

Indonesian Journal of Agrarian Law

ISSN: 3110-6633 (Online)

Vol. 3 Issue 2 (2026) 1422-1467

DOI: <https://doi.org/10.15294/jal.v3i2.47410>

Available online since: May 22, 2026



Legal Protection for Holders of Land Ownership Certificates Affected by Erosion of the Bekasi River

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Abstract

River abrasion is one of the natural events that can cause changes in the physical condition of land, or even result in the complete disappearance of land. This situation raises legal issues, particularly for communities that hold Certificate of Ownership (Sertipikat Hak Milik) over land subsequently affected by abrasion. This problem occurs in Sriamur Village, North Tambun District, Bekasi Regency, where abrasion of the Bekasi River has caused a reduction in land area and even the loss of several land plots belonging to residents. This study aims to analyze the legal status of land affected by abrasion as well as the forms of legal protection for holders of the Certificate of Ownership over such land. The research employs a juridical-empirical approach by examining laws and

regulations related to land rights, rivers, and the environment, supported by field data obtained through interviews with affected residents and relevant agencies. The results show that river abrasion may cause land to be classified as destroyed land (*tanah musnah*) if it can no longer be identified, thereby extinguishing the land rights and reverting them to state control. However, in practice, there remains legal uncertainty due to the absence of an official determination of destroyed land and the lack of a compensation mechanism for communities whose land has been reduced or has fallen into the river border area.

Keywords

Legal Protection, Land Ownership Rights, River Erosion, Land Loss, River Banks.

A. Introduction

Land is a natural resource of fundamental importance to human life, not only as a place to live but also as an asset in social, economic, and legal contexts. In social life, land serves as a place of residence and a venue for communities to carry out various activities.¹ From an economic perspective, land has high investment value because it serves as a site for infrastructure and property development, which drives economic growth.² Meanwhile, from a legal perspective, land is an object of property rights that is strictly protected and safeguarded by the state through legislation to guarantee the rights of landowners and prevent conflicts.³

The State guarantees legal certainty and protection of

¹ Afiful Huda and Laili Ainun Nadhiroh, "Fungsi Tanah Dalam Hubungan Sosial Dan Permohonan Tanah Serta Prosesnya," *Jurnal Hukum Dan Ahwal Al-Swyakhsiyyah* 1, no. 1 (2021): 54–67.

² Subekti Rahayu, Salma Jane Benedicta, and Hadhika Afghani Imansyah, "Kedudukan Penguasaan Tanah Dan Upaya Pengendalian Alih Fungsi Lahan Pertanian Indonesia," *Bina Hukum Lingkungan* 7, no. 2 (2023): 215–29.

³ Mudemar A. Rasyidi, "Hukum Tanah Adalah Hukum Yang Sangat Penting, Dibutuhkan Oleh Masyarakat/Bangsa Indonesia Di Dalam Kehidupan Sehari-Hari," *Universitaas Suryaadarma* 12, no. 2 (2021): 53–60.

land rights through the land registration system as stipulated in Government Regulation No. 24 of 1997 on Land Registration.⁴ The purpose of land registration is to ensure that ownership rights to land can be officially verified and recorded with the Land Office, thereby minimizing the risk of future land disputes.⁵ Article 32(1) of Government Regulation No. 24 of 1997 states that a certificate constitutes strong evidence regarding the physical and legal characteristics of land, unless proven otherwise.⁶ However, Article 18 of Government Regulation No. 24 of 1997 also acknowledges that the physical characteristics of land may change as a result of natural events. This situation highlights a conflict between the probative value of the certificate and the reality of physical changes to the land caused by erosion, which has the potential to create legal uncertainty for holders of Freehold Certificates.

Legal protection for holders of Freehold Certificates for land affected by river erosion cannot be separated from the principle of state control over land, water, and natural resources, as affirmed in Article 33, paragraph (3) of the 1945 Constitution of the Republic of Indonesia, which states that the earth and water are controlled by the state and used for the greatest possible prosperity of the people.⁷ This constitutional provision serves as the basis for the state's authority to regulate, manage, and protect the public's land rights, including in cases where physical changes to the land

⁴ Tehupeiori, A. (2012). Pentingnya Pendaftaran Tanah di Indonesia. In A. Tehupeiori, Pentingnya Pendaftaran Tanah di Indonesia. Jakarta: Raih Asa Sukses (Penebar Swadaya Grup).

⁵ Rosa Tiara, Pramudita Dewi, and Asmarani Ramli, "Analisis Terhadap Kepemilikan Hak Atas Tanah Yang Mengalami Tumpang Tindih (Studi Kasus Di Kelurahan Muktiharjo Kidul Kota Semarang)," *Bookchapter Hukum Dan Lingkungan*, 2025, 1595–1632.

⁶ Klaudius Ilkam Hulu et al., "Kekuatan Alat Bukti Sertifikat Hak Milik Atas Tanah Dalam Bukti Kepemilikan Hak," *Jurnal Panah Keadilan* 1, no. 1 (2021): 27–31.

⁷ Zela Ony Zulfida et al., "Perlindungan Hukum Terhadap Pemilik Hak Atas Tanah Yang Musnah," *Supremasi Jurnal Hukum* 6, no. 02 (2021): 188–99.

occur as a result of natural processes such as river erosion.

Legally, land ownership is governed by Law No. 5 of 1960 on the Basic Agrarian Principles Act (UUPA).⁸ Article 20(1) of the UUPA affirms that the right of ownership is the hereditary, strongest, and most comprehensive right that a person can hold over land. However, Article 27 of the UUPA states that the right of ownership is extinguished if the land is destroyed. This provision raises legal issues when land undergoes gradual erosion, as the UUPA does not provide further clarification regarding the criteria for “land being destroyed” due to natural processes, nor does it address the legal consequences for registered and certified property rights.

Erosion is the process of soil or land being worn away along riverbanks due to coarse materials such as sand, gravel, and rocks carried by the current, resulting in landslides and a reduction in land area.⁹ This process can lead to changes in the river’s course, land loss, and damage to buildings along the riverbanks. Erosion not only alters the physical condition of the land but also has implications for land ownership rights recognized by law and the state.¹⁰

Riverbank erosion is occurring in RT 005/RW 004, Sriamur Village, Tambun Utara Subdistrict, Bekasi Regency. Residents living along the banks of the Bekasi River have reported damage to their homes and the loss of land due to the gradual erosion of the Bekasi River, which has been occurring over a considerable period of time. Based on an interview with Mrs. Dihako on February 8, 2026, it was revealed that initially, the Bekasi River was quite far from the residential area, at a distance of approximately 200–300 meters. The erosion was triggered by heavy rainfall and runoff from the Bogor region, which caused flooding reaching waist-high

⁸ Eva Mustaqimah Slamet, “Analisis Perlindungan Hak Milik Tanah Berdasarkan Peraturan Dasar Pokok-Pokok Agraria” (2024).

⁹ Mananoma, T, et al. (2025). Morfologi Sungai: Pross, Dinamika, dan Pengelolaan. In T. d. Mananoma, Morfologi Sungai: Pross, Dinamika, dan Pengelolaan. Bukittinggi: Yayasan Tri Edukasi Ilmiah

¹⁰ Dian Dewi Khasanah and Alfons, “Analisis Yuridis Akibat Dari Musnahnya Obyek Jaminan Yang Dilekati Hak Tanggungan Karena Bencana Alam,” *Jurnal Widya Bhumi* 1, no. 2 (2021): 149–59.

levels for an adult. These conditions caused the soil along the riverbanks to become saturated and lose its cohesion, making it more susceptible to erosion by the increased river current. Consequently, infrastructure damage occurred in residents' homes, and in some cases, the land has been completely eroded away. Additionally, according to a statement provided by Mr. Saipudin, Head of RT 005, on February 27, 2026, 14 residents' homes were affected by river erosion. However, the actual number of homes and land lost due to the erosion of the Bekasi River is estimated to be higher than that figure.

The homes owned by residents affected by river erosion are held under freehold title, as evidenced by Freehold Certificates issued in the 1990s. This erosion not only causes economic losses due to damage to homes and the loss of residents' land, but also impacts the social and psychological well-being of the community. Residents with greater economic means prefer to move to safer locations. Meanwhile, for residents with limited economic resources, they have no choice but to remain in the area despite having to live with fear and anxiety over the threat of further erosion endangering their homes. Residents with greater economic means prefer to move to safer locations.

Changes in the physical condition of the land due to river erosion are also related to regulations regarding rivers and riverbanks as stipulated in Government Regulation No. 38 of 2011 on Rivers. Article 3 of Government Regulation No. 38 of 2011 states that rivers are under state control, while Articles 20 through 23 regulate riverbanks as protected zones. Shifts in river channels due to erosion can cause land originally owned by residents and located outside the riverbank zone to fall within the river area, thereby raising issues regarding the legal status of the land and the rights of communities that already hold Certificates of Ownership for that land.

Furthermore, river erosion as a form of environmental degradation must also be viewed within the framework of Law No. 32 of 2009 on the Protection and Management of the Environment. Article 65(1) grants every person the right to a good and healthy environment, while Article 67 obligates the government to maintain the sustainability of environmental

functions. In the context of the Bekasi River's erosion, these provisions strengthen the argument that the state bears responsibility not only regarding land ownership but also in providing protection and restoration for land rights holders harmed by environmental damage.

Therefore, although normative regulations regarding property rights, land registration, rivers, and the environment already exist, current laws and regulations have not explicitly and comprehensively established legal protection mechanisms for holders of Certificates of Ownership whose land has been lost or reduced due to river erosion. It is this regulatory gap that creates legal uncertainty and underscores the importance of research on legal protection for holders of Certificates of Ownership affected by the erosion of the Bekasi River. This study aims to analyze and identify an appropriate legal protection framework for holders of Certificates of Ownership over land affected by the Bekasi River's erosion, in order to ensure legal certainty and justice for communities holding land rights in disaster-prone areas, as well as to formulate policy recommendations for the reform of national agrarian law.

Previous research conducted by Christopher Kendrick Adam, Joe Arifiando Walpa, and Vina Octavia (2020) in an article titled "The Indonesian Government's Liability for the Loss of Land Rights of Residents Affected by Coastal Erosion in Brebes Regency, Central Java" discusses the government's responsibility for the loss of residents' land rights due to coastal erosion in Brebes Regency. The results of the study indicate that, based on Article 27 of the Land Law (UUPA), land destroyed by coastal erosion results in the extinction of land rights, thereby relieving the state of the obligation to provide compensation, unless the government is proven to have been negligent in implementing preventive measures; in such cases, the community may file a class-action lawsuit.¹¹

¹¹ Christopher Kendrick Adam, Joe Arifiando Walpa, and Vina Octavia, "Pertanggungjawaban Pemerintah Republik Indonesia Terhadap Hilangnya Hak Atas Tanah Milik Warga Masyarakat Yang

Research conducted by Reza Nur Amrin et al. (2022) in an article titled "The Legal Status of Land Rights Affected by Natural Disasters" discusses the legal status of land rights affected by natural disasters, particularly earthquakes and coastal erosion. The results of the study indicate that land rights affected by earthquakes are not extinguished because the land itself still exists, whereas in cases of coastal erosion, land rights are deemed extinguished because the land has been lost.¹² A study conducted by Nur Salsabila Koswara, Benny Djaja, and M. Sudirman (2025) in an article titled "Legal Protection of Land Ownership Rights Lost Due to Erosion" discusses legal protection for land ownership rights lost due to erosion, particularly in coastal areas, from the perspective of agrarian law, as well as the role of notaries in providing legal certainty. The results of the study indicate that there remains a lack of clarity regarding the legal status of land destroyed by coastal erosion and the need for more robust protective mechanisms.¹³

This study employs a juridical-empirical approach, which combines a normative analysis of legislation with an empirical examination based on facts observed in the field. This approach was chosen because the study not only examines the legal norms governing land rights but also analyzes their application within the social reality of the community. The research location is focused on Sriamur Village, RT 005/RW 004, Tambun Utara Subdistrict, Bekasi Regency, as an area experiencing riverbank erosion that directly impacts the existence of residents' land and buildings. Research data was obtained through interviews with residents affected by erosion, the Tambun Utara Subdistrict

Terkena Abrasi Di Wilayah Kabupaten Brebes Jawa Tengah," *Cepalo* 4, no. 2 (2020): 129–42, <https://doi.org/10.25041/cepalo.v4no2.1943>.

¹² Reza Nur Amrin et al., "Status Hukum Hak Atas Tanah Yang Terkena Bencana Alam," *Jurnal Tunas Agraria* 5, no. 1 (2022): 66–74.

¹³ Nur Salsabila Koswara, Benny Djaja, and M. Sudirman, "Perlindungan Hukum Terhadap Hak Milik Atas Tanah Yang Hilang Akibat Abrasi," *Jurnal JURISTIC* 06, no. 01 (2025): 9–18.

Office, the Bekasi Regency Land Office, and the Bekasi Regency Disaster Management Agency (BPBD), as well as through a document review of laws and regulations regarding land rights, rivers, and the environment. The collected data was analyzed qualitatively using legal content analysis and contextual interpretation, linking applicable legal norms with factual conditions on the ground to obtain an overview of legal protection for holders of Land Ownership Certificates affected by river erosion.

B. The Legal Status of Land Rights Affected by Coastal Erosion in Relation to State Control over Rivers and Riverbanks

1. *River Course Shifts and Expansion of Riparian Zones*

River erosion is the process by which soil or land along riverbanks is eroded due to strong, continuous water flow. This phenomenon occurs in various regions, particularly in areas with fast-flowing rivers. High rainfall intensity, uncontrolled land-use changes, and a lack of erosion-control infrastructure such as levees and riverbank walls further accelerate the process of erosion. Erosion can cause shifts in the river channel, leading to the loss of land and infrastructure along the riverbanks.¹⁴

This is the case in RT 005/RW 004, Sriamur Village, Tambun Utara Subdistrict, Bekasi Regency. Based on an interview with Mrs. Dihako on February 8, 2026, it was revealed that initially the distance between the river and the residential area was approximately 200–300 meters. However, starting in 1980, gradual and continuous erosion began to occur, and by 2019, the erosion had started to erode the land in Sriamur Village. The erosion was triggered by heavy rainfall and runoff from the Bogor area, which caused flooding reaching waist-high levels for an adult. Following the flood, the soil along the riverbanks began to erode slowly and continuously. To date, the distance between residents' homes

¹⁴ Jusri, Asram A T Jadda, and Asrul Hidayat, "Analisis Hukum Lingkungan Terhadap Pemanfaatan Dana Desa Dalam Penanggulangan Dampak Abrasi Aliran Sungai Sarasa Di Kabupaten Enrekang," *Legal ADVICE* 2, no. 2 (2025): 27–44.

and the riverbank is now just a single step, with a high risk of potential landslides. According to information provided by Mr. Saipudin, Head of RT 005, on February 27, 2026, 14 residents' homes have been affected by river erosion. However, in reality, the number of homes and land lost due to the erosion of the Bekasi River is estimated to be higher than that figure. This situation raises issues regarding the legal certainty of land rights, particularly when the physical object of the right has diminished, shifted in location, or even disappeared due to natural processes.

Article 1(9) of Government Regulation No. 38 of 2011 on Rivers defines the riverbank as an imaginary line on the left and right sides of the river channel that is designated as the boundary for river protection. Furthermore, Article 5, paragraph (5) of Government Regulation No. 38 of 2011 on Rivers states that river boundaries serve as a buffer zone between the river ecosystem and the surrounding land, so that ecological balance is maintained and human activities around the river do not interfere with the flow, carrying capacity, and environmental quality of the river itself.¹⁵

Article 3 of Government Regulation No. 38 of 2011 on Rivers stipulates that rivers are under state control as part of the water resources that constitute state assets. The principle of "controlled by the state" is not interpreted as private ownership, but rather as the public authority to regulate, manage, and oversee the utilization of rivers and surrounding areas for the greatest possible prosperity of the people. In practice, state control is exercised through the limited and selective regulation of the use of river spaces and their banks, prioritizing the public interest and environmental conservation.¹⁶ Therefore, land located within river buffer

¹⁵ Pemerintah Pusat Indonesia, "Peraturan Pemerintah (PP) Nomor 38 Tahun 2011 Tentang Sungai" (2011).

¹⁶ Hadayati and Maher Syahbani PP, "*Legal Review of the Utilization of the Ciliwung River Boundary Causes of Flooding in Jakarta and Surrounding Areas (Law Number 32 of 2009 Concerning Protection and Management of Environment)*," *Greenation International Journal of Law and Social Sciences* 3, no. 2 (2025): 79–91.

zones cannot be used freely by the rights holders, but is subject to the restrictions set forth in applicable laws and regulations.

Based on an interview with Mr. Saipudin, Head of RT 005, on February 27, 2026, it was found that there are four residents' homes whose land has now been completely lost, making it impossible to identify their boundaries; therefore, this land can be categorized as lost land. Article 27 of the UUPA stipulates that land lost due to erosion or designated as lost land shall revert to state control. However, this provision does not explicitly state that erosion can cause the land title certificate to be nullified. The interpretation regarding the termination of ownership rights as stipulated in Article 27 of the UUPA can be explained as follows:¹⁷

- a) Ownership rights are extinguished because the land rights have been revoked for the public interest, with the provision of fair and just compensation in accordance with the provisions of laws and regulations;
- b) Ownership rights are extinguished because the rights holder voluntarily surrenders the land in connection with land acquisition for development in the public interest;
- c) Ownership is extinguished due to abandonment by the land rights holder as regulated in regulations regarding the control and utilization of abandoned land;
- d) Ownership is extinguished because the legal entity as the subject of land ownership does not meet the requirements to possess and transfer the land;
- e) Ownership is extinguished because the land has been destroyed.¹⁸

It should be emphasized that it is the land itself that has been extinguished, not the certificate. A certificate is an administrative document; however, if the land that forms the basis of the right no longer exists and has been designated as extinguished land, then the title certificate no longer has legal force as evidence of the right. This provision is

¹⁷ Moh Fahmi Baharuddin, "Mekanisme Pengadaan Dan Konsinyasi Ganti Rugi Tanah Oleh Pemerintah Terkait Dengan Pembangunan Jalan Umum," 2015.

¹⁸ Ibid.

reinforced in Article 32(1) of Government Regulation No. 24 of 1997 on Land Registration, which states that a certificate is a document evidencing a right that serves as valid and compelling evidence regarding the physical and legal data of a parcel of land, unless proven otherwise.¹⁹

Article 2(2) of Regulation of the Minister of Agrarian Affairs and Spatial Planning/National Land Agency of the Republic of Indonesia No. 17 of 2021 on Procedures for Designating Land as Destroyed states that a parcel of land may be designated as destroyed land if it has undergone a change from its original form due to a natural disaster, such that its location can no longer be identified and it cannot be utilized, used, or put to its intended purpose.²⁰ The designation of land as lost, as stipulated in Regulation of the Minister of Agrarian Affairs and Spatial Planning/National Land Agency of the Republic of Indonesia No. 17 of 2021 concerning Procedures for the Designation of Lost Land, does not occur automatically. It requires an administrative process and a decision by the Head of the Land Office.²¹ This means that, as long as there has been no official determination, the land rights are still legally registered and have not been revoked.

According to a statement provided by Mr. Saipudin, head of RT 005, on February 27, 2026, although some residents' land has been completely lost due to being swept away by the river current, to date there has been no official

¹⁹ Zumrokhatus, S., & Syahrizal, D. (2014). *Undang-Undang Agraria & Aplikasinya*. Jakarta Timur: Dunia Cerdas.

²⁰ Kementerian Agraria dan Tata Ruang/Badan Pertanahan Nasional Indonesia, "Peraturan Menteri Agraria Dan Tata Ruang/Kepala Badan Pertanahan Nasional Republik Indonesia Nomor 17 Tahun 2021 Tentang Tata Cara Penetapan Tanah Musnah," 2021.

²¹ Riska Novelia and Gunawan Djajaputra, "Perlindungan Dan Status Hukum Kepemilikan Tanah Yang Musnah Ditinjau Berdasarkan Permen Agraria Dan Tata Ruang," *Jurnal Kertha Semaya* 13, no. 11 (2025): 2662–75.

designation of those land parcels as destroyed. The Certificates of Ownership issued around the 1990s are still held by the residents, and Property Tax (PBB) continues to be paid annually. This indicates that, administratively, the rights to the land are still recorded, even though, in reality, the land has undergone changes due to erosion.

2. Conflict of Interest Between Individual Rights and Authority

Land has a social function as stipulated in Article 6 of the Basic Agrarian Law. This provision states that land rights may not be exercised solely for personal gain, especially if such use is detrimental to the public interest.²² This principle of social function serves as the basis for the state's authority to impose restrictions on land use, including when the land is located within an area designated as a protected zone. One type of protected zone is a river buffer zone, which is an area along a river's course designated to preserve the river's functions in terms of its ecosystem, water quality, and protection against disasters such as flooding and erosion.

Ministerial Regulation No. 28/PRT/M/2015 of the Ministry of Public Works and Public Housing on the Determination of River and Lake Buffer Zones stipulates that buffer zones shall be established by taking into account the geomorphological characteristics of the river, the socio-cultural conditions of the community, and the need for access for river management and maintenance activities. Further elaborated in the same regulation, Article 22(1) stipulates that river buffer zones may only be utilized for water resource infrastructure, bridge and dock facilities, gas and drinking water pipelines, power and telecommunications cable corridors, and other activities provided they do not interfere with the river's functions. If there are structures located within the riverbank zone, such structures may be designated as "status quo" as regulated in Article 17(1) of Government

²² Zumrokhatur, S., & Syahrizal, D. (2014). Undang-Undang Agraria & Aplikasinya. Jakarta Timur: Dunia Cerdas.

Regulation No. 38 of 2011 on Rivers. "Status quo" refers to a condition in which a structure must not be altered, expanded, or repaired.²³

These restrictions have direct implications for the land rights of residents whose land has been reclassified as a river buffer zone due to erosion in Sriamur Village, Tambun Utara Subdistrict, Bekasi Regency, highlighting a conflict of interest between individual rights and state authority. Although residents still hold Freehold Certificates and continue to pay property taxes annually, they can no longer use the land freely as they did before. Residents are not free to construct, expand, or repair buildings because they must comply with regulations regarding riverbanks and the protective function restrictions inherent to the area.²⁴

Under such circumstances, the land rights are not automatically extinguished because there is no revocation of rights; rather, restrictions are imposed on the use and utilization of the land. However, these restrictions on the use and utilization of the land effectively result in economic and social losses for the rights holders. Land that was previously usable for housing and economic activities becomes limited in function and may even potentially be unable to be used optimally. On the other hand, regulations regarding river buffer zones do not explicitly provide for compensation to land rights holders whose land has been converted into a river buffer zone due to erosion. This differs from the land acquisition mechanism for public interest under Law No. 2 of 2012 on Land Acquisition for Development in the Public Interest, which mandates the provision of fair and just

²³ Alfitra Salam, Hafiz Sutrisno, and Rian Prayudi Saputra, "Implementasi Peraturan Menteri PUPR RI Nomor 28/PRT/M/2015 Tentang Penetapan Garis Sempadan Sungai Dan Garis Sempadan Danau Terhadap Bangunan Yang Berdiri Di Sempadan Sungai Daerah Kabupaten Kampar (Studi Kasus Sungai Kampar Wilayah Kecamatan Bangkinang)," *Jurnal Pahlawan* 8, no. 1 (2025): 14–33.

²⁴ Tivano Arbiani Candini, Yanti Fristikawati, and Stella Delarosa, "Pengaturan Tentang Pemanfaatan Lahan Sekitar Sungai Ciliwung Di Bogor Terkait Penanggulangan Banjir," *Gloria Justitia* 3, no. 2 (2023): 132–46.

compensation in the event of the revocation of land rights. This is because compensation can only be provided for parcels of land taken by the state for public interest purposes.²⁵

Based on an interview with Mr. Saipudin, Head of RT 005, on February 27, 2026, it was also revealed that residents have never received any official information or explanation regarding the legal status of land that has been incorporated into the river buffer zone. Regulations regarding river buffer zones do not explicitly provide for compensation to land rights holders whose land has been converted into a river buffer zone due to erosion; consequently, there is no mechanism for appraisal or compensation for land whose area has been reduced due to erosion. The statement provided by Ms. Dihako on February 8, 2026, indicated that the assistance previously received was solely of a social nature consisting of food packages distributed in 2025 without any long-term solutions such as relocation or the construction of a dike. Mr. Saipudin also stated that residents generally understand that a certificate serves as valid proof of ownership and consider that right to remain valid as long as taxes are paid; however, they are unaware of the obligation to submit a request for an update to the physical land data at the land office in the event of a reduction in area due to erosion. This situation highlights a gap between legal norms and the reality of their implementation on the ground.

The conflict of interest between individual rights and state authority over land that has become a riverbank zone due to erosion stems from an imbalance between restrictions on rights and adequate legal protection mechanisms. The state has the legitimacy to restrict land use for the public interest and environmental protection, but such restrictions have the potential to cause injustice if not accompanied by clear regulations regarding protection and compensation for affected rights holders. Therefore, clearer regulations are needed to ensure a balance between river protection

²⁵ Bunga Desyana P et al., "Status Hukum Tanah Musnah Berdasarkan Permen ATR / BPN No. 17 Tahun 2021," *Officium Notarium* 1, no. 2 (2021): 218–29.

functions and the protection of citizens' constitutional rights to land ownership.

Table 1. Regulations Concerning Legal Protection for Land Affected by Coastal Erosion

No.	Regulation	Relevant Provisions	Implementation for SHM Holders
1.	Article 33, Paragraph (3) of the 1945 Constitution	The land, water, and natural resources are controlled by the state for the prosperity of the people	The state has the authority to regulate, but it is obligated to protect the rights of its citizens
2.	UUPA Articles 20 & 27	Ownership rights: the strongest and most comprehensive; extinguished if the land is destroyed	The certainty of rights depends on the existence of the land
3.	Government Regulation No. 24/1997 Article 32	Certificates serve as strong evidence	The probative value of a certificate is limited if the land object changes
4.	Government Regulation No. 38/2011 on Rivers	River buffer zones as protected areas	Restrictions on the use of land within buffer zones
5.	Ministry of Agrarian Affairs and Spatial Planning/National Land Agency Regulation No.	Procedures for determining destroyed land	Rights are not automatically extinguished; administrative determination is required

	17/2021		
6.	Law No. 32/2009 on the Environment	Right to a good and healthy environment	The state is obligated to prevent and restore environmental damage
7.	Presidential Regulation No. 52/2022	Compensation fund for land expropriated for public interest	Compensation is only provided if the land is used for public interest

3. Land Affected by Erosion as an Object That Has "Changed Status"

The shifting course of the Bekasi River due to erosion not only alters the physical conditions of the area but also affects the legal status of the land owned by residents in the surrounding area. Legally, there are two possible legal statuses that may arise: (1) the land is classified as lost land; or (2) the land remains physically intact but is reclassified as part of the riverbank zone.

Land that has been completely lost due to erosion and being carried away by water flow may be classified as lost land. Pursuant to Article 2, paragraph (2) of Regulation of the Minister of Agrarian Affairs and Spatial Planning/National Land Agency of the Republic of Indonesia No. 17 of 2021 on Procedures for Designating Lost Land, a parcel of land may be designated as lost land if it has undergone a change from its original form due to natural events, such that its existence can no longer be identified, and it cannot be utilized, used, or put to its intended purpose..²⁶ This provision is consistent with Article 27 of the Land Law, which states that ownership rights are extinguished if the land is destroyed.

Based on an interview with Mrs. Dihako on February 8, 2026, it was revealed that since the 1980s, gradual and continuous erosion has been eroding the land of Srimur

²⁶ Indonesia, "Peraturan Menteri Agraria Dan Tata Ruang/ Kepala Badan Pertanahan Nasional Republik Indonesia Nomor 17 Tahun 2021 Tentang Tata Cara Penetapan Tanah Musnah."

Village, and by 2019, portions of the land had been carried away by the river current. In fact, some residents' homes have completely vanished because the land on which they stood was eroded and swept into the riverbed. Under such circumstances, if the location and boundaries of a parcel of land can no longer be identified, then legally, this situation meets the criteria for land deemed lost.

Further clarification is provided in Article 66 of Government Regulation No. 18 of 2021 concerning Management Rights, Land Rights, Apartment Units, and Land Registration, which states that if a parcel of land cannot be identified because it has changed from its original form due to a natural disaster, it shall be designated as destroyed land, and the Management Rights and/or Land Rights thereto shall be extinguished. The term "extinguished" in this provision is interpreted as the termination of land rights because the object no longer exists. Therefore, the extinction of the rights is not caused by revocation by the state, but rather by the loss of the land object that served as the basis for the creation of those rights. Based on an interview with Mr. Saipudin on February 27, 2026, to date there has been no administrative determination by the Head of the Land Office regarding the designation of the land affected by erosion as "destroyed land." Residents still hold Certificates of Ownership and continue to pay property tax annually. This indicates that, administratively, the land rights are still recorded and have not been declared extinguished, even though the land itself has factually disappeared.

Designation of land as destroyed by the Head of the Land Office. Pursuant to Article 2, paragraph (3) of Regulation of the Minister of Agrarian Affairs and Spatial Planning/National Land Agency of the Republic of Indonesia No. 17 of 2021 on Procedures for the Designation of Abolished Land, such designation is followed by administrative recording in the form of striking out the land title number in the land register, certificate, survey document, and other general records, as well as the inclusion of a note on the amendment page stating that the land title has been extinguished because the

land parcel has been designated as abolished land.²⁷ The Head of the Land Office will announce the designation of the land as destroyed to the rights holder to provide an opportunity to undertake reconstruction or reclamation efforts. The period granted to the rights holder to carry out reconstruction or reclamation is one year; if the reconstruction or reclamation is successfully completed, the land rights remain valid and the land may be utilized as intended. However, if the land is definitively declared destroyed, the official with authority over the land rights shall order its cancellation..²⁸

Once a parcel of land has been designated as “extinct land,” that parcel is deemed to no longer exist or to be unidentifiable, and the rights attached to it are automatically extinguished. The owner no longer has any legal claim to the parcel. If, at a later date, the site undergoes reconstruction, normalization, or reclamation by the Central Government or a Local Government, the land resulting from such activities falls under state control. Its management status may be granted in the form of a Management Right (HPL) or other land rights in accordance with applicable laws and regulations, and does not automatically revert to the previous owner, as their rights were extinguished when the land was designated as abandoned land.²⁹

Unlike land that has been lost, there are also situations where the land still physically exists but, due to erosion, has been reclassified as a river buffer zone. In this situation, the land owned by residents physically remains and is not lost, but rather undergoes a change in spatial position and

²⁷ Zulfida et al., “Perlindungan Hukum Terhadap Pemilik Hak Atas Tanah Yang Musnah.”

²⁸ Tanah Musnah: Bagaimana Status Hak Atas Tanahnya? (2025, 10 3). Retrieved from AMAR Law Firm & Public Interest Law Office: <https://amarlawfirm.com/tanah-musnah-bagaimana-status-hak-atas-tanahnya/>

²⁹ Ibid.

function. Regulations regarding rivers and their riparian zones are set forth in Government Regulation No. 38 of 2011 on Rivers; Article 3 states that rivers are controlled by the state as part of water resources.³⁰ This principle of state control is also stipulated in Article 33, paragraph (3) of the 1945 Constitution of the Republic of Indonesia, which states that the earth, water, and natural resources contained therein are controlled by the state and utilized for the greatest possible prosperity of the people. This provision grants legitimacy to the state as the highest authority to regulate the control and utilization of land, as well as the legal relationship between the state and land rights holders..³¹

As long as the land in question still exists and its location and boundaries can still be identified, ownership rights to that land are not automatically extinguished. The Certificate of Ownership retains its validity as a legal instrument of proof. The issue arises because the land is now located within a river buffer zone, which is classified as a protected area under Law No. 26 of 2007 on Spatial Planning. Furthermore, Article 17(1) of Government Regulation No. 38 of 2011 on Rivers states that structures owned by residents located within riverbank zones are designated as “status quo,” meaning such structures may not be altered, expanded, or repaired.³² This indicates that property rights are not revoked, but the exercise of those rights is restricted in the public interest and to protect the river’s functions. Therefore, what is

³⁰ Indonesia, Peraturan Pemerintah (PP) Nomor 38 Tahun 2011 tentang Sungai.

³¹ Ni Luh Ariningsih Sari, “Konsep Menguasi Negara Terhadap Tanah Dalam Hukum Tanah (UUPA) Dan Konstitusi,” *Jurnal Ganec Swara* 15, no. 1 (2021): 991–98.

³² Salam, Sutrisno, and Saputra, “Implementasi Peraturan Menteri PUPR RI Nomor 28/PRT/M/2015 Tentang Penetapan Garis Semapdan Sungai Dan Garis Sempadan Danau Terhadap Bangunan Yang Berdiri Di Sempadan Sungai Daerah Kabupaten Kampar (Studi Kasus Sungai Kampar Wilayah Kecamatan Bangkinang).”

taking place is not the abolition of rights, but rather the restriction of rights over the property in question.

A certificate issued pursuant to Article 32(1) of Government Regulation No. 24 of 1997 on Land Registration is a document evidencing rights that serves as conclusive evidence regarding the physical and legal characteristics of a parcel of land, unless proven otherwise. However, this conclusive and definitive nature does not mean that the right of ownership is absolute, unlimited, or inviolable.³³ If the land is declared to have been extinguished by an administrative decision, the certificate no longer has legal probative value because the land in question has been extinguished and has reverted to state ownership.³⁴

If the land still physically exists but has been reclassified as a river buffer zone, the certificate remains valid and continues to serve as strong evidence of ownership. However, the rights holder cannot fully use or utilize the land because they must comply with spatial planning regulations, river management regulations, and the principle of the social function of land as stipulated in Article 6 of the Land Law. The nature of ownership rights as hereditary, the strongest, and the most complete, as affirmed in Article 20(1) of the Land Law, does not mean that such rights are absolute and unlimited. The strength of ownership rights remains dependent on the existence of the land itself and is subject to restrictions in the public interest.³⁵

From the above discussion, it can be seen that changes in land status resulting from the erosion of the Bekasi River can be classified into two distinct legal consequences: the

³³ Qodar Istikomah, *"Analysis of The Issuance of Land Ownership Certificates on Riparian Land (Case Study of Land Ownership Certificate Number 913 in Demaan Village , Jepara),"* *Law & Society Review* 5, no. 1 (2025): 808–41.

³⁴ P et al., "Status Hukum Tanah Musnah Berdasarkan Permen ATR / BPN No. 17 Tahun 2021."

³⁵ Pemerintah Pusat Indonesia, "Peraturan Pemerintah (PP) Nomor 24 Tahun 1997 Tentang Pendaftaran Tanah" (1997).

extinction of rights due to the destruction of the object, or the restriction of rights due to the object's transfer into the riverbank zone. This distinction has significant legal consequences regarding the certainty and protection of the rights of Certificate of Ownership holders. If land has been designated as extinguished land, it means that the land no longer physically exists and its location and boundaries can no longer be identified. Since the object has disappeared, the right to the land is automatically extinguished. Meanwhile, if the land still physically exists but falls within a river buffer zone, it is not considered extinguished land. The land still exists, its boundaries can still be determined, and the certificate remains valid. However, the owner cannot use the land freely because there are regulations restricting its use.

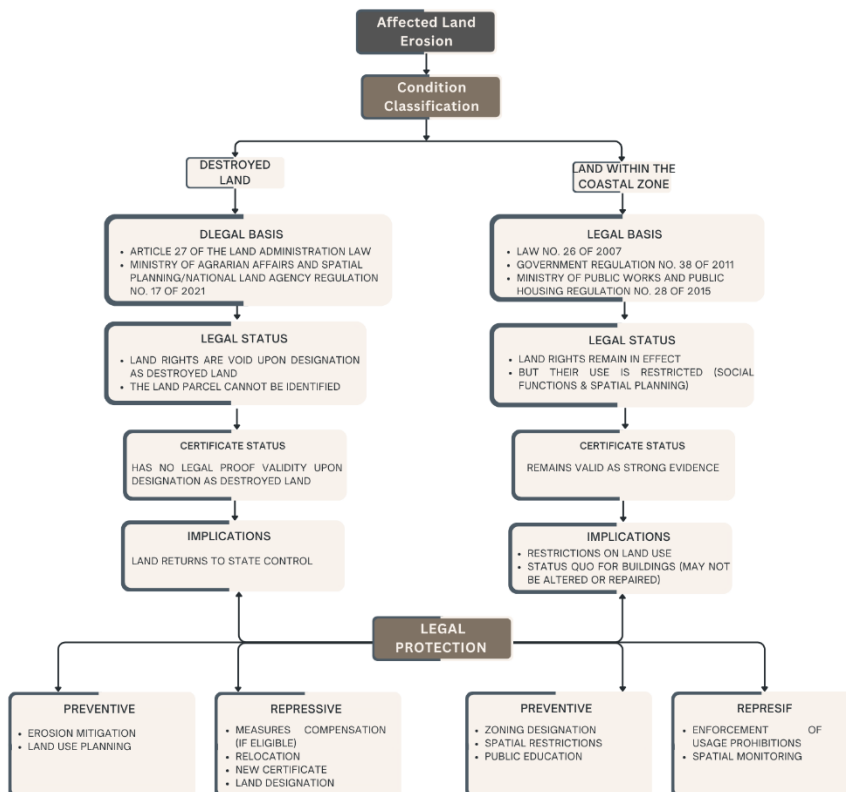
Table 2. Comparison of the Legal Status of Land Affected by Coastal Erosion

No.	Aspect	Land Destroyed	Land Within River Bank Zone
1.	Physical Condition	Existence and boundaries can no longer be identified	Still physically present, boundaries can be identified
2.	Legal Basis	Article 27 of the Land Administration Law; ATR/BPN Regulation No. 17/2021 Government	Regulation No. 38/2011 on Rivers; Law No. 26/2007 on Spatial Planning
3.	Rights Status	Has no probative value after official determination	Remains valid as strong evidence
4.	Status Sertipikat	Tidak memiliki kekuatan pembuktian setelah penetapan	Tetap sah sebagai alat bukti yang kuat

		resmi	
5.	Utilization	Cannot be utilized; reverts to state control	Restricted: may not be altered/improved (status quo)
6.	Compensation Mechanism	Entitled to goodwill funds if for public interest (Presidential Regulation 52/2022)	No clear compensation regulations yet
7.	Administrative Procedures	Requires a decision by the Head of the Land Office	Requires recording of physical data changes at the Land Office

Based on the comparison table, it is evident that there are fundamental differences between land lost to erosion and land located within river buffer zones, in terms of legal status, the validity of land titles, and legal implications.

Picture 1. Chart of Classification and Legal Implications of Land Affected by Erosion



C. The State's Responsibilities and Forms of Legal Protection for Holders of Freehold Certificates Affected by Coastal Erosion

1. *The State's Responsibilities Under Article 33, Paragraph (3) of the 1945 Constitution and the Environmental Law*

Legal protection for holders of Freehold Certificates for land affected by river erosion cannot be separated from the principle of State Control, as stipulated in Article 33, paragraph (3) of the 1945 Constitution of the Republic of Indonesia, which states that the earth, water, and natural resources are controlled by the state for the greatest possible prosperity of the people.³⁶ The principle of "state control" is

³⁶ Ahmad Hadzikil Fahimi, "The Role of the Government Regarding Land Rights of Residents Affected by Abrasion," *JUSTISI* 11, no. 24

not interpreted as private ownership by the state, but rather as the granting of public authority to regulate (*regelendaad*), administer (*bestuursdaad*), manage (*beheersdaad*), and supervise (*toezichthoudensdaad*) its use in the public interest.

Within this framework, the state has a duty to ensure that land and water management including river basins and their surrounding areas is carried out responsibly. The theory of state governance functions proposed by Labolo (2010) explains that the state's role encompasses regulatory, catalytic, and facilitative functions.³⁷ As a regulator, the government establishes policies, including river management and spatial planning. As a catalyst, the government encourages public participation in disaster mitigation and environmental conservation. As a facilitator, the government provides protective infrastructure, such as the construction of levees, river channelization, relocation, and compensation in cases where the government revokes land rights.

The principle of administrative action (*bestuursdaad*) requires active, planned, and legally grounded administrative measures to protect the public interest. Therefore, when erosion occurs that results in physical changes to the land, the state cannot remain passive. Changes in land conditions due to erosion raise legal issues regarding land rights status—whether the land is classified as lost or remains an object of property rights that subsequently falls within the river buffer zone. The determination of this status must be conducted carefully, transparently, and in accordance with statutory regulations. The state is obligated to ensure legal certainty and must not unilaterally revoke or restrict citizens' rights without clear mechanisms. If a change in status or restriction of rights occurs, the procedure must be conducted openly and accompanied by considerations regarding

(2025): 422–40.

³⁷ Winda Oktarina and Zikri Alhadi, "Peran Pemerintah Dalam Mitigasi Risiko Abrasi Di Nagari Pilubang Kabupaten Padang Pariaman," *Journal of Public Administration Studies* 3, no. 2 (2024): 174–80.

appropriate and fair forms of protection and compensation.

The erosion occurring in the Bekasi River area, particularly in RT 005/RW 004, Sriamur Village, indicates recurring and serious impacts. Based on an interview with Mr. Andika Rahman, S.T., Operations Service Coordinator at the Regional Disaster Management Agency (BPBD) of Bekasi Regency, on February 24, 2026, it was revealed that the Bekasi River causes annual impacts in the form of erosion of residential land, particularly when water levels rise with strong currents. The vulnerability level in this area has been classified as very high, given Bekasi Regency's geographical position in the downstream region, which receives water flows from upstream areas. The impacts are not limited to structural damage but also include the loss of portions of residents' private land.

Mr. Andika Rahman, S.T., also noted that incident reports are gathered from various sources, including public complaints, social media, disaster volunteers, and forums established by the BBD, such as Disaster-Resilient Villages, Disaster-Resilient Neighborhoods, and Disaster-Resilient Districts. The information received is then processed by the Operations Control Center (Pusdalops) through a process of documentation, impact assessment, and determination of response measures, including the deployment of personnel and distribution of logistics according to on-site needs. In practice, actions taken at the site are primarily temporary measures, such as installing sandbags, bamboo, and gabions at affected points. Meanwhile, regarding long-term management, the BPBD states that authority lies with relevant technical agencies, such as the Regional River Basin Office under the central government (BBWS). However, based on an interview conducted with Ms. Dihako on February 8, 2026, it was revealed that the assistance provided in 2025 was limited to social aid in the form of logistics.

This fact indicates that although the state has carried out its emergency response functions, the implementation of land rights protection and long-term prevention still requires strengthening. Coastal erosion in Sriamur Village not only causes economic losses in the form of damaged buildings and land loss but also results in social and psychological

impacts. Some residents with economic means choose to relocate to safer areas, while those with limited means are forced to remain in vulnerable conditions. This situation underscores that coastal erosion is not merely a natural phenomenon but a problem demanding the state's presence to ensure the protection of citizens' rights. Based on the principle of state responsibility, the state is obligated to ensure the protection and fulfillment of the public's right to a good and healthy environment.³⁸

This right is a constitutional right as stipulated in Article 28H(1) of the 1945 Constitution of the Republic of Indonesia, which affirms that every person has the right to a place of residence and to a good and healthy living environment. This provision is reaffirmed in Article 65(1) of Law No. 32 of 2009 on Environmental Protection and Management, which states that every person has the right to a good and healthy environment as part of their human rights.³⁹ This standard designates the state as a duty-bearer that must take preventive and corrective measures in the event of environmental damage.⁴⁰ In line with this, Article 67 requires the government to preserve the functions of the environment. Riverbank erosion that results in the loss of homes and threatens human safety can be classified as a violation of the right to a clean and healthy environment; therefore, the government is obligated to take preventive and remedial measures.

In addition to its duty to prevent disasters, the state

³⁸ Robi Adawiyah and Zulfa Fadhilah, "Tanggung Jawab Pemenuhan Hak Asasi Manusia Dalam Kasus Radiasi Ulang Yang Mengandung Cesium-137," *Al-Zayn: Jurnal Ilmu Sosial & Hukum* 3, no. 5 (2025): 8337–47.

³⁹ Ibid.

⁴⁰ Taqiyya, S. A. (2022, April 21). 3 Kewajiban Pokok Negara dalam Hukum HAM Internasional. Retrieved from HukumOnline.com: <https://www.hukumonline.com/klinik/a/3-kewajiban-pokok-negara-dalam-hukum-ham-internasional-lt62611e31941a4/>

also has a responsibility to carry out recovery efforts. Article 26 of Law No. 24 of 2007 on Disaster Management affirms the right of victims to have their basic needs met, to be protected from the effects of disasters, and to receive rehabilitation and reconstruction assistance.⁴¹ Therefore, erosion that has a widespread impact on the community imposes an obligation on the state not only to provide temporary assistance but also to ensure environmental rehabilitation, protection of land rights, and guarantees of the livelihood sustainability of affected residents. The state's responsibility must be understood as the embodiment of its constitutional duty to respect, protect, and fulfill human rights. The case of riverbank erosion along the Bekasi River in Sriamur Village serves as a benchmark for assessing the extent to which the state fulfills its functions of controlling and managing natural resources responsibly for the greatest possible prosperity of the people.

In many countries, the government plays a crucial role in helping to restore the homes and businesses of communities affected by disasters.⁴² In Indonesia, the legal framework for disaster management is set forth in Law No. 24 of 2007 on Disaster Management, which stipulates that disaster victims are entitled to protection from the effects of disasters and to the fulfillment of basic needs such as clothing, food, temporary shelter, health services, sanitation, and clean water. In addition, the law also regulates the implementation of rehabilitation and reconstruction as part of

⁴¹ Merryl Wowiling, Karel Yossi Umboh, and Deine Rike Ringkuangan, "Tanggung Jawab Pemerintah Atas Kerugian Akibat Benca Alam Amurang," no. 2 (2024).

⁴² Embun Sari et al., *"Compensation for Damaged Land: Comparative Study between Indonesia and Japan," International Conference on Law, Economic and Governance*, 2021, <https://doi.org/10.4108/eai.29-6-2021.2312610>.

efforts to restore community life after a disaster.⁴³ Nevertheless, these regulations generally still focus on humanitarian aid and infrastructure recovery, while mechanisms specifically governing land management for communities who have lost their land due to disasters remain relatively limited.

The experiences of other countries can serve as a learning resource in examining how states provide more comprehensive protection and recovery for disaster-affected communities. In Japan, following the Great East Japan Earthquake and Tsunami, the government implemented various recovery programs focused on resettlement and land acquisition as part of the reconstruction process for affected areas. Land acquisition was not limited to areas directly affected by the disaster but also extended to other lands, such as rice fields, forested areas, and hilly regions, which were subsequently developed as sites for new settlements within the framework of group relocation. This policy is grounded in the concept of community sustainability, which emphasizes the importance of ensuring that affected communities remain within the same social environment..⁴⁴

Furthermore, one of the main drivers of post-disaster reconstruction is land readjustment. Policies regarding land readjustment are regulated under the Special City Planning Act. Article 13 grants the authority to carry out mandatory land readjustment under certain conditions, including in

⁴³ Multazan. (2024, Juni 28). Bencana dan Manajemen Bencana. Retrieved from Badan Penanggulangan Bencana Daerah Kabupaten Kotawaringin Timur: <https://bpbd.kotimkab.go.id/bencana-dan-manajemen-bencana/>

⁴⁴ Kensuke Otsuyama, Tomoyuki Mashiko, and Tsukuda Haruka, "Comparative Study for Underlying Concepts of Land Acquisition during Post-Disaster Recovery in Italy , the United States and Japan," *Disaster Prevention and Management: An International Journal* 33, no. 5 (2024): 561–79, <https://doi.org/10.1108/DPM-11-2023-0308>.

emergency situations such as post-disaster rehabilitation. This policy was implemented following the Great Kanto Earthquake, which caused massive fires and destroyed more than 4,300 hectares of land in Tokyo and Yokohama. In response to the disaster, the government established the Reconstruction Council and carried out reconstruction projects through a land readjustment scheme based on the Special City Planning Act.⁴⁵

One of the key provisions of the policy is the requirement for landowners to contribute up to 10% of their land area without compensation, while losses exceeding that limit are subject to compensation payments. Additionally, a Land Reallocation Committee and a Compensation Review Board were established to facilitate agreements between the government and landowners regarding the implementation of reconstruction projects. The regulation also addresses the designation of planned land-reallocation areas (replotting planned areas), which serve to ensure alignment between land ownership and the implementation of infrastructure development, building relocation, and the provision of public facilities within the project area. This concept later evolved into a provisional land-reallocation designation system, which remains a key instrument in the provisional land-reallocation of post-disaster zones in Japan.⁴⁶

Therefore, Japan's practices can serve as a model for Indonesia in formulating more integrated post-disaster recovery policies, particularly regarding land management and the redevelopment of disaster-affected areas. The integration of reconstruction policies, spatial planning, and the protection of land rights for affected communities is expected to strengthen regional recovery efforts in a more sustainable manner while providing legal certainty for people who have lost their land or homes due to disasters.

2. Forms of Legal Protection That Can Be Provided to Holders of Freehold Certificates Affected by Coastal

⁴⁵ Norihiko Yanase, "Land Readjustment and Post-Disaster Reconstruction in Japan From Arable Land Readjustment to Land Readjustment," 2018, 63–78.

⁴⁶ Ibid.

Erosion

Satjipto Rahardjo defines it as a set of measures or mechanisms provided by law to guarantee and protect human rights from harmful actions committed by others. This protection aims to ensure that everyone can enjoy and exercise their legal rights safely, fairly, and with dignity in society.⁴⁷ Philipus M. Hadjon mengkategorikan perlindungan hukum ke dalam dua bentuk dua, yakni perlindungan hukum preventif dan perlindungan hukum represif. Perlindungan hukum preventif merupakan upaya yang dilakukan sebelum timbulnya sengketa atau pelanggaran, dengan tujuan mencegah terjadinya konflik serta memberikan kesempatan kepada warga negara untuk mengajukan keberatan atau pendapatnya sebelum suatu keputusan ditetapkan. Sementara itu, perlindungan hukum represif merupakan bentuk perlindungan yang diberikan pada saat atau setelah terjadinya sengketa, yang bertujuan untuk menyelesaikan perselisihan serta memulihkan hak-hak pihak yang dirugikan melalui mekanisme peradilan atau upaya hukum lainnya.⁴⁸

Erosion along the banks of the Bekasi River poses a high risk of land loss, damage to buildings, and social and psychological impacts on the community. To minimize these risks and improve preparedness, preventive legal measures can be implemented in the following ways:

- a) Strengthening early warning systems and erosion mitigation measures in riverbank areas.

These efforts can be carried out through the construction of levees, river channelization, and regular monitoring of river flow and bank conditions. The installation of early warning systems allows communities to quickly receive information about potential disasters,

⁴⁷ Daffa Arya Prayoga et al., "Perlindungan Hukum Terhadap Hak Warga Negara Dengan Berlakunya Undang-Undang Nomor 23 Tahun 2019 Tentang Pengelolaan Sumber Daya Nasional," *Sovereignty: Jurnal Demokrasi Dan Ketahanan Nasiona* 2, no. 2 (2023): 188–200.

⁴⁸ Alfin Dwiqi Reza, "Perlindungan Hukum Terhadap Hak Milik Atas Tanah Akibat Abrasi Yang Dilalui Jalan Tol Semarang-Demak Di Kecamatan Sayung" (2022).

such as floods or landslides, so that evacuation measures can be taken in a timely manner.⁴⁹ In addition, education and outreach regarding the risks of coastal erosion and evacuation procedures are key to raising public awareness and preparedness.⁵⁰

Based on an interview with Mr. Andika Rahman, S.T., Operations Service Coordinator at the Regional Disaster Management Agency (BPBD) of Bekasi Regency, on February 24, 2026, the government has established disaster management forums at the village, neighborhood, and subdistrict levels. These forums serve to strengthen coordination among agencies, enhance preparedness, and accelerate disaster mitigation and response efforts so that actions can be carried out in an organized and effective manner.

- b) Incorporation of disaster vulnerability data into the certificate issuance process.

This effort is undertaken to ensure that disaster risks, such as coastal erosion, flooding, or landslides, are documented and taken into account in legal land ownership. Currently, there are no regulations requiring hazard maps to be used as a mandatory basis for Land Use Planning (LUP). Furthermore, the Restrictions and Responsibilities (RRR) information from the LUP is not integrated or recorded in land certificates

The absence of such records makes it impossible to enforce city-level risk-based mitigation plans at the level of private land parcels. Although risk zones are designated as restricted areas after a disaster occurs, the absence of RRR records on land titles means that post-disaster recovery programs continue to restore the legal status of the land to what it was before the disaster. As a result, communities reoccupy hazard zones with valid legal documents, allowing the same vulnerabilities to

⁴⁹ Mohamad Revaldy Fairuzzen et al., "Peran Tata Ruang Dalam Mitigasi Risiko Pembangunan Dan Pencegahan Bencana Alam," *Interdisciplinary Explorations in Research Journa* 2, no. 3 (2024): 1497–1516.

⁵⁰ Ibid.

recur and rendering investments in reconstruction or aid ineffective.⁵¹ Therefore, integrating disaster vulnerability data into land certificates is an important preventive measure to provide legal certainty for landowners and ensure that disaster risk mitigation can be effectively enforced.

- c) Regulations regarding zoning that account for disaster risks.

This effort is a crucial component of land-use management in high-risk areas. Through comprehensive risk mapping, areas vulnerable to earthquakes, floods, landslides, or coastal erosion can be clearly identified, allowing development planning to be directed toward safe and sustainable locations.⁵² Risk-based zones are divided into several categories: safe zones, caution zones, and restricted zones, with development restrictions becoming increasingly strict as the risk level rises.⁵³

The designation of these zones is also governed by the general provisions of zoning regulations, including protected areas, agricultural areas, river buffers, and disaster-prone areas, so that any land use must take into account environmental carrying capacity, conservation functions, and public evacuation routes as stipulated in Bekasi Regency Regional Regulation (Perda) No. 12 of 2011 concerning the 2011–2031 Spatial Plan for Bekasi Regency.⁵⁴ Overall, the general provisions of zoning regulations serve as a preventive measure that can limit or guide development to ensure it remains in harmony with the environment's carrying capacity and capacity, while

⁵¹ Raihan. (2025, November 18). Indonesia di Garis Patahan: Mengapa Peta Risiko Bencana Gagal Tercatat di Sertifikat Tanah? Retrieved from Diklat Kerja Blog: <https://www.diklatkerja.com/blog/indonesia-di-garis-patahan-mengapa-peta-risiko-bencana-gagal-tercatat-di-sertifikat-tanah>

⁵² Fairuzzen et al., "Peran Tata Ruang Dalam Mitigasi Risiko Pembangunan Dan Pencegahan Bencana Alam."

⁵³ Ibid.

⁵⁴ Pemerintah Pusat Indonesia, "Peraturan Daerah (Perda) Kabupaten Bekasi Nomor 12 Tahun 2011 Tentang Rencana Tata Ruang Wilayah Kabupaten Bekasi Tahun 2011-2031" (2013).

also supporting sustainable development policies.⁵⁵

Meanwhile, repressive protection is aimed at addressing or preventing violations that have already or could potentially damage the environment and threaten public safety, which can be achieved in the following ways:

a) Mechanism for compensation for land lost due to erosion

As a preventive measure against the effects of erosion that lead to land loss, the government provides compensation mechanisms and legal protection for land rights holders. Pursuant to Ministerial Regulation of the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency No. 17 of 2021, holders of land management rights and/or land rights are granted a period of 1 (one) year to carry out reconstruction or reclamation on their own. If, within that period, the holders of land management rights and/or land rights fail to carry out reconstruction or reclamation, the land is designated as lost land.⁵⁶ Furthermore, as stipulated in Article 66(4) of Government Regulation No. 18 of 2021 on Management Rights, Land Rights, Apartment Units, and Land Registration, it is stipulated that if reconstruction or reclamation is carried out by the Central Government, a Regional Government, or another party, the holder of management rights and/or land rights is entitled to receive compensation funds as compensation for the loss of land.⁵⁷

Article 1(8) of Presidential Regulation No. 52 of 2022 on the Management of Social and Community Impacts on Land Identified as Expropriated Land for

⁵⁵ Dafa Alfahrizi and Muhammad Hafidz, "Pelanggaran Pemanfaatan Ruang Dan Risiko Longsor Di Simpang Jalan Kawasan Stasiun Batutulis, Bogor," *LITRA: Jurnal Hukum Lingkungan Tata Ruang Dan Agraria* 4, no. 1 (2024): 49–63.

⁵⁶ Indonesia, "Peraturan Menteri Agraria Dan Tata Ruang/ Kepala Badan Pertanahan Nasional Republik Indonesia Nomor 17 Tahun 2021 Tentang Tata Cara Penetapan Tanah Musnah."

⁵⁷ Republik Indonesia, "Peraturan Pemerintah (PP) Nomor 18 Tahun 2021 Tentang Hak Pengelolaan, Hak Atas Tanah, Satuan Rumah Susun, Dan Pendaftaran Tanah" (2021).

Public Interest Development stipulates that the purpose of the compensation fund is to restore the social and economic conditions of communities affected by the expropriation of land for public interest.⁵⁸ The government and all parties involved in the land acquisition process must carefully consider and respect the rights of communities affected by coastal erosion. Every resident who loses land as a result of such events is entitled to fair and adequate compensation commensurate with the value of the land and the extent of the loss.⁵⁹

However, there are no clear regulations regarding compensation or damages for land that has been partially lost or for building damage caused by coastal erosion, especially if the land is not subject to land acquisition for public interest. The remaining land remains privately owned, while changes to the physical boundaries of the land must be re-registered in the land registry system. This situation indicates a legal vacuum in the protection of land rights affected by partial erosion, so that protective measures regarding compensation or restitution focus more on government intervention in the form of reconstruction, reclamation, or the provision of goodwill funds if the land is declared destroyed and used for public interest. Therefore, clearer regulations are needed regarding the mechanism for compensation or restitution for land that has been partially lost due to erosion.

b) Relocation and provision of adequate housing for affected residents

One form of protective legal measures implemented by local governments for residents affected

⁵⁸ Pemerintah Pusat Indonesia, "Peraturan Presiden (Perpres) Nomor 52 Tahun 2022 Tentang Penanganan Dampak Sosial Kemasyarakatan Atas Tanah Yang Diidentifikasi Sebagai Tanah Musnah Dalam Rangka Pembangunan Untuk Kepentingan Umum" (2022).

⁵⁹ Habib Ferian Fajar and Muhammad Fatih Ihsanul Ilmi, "Implikasi Hukum Pengaturan Kompensasi Tanah Abrasi Dalam Pengadaan Tanah Yang Berkeadilan Di Indonesia," *Andalas Nptary Journal* XX, no. X (2024): 1–14.

by natural disasters is the relocation or resettlement of communities.⁶⁰ Relocation is defined as the process of moving residents from high-risk areas to safer areas with lower potential risks. The goal is to ensure the safety of lives, protect community assets, and ensure the social and economic sustainability of affected residents.⁶¹

Relocation is generally understood as the process of moving people from disaster-prone areas to safer, lower-risk locations in order to protect lives and property. This indicates that relocation serves as both an emergency solution and the starting point of a long-term recovery process.⁶² Relocation requires land. Identifying potential sites for the relocation of communities affected by natural disasters is a form of disaster risk mitigation. Relocation is not only a temporary solution in the aftermath of a disaster but also part of long-term recovery efforts.⁶³

The situation in Sriamur Village indicates that relocation is an urgent necessity. Based on an interview

⁶⁰ Maulina, R. A. (2026, July 26). Pengadaan Tanah dan Perumahan Untuk Relokasi. Retrieved from SCRIBD: https://www.scribd.com/document/893174389/Pengadaan-Tanah-Dan-Perumahan-Untuk-Relokasi?_gl=1*u5vxxmw*_gcl_au*NjQ1MTM4NjE1LjE3Njk0NDY4Nzk.

⁶¹ Ghina Asyifa Rahmadani, Aliya Rhamadani, and Delmira Syafrini, "Relokasi Dan Rehabilitasi : Upaya Pemulihan Masyarakat Pasca Banjir Lahar Dingin Akibat Dari Erupsi Gunung Marapi," *Social Empirical: Prosiding Berkala Ilmu Sosial* 2, no. 1 (2025): 144–52.

⁶² Ibid.

⁶³ Maulina, R. A. (2026, July 26). Pengadaan Tanah dan Perumahan Untuk Relokasi. Retrieved from SCRIBD: https://www.scribd.com/document/893174389/Pengadaan-Tanah-Dan-Perumahan-Untuk-Relokasi?_gl=1*u5vxxmw*_gcl_au*NjQ1MTM4NjE1LjE3Njk0NDY4Nzk.

conducted by Mr. Andika Rahman, S.T., Operations Coordinator at the Bekasi Regency Regional Disaster Management Agency (BPBD), on February 24, 2026, the area has been classified as a high-risk disaster zone. In reality, there are still a number of residents living in homes located very close to the river and at risk of further erosion. However, due to financial constraints, they lack the means to move to a safer location on their own. Under these circumstances, residents strongly hope for relocation as a form of protection for their safety and livelihood.

The relocation process must be carried out in a planned manner and involve the community. The government needs to ensure that the land used is safe from disaster risks, has a clear legal status, and complies with spatial planning regulations. In addition, the housing provided must meet livability standards, both in terms of building quality and the availability of basic facilities such as clean water, sanitation, electricity, and road access.⁶⁴ Therefore, relocation should not be viewed merely as a change of residence, but as a form of the government's responsibility to provide protection and recovery for the affected communities.

c) Issuance of certificates for relocation land

The issuance of land certificates for relocation sites is a crucial component of legal protection for communities affected by disasters. Once the relocation process is complete and permanent housing has been built, the certainty of the land's legal status becomes an aspect that cannot be overlooked. Without land certificates, relocated residents risk facing legal

⁶⁴ Sulthana Labiba Khansa, "Jurnal Nasional Kesehatan Lingkungan Global Faktor-Faktor Yang Mempengaruhi Kelayakan GOR Otista Jakarta Timur Menjadi Hunian Sementara Korban Bencana Banjir Ditinjau Dari Aspek Kesehatan Lingkungan Tahun 2019 Faktor - Faktor Yang Mempengaruhi Kelayakan G," *Jurnal Nasional Kesehatan Lingkungan Global* 2, no. 2 (2021): 62–70, <https://doi.org/10.7454/jnklg.v2i2.1000>.

	Disaster-risk-based zoning	Directing development to safe locations	Public Works and Public Housing Agency (PUPR), Regional Development Planning Agency (Bappeda)
	Public outreach & education	Improving community preparedness	Local Government, Disaster Resilience Forum Reactive
Represif	Compensation mechanisms/goodwill funds	Restoring socioeconomic conditions	Central/Local Government
	Relocation & provision of adequate housing	Ensuring safety & livelihood sustainability	Local Government, Ministry of Public Works and Public Housing
	Issuance of relocation land certificates	Providing legal certainty post-relocation	Ministry of Agrarian Affairs and Spatial Planning/National Land Agency
	Administrative law enforcement	Ensuring compliance with setback regulations	Department of Public Works and Public Housing, Land Office

4. Conclusion

Riverbank erosion along the Bekasi River in Sriamur Village, Tambun Utara Subdistrict, Bekasi Regency has caused changes in the physical condition of the land, including a reduction in land area or the complete loss of land. These changes have raised legal issues regarding the status of land rights that have been certified. Article 27 of the Basic Agrarian Law (UUPA) states that ownership rights are extinguished if the

land is destroyed. However, the designation of land as destroyed does not occur automatically and requires an administrative process through a decision by the Head of the Land Office as regulated in Minister of Agrarian Affairs and Spatial Planning/National Land Agency Regulation No. 17 of 2021. In reality, although there is land belonging to residents that has been lost due to erosion, to date there has been no official designation regarding destroyed land, so the Certificates of Ownership are still automatically recorded.

In addition, erosion also causes changes to riverbank boundaries, resulting in some of the residents' land that was previously outside the riverbank zone now falling within the river zone. This situation creates a conflict of interest between individual land rights and the state's authority to regulate river protection zones. Although land rights are not automatically extinguished, their use becomes restricted, causing losses for the rights holders. To date, there are no regulations clearly outlining the legal mechanisms for compensation for holders of Certificates of Ownership whose land has been reduced or lost due to river erosion. The government needs to establish regulations that not only address the legal status of lost land but also provide certainty regarding support for affected communities, such as through more responsive mechanisms for declaring land as lost, providing relocation schemes, and integrating disaster mitigation aspects into the land registration and management system. These efforts are crucial to ensure that legal protection for land rights holders remains guaranteed even when physical conditions change due to natural processes.

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Acknowledgment

None

Funding Information

None

Conflicting Interest Statement

The authors state that there is no conflict of interest in the publication of this article.

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All authors declared that this work is original and has never been published in any form and in any media, nor is it under consideration for publication in any journal, and all sources cited in this work refer to the basic standards of scientific citation.

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