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# **Legal Protection For Land Rights Holders Affected By The Pengapon–Boyolali Fuel Pipeline Program (A Case Study of Grogolan Village Residents)**

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## **Abstract**

Legal protection for landholders still faces challenges in practice when national infrastructure projects physically alter land conditions without adequate follow-up mechanisms. This article examines the legal protection afforded to holders of land rights in Grogolan Village, whose land has been affected by the construction of the Pengapon–Boyolali (BBM) oil pipeline transmission project carried out by PT Pertamina Patra Niaga. This study employs an empirical legal approach, combining field observations, in-depth interviews with affected landowners, village officials, and the Boyolali District

Land Office (BPN), supplemented by an analysis of relevant legislation. The research findings indicate that legal protection for land rights holders in Grogolan Village has not yet been substantively realised. Applying Satjipto Rahardjo's theory of legal certainty as the theoretical basis for evaluating legal protection, deficits were identified in all four of its constituent elements, physical changes to the land were not officially recorded in land documents, land certificates did not reflect the actual post-construction conditions, buffer zone restrictions were never formally communicated to landowners, and there was no active notification mechanism from Pertamina to the BPN. A public consultation that was not inclusive involving only two representatives from around 40–50 affected farmers demonstrates a failure to fully comply with Law No. 2 of 2012 on Land Acquisition for Public Interest. It is recommended that the regulations be amended to require energy infrastructure project implementers to facilitate the certificate splitting process and provide comprehensive the rights, obligations, and land use restrictions arising from pipeline corridors.

## Keywords

Agrarian Law, Fuel Pipeline, Land Acquisition, Land Rights, Legal Protection

## A. Introduction

Land is a natural resource that plays a fundamental role in human life, both individually and within society. The Constitution of the Republic of Indonesia, through Article 33(3) of the 1945 Constitution, affirms that the earth, water, and natural resources contained therein are controlled by the state and utilized for the greatest possible prosperity of the people.<sup>1</sup> This constitutional mandate serves as the philosophical foundation for national land management, which is further elaborated in legal terms in Law No. 5 of

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<sup>1</sup> "Undang-Undang Dasar (UUD) Tahun 1945 Dan Amandemen Nomor - Tentang UUD 1945 Dan Amandemen" (1945), <https://peraturan.bpk.go.id/Details/101646/uud-no-->.

1960 on the Basic Agrarian Principles (UUPA).<sup>2</sup> Within the framework of national agrarian law, land rights grant the holder the authority to use and/or derive benefits from the land under their control provided that such use is in accordance with its designated purpose and does not conflict with the provisions of laws and regulations.<sup>3</sup>

To ensure legal certainty regarding land rights, Article 19(1) of the UUPA mandates the implementation of land registration throughout the territory of the Republic of Indonesia.<sup>4</sup> Land registration aims to provide legal certainty and protection for land rights holders through the issuance of certificates as strong evidence of rights. This legal certainty encompasses certainty regarding the legal subject holding the rights, the object of the rights in the form of a land parcel with clear location, boundaries, and area, as well as the legal relationship between the subject and the object.<sup>5</sup> However, in practice, land issues are often complex and require a significant amount of time to resolve, particularly when changes in the physical condition of the land occur due to development activities for the public interest.<sup>6</sup> Differences in perspectives and interests between landowners and project

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<sup>2</sup> "Undang-Undang Nomor 5 Tahun 1960 Tentang Peraturan Dasar Pokok Agraria (UUPA)," Pub. L. No. 5 (1960), <https://peraturan.bpk.go.id/Details/51310/uu-no-5-tahun-1960>.

<sup>3</sup> Ayni Suwarni Herry, *HAK-HAK ATAS TANAH MENURUT HUKUM AGRARIA DAN HAK PENGELOLAAN* (Media Pustaka Indo, 2026), <https://www.neliti.com/publications/688391/hak-hak-atas-tanah-menurut-hukum-agraria-dan-hak-pengelolaan#cite>.

<sup>4</sup> Undang-Undang Nomor 5 Tahun 1960 tentang Peraturan Dasar Pokok Agraria (UUPA).

<sup>5</sup> Helena Sumiati, Ardiansah, and Bagio Kadaryanto, "KEPASTIAN HUKUM SERTIFIKAT HAK MILIK ATAS TANAH DALAM HUKUM PERTANAHAN INDONESIA" 7, no. September (2021): 135–45, [https://www.researchgate.net/publication/359027254\\_Kepastian\\_Hukum\\_Sertifikat\\_Hak\\_Milik\\_atas\\_Tanah\\_Dalam\\_Hukum\\_Pertanahan\\_Indonesia](https://www.researchgate.net/publication/359027254_Kepastian_Hukum_Sertifikat_Hak_Milik_atas_Tanah_Dalam_Hukum_Pertanahan_Indonesia).

<sup>6</sup> Gigih Satrio Pamungkas, Glory Agnesia Hutauruk, and Reza Fathurrahman, "Membedah Kebijakan Pemerintah: Strategi Menuntaskan Konflik Pertanahan Demi Keadilan Yang Berkelanjutan" 8 (2025), <https://doi.org/https://doi.org/10.54371/jiip.v8i1.6508>.

implementers often lead to conflicts that escalate into protracted disputes, hindering the development process. Therefore, the existence of a fair, transparent, and effective legal protection mechanism for both parties is crucial to ensure that landowners' rights remain safeguarded while development can proceed in an orderly and sustainable manner.<sup>7</sup>

One of the increasingly prominent land issues is the alteration or damage to the physical condition of land resulting from the construction of national strategic infrastructure. Unlike land changes caused by natural disasters, such as liquefaction whose legal implications are explicitly regulated in Government Regulation No. 18 of 2021 on Land Management Rights, Rights to Land, Apartment Units, and Land Registration, changes in land conditions resulting from energy infrastructure development particularly oil transmission pipelines continue to raise legal issues that have yet to be comprehensively addressed.<sup>8</sup> The construction of fuel pipelines generally does not result in the destruction of land, but it does cause changes in physical conditions, restrictions on land use, and changes in land function that have the potential to create legal uncertainty for land rights holders.<sup>9</sup>

The construction of the Pengapon–Boyolali fuel transmission pipeline is part of a national strategic project that falls under the category of development for public interest as referred to in Law No. 2 of 2012 on Land Acquisition for Development for Public Interest.<sup>10</sup> Oil and gas

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<sup>7</sup> Lintar Anjhany and Asmarani Ramli, "Pengadaan Tanah Yang Mengenai Tanah Instansi : Studi Kasus Pembangunan Jalan Tol Bawen-Jogja Terhadap Lahan Pertanian SMK Negeri 1 Bawen" 1 (2025): 909–36, <https://bookchapter.unnes.ac.id/index.php/hk/issue/view/55>.

<sup>8</sup> "Peraturan Pemerintah (PP) Nomor 18 Tahun 2021 Tentang Hak Pengelolaan, Hak Atas Tanah, Satuan Rumah Susun, Dan Pendaftaran Tanah," Pub. L. No. 18 (2021), <https://peraturan.bpk.go.id/Details/161848/pp-no-18-tahun-2021>.

<sup>9</sup> Mahendra Tio Arbianzah, "TINJAUAN YURIDIS PENGATURAN PEMANFAATAN RUANG BAWAH TANAH" (2024).

<sup>10</sup> "Undang-Undang (UU) Nomor 2 Tahun 2012 Tentang Pengadaan



condition of the land, including changes in the contour and structure of the soil due to excavation and backfilling activities up to a depth of 2.5 meters, as well as restrictions on land use along the pipeline route through the establishment of a buffer zone 5–10 meters wide, as outlined in the preliminary study conducted by the Central Java Regional Development Planning Agency on January 29, 2026, in Grogolan Hamlet, Grogolan Village, Karanggede Subdistrict, Boyolali Regency, Central Java Province.

Based on the findings of the preliminary study, one of the affected landowners, Muhammad Tahrir a farmer whose livelihood depends on his rice fields has experienced significant changes to his land due to a pipeline route spanning approximately 14 meters. The land was cut diagonally, dividing it into two unequal parts and forming a triangular configuration, which implies changes to the physical boundaries as well as the potential for a decline in land productivity. Although the affected portion of the land was purchased by Pertamina between 1992 and 1994, to this day the land title certificate is still recorded as a single plot, and no subdivision or adjustment of either the physical or legal data has been made in the land records.

However, normatively, Article 19 of the Land Administration Law mandates the implementation of land registration to ensure legal certainty through the alignment of physical and legal data with the actual conditions on the ground.<sup>12</sup> The discrepancy between the actual post-construction land conditions and the administrative land data indicates a gap between the normative objectives of land registration and the reality of its implementation, which has the potential to obscure the boundaries of land rights and weaken legal protection for land rights holders. This situation indicates a discrepancy between the physical condition of the land post-construction and administrative land data, which has the potential to create legal uncertainty and becomes a crucial issue in harmonizing the interests of infrastructure development for the public good with the protection of the

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<sup>12</sup> Undang-Undang Nomor 5 Tahun 1960 tentang Peraturan Dasar Pokok Agraria (UUPA).

community's land rights.

Previous studies have examined land acquisition for public interest from a normative perspective, particularly regarding the constitutionality of norms, compensation mechanisms, and legal protection for holders of land rights. However, most of these studies have focused on doctrinal analysis of legislation and court rulings. Research conducted by Tiara Dwi Rahayu et al. (2023) examined the legal consequences and legal certainty of land rights affected by liquefaction in Palu City and concluded that land affected by liquefaction can be declared as destroyed land, thereby extinguishing the land rights and returning the land to state control.<sup>13</sup>

Additionally, research conducted by Annisa Berliani, Hafiz Sutrisno, and Yuli Heriyanti (2023) focuses on the constitutional review of Law No. 2 of 2012 through Constitutional Court Decision No. 50/PUU-X/2012. This study is of a normative legal nature, focusing on the constitutional judges' deliberations regarding the argument of a violation of citizens' constitutional rights. The research findings indicate that the Constitutional Court determined that the provisions of Law No. 2 of 2012 do not conflict with the 1945 Constitution, although there are concerns that these norms have the potential to disregard the interests of the public. This study emphasizes the aspects of normative legitimacy and constitutional control rather than actual implementation in the field.<sup>14</sup>

Furthermore, research by Muhammad Irfan Aditya, Maryano, and Ahmad Yani (2023) discusses legal certainty in the provision of compensation for national strategic projects (PSN). Using a normative legal approach and an analysis of

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<sup>13</sup> Tiara Dwi Rahayu, Yani Pujiwati, and Betty Rubiati, "KEPASTIAN HUKUM KEPEMILIKAN HAK ATAS TANAH SETELAH MENGALAMI LIKUIFAKSI TANAH" 2, no. 18 (2023), <https://doi.org/https://doi.org/10.23920/litra.v2i2.1315>.

<sup>14</sup> Annisa Berliani and Pahlawan, "Kajian Yuridis Undang - Undang Nomor 2 Tahun 2012 Tentang Pengadaan Tanah Bagi Pembangunan Untuk Kepentingan Umum Dalam Putusan Mk.50/Puu-X/2012" 1, no. 1 (2023): 16–40, <https://doi.org/https://doi.org/10.70292/pchukumsosial.v1i1.2>.

legislation, the study identifies various issues in practice, such as discrepancies in appraisal values and compensation disputes. However, the focus of the study remains within the normative framework and the construction of legal certainty within the regulatory system, without an in-depth empirical examination of the concrete experiences of communities affected by development.<sup>15</sup>

On the other hand, research by Van Basten Simamora, Jemmy Jefry Pietersz, and Novyta Uktolseja (2025) specifically highlights legal protection for holders of land title certificates in land acquisition. This study affirms that certificates serve as strong evidence of rights, and legal protection is realized through mechanisms of compensation and escrow if an agreement cannot be reached. Although it provides a comprehensive analysis of the constitutional and regulatory foundations of land rights protection, the approach remains normative.<sup>16</sup>

Similarly, the research by Ari Leonardo and Mahlil Adriaman (2025) discusses the legal protection of land rights holders in land acquisition for public interest. This study emphasizes the state's obligation to ensure justice and not to harm landowners; however, the analysis is conducted through a literature review and a normative approach to legislation.<sup>17</sup>

Based on a review of these previous studies, it is evident that the majority of analyses remain focused on normative-

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<sup>15</sup> Muhammad Irfan Aditya, Maryano, and Ahmad Yani, "KEPASTIAN HUKUM DALAM PENGADAAN TANAH UNTUK PEMBANGUNAN PROYEK STRATEGIS NASIONAL TERKAIT GANTI KERUGIAN BAGI MASYARAKAT YANG TERDAMPAK," no. September (2023): 3710–21, <https://doi.org/https://doi.org/10.55681/sentri.v2i9.1525>.

<sup>16</sup> Van Basten Simamora, Jemmy Jefry Pietersz, and Novyta Uktolseja, "Perlindungan Hukum Terhadap Pemegang Sertifikat Hak Milik Dalam Pengadaan Tanah Bagi Pembangunan Untuk Kepentingan Umum" 3, no. April (2025): 87–100, <https://doi.org/https://doi.org/10.47268/palasrev.v3i1.19721>.

<sup>17</sup> Ari Leonardo and Mahlil Adriaman, "Perlindungan Hukum Pemegang Hak Atas Tanah Dalam Pengadaan Tanah Untuk Kepentingan Umum" 3, no. 1 (2025): 229–40, <https://jurnal.umsb.ac.id/index.php/SLJ/article/view/6501/4253>.

doctrinal aspects, namely the analysis of legislation, court rulings, and theoretical concepts of legal protection. No research has yet been found that specifically focuses on legal protection for land rights holders affected by energy infrastructure development as its main subject of study, using an empirical legal approach.

This study offers a novel perspective by positioning energy infrastructure development specifically the Pengapon–Boyolali fuel pipeline as the specific context for land acquisition, which possesses distinct characteristics from other general infrastructure projects such as toll roads or dams.<sup>181920</sup> In energy projects, land is generally not destroyed but undergoes physical changes, restrictions on use, and potential discrepancies between factual conditions and land administration data. This characteristic raises its own set of issues regarding the legal protection of land rights holders, which have not been examined in depth in previous research.

Furthermore, this study shifts the focus of analysis from merely normative legal protection toward the factual legal certainty directly experienced by affected landowners. The approach used is an empirical legal one, involving in-depth field data collection through interviews, observations, and documentation with affected landowners. This study aims to analyze and evaluate the legal protections afforded to landowners in Grogolan Village who were affected by the construction of the Pengapon–Boyolali fuel transmission pipeline, as well as to identify the obstacles and challenges

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<sup>18</sup> Shelin Nabila Wibowo et al., “Kepastian Hukum Ganti Kerugian Pengadaan Tanah Bagi Pembangunan Jalan Tol Cisumdawu” 4 (2021): 191–209, <https://doi.org/https://doi.org/10.23920/acta.v4i2.480>.

<sup>19</sup> Anjhany and Ramli, “Pengadaan Tanah Yang Mengenai Tanah Instansi: Studi Kasus Pembangunan Jalan Tol Bawen-Jogja Terhadap Lahan Pertanian SMK Negeri 1 Bawen.”

<sup>20</sup> Thalita Raissa Latifolia and Alan Bayu Aji, “Efektivitas Hukum Pengadaan Tanah Untuk Pembangunan Jalan Tol Yogyakarta-Bawen Dalam Perspektif Asas Keadilan Dan Kepastian Hukum Di Kabupaten Magelang,” 2025, 10394–404, <https://doi.org/https://doi.org/10.61104/alz.v3i6.2760>.

faced by the community in securing legal certainty following the project's completion. The findings of this study are expected to provide practical benefits as a basis for improving policies and mechanisms for updating land data regarding land affected by infrastructure development, as well as to academically enrich empirical agrarian law studies concerning legal protection for land rights holders in the context of national strategic infrastructure development.

## **B. Physical and Legal Impacts of Fuel Pipeline Construction on Land Rights of Grogolan Village Residents**

### ***1. Changes in Land Contour and Structure***

**Figure 2.** Boundary markers for the Pengapon–Boyolali fuel pipeline route in the Grogolan Village area in the form of boundary posts.





**Source:** Author (2026)

Construction of the Pengapon–Boyolali fuel pipeline in the Grogolan Village area began with the installation of boundary markers on residents' land through which the pipeline passes, prior to excavation and pipe installation, as shown in Figure 2. Based on field data, the construction process involved excavating the ground to a depth of approximately 2 meters within a 6-meter-wide corridor along the pipeline route.<sup>21</sup> These construction activities took place over a relatively short period but left permanent physical impacts on residents' agricultural land.

The excavation process was carried out mechanically using heavy equipment, so that within a short time, the soil layer structure that had formed over decades underwent changes that could not be fully restored to their original condition. This situation resulted in crop failures two to three times for rice crops and damage to banana plants owned by affected residents in the excavated area.<sup>22</sup> These impacts are not merely temporary during the construction phase but persist post-construction because the backfilling of excavated soil does not fully restore soil fertility due to the

<sup>21</sup> "Wawancara Dengan Bapak Muhammad Tahrir : Petani Desa Grogolan, 9 Maret 2026."

<sup>22</sup> "Wawancara Dengan Bapak Sudarmulyo : Petani Desa Grogolan, 9 Maret 2026" (Desa Grogolan, Kabupaten Boyolali, n.d.).

mixing of fertile topsoil with nutrient-poor subsoil. This condition causes a significant decline in agricultural productivity on the affected land even after construction activities have concluded.<sup>23</sup>

From an agrarian perspective, these excavation and backfilling activities tangibly alter the contour and structure of the land that was previously used as productive agricultural land. These changes in the physical condition of the land have important legal implications, as physical land data including the location, boundaries, and area of the land constitute an integral part of land legal certainty as regulated in Article 19 of the Land Law (UUPA) and Government Regulation No. 24 of 1997 on Land Registration. If the physical condition of the land changes significantly but is not followed by an update to the administrative data, a gap arises between the *de facto* and *de jure* conditions, which undermines the legal certainty of the rights holders.<sup>24</sup>

In the context of the Grogolan Village case, changes in land contours resulting from pipeline excavation also affect the physical boundaries between land parcels that have traditionally been recognized by the local community, thereby making the potential for future land boundary disputes increasingly evident. Physical changes to the land caused by the construction of fuel pipelines also impact the economic value of the land. Agricultural land that has undergone changes in soil structure due to deep excavation and mechanical backfilling generally requires several growing seasons to restore its fertility.<sup>25</sup> Additionally, the presence of

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<sup>23</sup> Nur Indah Syafna Marpaung, "UNDERPASS PADA PEMBANGUNAN JALAN TOL TEBING TINGGI – INDERAPURA" (Universitas Medan Area, 2022), [https://repositori.uma.ac.id/jspui/bitstream/123456789/17085/1/168110090 - Nur Indah Syafna Simangunsong - Fulltext.pdf](https://repositori.uma.ac.id/jspui/bitstream/123456789/17085/1/168110090-Nur%20Indah%20Syafna%20Simangunsong-Fulltext.pdf).

<sup>24</sup> Jheni Rahmad, "KEDUDUKAN HUKUM SERTIPIKAT HAK MILIK DAN TANGGUNG JAWAB PEMERINTAH ATAS KEPEMILIKAN TANAH MELALUI PROGRAM PENDAFTARAN TANAH SISTEMATIS LENGKAP" (UNISSULA, 2024), [https://repository.unissula.ac.id/37207/1/Magister Kenotariatan\\_21302200159\\_fullpdf.pdf](https://repository.unissula.ac.id/37207/1/Magister%20Kenotariatan_21302200159_fullpdf.pdf).

<sup>25</sup> Warda Murti and Sri Maya, *PENGELOLAAN SUMBER DAYA ALAM*

underground pipelines limits the types and intensity of land cultivation that farmers can perform, as deep soil cultivation above pipeline routes risks damaging the infrastructure. This situation directly impacts long-term agricultural productivity and the market value of the land, as potential buyers aware of the underground pipelines tend to offer lower prices due to these usage limitations.

Furthermore, changes in land contours and structure resulting from the construction of fuel pipelines also have implications for the socio-cultural dimensions of the agrarian community in Grogolan Village. For farmers who have been cultivating the same land for generations, physical changes to the land are not merely technical agricultural issues but also touch upon aspects of identity, family food security, and the sustainability of their livelihoods. This is evident from the statement by Mr. Muhammad Tahrir, who noted that the diagonal changes to his land not only affect crop productivity but also complicate land cultivation due to the division of the rice field into two asymmetrical segments. Uncertainty regarding the legal status of the land following pipeline construction adds psychological pressure on farmers, who ideally require clear legal guarantees regarding the land that serves as their source of livelihood.

## **2. Land Use Restrictions via a Buffer Zone**

Following the completion of pipeline installation, land along the pipeline route faces usage restrictions due to the establishment of a 6-meter-wide corridor or *buffer zone*. Although no formal written prohibition has been officially communicated to residents, in practice, land within the pipeline corridor cannot be freely utilized particularly for permanent crops or structures to avoid the risk of disrupting the underground pipeline installation. Pertamina generally prohibits construction above pipeline routes, as has also been communicated in various pipeline projects in other regions.<sup>26</sup>

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(CV WIDINA MEDIA UTAMA, 2021), <https://repository.penerbitwidina.com/tr/publications/348689/pengelolaan-sumber-daya-alam#cite>.

<sup>26</sup> VOI.id, "Pertamina Urges Residents Not To Build Buildings To Match Plants In Oil Pipelines," 2023, <https://voi.id/fr/amp/301095>.

These restrictions are, in fact, an unavoidable technical consequence of the presence of high-pressure pipelines beneath the ground, given that construction or excavation activities above the pipeline route can pose a risk of pipeline damage that could potentially trigger fires or environmental contamination. Such restriction policies align with the Ministry of Energy and Mineral Resources Regulation governing pipeline right-of-way boundaries,<sup>27</sup> however, the issue is that residents have not received official and comprehensive explanations regarding the limitations on their land rights due to the pipeline corridor. Residents' lack of awareness regarding these restrictions leads to uncertainty in land utilization, which ultimately threatens agricultural productivity and the overall economic value of the land. This situation highlights a serious communication gap between PT Pertamina Patra Niaga, as the project owner, and the affected landowners, where residents' right to receive clear and complete information regarding the implications of the pipeline's presence on their land use has not been adequately fulfilled.

Normatively, the establishment of a *buffer zone* or pipeline right-of-way should be accompanied by official records or notes included in land documents or the relevant land title certificates. This is crucial so that every land rights holder whether current owners, future buyers, or heirs can definitively know of the usage restrictions attached to the land in question. The absence of official documentation regarding these restrictions in land documents constitutes a legal vacuum that has the potential to cause conflicts in the future, particularly when there is a transfer of rights through sale, gift, or inheritance to parties unaware of the history of pipeline construction on that land.<sup>28</sup>

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<sup>27</sup> "Peraturan Menteri Energi Dan Sumber Daya Mineral Nomor 32 Tahun 2021 Tentang Inspeksi Teknis Dan Pemeriksaan Keselamatan Instalasi Dan Peralatan Pada Kegiatan Usaha Minyak Dan Gas Bumi," Pub. L. No. 32 (2021), <https://peraturan.bpk.go.id/Details/215446/permen-esdm-no-32-tahun-2021>.

<sup>28</sup> Anisa Nurul Hidayah, Asep Guntur Hidayat, and Tryola Nadia,

The long-term impact of these officially undocumented *buffer zones* also affects landowners' ability to access collateral-based financial services. Banks and financial institutions generally require complete and clear land data during the collateral appraisal process.<sup>29</sup> Land that is *de facto* subject to use restrictions due to the presence of a pipeline, yet these restrictions are not reflected in the certificate, can result in collateral valuation discrepancies that are disadvantageous to the landowner. Furthermore, in the event of future disputes regarding violations of land use restrictions over the pipeline route, residents lack official documents to rely on to protect their rights and obligations.

### **3. Case Study: Affected Landowner**

Mr. Muhammad Tahrir, commonly known as Pak Tahrir, a 60-year-old farmer in RT 3 RW 2, Grogolan Village, is one of the most representative affected residents illustrating the complexity of post-pipeline construction land law issues. His rice field is crossed by the pipeline, with an affected area of approximately 168 m<sup>2</sup>. Based on this, he received compensation of Rp840,000, calculated as 168 m<sup>2</sup> × Rp5,000/m<sup>2</sup>, which was then reduced by 5% by the village administration, resulting in a net amount of approximately Rp798,000. According to Mr. Tahrir, this compensation amount is sufficient to cover the actual losses he incurred. The compensation was also the result of negotiations between the affected residents and Pertamina, which had previously faced protests because the compensation amount Pertamina intended to pay was too low Rp3,000/m<sup>2</sup>.<sup>30</sup>

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"Peralihan Hak Atas Tanah" 3, no. 1 (2025): 295–305, <https://doi.org/https://doi.org/10.53935/jim.v3.i1.53>.

<sup>29</sup> Loso Judijanto, "Peran Sertifikat Tanah Sebagai Agunan Kredit Di Bank Dalam Meningkatkan Akses Permodalan Dan Investasi Usaha" 2, no. 4 (2025): 262–71, <https://sociohum.net/index.php/BORJUIS/article/view/242/239>.

<sup>30</sup> "Wawancara Dengan Bapak Muhammad Tahrir : Petani Desa Grogolan, 9 Maret 2026."

**Figure 3.** Condition of Mr. Tahrir's Land Affected by the Construction of the Pengapon–Boyolali Fuel Pipeline.



Source: Author (2026)

Nevertheless, the more fundamental and long-term issues remain unresolved. Mr. Tahrir's land is bisected diagonally by a pipeline, dividing it into two unequal sections and forming a triangular configuration, as shown in Figure 3. This situation not only makes land cultivation technically difficult but also creates uncertainty regarding physical boundaries, which impacts overall land management. More critically, to this day, Mr. Tahrir's land title certificate is still recorded as a single, undivided parcel, and no subdivision or adjustment of either the physical or legal data has been made even though part of his land was purchased by Pertamina between 1992 and 1994. This discrepancy between the physical conditions on the ground and the certificate data leaves Mr. Tahrir in a legally unprotected position.

A similar situation is faced by Mr. Sudarmulyo, who, along with approximately 40–50 farmers in Grogolan Village, has experienced the direct impacts of the pipeline construction. Although the compensation amount is considered sufficient to cover actual losses, both emphasize that pre-construction outreach was not conducted with all affected landowners. Of the approximately 40–50 farmers whose land was crossed by the pipeline, only two representatives were invited to the public consultation meeting, while the rest did not receive

direct information. Furthermore, no complaint mechanism was available to affected residents, meaning that should issues arise in the future, residents have no official channel to voice objections or claims.

The limited outreach, which reached only two representatives out of dozens of affected farmers, reflects a failure to comply with the principle of inclusive public consultation as mandated by Law No. 2 of 2012.<sup>31</sup> The majority of farmers are not fully aware of their rights in the land acquisition process, including the right to an independent assessment of compensation, the right to file objections, and the right to receive updated land documents following construction. This situation is exacerbated by residents' relatively limited levels of education and legal literacy, leaving them without the capacity to independently demand the fulfillment of these rights. The tangible implication of this situation is the creation of layered legal uncertainty not only regarding the physical changes to the land but also concerning procedural aspects that have not been substantively fulfilled.

**Table 1.** Summary of Physical Land Changes and Their Impact on Legal Certainty

| Type of Change                      | Field Description (Grogolan Village)                                                                      | Physical & Economic Impacts                                                                        | Impact on Legal Certainty                                                             |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Changes in land contour & structure | Mechanical excavation to a depth of $\pm 2$ meters along a 6-meter-wide corridor, followed by backfilling | 2–3 crop failures, damage to banana plants, reduced soil fertility (mixing of topsoil and subsoil) | Physical data (boundaries, area) in the certificate no longer match actual conditions |
| Cutting of land parcels             | Land cut diagonally (on Mr. Tahrir's land)                                                                | Difficulties in land cultivation, division of land into asymmetrical                               | Unclear physical boundaries between plots,                                            |

<sup>31</sup> Undang-undang (UU) Nomor 2 Tahun 2012 tentang Pengadaan Tanah Bagi Pembangunan Untuk Kepentingan Umum.

|                                       | forming a triangular configuration                                                      | segments                                                                                  | potential for boundary disputes in the future                         |
|---------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Establishment of a <i>buffer zone</i> | A 6-meter-wide corridor along the pipeline route, without official written notification | Usage restrictions: no permanent structures, deep-rooted plants, or deep soil cultivation | No record in the certificate; restrictions are not legally documented |

**Source:** Field data analysis by Mr. Muhammad Tahrir and Mr. Sudarmulyo (2026)

### C. Legal Protection for Land Rights Holders in Land Acquisition for Infrastructure

Legal certainty is one of the most fundamental and frequently debated primary objectives of law in practice. According to Satjipto Rahardjo (2006), legal certainty is “*Sicherheit des Rechts selbst*” or certainty regarding the law itself.<sup>32</sup> There are four aspects related to the concept of legal certainty. First, the law is positive, meaning that it consists of statutory provisions (*gesetzliches recht*). There are four aspects related to the meaning of legal certainty. First, that the law is positive, meaning it is statutory law (*gesetzliches Recht*). Second, that the law is based on facts (*Tatsachen*), not on a formulation of judgments to be made later by a judge. Third, that these facts must be formulated clearly to avoid errors in interpretation, as well as to ensure ease of implementation. Fourth, positive law must not be frequently altered. Within the framework of Satjipto Rahardjo’s (2006) thinking, legal certainty requires that the norms governing rights and obligations be formulated in a positive manner and based on clear facts, so that they can be implemented without errors in interpretation. Legal certainty also requires the stability of norms, meaning that positive law must not be frequently altered so that it can provide consistent

<sup>32</sup> Satjipto Rahardjo, *Membedah Hukum Progresif* (Jakarta: Penerbit Buku Kompas, 2006).

guarantees for legal subjects.

Based on this theory of legal certainty, in the context of energy infrastructure development, legal protection for land rights holders requires that any changes in the physical condition of the land resulting from pipeline construction be immediately followed by an update of land data that is accurate and based on field observations. Norms regarding rights, obligations, and restrictions on land use must be clearly formulated and communicated to rights holders so as not to give rise to multiple interpretations. Furthermore, procedures for updating certificates and complaint mechanisms must be available and enforceable. Additionally, updated land data must be stable and resistant to change to ensure the stability of land rights. Alignment between the actual post-construction conditions of the land and administrative land records is a prerequisite for achieving legal certainty regarding land rights for affected residents.

### **1. Analysis of Law No. 2 of 2012**

Law No. 2 of 2012 on Land Acquisition for Development in the Public Interest has, in a normative sense, established mechanisms aimed at realizing legal certainty as interpreted by Satjipto Rahardjo (2006). From the perspective of legal certainty, this law establishes systematic stages ranging from planning, preparation which includes public consultation implementation, to the handover of the results of land acquisition.<sup>33</sup> This law also ensures legal certainty through mechanisms of deliberation, transparent compensation assessments, and inclusive public consultation procedures, so that land rights holders can clearly know and understand their rights and obligations before and after project implementation.

Although compensation has been deemed fair and reasonable for affected residents through the deliberation mechanism, this study found that the implementation of Law

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<sup>33</sup> Siti Miftahul Jannah, Wira Fanciska, and Hedwig A. Mau, "Legal Certainty in the Implementation of Compensation for Land Acquisition for Development in the Public Interest" 2, no. 3 (2025): 485–96, <https://doi.org/https://doi.org/10.62335/cendekia.v2i3.1061>.

No. 2 of 2012 in the context of the Pengapon–Boyolali fuel pipeline project in Grogolan Village still has substantial shortcomings. First, the provisions regarding public consultation were not carried out inclusively; out of approximately 40–50 affected landowners, outreach efforts only reached a limited number of representatives. Second, the law does not explicitly mandate the project implementer’s obligation to facilitate post-construction land data updates, particularly in cases where land is not fully expropriated but merely crossed.<sup>34</sup>

**Table 2.** Gaps Between Normative Provisions and Field Implementation

| Land Acquisition Aspects                  | Normative Provisions (Law No. 2/2012 & Government Regulation No. 24/1997)                                            | Implementation in Grogolan Village                                                                            | Gap                               |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Public consultation                       | Must be inclusive, involving all entitled parties (Article 5 of Law No. 2/2012)                                      | Only 2 representatives from 40–50 affected farmers were invited                                               | Very significant                  |
| Compensation                              | Appropriate, fair, and through deliberation (Article 10 of Law No. 2/2012)                                           | Compensation of Rp5,000/m <sup>2</sup> was agreed upon through negotiation and deemed sufficient by residents | Relatively met (financial aspect) |
| Recording of physical changes to the land | Physical data must be up-to-date in accordance with actual conditions (Government Regulation No. 24/1997, Article 3) | No data updates; certificates still reflect conditions prior to construction                                  | Significant                       |

<sup>34</sup> Shinta Pangesti et al., “PERSPEKTIF HUKUM AGRARIA TERHADAP PERLINDUNGAN PARA PIHAK DALAM KONTRAK PEMBANGUNAN PIPA GAS BAWAH TANAH,” *Widya Bhumi* 6, no. 1 (2026): 18–38, <https://doi.org/https://doi.org/10.31292/wb.v6i1.287>.

|                                 |                                                                                                                |                                                                                                       |             |
|---------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------|
| Certificate Division            | If part of a land parcel is expropriated or encumbered, the land must be subdivided                            | If the certificate is not split, there is no assistance from Pertamina or the National Land Agency    | Significant |
| Recording of usage restrictions | Any encumbrance or restriction on rights must be listed in the certificate (Government Regulation No. 24/1997) | <i>Buffer zones</i> are not recorded; residents do not have official documents regarding restrictions | Significant |

**Source:** Field data analysis by Mr. Muhammad Tahrir, Mr. Sudarmulyo, Ms. Fitri Mahardikasari, S.Si. (2026), Law (UU) No. 2 of 2012, and Government Regulation (PP) No. 24 of 1997

## 2. *Land Acquisition and Compensation Process*

PT Pertamina Patra Niaga, as the project owner, and PT PGAS Solution, as the implementing contractor, claim that the Pengapon–Boyolali pipeline project was designed with due consideration for permitting aspects and community relations since *the kick-off meeting* in July 2023.<sup>35</sup> Pertamina states that this project is a concrete effort to implement *Environmental, Social, and Governance* (ESG) principles, aimed at reducing distribution costs and lowering carbon emissions, given that fuel distribution previously relied on ships and trucks.<sup>36</sup> Pertamina is also committed to adhering to project permitting procedures that involve not only companies or institutions but also the community. The

<sup>35</sup> Kelik Dewanto, “Subholding Pertamina Bersinergi Bangun Pipa Minyak Pengapon-Boyolali,” ANTARA, 2023, <https://www.antaranews.com/berita/3770739/subholding-pertamina-bersinergi-bangun-pipa-minyak-pengapon-boyolali>.

<sup>36</sup> Pebrianto Eko Wicaksono and Septian Deny, “Pipa BBM Sepanjang 81,5 Km Dari Semarang Ke Boyolali Dibangun,” Liputan6.com, 2023, [https://www.liputan6.com/bisnis/read/5423600/pipa-bbm-sepanjang-815-km-dari-semarang-ke-boyolali-dibangun#google\\_vignette](https://www.liputan6.com/bisnis/read/5423600/pipa-bbm-sepanjang-815-km-dari-semarang-ke-boyolali-dibangun#google_vignette).

Boyolali Regency Government itself has welcomed the construction of the pipeline and expressed its full support for this national strategic project.<sup>37</sup>

Regarding the compensation payment mechanism, Pertamina has implemented a bank transfer method that is in accordance with applicable laws and regulations. Article 1, Paragraph 1 of Law No. 3 of 2011 on Fund Transfers defines a fund transfer as a series of activities initiated by an instruction from the originating sender aimed at transferring a certain amount of funds to the recipient specified in the fund transfer instruction, and this mechanism is recognized as a legally valid payment instrument.<sup>38</sup> Furthermore, Bank Indonesia Regulation No. 23/6/PBI/2021 on Payment Service Providers emphasizes that electronic fund transfers are payment instruments recognized by the state and possess evidentiary weight equivalent to other written payment evidence, given that every transaction is recorded electronically and can be printed as valid evidence.<sup>39</sup> Thus, the transfer history in the recipient's account has legal force as valid evidence of a transaction as referred to in Article 5 of Law No. 11 of 2008 on Electronic Information and Transactions (ITE), which states that electronic information and documents constitute valid legal evidence.<sup>40</sup>

Nevertheless, Pertamina's commitment has not been fully implemented in other areas. Pertamina generally prohibits construction within the pipeline's *Right of Way* (ROW),<sup>41</sup> but in

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<sup>37</sup> Indrawan, "Subholding Gas Dan Subholding C&T Pertamina Bangun Proyek Pipa Minyak Pengapon – Boyolali."

<sup>38</sup> "Undang-Undang (UU) Nomor 3 Tahun 2011 Tentang Transfer Dana," Pub. L. No. 3 (2011), <https://peraturan.bpk.go.id/Details/39133/uu-no-3-tahun-2011>.

<sup>39</sup> "Peraturan Bank Indonesia Nomor 23/6/PBI/2021 Tahun 2021 Tentang Penyedia Jasa Pembayaran," Pub. L. No. 23/6/PBI/2021 (2021), <https://peraturan.bpk.go.id/Details/219348/peraturan-bi-no-236pbi2021>.

<sup>40</sup> Novi Abdi, "Pertamina Imbau Masyarakat Tidak Membangun Di Jalur Pipa Minyak," ANTARA, 2023, <https://www.antaranews.com/berita/3677742/pertamina-imbau-masyarakat-tidak-membangun-di-jalur-pipa-minyak>.

<sup>41</sup> Abdi.

the case of Grogolan Village, communication regarding these restrictions was not formally conveyed in writing to residents. This has created uncertainty for landowners regarding their rights and obligations on land crossed by the pipeline. From a corporate policy perspective, Pertamina lacks mechanisms that actively facilitate the updating of land certificates for affected landowners following pipeline construction,<sup>42</sup> unlike the standards applied in national toll road construction projects.<sup>43</sup>

**Table 3.** Comparison of Land Data Change Management: Fuel Pipeline Project vs. Toll Road Project (National)

| Aspect                                             | Pengapong-<br>Boyolali<br>Fuel<br>Pipeline<br>Project | National Toll Road<br>Project                                                                | Analysis                                                               |
|----------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Facilitation of certificate splitting              | None                                                  | The land acquisition agency actively assists with the post-acquisition certification process | Fuel pipelines are left behind in the protection of landowners' rights |
| Notification mechanism to the National Land Agency | No notification from Pertamina                        | There is coordination between the project implementer and the BPN                            | The lack of notification results in outdated land data                 |
| Recording of land use restrictions                 | Not recorded in the certificate                       | Usually recorded as an easement or special note                                              | Fuel pipelines create long-term legal uncertainty                      |
| Outreach to landowners                             | Only to representatives (not inclusive)               | Inclusive and documented                                                                     | Violation of the principle of public consultation                      |

**Source:** Field data analysis by Muhammad Tahrir, Sudarmulyo,

<sup>42</sup> "Wawancara Dengan Ibu Fitri Mahardikasari, S.Si. : Sekretaris Desa Grogolan, 13 April 2026" (Desa Grogolan, Kabupaten Boyolali: Wawancara Pribadi, n.d.).

<sup>43</sup> Latifolia and Aji, "Efektivitas Hukum Pengadaan Tanah Untuk Pembangunan Jalan Tol Yogyakarta-Bawen Dalam Perspektif Asas Keadilan Dan Kepastian Hukum Di Kabupaten Magelang."

Fitri Mahardikasari, S.Si., Ami (2026), and Anjhany, Lintar, and Asmarani Ramli (2025)

### **3. *Evaluation of Field Implementation***

Viewed from the theory of legal certainty as articulated by Satjipto Rahardjo (2006), the implementation of land acquisition in the Pengapon–Boyolali pipeline project in Grogolan Village reveals a clear deficit in the elements of legal certainty, particularly regarding the dimensions of the norm's positivity, the alignment of data with facts, the clarity of formulation, and legal stability for rights holders.

From the perspective of the first element of legal certainty that the law must be positive and based on facts it was found that although compensation was provided through a deliberation mechanism with community representatives and payments were made non-cash via bank transfer, the physical changes to the land were not officially recorded or documented in land records. The agreed-upon compensation amount, although accepted by residents as fair compensation for crop damage, was not accompanied by an update of land records based on field facts, as required by the principle of legal certainty.

When examined through the second and third elements of legal certainty namely, the alignment of data with facts and the clarity of formulations to prevent multiple interpretations there is a clear deficit. Land data has not been updated despite significant changes in the physical condition of the land. Residents' land title certificates still list outdated data without any record of the existence of pipeline corridors, usage restrictions, or the physical boundary changes that have occurred. The prohibition on construction along the *Right of Way* (ROW) has not been formally and in writing communicated to landowners; consequently, data that does not align with facts leads to unclear formulations that result in multiple interpretations, as well as ongoing uncertainty regarding residents' rights and obligations regarding land traversed by pipelines.

Viewed through the fourth element of legal certainty according to Satjipto Rahardjo (2006) namely that positive law must not be frequently altered to ensure stability affected

residents cannot definitively ascertain the legal status of their land, the applicable usage restrictions, certificate renewal procedures, or complaint mechanisms in the event of future disputes. This instability and lack of clarity in information reflects a failure to fulfill the element of legal certainty, which should provide clear guidelines for behavior and tangible protection for land rights holders.

**Table 4.** An Evaluation of Legal Protection for Land Rights Holders Based on Satjipto Rahardjo's Theory

| Elements of Legal Certainty (Rahardjo, 2006)                  | Desired Conditions                                                                                  | Actual Conditions in Grogolan Village                                                                   | Status of Fulfilment |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------|
| The law is positive (based on legislation)                    | Any changes to land rights/objects are regulated normatively and implemented                        | Physical changes occur, but are not followed by updates to land data                                    | Not met              |
| Law is based on facts ( <i>Tatsachen</i> )                    | Land data must correspond to physical conditions on the ground                                      | Certificates still contain old data; the <i>de facto</i> conditions differ from the <i>de jure ones</i> | Not met              |
| Facts are clearly defined (avoiding multiple interpretations) | There are official documents explaining the limits of rights and obligations following construction | <i>The buffer zone</i> was not communicated in writing; residents are unaware of land-use restrictions  | Not met              |
| Positive law is not frequently amended (normative stability)  | Rights holders have long-term certainty regarding the status of their land                          | There is no active notification mechanism; residents have no certainty regarding the                    | Not met              |

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status of the  
land through  
which the  
pipeline runs

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**Source:** Field data analysis by Muhammad Tahrir, Sudarmulyo, Fitri Mahardikasari, S.Si., Ami (2026), and Satjipto Rahardjo (2006)

## **D. Barriers to Post-Construction Land Data Updates**

### **1. *Discrepancies Between Physical and Legal Data***

Following the completion of pipeline construction, there is a significant discrepancy between the physical condition of the land on-site and the data recorded in land documents. The land ownership certificates of affected residents still contain outdated data that does not reflect the physical changes resulting from pipeline excavation, the existence of a 6-meter-wide corridor, or the usage restrictions imposed on the land. This situation constitutes a violation of the principle of up-to-date land data as mandated by Government Regulation No. 24 of 1997 on Land Registration, which requires that physical and legal land data always correspond to actual conditions.<sup>44</sup>

From the perspective of the Boyolali Regency Land Agency (BPN), the absence of an active notification mechanism from the project implementers makes it extremely difficult to proactively update land data. The land system at the BPN does require identification based on certificate numbers and owner names to conduct data tracing and updates; however, this is precisely where the structural problem lies. Pertamina has not officially submitted a list of affected land parcels to the BPN, so there is no basis for the BPN to initiate the update process. Without facilitation from the project implementers or institutional initiative from the BPN, affected residents lack clear guidance on what steps to take, whom to report to, and how the certificate update

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<sup>44</sup> "Peraturan Pemerintah (PP) Nomor 24 Tahun 1997 Tentang Pendaftaran Tanah," Pub. L. No. 24 (1997), <https://peraturan.bpk.go.id/Details/56273/pp-no-24-tahun-1997>.

procedure can be initiated.<sup>45</sup>

## 2. Failure to Split Certificates

In the context of infrastructure projects where portions of land are permanently expropriated or encumbered with right-of-way rights, the standard procedure that should be followed is certificate subdivision: the portion being released or encumbered is registered separately, while the remaining portion is returned to the original owner with a new certificate.<sup>46</sup> However, in the case of the pipeline project in Grogolan Village, the certificate division process was not carried out at all, neither by Pertamina nor by the National Land Agency (BPN) on their own initiative. Residents did not receive assistance to undergo this process, and the project implementers did not facilitate it.<sup>47</sup>

Unlike highway projects where land acquisition agencies actively assist with the post-acquisition certification process,<sup>48</sup> in this fuel pipeline project, the entire administrative burden is placed on landowners who are generally unfamiliar with the law and lack the financial means to handle the certificate splitting process themselves, which can cost millions of rupiah. This lack of facilitation contradicts the principle of legal certainty, which requires that rights holders possess valid and up-to-date proof of their rights.

**Table 5.** Structural Barriers to Land Data Updates Following Fuel Pipeline Construction

| Barrier | Description | Responsible | Legal Implications |
|---------|-------------|-------------|--------------------|
|---------|-------------|-------------|--------------------|

<sup>45</sup> "Wawancara Dengan Ibu Ami: Petugas Administrasi BPN Kabupaten Boyolali, 8 April 2026," n.d.

<sup>46</sup> M. Nailul, "Tinjauan Maqāṣid Syarī'ah Syaikh 'allāl Al-Fāsī Terhadap Ganti Rugi Tanah (Studi Kasus Proyek Strategis Nasional Pembangunan Bendungan Bener Di Kecamatan Bener Kabupaten Purworejo)," 2023, <https://dspace.uui.ac.id/handle/123456789/49016>.

<sup>47</sup> "Wawancara Dengan Ibu Fitri Mahardikasari, S.Si.: Sekretaris Desa Grogolan, 13 April 2026."

<sup>48</sup> Latifolia and Aji, "Efektivitas Hukum Pengadaan Tanah Untuk Pembangunan Jalan Tol Yogyakarta-Bawen Dalam Perspektif Asas Keadilan Dan Kepastian Hukum Di Kabupaten Magelang."

| Party                                          |                                                                                                                      |                                                                                                              |                                                                                        |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| No active notification                         | Pertamina did not submit a list of affected land parcels to the National Land Agency                                 | PT Pertamina Patra Niaga                                                                                     | The BPN lacks a database to initiate certificate updates                               |
| No facilitation of certificate splitting       | The costs associated with splitting the certificate (fees, administrative costs) are borne entirely by the residents | PT Pertamina & BPN                                                                                           | Residents are legally uninformed and financially unable; certificates remain unchanged |
| Lack of standard <i>right-of-way</i> contracts | No standard clauses governing corridors, compensation, land restoration, and data updates                            | Regulators (Ministry of Energy and Mineral Resources, Ministry of Agrarian Affairs and Spatial Planning/BPN) | No legal certainty regarding the rights and obligations of the parties                 |
| Limited legal literacy among citizens          | Citizens are unaware of the procedures for independently updating land data                                          | Village Government & BPN                                                                                     | Citizens cannot proactively demand the fulfillment of their rights                     |

**Source:** Field data analysis by Mr. Muhammad Tahrir, Mr. Sudarmulyo, Ms. Fitri Mahardikasari, S.Si., and Ms. Ami (2026)

### ***3. Implications for The Legal Protection of Landowners***

Unresolved discrepancies between physical and legal data carry serious legal implications for landowners. The lack of clarity regarding physical land boundaries due to the presence of pipeline corridors has the potential to trigger land boundary disputes among owners in the future.<sup>49</sup> Furthermore,

<sup>49</sup> Gede Gangga Mahadhika et al., "PEMBATALAN SERTIFIKAT HAK MILIK AKIBAT ADANYA BIDANG TANAH TUMPANG TINDIH ( OVERLAP ) DI BPN BANGLI" 05, no. 02 (2025): 351–65,

many certificates in Grogolan Village are still registered in the names of former owners or deceased parents, resulting in a gap between the *de facto* owners and the *de jure* rights holders, which increases the risk of inheritance disputes.<sup>50</sup>

Furthermore, landowners cannot optimally use certificates as collateral for bank loans because changes in physical conditions have not been reflected in the certificate data.<sup>51</sup> These conditions collectively illustrate the failure to fulfill the four elements of legal certainty as outlined by Satjipto Rahardjo (2006): legal positivity, conformity with facts, clarity of formulation, and stability of norms. This failure causes the law to lose its function as a guide for legal conduct which should protect citizens and instead leaves them in prolonged uncertainty.

From an agrarian law perspective, this issue is also closely linked to the absence of regulations explicitly governing *rights of way* or *easements* in the context of oil and gas pipelines on land owned by residents. Research by Pangesti et al. (2025) on the protection of parties in contracts for the construction of underground gas pipelines emphasizes that minimum contract clauses must address corridor identification, land-use restrictions, compensation, land restoration, and dispute resolution to ensure legal certainty.<sup>52</sup> The absence of such standard contracts in the fuel pipeline project in Grogolan Village is one of the main root causes of the legal uncertainty experienced by residents.

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<https://doi.org/https://doi.org/10.36733/jhm.v5i2>.

<sup>50</sup> Rezi Alfarizi Rahman and Atik Winanti, "Perlindungan Hukum Bagi Pembeli Hak Atas Tanah Dalam Sengketa Warisan Siraso-Raso Sumatera Utara Legal Protection For Buyers Of Land Rights In The Siraso-Raso Inheritance Dispute North Sumatra" 8, no. 1 (2025): 47–64,

<https://doi.org/https://doi.org/10.26623/julr.v8i1.9473>.

<sup>51</sup> Loso Judijanto, "ANALISIS KEMUDAHAN AKSES KREDIT BANK MELALUI SERTIFIKAT TANAH ELEKTRONIK: PELUANG DAN TANTANGAN BAGI PEMILIK USAHA" 2, no. 4 (2025): 251–61, <https://sociohum.net/index.php/BORJUIS/article/view/240/238>.

<sup>52</sup> Pangesti et al., "PERSPEKTIF HUKUM AGRARIA TERHADAP PERLINDUNGAN PARA PIHAK DALAM KONTRAK PEMBANGUNAN PIPA GAS BAWAH TANAH."

## E. Conclusion

This study concludes that legal protection for the landowners of Grogolan Village affected by the construction of the Pengapon–Boyolali fuel transmission pipeline has not yet been substantively realized. Viewed through Satjipto Rahardjo's (2006) theory of legal certainty, there is a clear deficit in all four of its elements. First, physical changes to the land have not been officially recorded in land documents, so legal norms are not grounded in on-the-ground facts. Second, certificate data does not align with the actual post-construction conditions of the land. Third, restrictions on land use through *buffer zones* have not been formally and in writing communicated to landowners, leading to multiple interpretations. Fourth, the absence of an active notification mechanism from Pertamina to the National Land Agency (BPN) and the lack of facilitation for splitting certificates constitute structural barriers that leave residents in prolonged instability and uncertainty regarding information. Although compensation has been provided through a deliberation mechanism and deemed fair by affected residents, weaknesses in the non-inclusive public consultation process and the lack of post-construction land data updates indicate that the implementation of Law No. 2 of 2012 in the context of fuel pipeline construction has not been optimal or comprehensive.

Based on these findings, this study recommends the need for regulatory changes that explicitly require energy infrastructure project implementers to facilitate the process of splitting land certificates and updating land data following construction, as has been implemented in national toll road projects. The Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) needs to develop an active notification mechanism and a monitoring system that enables the proactive identification and updating of land data when physical changes to the land occur due to infrastructure development. In addition, PT Pertamina Patra Niaga and other energy infrastructure project implementers need to establish standard operating procedures requiring the

provision of written information to all affected landowners regarding the rights, obligations, and restrictions on land use arising from the presence of pipeline routes, as well as providing an accessible public complaint mechanism. The implementation of these recommendations is expected to bridge the gap between the normative goal of legal protection for land rights holders and the reality of its implementation on the ground, while providing stronger and more equitable legal protection for communities whose land is traversed by national strategic infrastructure projects.

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