



Legal Protection Of Land Ownership Rights In Coastal Areas Affected By Abrasion: Climate Change, Coastal Border Regime, And Tenure Uncertainty In Indonesia

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ABSTRACT

Global climate change, which has triggered sea level rise and extreme abrasion, now poses a real threat to the stability of property rights regimes in coastal areas. This study offers a theoretical contribution to the agrarian law discourse by analyzing the failure of the static legal paradigm in dealing with the dynamics of natural change. Focusing on the city of Pekalongan, Indonesia, this study uses a socio-legal approach that synthesizes normative analysis, empirical field data, and Geographic Information System (GIS) mapping to reveal the legal tension between property certificate holders and the designation of coastal zones. The findings show that the current legal regime suffers from acute sectoral fragmentation; on the one hand, it recognizes the existence of property rights administratively, but on the other hand, it affirms their function through ecological coastal zone policies. This inconsistency creates legal bias against coastal residents. This study argues that the current legal protection model is still inadequate and that there is an urgent need for reconstruction towards an adaptive legal framework. Although some legal protections are in place, they are still insufficient to provide legal certainty for communities and ecological justice. The international relevance of this research lies in offering solutions for island nations in managing tenure conflicts on coastlines that are constantly changing due to the global climate crisis.

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1. Introduction

Global climate change has become a major challenge to the stability of agrarian law in coastal areas. The phenomena of sea level rise and extreme coastal abrasion are physically altering the landscape and triggering legal uncertainty regarding existing private property rights. Internationally, shifting coastlines are creating conflicts between static property rights and the need for states to establish dynamic protection zones or coastal boundaries.¹ As a result, traditional land laws oriented towards the physical location of land become less relevant when coastal land transitions into permanent water columns.² This issue becomes particularly complex because land laws in many countries, including Indonesia, are not yet fully prepared to deal with the transition of land from coastal land to permanent water columns.

The urgency of strengthening legal protection of land rights is important based on the principles of legal unity and recognition of community rights as stipulated in Indonesia's land regulations (UUPA).³ However, the implementation of these legal norms now faces major challenges in an era of uncontrolled climate change. Natural phenomena have triggered the loss of coastal land and changed the function of coastal areas. Therefore, legal certainty regarding land ownership has become a problem. These agrarian dynamics show that legal protection must encompass aspects of social justice⁴ so that it can balance individual ownership rights with the social function of land in development and sustainable ecological preservation.⁵

Legal protection exists to establish order.⁶ However, the implementation of such protection faces real challenges regarding land ownership status in coastal areas. Land ownership rights in these areas can be degraded by natural factors, such as the effects of abrasion, tidal flooding, and other natural disasters.⁷ These factors occur beyond human

¹Laely Nurhidayah and Alistair McIlgorm, "Coastal Adaptation Laws and the Social Justice of Policies to Address Sea Level Rise: An Indonesian Insight," *Ocean & Coastal Management* 171, no. 1 April 2019 (2019): 11–18, <https://doi.org/https://doi.org/10.1016/j.ocecoaman.2019.01.011>.

²Sukmo Pinuji et al., "Is Obliterated Land Still Land? Tenure Security and Climate Change in Indonesia," *Land* 12, no. 2 (2023): 478, <https://doi.org/10.3390/land12020478>.

³Ni Ketut Suartining and Benny Djaja, "Land Rights in the Land Law System in Indonesia According to the Basic Agrarian Law Number 5 of 1960," *Journal of Social Research* 2, no. 6 (2023): 1777, <https://doi.org/10.55324/josr.v2i6.903>.

⁴Ahmad Dhiaulhaq and John F McCarthy, "Indigenous Rights and Agrarian Justice Framings in Forest Land Conflicts in Indonesia," *The Asia Pacific Journal of Anthropology* 21, no. 1 (January 1, 2020): 34–54, <https://doi.org/10.1080/14442213.2019.1670243>.

⁵Lily Kalyana and Widodo Budidarmo, "Dynamics of Land Ownership Rights in the Perspective of Indonesian Agrarian Law in the Perspective of Legal Certainty and Social Justice," *JOSH: Journal of Sharia* 4, no. 2 (2025): 234–43, <https://doi.org/10.55352/josh.v4i02.2021>.

⁶M.M Blihar, "The Influence of Legal Order on the Presentation of Evidence: Cognitive Dissonance and Administrative and Legal Characteristics," *Uzhhorod National University Herald* 2, no. 73 (2022): 208, <https://doi.org/10.24144/2307-3322.2022.73.61>.

⁷Petr Sklenicka et al., 2020, "Trends of Soil Degradation: Does the Socio-Economic Status of Land Owners and Land Users Matter?," *Land Use Policy* Vol. 95, no. June, page 103992, <https://doi.org/10.1016/j.landusepol.2019.05.011>.

control, so there needs to be legal certainty to realize the protection of land rights in coastal areas.

The city of Pekalongan is a region that is vulnerable to natural disasters because it borders the sea to the north. Abrasion in the northern part of Central Java is relatively high. In 2021, the rate of abrasion in Pantura (North Coast) of Central Java covered 7,957 hectares⁸ and had a direct impact on the condition of the northern Pekalongan region. The most severely affected area is the coastal area of Sari Pekalongan Beach, located in Panjang Baru Village, North Pekalongan. This 1.2 kilometer coastal area⁹ is in direct contact with residential areas. In addition to erosion, natural disasters such as tidal flooding are a major issue for coastal residents of Pekalongan City.

Massive abrasion and tidal flooding that occur every year have caused the land subsidence in Pekalongan City to worsen. The rate of land subsidence in Pekalongan City reaches 6 cm per year and is classified as high subsidence.¹⁰ The biggest impact is that Pekalongan City could sink and the land in the northern coastal area could be eroded due to abrasion.

The stagnant natural disaster conditions in Pekalongan City due to its geographical location directly bordering the north coast of Java significantly affect the legal and sociological dimensions of society, especially regarding potential conflicts over land ownership. The massive erosion in the region creates legal uncertainty when the status of citizens' property rights conflicts with normative agrarian provisions regarding coastal boundaries. In fact, from a fundamental perspective, land ownership rights are part of human rights¹¹ and constitutional rights guaranteed in the 1945 Constitution of the Republic of Indonesia. Therefore, the government has an obligation to provide legal protection oriented towards the interests of the community in order to guarantee certainty of rights amid these changing natural conditions.

In contrast to the existence of land rights for coastal communities, there are provisions regarding the state's rights in the control and management of state borderlands. In this context, this refers to coastal border lands that are classified as state lands that cannot be owned by private individuals. Provisions regarding coastal border lands are regulated by

⁸Ahmad Asnawi, "Abrasi Di Jawa Tengah Capai 7.957 Hektar," Mongabay.co.id: Situs Berita Lingkungan, 2021, <https://www.mongabay.co.id/2021/12/11/abrasi-di-jawa-tengah-capai-7-957-hektar/>, accessed on 7-10-2024 at 09:55 WIB.

⁹Firman Budiando, "Potensi Pantai Sari Panjang Baru Pekalongan," Kompasiana, 2020, https://www.kompasiana.com/firmanbudiando6112/5ed33cf1d541df73e01a2332/potensi-pantaisari-panjang-baru-pekalongan?page=3&page_images=1. Accessed on May 26, 2025. Accessed at 07:45 WIB.

¹⁰Bachtiarudi Alam, "Terancam Tenggelam, Penurunan Muka Tanah Di Pekalongan Lebih Parah Dari Jakarta," liputan6.com, 2022, <https://www.liputan6.com/news/read/5115805/terancam-tenggelam-penurunan-muka-tanah-di-pekalongan-lebih-parah-dari-jakarta>. Accessed on 7-10-2024 at 09:55 WIB.

¹¹Anna Katharina Kramer et al., "Strengthening Accountability for Responsible Land Governance: Linking Governance of Tenure to Human Rights," *Sustainability* 13, no. 19 (2021): 1113, <https://doi.org/10.3390/su131911113>.

Law No. 27 of 2007 on Coastal Zone and Small Island Management and other technical regulations.

The coastal border protection zone is used to preserve the coastal ecosystem and protect communities from potential natural disasters in coastal areas. The minimum length of the coastal border is 100 meters from the highest tide mark inland.¹² Coastal border land is the land along the coastline with a width proportional to the provisions of the law, a minimum of 100 meters and a maximum of 300 meters. The area of the coastal border depends on calculations and provisions based on the level of disaster risk.¹³

Abrasion in Pekalongan City occurs massively and continues to hit along the coastline, especially along the coastal area. Abrasion in Pekalongan City has occurred year after year and has had an impact on changes in the position of the coastline.¹⁴ The Pekalongan City Government has made efforts to prevent and deal with coastal abrasion in various ways. The culmination of these efforts is the construction of a massive 7.2 kilometer seawall to prevent tidal flooding and worsening coastal erosion in Pekalongan City.¹⁵

The extreme level of erosion has significantly affected the width and area of the coastal zone designated by the state. The reality is that when the coastline erodes and the highest tide line advances inland, the coastal zone will also advance in line with the erosion of the coastline. Currently, the highest tide line is only about 7-8 meters away from residents' homes.¹⁶

The condition of coastal erosion, which has resulted in the expansion of the coastal zone further into residential areas, has become a legal issue. This is because, according to the law, coastal residential areas are classified as coastal zones. However, on the other hand, the community as individuals have proof of ownership of the land that is legally valid through SHM (certificate of ownership). This becomes a dilemma from a normative and sociological perspective. Legal protection of land ownership rights from the community's perspective and legal certainty regarding the coastal zone that enters residential areas due to abrasion is one of the complexities of agrarian issues.

¹²Dwight Moody Rondonuwu et al., "Arrangement of Coastal Setbacks in Efforts to Mitigate Tidal Wave Disasters in Built-up Areas of Manado City," *AIP Conference Proceedings* 2694, no. 1 (April 26, 2023): 60008, <https://doi.org/10.1063/5.0118798>.

¹³ Article 3 paragraph (1) of Indonesian Minister of Maritime Affairs and Fisheries Regulation Number 21/Permen-KP/2018.

¹⁴Kristian Nugroho and Thonas Indra, "Identifikasi Perubahan Garis Pantai Menggunakan Citra Satelit Landsat Dengan Metode Digital Shoreline Analysis System (DSAS) (Studi Kasus: Kota Pekalongan, Jawa Tengah)," in *Prosiding FTSP Series 3: The-3rd State of The Art Science and Technology Dalam Pembangunan Berkelanjutan Di Indonesia* (Bandung: Penerbit Itenas, 2022), 344, <https://eproceeding.itenas.ac.id/index.php/ftsp/article/view/820>.

¹⁵Ardiansyah Fadil and Hilda B Alexander, "Akhir 2021, Bakal Ada Tanggul Rob 7,2 Kilometer Di Pekalongan," Kompas.com, 2021, <https://properti.kompas.com/read/2021/02/03/170000521/akhir-2021-bakal-ada-tanggul-rob-7-2-kilometer-di-pekalongan>.

¹⁶ Figures based on independent observations and measurements at the end of 2025

With regard to normative provisions, the community living in the coastal area of Sari Pekalongan Beach, or more precisely in the northern part of Panjang Baru Village, experiences legal confusion. Their land ownership rights under the law can be eroded by the coastal boundary line. This will certainly cause great losses, both economically and socially. The legal conflict over land rights between the community and the state (in this case, the Pekalongan City Government) is based on laws whose validity is still recognized by the state. The community's constitutional right to land ownership ultimately clashes with the state's coastal zone regulation, which stipulates a minimum width of 100 meters from the highest tide line inland.

There are many previous studies that have mapped the ecological and socio-economic impacts of abrasion in coastal areas, particularly in Pekalongan City. Discourse on the legal dimensions of this phenomenon is often limited to narratives of disaster compensation or physical vulnerability mapping. There is still a gap in the literature that sharply dissects the tension between the legal certainty of static property rights and dynamic coastal management policies due to the climate crisis. This study fills this gap by exploring how Indonesian agrarian law responds to situations where physically certified land becomes public or coastal buffer zones.

Based on the urgency and issues described above, this study seeks to examine agrarian law issues with a particular focus on legal protection and legal certainty. Land-related problems in agrarian law require solutions that uphold legal justice while avoiding violations of fundamental human rights. Accordingly, this research analyzes the manifestation of legal tension between the certainty of land ownership rights and coastal zone ecological policies in the context of coastal erosion, as well as the existing legal protection mechanisms governing land rights within the mandate of ecosystem sustainability.

The urgency of this research is not only limited to the local area of Pekalongan City, Indonesia. However, it can be a reflection of the legal problems faced by various archipelagic states amid the threat of global sea level rise. By analyzing the conflict between private rights and public interests in Indonesia's coastal areas, this study offers a theoretical contribution to the development of a legal risk mitigation model due to climate change. These findings are expected to serve as a reference in formulating a policy framework that not only ensures the ecological sustainability of coastal areas but also provides protection for human rights to fair and sustainable property at the international level.

2. Legal Material and Methods

This study uses a socio-legal approach to examine the tension between empirical reality in the field and legal doctrine and applicable normative provisions. This approach was chosen because the issue of property rights in coastal areas cannot be resolved solely through textual analysis of norms, but requires an understanding of how the law works amid ecosystem change.

Primary data was collected through in-depth interviews with key informants selected through purposive sampling, including land authorities (National Land Agency/BPN Kota Pekalongan) and relevant local governments. Furthermore, general data was collected from the community of the Sari Pekalongan coastal area who factually hold proof of land ownership but whose land is legally overlapping with the status of boundary land. This strategy aims to capture the fragmentation between the state's administrative recognition and the loss of physical ownership.

To strengthen the argument, this study integrates spatial analysis through a Geographic Information System (GIS). The use of GIS in this legal research is not merely a mapping tool, but rather an analytical instrument to visually prove the overlapping between private property coordinates and the coastal buffer zone established in Local Regulation No. 13 of 2022.

The collected data was then analyzed using qualitative-argumentative analysis with triangulation techniques. The focus of the analysis was directed at identifying biases in the sectoral legal regime in mediating conflicts of interest between the protection of human rights (property rights) and environmental protection policies (coastal setback). Through the synthesis of empirical, spatial, and normative data, this study aims to produce a new construction of an adaptive legal protection model.

3. Results and Discussion

3.1. Legal Tension Between Property Rights Certainty and Coastal Zone Ecological Policy in the Case of Abraded Coastal Areas

The legal tension in coastal zone management in Pekalongan City stems from the clash between the static nature of property rights and the ever-changing dynamics of the law. Based on spatial analysis using Geographic Information Systems (GIS) in the coastal area of Sari Pekalongan Beach (Panjang Baru Village, North Pekalongan District), it can be seen that the coastline has shifted significantly inland. GIS imaging data on the coastal border area is described as follows:

Figure 1.1. GIS Data on Coastal Line Shifts Inland from 2009 to 2024



Source: Personal Processing Through Geographic Information System, 2025.

Figure 1.1 illustrates the shoreline changes along Sari Pekalongan Beach between 2009 and 2024, derived from GIS-based spatial analysis. The 2009 and 2024 coastlines are overlaid to visualize the landward shift of the shoreline over a 15-year period. The map clearly shows a consistent retreat of the coastline toward the mainland, particularly in sections adjacent to densely populated residential areas. Areas highlighted in red indicate zones that were previously land but are now located below the highest tidal line, signifying permanent inundation due to coastal abrasion.

Quantitatively, the analysis indicates an average abrasion rate of 15.32 m², with maximum values reaching up to 30.24 m². This shoreline retreat has resulted in the loss of approximately 1.95 hectares of coastal land between 2009 and 2024, effectively converting former residential and coastal buffer zones into open water.

These physical changes demonstrate that the sea has progressively encroached into areas that were historically occupied and utilized by local communities. As a result, settlements that were once located outside the coastal protection boundary are now spatially classified within the state-controlled coastal zone. This transformation has direct implications for land tenure, particularly for properties that have been held under Freehold Title Certificates for decades. The abrasion-induced loss of land has created a legal conflict between long-standing private ownership rights and the state's authority to regulate and protect coastal zones as public and environmental assets.

Data on the destruction of the beach at Sari Pekalongan Beach is presented in the following geographical map:

Figure 1.2. Area of Erosion at Sari Pekalongan Beach



Source: Personal Processing Through Geographic Information System, 2025.

The erosion conditions in Pekalongan City, which have reached a high-risk status, exacerbate the land rights status issues in the coastal area. The land rights status of the Sari Pekalongan Beach community in Panjang Baru Village certainly cannot be ignored. This is because the majority of the community already has SHM and SHPakai, which legally legitimize their position in land ownership. However, the coastal boundary area based on the law is automatically drawn from the highest tide point.

This dualism in the application of the law is certainly detrimental to the community, both materially and immaterially. Based on direct observation and measurement by researchers, the distance between the Java Sea and the highest tide point at Sari Pekalongan Beach and the outer boundary of residents' houses is only $\pm 7-8$ meters. This distance is also separated by a sea wall and a secondary local road. Thus, after the Java Sea water is dammed and then there is a secondary local road (Pantai Sari Road), the residents' settlements are located right in front of it. This certainly contradicts the existing coastal boundary provisions that prioritize the protection of the marine ecosystem and the safety of the community from possible natural disasters in the marine sector (abrasion, extreme waves, and tidal waves).

The recognition of property rights and the legal validity of land rights in the coastal area of Sari Pekalongan Beach can be carried out based on legal analysis and a legal theory approach. These two bases of analysis are conducted to provide legal and doctrinal approaches regarding which rights are recognized between property rights and state rights in coastal boundaries. The legal theory approach is used to examine legal certainty and justice for the community and to measure the extent to which the law is being implemented.

Land title certificates in the coastal area of Pekalongan City represent a constitutional guarantee that provides protection for citizens. The strong evidentiary value of these certificates, as mandated by the Basic Agrarian Law (Agraria or UUPA) and Government Regulation (PP) No. 24 of 1997, creates a *legal expectation* of permanent rights. This legal basis is fundamental when viewed from the perspective of human rights in Law No. 39 of 1999, which places property ownership as a right that cannot be arbitrarily taken away by the state. However, this static principle of legal certainty faces an existential challenge when it collides with the dynamic geophysical phenomena of the coastline caused by the global climate crisis.

Resolving the conflict between the private rights of the community and the boundaries of Sari Beach, which is categorized as a public zone, requires an analysis based on the *lex specialis* principle, particularly through the regulatory framework of Government Regulation No. 43 of 2021 concerning the Resolution of Spatial Planning Discrepancies. This approach offers legal moderation to the phenomenon of coastal line changes triggered by natural dynamics. This step is crucial to mitigate legal anomalies arising from the incompatibility between coastal conservation interests and the guarantee of legally established civil rights.

The affirmation in Article 16 paragraph (1) of Government Regulation No. 43 of 2021, which states that land rights are still recognized even though the object has transitioned into a sea area, is a dogmatic breakthrough. The substance of this norm indicates a paradigm shift in national agrarian law, whereby the state begins to recognize that physical degradation of land due to abrasion does not necessarily result in the legal extinction of property rights. This policy reflects the function of *legal protection* oriented towards justice and the validity

of the acquisition of land rights¹⁷ for legal subjects affected by changes in natural conditions beyond human control. This continuous recognition of rights is a preventive instrument in preventing mass socio-economic losses, while also correcting the conventional doctrine that tends to negate rights immediately when land is submerged by tidal waters.

The effectiveness of implementing the "continued recognition" norm ultimately depends on the integrity of data between official topographic maps and the latest geospatial reality. Weak synchronization between land databases and coastal dynamics will only place rights holders on the Pekalongan coast in a state of permanent uncertainty. The community still holds legal legitimacy over their property, but functionally, these rights are reduced by the establishment of buffer zones that continue to encroach on residential areas.

The construction of legal norms in Article 16 paragraph (1) shows the state's alignment with the principle of non-retroactivity in the protection of civil rights. This means that ownership rights that have been obtained in accordance with positive legal procedures cannot be set aside simply because of geographical changes that alter the boundaries between land and sea. Changes in the coastline as a natural event cannot be used as a basis for nullifying rights that were previously valid according to the law.¹⁸ This perspective is in line with Article 19 of the Basic Agrarian Law (UUPA), which guarantees legal certainty through land registration, and Article 28H paragraph (4) of the 1945 Constitution, which protects the property rights of every citizen.

This principle of protection is important to prevent overlapping authority between communities holding land rights and the government that establishes coastal zones. Overlap often arises due to inconsistencies between agrarian law and maritime law,¹⁹ especially in transitional areas between land and sea. By recognizing the validity of rights that were registered before the change in the coastline, the state seeks to avoid potential violations of civil rights and ensure that coastal spatial planning policies do not create legal uncertainty for citizens who already have legal rights to their land.

The application of Article 16 paragraph (1) of Government Regulation Number 43 of 2021 is a crucial instrument that bridges the dichotomy between coastal ecosystem protection and the guarantee of legal certainty. The principle of substantive justice places holders of Freehold Title Certificates (SHM) as subjects who must be protected, given that these rights were obtained through formal and valid procedures. Natural shifts in the coastline should not automatically negate the legally *binding* status of these rights. The legal position of the community is based on the nature of the certificate as authentic evidence that can only be annulled through a final and binding court decision.

¹⁷ Iwan Permadi and Herlindah, "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 (July 27, 2023): 47–61, <https://doi.org/10.14296/deeslr.v20i.5636>.

¹⁸ Interview with Mr. Danu Widodo, S.SiT., Land Office/BPN of Pekalongan City, October 20, 2025.

¹⁹ Johamran Pransisto et al., "Konflik Dan Harmonisasi Regulasi Hak Atas Tanah Laut: Studi Kasus Penataan Wilayah Pesisir Dan Pulau-Pulau Kecil," *JULIA: Jurnal Litigasi Amsir* 12, no. 3 (2025): 247, <https://journalstih.amsir.ac.id/index.php/julia/article/view/670>.

The reason for the supremacy of land title certificates is reinforced by the perspective of the local land authorities. The Pekalongan City Land Office/National Land Agency, in an academic interview, emphasized that the existence of physical evidence is the main determinant in the recognition of rights. As long as the land can still be physically identified and has not been categorized as "lost land," the state, through the National Land Agency, consistently recognizes community ownership rights over increasingly advanced boundary zone claims.²⁰ This institutional trend shows that the validity of SHM has strong legal resilience against dynamic spatial zoning changes.

Protection for coastal communities has gained further legitimacy through ATR/BPN Regulation No. 17 of 2016. This regulation provides administrative exceptions for customary law communities or residents who have settled in coastal areas for generations. A special mechanism in Article 6 paragraph (3) allows for the waiver of the requirement for compliance with the Regional Spatial Plan (RTRW) in order to provide legal certainty for indigenous peoples. This policy measure is a manifestation of the state's function in guaranteeing the right to life and the right to property as part of inalienable human rights.

Referring to the foundation of human rights in Indonesia as stipulated in Article 36 paragraph (1) of Law Number 39 of 1999, this becomes the last legal defense for the community against arbitrary actions in land acquisition. This provision prohibits the revocation of property rights without a fair legal process, even if there are claims of public interest in the name of the border zone. The relevance of this law is closely correlated with the sociological facts on the ground, where the control of land by the Pantai Sari community has been going on for more than six decades (65 years). The perspective of the local government at the village level confirms that the community had good intentions in occupying the area long before the phenomenon of abrasion occurred.²¹ The collectivity of legal evidence, recognition by land agencies, and sociological reality creates a "multilayer legitimacy" that should be the main basis for any effort to reconstruct adaptive coastal spatial policies.

Although the communities around the coast of Sari Pekalongan Beach do not yet have certificates as proof of ownership and only have SKT (Land Certificates from Village Government), their ownership is still recognized and respected. This refers to the ownership and control of land that has been carried out for more than 20 years. This refers to the provisions of Article 24 paragraph (2) of the Basic Agrarian Law (UUPA). The provisions of the UUPA are then reinforced in Government Regulation No. 24 of 1997, which states that if there is no written evidence, physical control for more than 20 consecutive years can be submitted as the basis for land registration.

The jurisprudence of the Supreme Court as reinforcement in court practice refers to Supreme Court Decision No. 1794 K/Pdt/1989, which states that good faith control of land

²⁰ Interview with Mr. Danu Widodo, S.SiT., Land Office/BPN of Pekalongan City, October 20, 2025.

²¹ Interview with Mr. Rochman Hidayat, S.E., Head of Panjang Baru Village, October 1, 2025.

for decades without disturbance and known to the surrounding community can be used as a basis for claiming rights. Of course, based on the provisions of the UUPA, Government Regulation No. 24 of 1997, and Supreme Court jurisprudence, the rights of the community on the coast of Sari Pekalongan who do not have SHM but control land in the coastal area are still protected by law.

The application of the provisions on the recognition of yasan land²² possession shows that Indonesian agrarian law recognizes the social realities that have developed in the community. Yasan land that has been occupied and utilized continuously for 20 years fulfills the elements of actual control and good faith.²³ This concept is in line with the principle of *rechtsverwerking* known in customary law, whereby a person who has long controlled land in good faith can obtain legal recognition of the land.²⁴

When examined from a comparative perspective, the legal tensions in the Sari Pekalongan coastal area reflect global challenges related to legal adaptation to the impacts of climate change and coastal dynamics. This is particularly evident in the conflict between private land rights and environmental and public needs. International literature shows that traditional property (ownership) laws are often unresponsive to climate change adaptation, requiring a more flexible approach to coastal property rights regulation. The concept of *rolling easements* adopted by the United States has emerged as a legal tool that allows property rights to move with changes in the coastline due to sea level rise while still bridging public and ecological protection.²⁵

Rigid property rights norms can create structural barriers to coastal adaptation, highlighting the need for legal reforms that take into account the geographical and social dynamics of coastal communities.²⁶ This approach is in line with the international legal framework for climate change adaptation, which emphasizes the importance of *adaptive capacity* and the precautionary principle to strengthen community resilience to future ecological risks.²⁷

²² Yasan Land is one of the land rights recognized in Indonesia, based on customary law. Review at Gatot Efrianto, "Registration of Ownership Rights Over Customary or Customary Land Based on Law No. 5 of 1960 Concerning Basic Regulations on Agrarian Principles," *International Journal of Social Service and Research*, 2, no. 6 (2023): 1665–71, <https://doi.org/10.46799/ijssr.v3i7.432>.

²³ Andi Abdi Islam, Syahrudin Nawir, and Andi Risma, "Penerapan Pasal 32 Ayat (2) PP 24 Tahun 1997 Tentang Pendaftaran Tanah Mengenai Asas Rechtsverwerking," *Journal of Lex Philosophy* 5, no. 2 (2024): 1577, <https://mail.pasca-umi.ac.id/index.php/jlp/article/view/1956>.

²⁴ Hari Sutra Disemadi and Suryasan Lau, "Bezitter Yang Beritikad Baik Dalam Memperoleh Hak Milik Atas Tanah Melalui Acquisitive Verjaring," *Jurnal Jatiswara* 36, no. 2 (2021): 198, <https://doi.org/10.29303/jtsw.v36i2.307>.

²⁵ Katherine Meek, "Rolling Easements as a Viable Tool to Address Rising Sea Levels in US Coastal Communities," *UCLA Journal of Environmental Law and Policy* 41, no. 1 (2023): 99–136, <https://doi.org/10.5070/L541162091>.

²⁶ Tayanah O'Donnell, "Interrogating Private Property Rights and Path Dependencies for Coastal Retreat," *Ocean & Coastal Management* 231, no. 1 Januari 2023 (2023): 106379, <https://doi.org/https://doi.org/10.1016/j.ocecoaman.2022.106379>.

²⁷ Michael Addaney, "International Climate Law: Principles and Obligations for Adaptation," *Utrecht Journal of International and European Law* 40, no. 1 (2025): 23–42, <https://doi.org/10.5334/ujiel.653>.

By comparing practices abroad that integrate natural dynamics into land rights regimes, it is apparent that the Indonesian legal system is still stuck in a static administrative foundation of property rights, such as Freehold Title Certificates, which do not reflect ecological sustainability in coastal zones. This gap indicates the need for broader normative reform, namely integrating adaptive agrarian law and a modern environmental law approach that is responsive to climate change and the rights of coastal communities to access, restoration, and environmental justice.

The recognition and validity of property rights after extreme abrasion in coastal areas is indeed a dilemma. This is due to the conflict between coastal ecological interests and the interests of protecting the civil rights of the community, as well as the application of agrarian law, which was implemented before the extreme abrasion occurred. It should be emphasized that coastal ecological protection cannot override the fundamental and private rights of the community²⁸ that has lawfully controlled and acquired rights to the land.

The theoretical approach provides academic justification for the recognition of property rights after abrasion. The theory of legal certainty put forward by Utrecht emphasizes the importance of clear, consistent, and predictable written norms as a key requirement for the creation of social order. Ownership certificates are a concrete manifestation of formal *rechtszekerheid* in agrarian law.²⁹ Without recognition of legally issued certificates, the law would lose its primary function as a provider of certainty.

In line with this, John Rawls' theory of justice through the concept of *justice as fairness* demands that legal policies do not harm the most vulnerable groups. Coastal communities that have lost land due to abrasion are *the least advantaged* groups who are morally entitled to protection and corrective policies. The establishment of coastal zones should not negate existing rights, but rather accommodate recognition, proportional restrictions, and environmental responsibility.

The spatial planning regulations of Pekalongan City demonstrate an effort to harmonize the interests of environmental protection and the protection of civil rights of the community. Pekalongan City Regulation Number 9 of 2020 concerning Spatial Planning and Regional Regulation Number 13 of 2022 concerning Coastal Boundaries explicitly allow the existence of settlements that existed prior to the establishment of zoning, as long as they are proven with valid legal grounds. This provision affirms the role of regional law as *lex specialis* that adapts national norms to the empirical conditions of coastal areas.

The lack of synchronization between institutional recognition as emphasized by the Land Office and the Village Government and coastal zone spatial planning regulations

²⁸David Grinlinton, "The Intersection of Property Rights and Environmental Law," *Environmental Law Review* 25, no. 3 (September 1, 2023): 202–18, <https://doi.org/10.1177/14614529231193804>.

²⁹Rizal Iskandar Soewito and Gunawan Djajaputra, "Legal Certainty For Holders of Land Rights Over The Issuance of Multiple Certificates," *Journal of Law, Politic and Humanities* 4, no. 4 (June 15, 2024): 854–60, <https://doi.org/10.38035/jlph.v4i4.513>.

reflects a problematic dualism in policy. Although the legitimacy of community ownership is very strong historically and legally, the absence of a compensation mechanism or rights conversion scheme in coastal zone regulations has the potential to give rise to purely administrative rights. These rights are then prone to losing their economic function.

The National Land Agency (BPN), which in its perspective considers that land that still physically exists continues to be recognized by the state, is a crucial argument for rejecting the automatic revocation of rights. Therefore, the legal protection provided should not stop at recognizing status, but must be followed up with the harmonization of zoning maps that accommodate the existence of existing rights amid the changing dynamics of the ecosystem.

3.2. Legal Protection Mechanisms in Land Rights Issues and the Mandate for Ecosystem Sustainability

Private property rights are rooted in the concept that every individual has power (autonomy) and rights over the fruits of their labor, efforts, and resources that they legally own.³⁰ The government, as the instrument of state administration, provides guarantees so that every citizen can enjoy their legally acquired property rights without interference or intervention from other parties, while still observing social principles³¹. This principle affirms that in addition to property being related to economic rights, it is also inextricably linked to constitutional rights that cannot be revoked except through clear legal provisions.

Land occupies a central position as a fundamental element for human existence and livelihood³² that transcends mere spatial dimensions. The significance of protecting land or property rights is increasingly urgent in coastal areas exposed to extreme natural dynamics. The characteristics of settlements located in erosion zones create a high risk of degradation of legal certainty, especially when the physical boundaries of land undergo a natural transition into public space or protected areas.

The residential area on Sari Beach, Pekalongan, represents an area with a very high level of tenure vulnerability due to its geographical position in direct contact with the sea wall. Concrete protection efforts are urgently needed, given that the majority of land in the region has legal legitimacy through ownership certificates. The power of proof of rights

³⁰ Paul J. Weithman, 1993, "Natural Law, Property, and Redistribution," *The Journal of Religious Ethics* Vol. 21, No. 1 (Spring), page 166, <https://www.jstor.org/stable/40018148>.

³¹ This statement means that every existence of private property has a social function. The birth of property rights (regardless of what and whatever the object) is intended to fulfill the social duties of its owners. See and refer to Rai Mantili and Remigius Jurmalan, "Eksistensi Teori Hak Milik Pribadi Dalam Kepemilikan Perseroan Terbatas (Dari Perspektif Sistem Kapitalisme Dan Sistem Ekonomi Pancasila)," *Acta Diurnal: Jurnal Hukum Kenotariatan* 5, no. 2 (2022): 264, <https://doi.org/10.23920/acta.v5i2.929>.

³² Rahayu Fery Anitasari, "Agrarian Law: Perspective Of Indonesian Agricultural Policies," *South East Asia Journal of Contemporary Business, Economics and Law* 20, no. 4 (2019): 4. See also Dina Catur Ayu Ningtyas, "Hak Atas Tanah Sebagai Dasar Pembuktian Bagi Pemiliknya Dalam Hukum Agraria Yang Di Dasari UUPA," *COURT REVIEW: Jurnal Penelitian Hukum* 1, no. 3 (2023): 28, <https://doi.org/10.69957/cr.v3i01.698>.

guaranteed by law is now facing the reality of landscape changes that threaten the physical existence of the land itself.

The phenomenon of coastal abrasion is seen as a force majeure event that extremely changes the configuration of the coastline beyond human control. The massive intrusion of the sea towards the mainland creates a complex overlapping of legal status for landowners. This condition triggers legal ambivalence, namely, on the one hand, the land remains legally owned before the disaster occurred. However, on the other hand, the advancing coastline automatically converts the area into a coastal zone according to spatial planning rules. The conflict between legally valid property rights and the establishment of protected zones by the state requires regulatory reconstruction so that the rights of the affected communities are not neglected.

The institutional stance of the Pekalongan City Land Office shows a positive tendency towards protecting the civil rights of the community by prioritizing valid physical and administrative evidence. The land authority emphasizes that land that continues to exist materially and is not in dispute must be recognized as owned,³³ regardless of the dynamics of coastal line changes. This institutional paradigm consistently places certificates as authentic evidence that has binding legal force, as well as a manifestation of the principle of legal certainty guaranteed by the constitution.

Certificates issued by the National Land Agency serve as authentic evidence of land ownership recognized by the state and have binding legal force.³⁴ The existence of a certificate is formal proof of ownership and a manifestation of legal recognition of the rights of individuals who have fulfilled the legal procedures for acquiring, controlling, and utilizing land in accordance with the law. Legal protection of this matter ultimately reflects the principles of legal certainty and justice as stipulated in Article 28D paragraph (1) of the 1945 Constitution of the Republic of Indonesia.

Land protection instruments are further strengthened through sectoral regulations in Minister of Agrarian Affairs and Spatial Planning/National Land Agency Regulation No. 17 of 2016. The state provides space for the recognition of Land Rights (HAT) in coastal areas, especially for communities that have settled there for generations and have historical and sociological ties to their environment. This policy is a form of administrative discretion that provides an exception to spatial planning requirements in order to guarantee the constitutional rights of citizens. The granting of legal access proves that the social function of land must be aligned with the guarantee of a decent life for coastal residents.

³³ Interview with Mr. Danu Widodo, S.SiT., Land Office/BPN of Pekalongan City, 20-10-2025.

³⁴ Deny Haspada, "The Legal Validity of Electronic Certificates as Evidence of Legitimate Land Ownership," *European Journal of Law and Political Science* 4, no. 2 (2025): 22–27, <https://doi.org/10.24018/ejpolitics.2025.4.2.169>.

The aspect of property protection in this erosion-prone area is actually based on universal human rights standards. Article 36 of Law Number 39 of 1999 on Human Rights prohibits all forms of arbitrary and unlawful deprivation of property rights. This national norm resonates with the international mandate in the International Covenant on Civil and Political Rights (ICCPR), which Indonesia ratified through Law Number 12 of 2005.

The state's obligation under the ICCPR is to respect and guarantee the rights of individuals under its jurisdiction.³⁵ The state's obligation under the covenant requires fair treatment of coastal landowners. The convergence between international commitments and domestic policy reinforces that the protection of the property rights of the Pantai Sari community is a multilayer legal mandate that cannot be ignored for administrative reasons alone.

The Pekalongan City Government, through the issuance of a number of regional regulations, has attempted to translate these global and national norms into more operational local policies. The legal instruments are Pekalongan City Regulation Number 9 of 2020 and Pekalongan City Regulation Number 13 of 2022. These regulations serve as a means of control and provide certainty regarding the zoning of settlements and protected areas. This legislative step is crucial to prevent ecological degradation due to abrasion without having to eliminate civil rights that have long existed in the area.

Pekalongan City Regulation Number 9 of 2020 also emphasizes that any use of space in coastal areas must take into account environmental carrying capacity, safety, and public interests. This spatial planning is a strategic step in preventing land disputes due to changes in the coastline caused by abrasion and reclamation. Regarding the coastline and coastal zone, Pekalongan City has a specific legal basis. This takes into account the physical condition of Sari Pekalongan Beach, which has experienced extreme abrasion and now has a sea wall installed.

Based on Pekalongan City Regulation Number 13 of 2022 concerning Boundary Lines, coastal boundary measurements are categorized into two types. Referring to the provisions of Article 14 of Local Regulation Number 13 of 2022, there are two types of coastal boundaries, namely coastal boundaries without seawalls and coastal boundaries with seawalls. Coastal boundaries without seawalls apply as defined in general normative provisions, namely at a distance of at least 100 (one hundred) meters from the coastline.

The policy regarding coastal embankments as regulated by Pekalongan City Regulation No. 13 of 2022 represents an effort to synchronize ecosystem protection and land rights guarantees. This step is an implementation of the principles of *local wisdom* and decentralization as regulated in Law No. 23 of 2014 concerning Regional Government.

³⁵General Assembly 2200A (XXI), "International Covenant on Civil and Political Rights 1976," United Nations Human Rights/ohcr.org, 2025, <https://www.ohchr.org/en/instruments-mechanisms/instruments/international-covenant-civil-and-political-rights>. accessed on 05-11-2025 at 10:40 WIB.

Regions are given the authority to regulate and manage the interests of their communities as long as they do not conflict with higher laws and regulations.³⁶ Article 16 of the local regulation introduces a very specific classification of boundary distances, which substantially reduces the national minimum standard of 100 meters to a more sociologically adaptive distance.

The determination of the boundary distance based on Article 16 is divided into two main categories depending on the terrain in the field. First, areas that are already residential are only subject to a minimum coastal boundary distance of 10 (ten) meters, calculated from the outer edge of the sea wall. Second, areas that are not yet residential but are within the coastal protection zone are set to have a minimum boundary distance of 50 (fifty) meters from the outer edge of the embankment. This classification proves that the local government is trying to maintain the property rights of the community that has long settled on Sari Beach, while recognizing the existence of the sea wall as a new physical boundary that provides protection for the land behind it.

The legal justification for reducing the distance to only 10 meters reflects the law's alignment with the principle of substantive justice. The rigid application of the 100 meter standard in densely populated residential areas on the north coast of Java would result in the mass elimination of residents' property rights, which are constitutionally protected by the state. However, this relaxation of distance requires stricter monitoring mechanisms through Strategic Environmental Assessments (KLHS) to ensure that development in these zones continues to take into account environmental carrying capacity and the risk of disasters that still threaten the area.

Progressive efforts through the establishment of adaptive boundary distances are currently stuck in a *rechtsvacuum* or operational legal vacuum. The mandate of Article 44 of Local Regulation No. 13 of 2022, which requires the issuance of a Mayor's Regulation as a technical regulation within two years, has not been realized until early 2026. The absence of these derivative regulations has resulted in the provisions regarding the 10-meter and 50-meter buffer zones losing their executory power at the level of land administration and building permits.

This technical legal vacuum has created uncertainty for certificate holders who wish to utilize space or renovate buildings in areas affected by abrasion. Without implementable guidelines from the Mayor's Regulation, the guarantee of land rights protection remains merely normative rhetoric. This regulatory stagnation has the potential to trigger agrarian conflicts between the community and the local government, given that residents hold legally recognized rights but their administrative access is blocked by the absence of technical

³⁶Aristo Evandy A. Barlian, "Konsistensi Pembentukan Peraturan Daerah Berdasarkan Hierarki Perundang-Undangan Dalam Perspektif Politik Hukum," *Fiat Justitia Jurnal Ilmu Hukum* 10, no. 4 (2016): 609, <https://doi.org/10.25041/fiatjustisia.v10no4.801>.

guidelines. The completion of the follow-up regulation mandate is an absolute requirement so that justice for the coastal community of Pekalongan is not hampered by bureaucratic negligence in drafting operational instruments.

The existence of flexible legal instruments such as special boundaries in Pekalongan City makes an important contribution to the discourse on agrarian law in disaster-prone areas. This phenomenon proves that the protection of property rights can no longer be viewed as absolute and static, but must be transformed into rights that are adaptive to changes in the geophysical landscape. Synchronization between the legitimacy of ownership by land authorities and regional spatial policies is a key variable in determining the effectiveness of constitutional guarantees for citizens. Therefore, resolving the administrative obstacles that still exist today is a fundamental effort to achieve agrarian justice. This also balances the ecological sustainability of the coast with the economic dignity of the landowners.

4. Conclusion

The existence of land ownership rights in the coastal area of Pekalongan City, Indonesia, faces serious challenges due to the misalignment between the static agrarian regulatory regime and the progressive dynamics of the ecosystem. The conclusion of this research is that although legal protection has been normatively regulated in Article 16 of Government Regulation No. 43 of 2021 and Article 16 of Pekalongan City Regulation No. 23 of 2022, its implementation is still hampered. Recognition of community property rights through legal flexibility regarding coastal boundaries is a crucial legal breakthrough. However, its effectiveness has not been optimal prior to the issuance of implementing regulations (Mayor Regulations). These operational instruments are still not available, resulting in local regulations on coastal boundaries remaining merely normative regulations without any implementing regulations.

Legal uncertainty in coastal zone management ultimately gives rise to protection issues. The community holds constitutionally valid proof of ownership but loses the use of its assets due to overlapping status with the coastal zone. In addition, land values in the area tend to decline due to disaster vulnerability and increasingly extreme erosion rates. Theoretically, this study contributes to the need for a paradigm shift towards adaptive agrarian law that is capable of integrating the latest geospatial data with human rights guarantees. The main recommendation is directed at accelerating data synchronization between land authorities and spatial planning authorities as a model for mitigating tenure conflicts in coastal areas that are vulnerable to the impacts of global climate change.

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