes for all segments of society.

C. Conclusion

Gender-based inequality in registered land ownership remains evident in North Sumatra. Spatial distribution data indicate that registered land assets are predominantly recorded under male ownership (50.52%) compared with female ownership (38.76%). This gender disparity becomes more pronounced in rural areas such as Samosir Regency (76% male, 23% female), largely due to the continued influence of strong patrilineal cultural traditions. Male dominance in land ownership is deeply rooted in the Batak customary system, which positions land as a symbol of clan sovereignty and transfers it exclusively through the male lineage (agnatic descent). In practice, a legal dualism creates a clear contradiction between State Law—particularly the Basic Agrarian Law (UUPA No. 5/1960), which guarantees equal individual rights—and the living law of customary practices that restrict daughters (*boru*) from inheriting ancestral land. Field findings confirm that regional characteristics play a significant role in shaping these patterns. Sub-urban areas such as Deli Serdang demonstrate greater gender flexibility because land increasingly functions as a commercial asset. In contrast, rural areas such as Samosir continue to experience traditional stagnation because land remains closely associated with rigid customary identity.

Furthermore, the current land registration program (PTSL) has not yet become fully gender-responsive. Several limitations persist, including restricted access to information for women, relatively low female participation, and administrative systems—particularly the Land Office Computerization system (KKP)—that do not automatically classify gender-disaggregated data. From a bureaucratic perspective, administrative gaps are also evident. For instance, a significant data anomaly was identified in Deli Serdang, where 61% of land parcel records lack gender identification. This situation reflects a systemic oversight in the historical recording of land rights holders and highlights the need for comprehensive administrative reform.

D. Recommendation

To accelerate inclusive and gender-equitable land governance within the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN), without disrupting existing social structures, several strategic measures are proposed:

1. Improvement of Land Administration Systems.

The Ministry of ATR/BPN should accelerate the integration of the National Identification Number (NIK) database with the Civil Registration Office (Dukcapil) within the Land Office Computerization System (KKP). This integration would ensure the automatic provision of gender-disaggregated data for each land certificate.

2. Affirmation of Joint Ownership (Joint Title).

The Ministry of ATR/BPN may promote a policy encouraging land registration under the joint names of husband and wife for land assets acquired during marriage (*gono-gini* property). This policy should also include regulations that safeguard the interests of children in cases where remarriage occurs.

3. Implementation of Gender-Responsive Budgeting.

The Ministry of ATR/BPN should allocate dedicated funding for inclusive land registration activities. Such initiatives may include outreach programs that provide childcare facilities, as well as programs specifically addressing vulnerable women, elderly individuals, female-headed

households, and the inventory of customary land typologies that map women's rights within clan-based systems.

4. Inclusive Technical Strategies.

Land offices at the district and municipal levels should conduct gender-sensitive socialization of land registration programs. This approach requires adjusting outreach schedules and locations so that women can easily access them, while also actively involving women's groups in the process of determining land boundaries.

5. Gradual Accommodation of Gender Norms According to Levels of Complexity.

The Ministry of ATR/BPN should introduce policy interventions across three stages: the provision of information in the short term, facilitation of active participation in the medium term, and legal reform in the long term that recognizes inclusive customary legal practices.

6. Strengthening the Role of the ATR/BPN Data and Information Center (Pusdatin).

The land data system should be further integrated to support the regulation and monitoring of agricultural and residential land ownership. This integration would help establish ownership limitations aimed at ensuring equitable land rights among Indonesian citizens.

7. Utilization of Customary Conventions.

Landowners seeking to register their land may utilize customary deliberation mechanisms or local conventions as a legal reference in reaching agreements on the distribution of rights that are more equitable for women, in accordance with the Batak principle of social harmony.

8. Enhancement of Human Resource Capacity.

The National Land College (STPN), in collaboration with the Human Resource Development Agency (BPSDM), should provide continuous training for land registration officers and Adjudication Task Forces. Such training would strengthen their gender sensitivity when verifying juridical data during field operations.

The authors believe that by combining the formal legal certainty provided by the state with the flexibility of local customary values, land registration can function as an effective instrument for advancing gender justice and social welfare in North Sumatra.

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References

- Aditya, M. D. (2025). Kebijakan Pelayanan Pertanahan yang Berkeadilan Gender di Kota Semarang. *Jurnal Impresi Indonesia*, 4(6). <https://doi.org/10.58344/jii.v4i6.6671>
- Afandi, F. (2022). Penelitian Hukum Interdisipliner Reza Banakar: Urgensi dan Desain Penelitian Sosio-legal. *Undang: Jurnal Hukum*, 5(1). <https://doi.org/10.22437/ujh.5.1.231-255>
- Ashmarita, Cindy, Hartini, & Sumule, M. G. (2022). Orang Batak Mempertahankan Identitas Etnisnya. *Indonesian Annual Conference Series*.
- Dewi, R. A. R. M., & Susantio, C. (2024). Penggunaan Sertifikat Elektronik untuk Meningkatkan Efisiensi Pendaftaran Tanah dalam Upaya Pencegahan Mafia Tanah. *Jurnal Syntax Admiration*, 5(9). <https://doi.org/10.46799/jsa.v5i9.1441>
- Dua Osa, A., Nuwa, G., & Muis Kasim, A. (2023). Eksistensi Hukum Waris Adat pada Sistem kekerabatan Patrilineal di Kabupaten Sikka Provinsi Nusa Tenggara Timur. *Keadilan*, 21(1). <https://doi.org/10.37090/keadilan.v21i1.905>
- Firmando, H. B. (2021). Sistem Pertanahan Tradisional pada Masyarakat Batak Toba dan Relevansinya di Kawasan Danau Toba (Analisis Sosiologis). *Jurnal Ilmiah Sosiologi Agama (JISA)*, 4(2).
- Fischer, F., & Miller, G. J. (2017). Handbook of public policy analysis: Theory, politics, and methods. In *Handbook of Public Policy Analysis: Theory, Politics, and Methods*. <https://doi.org/10.4324/9781315093192>
- Fredriko, A. (2024). Konstruksi Sosial Realitas Perempuan Batak Toba sebagai Parhobas pada Komunitas Adat Batak Toba di Kota Salatiga. *Jurnal Neo Societal*, 6(2).
- Goldman, M. J., Davis, A., & Little, J. (2016). Controlling land they call their own: access and women's empowerment in Northern Tanzania. *Journal of Peasant Studies*, 43(4). <https://doi.org/10.1080/03066150.2015.1130701>
- Gultom, E. S. (2024). Dynamics of Toba Batak Women in Forest Conservation through the Perspective of Ecofeminism: Dinamika Perempuan Batak Toba dalam Pelestarian Hutan. *Al-Musthalah: Jurnal Riset Dan Penelitian Multidisiplin*.
- Irianto, S. (2005). *Perempuan di antara berbagai pilihan hukum (Studi mengenai Strategi Perempuan Batak Toba untuk Mendapatkan Akses kepada Harta Waris melalui Proses Penyelesaian Sengketa* (2nd ed.). Yayasan Obor Indonesia.
- Jahani Chehrehbargh, F., Rajabifard, A., Atazadeh, B., & Steudler, D. (2024). Current challenges and strategic directions for land administration system modernisation in Indonesia. *Journal of Spatial Science*, 69(4). <https://doi.org/10.1080/14498596.2024.2360531>
- Jahani Chehrehbargh, F., Rajabifard, A., Atazadeh, B., Steudler, D., & Nugraha, B. W. (2025). Advancing sustainable land governance: extending LADM for integrating global initiatives—a case study in Indonesia. *Survey Review*, 57(405). <https://doi.org/10.1080/00396265.2025.2543615>
- Jenkins, A. M., Bayer, N. D., Nooraie, R. Y., & Fiscella, K. (2023). Putting the Mix in Mixed Methods Research. *Hospital Pediatrics*, 13(12). <https://doi.org/10.1542/hpeds.2022-007110>

- Krismantoro, D. (2024). The Implementation of Land Registration to Provide Legal Certainty in Indonesia. *Journal of Lifestyle and SDGs Review*, 4(4). <https://doi.org/10.47172/2965-730x.sdgsreview.v4.n04.pe04291>
- Lindarto, H. D., Sirojuzilam, S., Badaruddin, B., & Aulia, D. N. (2018). Pengaruh Faktor Pengembangan Wilayah Terhadap Perubahan Guna Lahan di Deli Serdang. *Talenta Conference Series: Energy and Engineering (EE)*, 1(1). <https://doi.org/10.32734/ee.v1i1.114>
- Lubis, M. I. (2011). *Persepsi masyarakat kelurahan panyanggar baru tentang isteri bekerja (studi atas peran ganda perempuan berperspektif gender)* [IAIN Padangsidimpuan.]. <https://etd.uinsyahada.ac.id/6095/>
- Martial, T., Lubis, Y., Harahap, A. R., Jaya, M., Nasution, F. U., Humaira, M., & Tirtana, M. A. (2023). *Perempuan dalam Sistem Penguasaan Lahan Perkebunan Kopi Rakyat di Sumatera Utara*. Penerbit Adab.
- Nugaheni, L. A. (2021). Dinamika Hukum Waris Adat dalam Sistem Keekerabatan Patrilineal: Pewarisan terhadap Anak Perempuan. *Jurnal Literasi Hukum*, 5(1).
- Pasaribu, R. H. (2023). Beban Ganda Perempuan Batak dalam Partisipasi Politik. *Al Qalam: Jurnal Ilmiah Keagamaan Dan Kemasyarakatan*, 17(1). <https://doi.org/10.35931/aq.v17i1.1790>
- Permadi, I., & Herlindah. (2023). Electronic title certificate as legal evidence: the land registration system and the quest for legal certainty in Indonesia. *Digital Evidence and Electronic Signature Law Review*, 20.
- Purba, B. M., Sugiarto, A., Nuraini, C., Dian, R., & Kurniawan, H. (2024). Kajian Pemanfaatan Ruang Terhadap Sistem Transportasi pada Kawasan Perkotaan Batang Kuis. *Jurnal Darma Agung*, 32(4).
- Pusdatin. (2025). *Pusdatin Kementerian Agraria dan Tata Ruang/Badan Pertanahan Nasional*.
- Rabbani, F. F., Ardan, M., & Aliyah, K. K. (2024). Problematika Pembagian Waris Adat pada Keekerabatan Patrilineal. *Indonesian Journal of Social Sciences and Humanities*, 4(2).
- Rammohan, A., & Johar, M. (2009). The determinants of married women' s autonomy in Indonesia. *Feminist Economics*, 15(4). <https://doi.org/10.1080/13545700903153989>
- Read, J. M., & Lam, N. S. N. (2002). Spatial methods for characterising land cover and detecting land-cover changes for the tropics. *International Journal of Remote Sensing*, 23(12). <https://doi.org/10.1080/01431160110106140>
- Rihi, Y. (2025). Just transitions under pressure: from early visions to new proposals and trajectories in the Global South. *SOUtenabilité et RésilienCE*.
- Sibeth, A., Kozok, U., & Ginting, J. R. (1991). *The Batak: peoples of the island of Sumatra: living with ancestors*. Thames and Hudson.
- Siburian, D. (2021). Menggugat Perceraian: Kekerasan Gender dalam Praktek Paulakhon pada Masyarakat Batak Toba. *SOSIOLOGI: Jurnal Ilmiah Kajian Ilmu Sosial Dan Budaya*, 23(2). <https://doi.org/10.23960/sosiologi.v23i2.111>
- Simamora, C., Marbun, K., & Simanjorang, S. (2015). Hamoraon, Hagabeoan, Hasangapon: Konsep dan Pengaruhnya Bagi Pembentukan Karakter Masyarakat Batak Toba. *Jurnal Perspektif*.
- Simangunsong, F. (2018). Pengaruh Konsep Hagabeon, Hamoraon, dan Hasangapon Terhadap Ketidaksetaraan Gender dalam Amang Parsinuan. *Sirok Bastra*, 1(2). <https://doi.org/10.37671/sb.v1i2.24>
- Simanjuntak, B. A. (2015). *Arti dan Fungsi Tanah bagi Masyarakat Batak Toba, Karo, Simalungun*. Yayasan Obor Indonesia.
- Simbolon, N. Y., Nasution, M. Y., & Lubis, M. A. (2019). Pemberdayaan Kearifan Lokal Masyarakat Adat Batak Toba dalam Mencegah Kekerasan terhadap Anak. *JURNAL MERCATORIA*, 12(2). <https://doi.org/10.31289/mercatoria.v12i2.2944>

- Siregar, D., Daulay, A., Sabrina, H., Aramita, F., & Dewi Setia Tarigan, E. (2024). Pengaruh Manajemen Kewirausahaan terhadap Daya Saing UMKM di Sektor Pariwisata Kabupaten Deli Serdang. *EKOMA: Jurnal Ekonomi*, 3(2).
- Siregar, D., & Gulo, Y. (2020). Eksistensi Parmalim Mempertahankan Adat dan Budaya Batak Toba di Era Modern. *Anthropos: Jurnal Antropologi Sosial Dan Budaya (Journal of Social and Cultural Anthropology)*, 6(1). <https://doi.org/10.24114/antro.v6i1.16632>
- Siregar, J. P. R., Sihombing, T. P., & Hutabarat, R. S. (2023). Land Theology: Intrigue View of Land According to the Culture of the Toba Batak People in Ecological Preservation. *Eduvest - Journal of Universal Studies*, 3(8). <https://doi.org/10.59188/eduvest.v3i8.895>
- Situmorang, L. (2021). Tinjauan Konsep Hamoraon, Hagabeon, Hasangapon pada Masyarakat Batak Toba di Kota Rantauprapat. *CIVITAS (JURNAL PEMBELAJARAN DAN ILMU CIVIC)*, 7(2). <https://doi.org/10.36987/civitas.v2i1.3206>
- Sugiyanto, Siregar, H., & Soetarto, E. (2008). Analisis dampak pendaftaran tanah sistematik terhadap kondisi sosial ekonomi masyarakat di Kota Depok. In *Jurnal Manajemen dan Agribisnis* (Vol. 5, Number 2).
- Suhadi, S., Sastroatmodjo, S., Wahanisa, R., & Niravita, A. (2022). Advances in technology and the future of publication systems in land registration in Indonesia. *AIP Conference Proceedings*, 2573. <https://doi.org/10.1063/5.0104112>
- Sumanto, L. (2020). The future on publication system of land registration in Indonesia. *International Journal of Scientific and Technology Research*, 9(3).
- Supriyanto, V. H., & Krismantoro, D. (2020). Juridical Review of The Complete Systematic Land Registration in Indonesia. *Journal of Law, Policy and Globalization*, 101. <https://doi.org/10.7176/JLPG/101-18>
- Sutrisno, W. L., Widyanti, A. N., & Akkapin, S. (2025). Legal Certainty of Electronic Land Certificates in Land Registration in Indonesia. *SIBATIK JOURNAL: Jurnal Ilmiah Bidang Sosial, Ekonomi, Budaya, Teknologi, Dan Pendidikan*, 4(2).
- Vergouwen, J. C. (2004). *Masyarakat dan Hukum Adat Batak Toba*. LKiS.
- Yubaidi, R. S., Mohamad, M., & Abd Aziz, S. N. (2022). Land Registration Acceleration in Indonesia: A Lesson-Learned Guideline from Land Registration Issues in Malaysia. *UUM Journal of Legal Studies*, 13. <https://doi.org/10.32890/uumjls.13.1.2022.10765>
- Yuniawan, E. B., & Sulistyaningrum, E. (2025). Assessing the impact of the Complete Systematic Land Registration (PTSL) programme on land values in Indonesia: evidence from Rejang Lebong, Bengkulu Province. *Journal of Property Research*, 42(4). <https://doi.org/10.1080/09599916.2025.2495754>