



ENVIRONMENTAL RISK MITIGATION ANALYSIS OF GLASS INDUSTRY DEVELOPMENT POLICY ON REMPANG ISLAND

ANALISIS MITIGASI RISIKO LINGKUNGAN DARI KEBIJAKAN PENGEMBANGAN INDUSTRI KACA DI PULAU REMPANG

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Abstract

This research comprehensively analyzes the glass industry development policy on Rempang Island, Batam City, Riau Islands Province, using an environmental risk mitigation approach. Employing a descriptive qualitative method with a case study design and library research, this study examines five main dimensions: the chronology of the Rempang Island case, policy conflicts and controversies, the government regulatory framework, disaster risk analysis from nine environmental perspectives, and overall policy evaluation. The findings reveal that the Rempang Eco City project, designated as a National Strategic Project (PSN) through Permenko for Economic Affairs Number 7 of 2023, triggered prolonged agrarian conflict due to the absence of meaningful participation from indigenous Malay communities who have inhabited 16 ancient villages on the island since 1834. The project implementation was marked by forced evictions, repeated acts of violence, and non-transparent environmental impact assessment (AMDAL) processes. Disaster risk analysis from nine environmental perspectives covering air quality, water quality, coastal and marine ecosystems, sand mining and geological degradation, biodiversity, community health, social-cultural impacts, climate change vulnerability, and environmental governance consistently produces high-risk assessments, affirming that Rempang Island as a small island ecosystem lacks adequate carrying capacity for large-scale glass industrial development without permanent and irreversible ecological damage. Although Presidential Regulation Number 12 of 2025 de facto removed Rempang Eco City from the list of 77 National Strategic Projects under President Prabowo Subianto's administration, the absence of an explicit revocation of Permenko Number 7 of 2023 creates ongoing legal ambiguity for affected communities. This research concludes that Indonesia urgently requires fundamental reform in its investment-based development policy paradigm, encompassing strengthened indigenous community participation mechanisms, elevation of AMDAL as a non-circumventable legal requirement prior to investment designation, and application of the ecological precautionary principle in small island development.

Keywords : Rempang Island, Glass Industry, Environmental Risk Mitigation, National Strategic Project, Rempang Eco City.

Abstrak

Penelitian ini menganalisis secara komprehensif kebijakan pengembangan industri kaca di Pulau Rempang, Kota Batam, Provinsi Kepulauan Riau, menggunakan pendekatan mitigasi risiko lingkungan. Dengan menggunakan metode kualitatif deskriptif dengan desain studi kasus dan riset



pustaka, penelitian ini mengkaji lima dimensi utama: kronologi kasus Pulau Rempang, konflik dan kontroversi kebijakan, kerangka peraturan pemerintah, analisis risiko bencana dari sembilan perspektif lingkungan, dan evaluasi kebijakan secara keseluruhan. Temuan menunjukkan bahwa proyek Kota Ekologi Rempang, yang ditetapkan sebagai Proyek Strategis Nasional (PSN) melalui Permenko Urusan Ekonomi Nomor 7 Tahun 2023, memicu konflik agraria yang berkepanjangan karena kurangnya partisipasi yang berarti dari masyarakat Melayu asli yang telah mendiami 16 desa kuno di pulau tersebut sejak tahun 1834. Implementasi proyek ditandai dengan penggusuran paksa, tindakan kekerasan berulang, dan proses penilaian dampak lingkungan yang tidak transparan (AMDAL). Analisis risiko bencana dari sembilan perspektif lingkungan yang meliputi kualitas udara, kualitas air, ekosistem pesisir dan laut, penambangan pasir dan degradasi geologi, keanekaragaman hayati, kesehatan masyarakat, dampak sosial-budaya, kerentanan perubahan iklim, dan tata kelola lingkungan secara konsisten menghasilkan penilaian risiko tinggi, menegaskan bahwa Pulau Rempang sebagai ekosistem pulau kecil tidak memiliki daya dukung yang memadai untuk pengembangan industri kaca skala besar tanpa kerusakan ekologis permanen dan tidak dapat dipulihkan. Meskipun Peraturan Presiden Nomor 12 Tahun 2025 secara de facto menghapus Kota Ekologi Rempang dari daftar 77 Proyek Strategis Nasional di bawah pemerintahan Presiden Prabowo Subianto, ketiadaan pencabutan eksplisit Permenko Nomor 7 Tahun 2023 menciptakan ambiguitas hukum yang berkelanjutan bagi masyarakat yang terdampak. Penelitian ini menyimpulkan bahwa Indonesia sangat membutuhkan reformasi mendasar dalam paradigma kebijakan pembangunan berbasis investasi, yang mencakup penguatan mekanisme partisipasi masyarakat adat, peningkatan AMDAL sebagai persyaratan hukum yang tidak dapat dihindari sebelum penetapan investasi, dan penerapan prinsip kehati-hatian ekologis dalam pembangunan pulau kecil.

Kata Kunci : Pulau Rempang, Industri Kaca, Mitigasi Risiko Lingkungan, Proyek Strategis Nasional, Kota Ramah Lingkungan Rempang.

1. INTRODUCTION

Large scale foreign investment-based industrial development often presents complex policy dilemmas, particularly when it intersects with indigenous peoples' rights, environmental sustainability, and national economic interests. The case of Rempang Island in Batam City, Riau Islands Province, stands as one of the most concrete examples of such tensions in the context of contemporary Indonesian development policy. The Rempang Eco-City project, originally named the Exclusive Integrated Tourism Area (KWTE) of Rempang Island focusing on tourism development, subsequently transformed into a far more ambitious project encompassing the construction of a new city, glass factory, and solar panels. This transformation opened a new chapter of conflict between investment interests and the rights of communities that had long inhabited the island.

Xinyi Glass Holdings Ltd. is one of the primary investors planned to establish a glass factory on Rempang Island with an investment value reaching IDR 175 trillion, as part of the National Strategic Project (PSN) of Rempang Eco City. Overall, the Xinyi Group project encompasses 10 major projects implemented in phases, including an integrated industrial zone, solar panel glass industry, soda ash industry, and silica sand processing, with total land to be developed reaching 8,142 hectares out of Rempang Island's total area of 17,600 hectares. The massive scale of this project makes Rempang Eco City one of the largest investment projects ever planned in the Riau Islands region. The designation of Rempang Eco City as a National Strategic Project (PSN) carried very heavy consequences for local communities. WALHI Riau suspects that the promised investment in glass and solar panel factory construction worth USD 11.5 billion (equivalent to IDR 173.6 trillion) became the basis for designating this project as a PSN through Permenko Ekuin Number 7 of 2023. The PSN label was then used as legal justification to accelerate land clearance, which in turn triggered prolonged conflict between the government, private sector, and residents who refused to be relocated from land they had occupied for generations.



The conflict on Rempang Island cannot be separated from the issue of ignored rights of the indigenous Malay community who had inhabited the island long before the modern era. WALHI Riau's study affirms that Rempang Island is not an empty island, as evidenced by the long history of community presence there well before independence through Rempang's integration as part of Indonesian territory. This fact constitutes a strong moral and legal foundation for residents' rejection of the mass relocation plan promoted by the government to smooth the way for the giant-scale glass industrial project.

Ironically, only approximately 20% of households approved relocation in the first phase development area, while the majority of residents refused to leave their homeland. The project implementation process was also marked by repressive actions that drew widespread attention from various quarters. Rempang Island residents reported receiving intimidation from various parties, including PT Makmur Elok Graha (MEG) security officers, resulting in physical violence, where incidents in September 2024 left three residents injured including an elderly woman who suffered a broken hand. Furthermore, in December 2024, an attack by dozens of PT MEG officers at three resident posts in Kampung Sembulang Hulu and Sungai Buluh left eight residents injured, one seriously requiring intensive hospital care. This series of violence reflects the depth of social tension generated by development policies that disregard community participation and consent.

From an environmental perspective, the glass industry project on Rempang Island contains potential ecological disaster risks that are often overlooked in the planning process. The construction of glass factories and solar power plants has the potential to cause considerable environmental damage, including worsening damage to marine ecosystems affecting coastal communities, as well as damaging the land area of Rempang Island that has long served as a local food source. Rempang Island, with its rich ecosystem, is a territory vulnerable to various environmental disaster threats if large-scale industrial construction is carried out without comprehensive and transparent risk mitigation studies.

The latest chapter of this prolonged polemic occurred in early 2025, when President Prabowo Subianto's administration de facto removed Rempang Eco City from the list of National Strategic Projects. On February 10, 2025, President Prabowo Subianto enacted Presidential Regulation (Perpres) Number 12 of 2025 concerning the National Medium-Term Development Plan 2025–2029, which lists 77 PSNs in Indonesia, but Rempang Eco City is not among them. Commission VI Chair Nurdin Halid confirmed Rempang Eco City's removal from the PSN list after verifying the Presidential Regulation in a Public Hearing with Rempang Island residents on April 28, 2025. Nevertheless, Rempang's absence from the latest RPJMN list created confusion and triggered mixed information in public, with some parties stating Rempang had been removed from the PSN list while others believed the project remained a central government priority.

The revocation of PSN status opens opportunities for comprehensive evaluation of all aspects of the project. Commission VI member Rieke Diah Pitaloka asserted that with the PSN status revoked, the government must immediately conduct a thorough evaluation of the project, including urging the Attorney General to fully investigate alleged corruption and requesting the State Audit Board (BPK) to conduct a comprehensive audit of BP Batam. Meanwhile, communities who have lived for two years under pressure and threat of eviction demand legal certainty over their rights to ancestral land that has long been their source of livelihood. From an ecological dimension, the threats posed by the planned glass industry development on Rempang Island far exceed the boundaries of the island's land area itself. The Executive Director of WALHI Riau expressed concern not only about marine ecosystem damage from coastal industrial construction, but also about the potential for large-scale mining of quartz sand and silica as raw materials for the glass factory, which would most likely be extracted from coastal areas, seas, and small islands surrounding Rempang.

Even the team that compiled the Rempang Eco City Environmental Impact Assessment (AMDAL) document acknowledged the negative impacts of the industrial development, including disturbance to aquatic biota and reduced income for fishermen. This situation places thousands of



fishermen who depend on the Riau Islands' marine ecosystem in a very vulnerable position, as damage to the underwater ecosystem will directly and permanently destroy their livelihoods. The Rempang Island case is truly not a standalone phenomenon, but rather part of a broader pattern in the implementation of PSN policy in Indonesia. Throughout 2024, PSNs caused 36 new agrarian conflicts, with the infrastructure sector as a whole contributing 79 conflict cases covering 290,785 hectares of land and affecting more than 20,000 families across Indonesia. PSN implementation in Indonesia frequently ignores the rights to information and participation of local and indigenous communities as the most fundamental right to development, while also risking human rights violations in the form of the forcible removal of indigenous peoples from their hereditary lands. This recurring pattern indicates systemic weaknesses in national development governance that urgently require academic examination.

The absence of adequate environmental risk mitigation studies in the planning of the Rempang Eco City project reflects a fundamental weakness in Indonesia's development policy approach. The quartz sand used for the glass industry on Rempang Island will be extracted from waters in the Riau Islands, meaning there will be large-scale sand mining that, when reserves are exhausted, will leave permanent damage a form of short-term economics that in reality bankrupts Indonesia socially, economically, and ecologically. A comprehensive environmental risk mitigation approach, encompassing dimensions ranging from air quality, freshwater availability, soil stability, coastal ecosystems, to social vulnerability of communities, is an absolute prerequisite for any industrial development in ecologically sensitive island territories.

This research aims to comprehensively analyze the glass industry development policy on Rempang Island using an environmental risk mitigation approach. Specifically, this research aims to: (1) examine the chronology and field facts of the Rempang Island case as a study of foreign investment-based development policy; (2) identify policy conflicts and controversies arising from the designation and implementation of the Rempang Eco City project; (3) analyze government regulations that form the legal basis as well as those underlying the cancellation of the project's PSN status; (4) conduct disaster risk analysis from nine environmental perspectives as a comprehensive mitigation framework; and (5) critically evaluate the policy to provide constructive recommendations for future decision-making. The results of this study are expected to serve as academic reference for the formulation of more inclusive, just, and environmentally conscious development policies in the future.

2. RESEARCH METHOD

This research employs a descriptive qualitative approach using case study research methodology. The qualitative approach was chosen because this research aims to deeply understand the complex, multidimensional phenomenon of glass industry development policy on Rempang Island, which cannot be adequately explained through statistics alone. The case study method was deemed most appropriate as it enables researchers to comprehensively examine a phenomenon within its real context, including the interrelated dynamics of policy, social conflict, and environmental impact. This approach aligns with Yin (2018), who states that case study is the appropriate research strategy when research questions are of a "how" and "why" nature, and when researchers have no control over the events being studied.

The research type employed is library research reinforced by policy document analysis. All data in this research is secondary, collected through systematic searching of various relevant written sources. Secondary data sources used include: (1) legislation related to the Rempang Eco City project, including Permenko Ekuin Number 7 of 2023 on PSN designation and Presidential Regulation Number 12 of 2025 on the National Medium-Term Development Plan 2025–2029; (2) reports and studies from non-governmental organizations (3) official government documents including statements from the Batam Business Agency (BP Batam), the Investment Ministry, and the Coordinating Ministry for Economic Affairs; (4) academic articles and journals addressing public policy, agrarian conflict, and environmental disaster mitigation in Indonesia; and (5) credible and verified mass media reporting as factual chronological data sources.



Data collection was conducted through systematic documentation study using categorization guides developed based on research sub-topics. The data collection process began with identifying relevant documents, followed by selection based on source credibility, data currency, and substantive relevance to the research focus. This research limits its data scope to the period 2023 to 2025, from when Rempang Eco City was designated as a PSN through the latest developments following the project's removal from the PSN list through Perpres Number 12 of 2025. This temporal limitation ensures the analysis reflects the most current and relevant policy conditions.

Data analysis in this research employs three techniques applied sequentially and complementarily. First, content analysis was used to deeply examine policy documents and legislation to identify substance, legal gaps, and policy implications contained within them. Second, public policy analysis was applied to evaluate the formulation, implementation, and impact processes of the Rempang Eco City development policy based on the policy cycle framework. Third, environmental risk analysis based on nine perspectives was used as a disaster mitigation framework encompassing physical, biological, chemical, social, economic, health, cultural, legal, and environmental governance dimensions. The integration of these three analytical techniques enables the research to produce a comprehensive and in-depth picture of the complexity of issues surrounding the Rempang Island case.

3. RESULT AND DISCUSSION

This section presents the results of analysis of the glass industry development policy on Rempang Island based on five established sub-discussions: the Rempang Island case study, policy conflicts and controversies, government regulations related to construction cancellation, disaster analysis from nine environmental perspectives, and policy evaluation. Analysis is conducted systematically by integrating data from various verified sources to produce a comprehensive and evidence-based picture of the complexity of issues surrounding this case. Each sub-discussion is presented sequentially and interconnectedly, forming a complete analytical narrative from historical, policy, legal, environmental, and evaluative aspects.

1. Rempang Island Case Study

Rempang Island is an island located in the administrative territory of Batam City, Riau Islands Province, with a total area of approximately 17,600 hectares. Geographically, this island occupies a highly strategic position as it directly borders the Strait of Malacca and lies on the international trade route connecting the Indian Ocean with the South China Sea. This geographic location makes Rempang Island one of the territories considered to have potential for development as an industrial and investment zone, particularly in the context of regional economic competition with Singapore and Malaysia situated in adjacent areas.

Long before the modern development era, Rempang Island had been inhabited by indigenous communities comprising diverse ethnic groups. Indigenous communities in the 16 ancient villages of Rempang Island, consisting of the Malay People, Orang Laut (Sea People), and Orang Darat (Land People), have lived there for more than one hundred years. Based on historical records, the indigenous communities living on Rempang Island have settled there from generation to generation since 1834. Their presence spanning centuries makes the land of Rempang Island not merely a geographic space, but also a cultural space, identity, and life that cannot be separated from the existence of the Malay community inhabiting it. The people of Rempang cannot be categorized as illegal settlers, as the indigenous community consisting of the Malay People, Sea People, and several other tribes, have occupied Rempang Island for more than 200 years.

The root of the Rempang Island problem actually began long before the 2023 conflict erupted. In July 2023, the government signed a memorandum of understanding with Xinyi Group from China for the construction of a glass and solar panel factory on Rempang Island as part of the Rempang Eco City concept with a project value of USD 11.5 billion, which was included in the National Strategic Program and was estimated to displace 16 ancient villages within the project area. This designation



immediately triggered waves of rejection from communities who felt they had never been involved in the decision-making process regarding the future of the land they had inhabited for generations.

The peak of tensions occurred in September 2023, marking the most dramatic chapter in the Rempang Island conflict. A clash between residents of Kampung Melayu Pulau Rempang and joint security forces of the TNI, National Police, BP Batam, and Civil Service Police Unit (Satpol PP) occurred on September 7, 2023, during land surveying for the Rempang Eco City project bearing National Strategic Project status. In that clash, police fired tear gas that caused a number of school students to be taken to the hospital, with tear gas shell casings found on school rooftops by a Komnas HAM investigation team. Four days later, on September 11, 2023, thousands of Malay indigenous people of Kepri stormed the BP Batam office, rejecting eviction and demanding the cancellation of the ancient village demolition; this action ended in violence and resulted in 43 community members being designated as suspects. The conflict continued without adequate resolution into 2024 and 2025. Table 1 below presents a summary chronology of key events in the Rempang Island case from the beginning to the most recent developments. The following table systematically presents the sequence of critical events that shaped the trajectory of the Rempang Island conflict, from its earliest origins in 2004 through the most recent policy developments in 2025.

Table 1. Chronology of Key Events in the Rempang Island Case (2004–2025)

Period	Key Events	Parties Involved
2004	PT Makmur Elok Graha (MEG) receives management and development rights over Rempang Island for 30 years, extendable to 80 years	PT MEG, BP Batam, Batam City Government
July 2023	Signing of MOU between government and Xinyi Group for glass factory construction worth USD 11.5 billion; Rempang Eco City designated as PSN	Government of RI, Xinyi Group, Coordinating Ministry for Economic Affairs
07 Sept 2023	First clash between residents and joint security forces during land surveying; tear gas hit school area; dozens of students taken to hospital	TNI, National Police, BP Batam, Satpol PP, Rempang Residents
11 Sept 2023	Large demonstration at BP Batam office ends in riots; 43 residents designated as suspects	Rempang Residents, Kepri Regional Police, Barelang Resort Police
16 Sept 2023	Komnas HAM conducts field investigation and recommends temporary suspension of project	Komnas HAM
September 2024	PT MEG officers attack residents; three injured including elderly woman with broken hand	PT MEG, Rempang Residents
December 2024	Attack on resident posts by dozens of PT MEG officers; eight residents injured, one seriously	PT MEG, Rempang Residents, AMAR-GB Alliance
Januari 2025	Three Rempang residents designated as suspects on charges of depriving others of liberty	Police, Rempang Residents
Februari 2025	President Prabowo issues Perpres No. 12 of 2025 on RPJMN 2025–2029; Rempang Eco City not listed among 77 PSNs	President of RI, Commission VI DPR
April 2025	Commission VI DPR Public Hearing	Commission VI DPR, Rempang



	with Rempang residents; DPR confirms Rempang Eco City officially not in PSN list	Residents, AMAR-GB
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Sources: Compiled by researchers based on various sources, 2026

From the chronology above, it is clear that the Rempang Island case represents an accumulation of communication failures, disregard for indigenous peoples’ rights, and the absence of meaningful participation mechanisms in the policy planning process. The land status of the Old Malay indigenous community on Rempang Island should rightfully be their property, given that the land has been inhabited for hundreds of years, while the Rempang Eco City project is considered a threat to environmental sustainability and the traditional livelihoods of the Old Malay community living in the area. This prolonged conflict ultimately not only harms the affected communities, but also results in investment uncertainty that defeats the very purpose of development itself.

2. Policy Conflicts and Controversies

The conflict surrounding the Rempang Eco City project cannot be understood simply as a clash between development interests and resident rejection. At its core, this conflict is a manifestation of deeper structural tension between a development paradigm oriented toward economic growth on one side, and the constitutional rights of indigenous peoples that have long been ignored by the state on the other. The Rempang Eco City conflict emerged from the collision between large-scale investment-based development interests and the traditional land rights of 16 indigenous Malay villages that had inhabited the area for generations, where minimal communication and transparency from both central and local governments regarding relocation plans triggered mass actions and violent clashes in September 2023.

The first and most fundamental controversy in this policy concerns the ambiguity and overlapping legal status of land on Rempang Island. Based on Presidential Decree Number 41 of 1973, land management rights in Batam were entirely granted to the Batam Business Agency for distribution to third parties, and in 1992 the government handed over the Rempang and Galang area to BP Batam for industrial management and development. On the other hand, indigenous communities view the land as ancestral heritage whose existence predates all these regulations. From a legal perspective, the government cannot label every piece of land as state property as this is a colonial-era relic, since indigenous peoples’ rights supersede the state’s right to control it, and in the Rempang case there are 16 Ancient Villages whose origins can be proven but were ignored by the government. This dual claim creates a condition of legal uncertainty that ultimately becomes the root of all conflict escalation.

The second controversy concerns the formulation and implementation process of policy that was entirely non-participatory. The non-participatory relocation offer left considerable problems as it failed to account for residents’ psychological conditions, including fears of losing history and identity, severing from established social networks, uncertainty in starting life in a new place, and potential horizontal conflict with residents near the relocation site. Furthermore, Komnas HAM recommended that the government conduct sufficient and proper dialogue and socialization regarding development and relocation plans, respect the wishes of affected communities not to move locations, and not use violent means involving security forces in the relocation process.

These Komnas HAM recommendations reflect that the policy process undertaken was far from the minimum standards for fulfilling human rights in development. The third controversy concerns the dimension of violence based on capital interests that recurred throughout 2023 to 2024. Viewing the pattern of successive attacks on Rempang residents involving the police, military, BP Batam, and groups mobilized by PT MEG, orchestrated by central government officials, the situation points toward serious human rights violations in the form of crimes against humanity and the forced displacement or expulsion of populations as regulated under Article 9 paragraphs d and e of Law Number 26 of 2000. Komnas HAM itself noted that violence in Rempang continued throughout 2023–2024, and this recurring violence shows that the agrarian conflict in Rempang is a serious problem



requiring an immediate solution. The pattern of recurring violence without adequate punishment of perpetrators reflects systemic impunity in handling the Rempang conflict.

The fourth controversy concerns the ecological claims inherent in the project's name itself. The "green" and "eco" labels that have long been promoted by the government in the Rempang Eco City project cannot truly be justified if its implementation is carried out by violating the basic rights of indigenous peoples to maintain their right to live on land they have occupied for generations. WALHI Riau's study reveals that naming the project an "eco-city" seems to label it as environmentally friendly, whereas the consequences that would occur if the project continues to proceed would actually open the door to boycotts of products from that location in international markets. The irony between a name emphasizing ecological sustainability and field practices full of violence and forced eviction has become one of the greatest sources of controversy attracting national and international public attention.

Overall, the policy conflicts and controversies on Rempang Island reflect a fundamental failure in development governance that should be grounded in human rights principles. Development that never honors the human rights principle of human dignity is in essence not development but colonization, displacement, and exploitation. The Rempang Eco City development plan triggered agrarian conflict resulting in violations of the traditional rights of the indigenous customary law community of Rempang Island, particularly land rights, while customary law communities are in fact recognized and protected as mandated by Indonesia's constitution and international instruments.

3. Government Regulations Related to Construction Cancellation

To fully understand the legal dimension of the Rempang Island case, it is necessary to trace the regulatory framework that served as the basis for both the designation and the underlying shift in status of the Rempang Eco City project. This regulatory framework does not stand alone, but constitutes a layered and interrelated set of regulations, from the level of agreements and ministerial regulations to presidential regulations. Understanding these regulatory layers is key to assessing whether what occurred with the Rempang Eco City project can be categorized as a legal cancellation, or merely a policy shift that still leaves uncertainty for affected communities. The first regulation forming the project's initial foundation is Deed of Agreement Number 66 of 2004, a cooperation agreement between BP Batam and the Batam City Government with PT Makmur Elok Graha (MEG) granting management rights over Rempang Island. Rempang area development plans began in 2004 based on this deed, and PT MEG officially became the manager of the 8,000-hectare area on April 12, 2023, marked by the launch of the Rempang Area Development Program in Jakarta. This agreement is the legal foundation for PT MEG's presence on Rempang Island, and therefore constitutes one of the legal instruments that must be resolved first if the project is to be comprehensively halted.

The second regulation, constituting the most crucial milestone, is the Regulation of the Coordinating Minister for Economic Affairs Number 7 of 2023 on the Third Amendment to Permenko for Economic Affairs Number 7 of 2021 on Changes to the National Strategic Projects List, signed on August 28, 2023, which officially included Rempang Eco City in the PSN list. The PSN designation of Rempang Eco City through this Permenko was even made just 10 days before the central government's action to conduct land staking and evictions, and elapsed only 30 days after the government signed the cooperation agreement with Xinyi Group from China. The speed of this regulatory process without adequate environmental studies and without community participation became one of the biggest sources of controversy in the project. Komnas HAM researchers assessed that PSN regulations at the presidential and ministerial levels constitute extraordinary destructive legal anomalies, because presidential and ministerial regulations can override and even negate laws on spatial planning, forestry, and environmental protection.

The third regulation marking the turning point is Presidential Regulation Number 12 of 2025 on the National Medium-Term Development Plan 2025–2029. This Presidential Regulation, signed by President Prabowo Subianto on February 10, 2025, lists 77 PSNs to be implemented over the next five years, but Rempang Eco City is not among them, alongside two other Jokowi-era PSNs: PIK 2



Tropical Coastland in Banten and Bener Dam in Central Java. Rempang Eco City's absence from this Presidential Regulation sends a strong signal that the new administration no longer prioritizes the project as a national development priority, although there is no official statement explicitly using the word "cancellation." However, the legal situation arising after the issuance of Perpres Number 12 of 2025 actually created new regulatory ambiguity. A constitutional law expert from the University of Riau Islands affirmed that Perpres Number 12 of 2025 does not explicitly cancel Permenko Number 7 of 2023, so as long as that Permenko remains in effect, ministers can still follow up on the PSN Rempang Eco City. This ambiguity deepens further given that the PSN continuation is actually reinforced through Permenko for Economic Affairs Number 2 of 2025, the seventh amendment regarding changes to the National Strategic Projects List, enacted on March 7, 2025 with one of its considerations being Perpres Number 12 of 2025 itself, and adding a new article instructing PSN responsible parties to complete PSNs according to planned timelines.

This regulatory complexity has real consequences for the legal certainty of Rempang communities. An incomplete legal interpretation can trigger social conflict and undermine public trust in the state, because the Rempang case is not only about state regulations today, but all forms of prior agreements and their impacts must also be considered to prevent a situation where one regulation is changed but other non-aligned regulations and policies remain. The project halt must also be accompanied by concrete steps from the government to address the impacts that have occurred, whether legal, economic, social, or cultural, including how the government restores the rights of affected communities. Without clear and comprehensive legal certainty, the people of Rempang Island will continue to exist in exhausting uncertainty, even though PSN status has de facto ended.

4. Disaster Analysis from Nine Environmental Perspectives

Disaster mitigation analysis of the planned glass industry development on Rempang Island must be conducted comprehensively using a multi-environmental perspective approach. This is crucial given that Rempang Island is a small island with a complex and vulnerable ecosystem that, if affected by large-scale industrial development without adequate mitigation planning, risks producing ecological disasters that are permanent and irreversible. The following is a risk analysis based on nine environmental perspectives relevant to the context of glass industry development on Rempang Island.

Perspective 1 Air Quality The glass industry is one of the industrial sectors with extremely high emission intensity. The glass production process requires combustion of raw materials at extreme temperatures, producing large quantities of carbon dioxide (CO₂), sulfur dioxide (SO₂), nitrogen oxides (NO_x), and fine particulate matter (PM_{2.5}). In the glass production process, the only greenhouse gas produced during natural gas combustion and raw material decomposition is carbon dioxide, but at the industrial scale planned for Rempang Island, the volume of these emissions has the potential to be very large. Rempang Island, geographically a small island with limited air circulation, makes airborne pollutant accumulation a serious threat to the health of coastal communities living near the industrial zone. Without strict and verified emission control systems, the construction of this enormous-capacity glass factory risks significantly and permanently altering air quality on Rempang Island.

Perspective 2 Water Quality and Aquatic Pollution The glass industry's production process generates liquid waste containing various hazardous substances, including heavy metals, chemical compounds from coloring processes, and residual combustion materials. Fishermen around Rempang Island are concerned that glass industry construction will negatively impact the preservation of marine ecosystems, including potential pollution from the construction of an industrial port in the area. The waters surrounding Rempang Island, which serve as habitat for various economically valuable marine biota, are highly vulnerable to industrial waste pollution. Given the dynamic currents of the Strait of Malacca, inadequately managed liquid waste has the potential to spread to much wider waters, threatening cross-border marine ecosystems that serve as the livelihood of thousands of fishermen in the Riau Islands.

Perspective 3 Coastal and Marine Ecosystem Damage The coastal ecosystem of Rempang Island, encompassing mangrove forests, coral reefs, and seagrass beds, constitutes an ecologically



critical component that is also the most vulnerable to large-scale industrial development activities. Glass factory construction will threaten the marine ecosystem and fish habitats in the surrounding area, given that glass factory raw materials prioritize the nearest sands around Rempang, Galang, and Galang Baru, and will be accompanied by industrial port construction that directly alters the coastline and coastal ecosystem. Seawater intrusion and abrasion will also become serious threats to the island's safety and surrounding communities as a result of coastal ecosystem changes from industrial development. The loss of mangrove ecosystems and coral reefs not only impacts biodiversity, but also removes the natural protective function against waves and storms that is critically needed by small islands like Rempang.

Perspective 4 Sand Mining and Geological Degradation One of the most critical environmental threats from the glass industry project on Rempang Island is the need for quartz and silica sand raw materials in enormous quantities. The Executive Director of WALHI Riau asserted that the mining location for glass and solar panel factory raw material supply will most likely be extracted from coastal areas, seas, and small islands surrounding Rempang, meaning the factory construction will not only displace Malay communities on Rempang but will further threaten fishing activities at the locations to be mined. Large-scale quartz sand mining to meet the glass industry's raw material needs, when reserves are exhausted, will leave permanent damage a form of short-term economics that genuinely bankrupts Indonesia socially, economically, and ecologically. Large-scale seabed sand mining also has the potential to significantly alter bathymetry and ocean currents, which in turn will worsen coastal erosion and seabed instability throughout the island chain.

Perspective 5 Biodiversity Rempang Island and its surrounding waters serve as habitat for various flora and fauna species with high conservation value. The waters around Mubut Island, located within the first phase of the Rempang Eco City development plan, serve as habitat for green turtles and hawksbill turtles, two species protected under Indonesian law. The construction of an integrated industrial area covering 8,142 hectares will directly destroy the land and marine habitats that serve as home to various endemic and protected species. The loss of biodiversity is irreversible, meaning that species extinction resulting from habitat destruction cannot be restored even if the industrial project is ultimately halted.

Perspective 6 Community Health The impact of glass industry construction on the health of communities living near the industrial zone is a dimension that has received inadequate attention in the Rempang Eco City project planning. Long-term exposure to silica dust from mining and glass production processes potentially causes serious lung diseases such as silicosis, a progressive and incurable occupational disease. Furthermore, air pollution from industrial emissions will increase the risk of respiratory, cardiovascular, and cancer diseases for communities living near the industrial zone. The concept of real-time technology sensor-based environmental quality monitoring has even been proposed by researchers to detect air, water, and soil pollution in order to identify the impact of the glass industry in real-time, demonstrating that the potential health impacts of this industry are acknowledged as serious enough to require a dedicated monitoring system.

Perspective 7 Social and Cultural The disasters caused by the Rempang Eco City project are not only ecological but also social and cultural in nature. Glass factory construction will not only displace the Malay community of Rempang from their ancestral land, but will also push toward the extinction of the Old Malay Indigenous People, separating them from ancestral land through forced eviction and destroying cultural identity built over centuries. The Malay community of Rempang possesses a system of local knowledge, maritime traditions, and ecological wisdom that has been tested over hundreds of years in managing and preserving the island's ecosystem. The uprooting of communities from their ancestral land through forced relocation means the permanent loss of this invaluable local knowledge system. The non-participatory relocation offer leaves considerable problems as it fails to account for residents' psychological conditions, including fears of losing history and identity, severing from established social networks, and uncertainty in starting life in a new place.



Perspective 8 Climate Change and Small Island Vulnerability Rempang Island as a small island is one of the territories most vulnerable to the impacts of global climate change, including sea level rise, increased frequency and intensity of storms, and changing rainfall patterns. KIARA notes that the area of Rempang Island is approximately 165.8 km² and constitutes a small island under applicable laws, which legally should receive special treatment and protection in every spatial utilization plan. The construction of a massive industrial zone on this already climate-vulnerable small island will actually worsen that vulnerability, because coastal ecosystem destruction will reduce the island's natural adaptive capacity to climate change impacts. Carbon emissions from glass industry operations at the planned scale will also contribute significantly to accelerating climate change, which in turn directly impacts the island's own resilience a serious ecological paradox.

Perspective 9 Environmental Governance and AMDAL Compliance The ninth and equally important perspective is the environmental governance dimension, particularly regarding compliance with Environmental Impact Assessment (AMDAL) procedures, which constitute the primary legal instrument for environmental impact control in Indonesia. WALHI Riau's study reveals that the socialization process carried out in the Rempang Eco City project planning was not transparent, including the AMDAL issue referred to as a "farce" because it was not conducted according to proper standards before evictions began. Since the enactment of the Job Creation Law, the PSN mechanism was explicitly designed to accelerate development and facilitate investment, but this regulatory design simultaneously eliminated meaningful public participation space in the environmental planning process. The weak environmental governance in the Rempang Eco City project reflects a broader systemic problem, where environmental protection instruments that should serve as guardians of ecosystem sustainability are treated as administrative formalities that can be circumvented for the sake of accelerating investment.

5. Policy Evaluation

Based on all the discussions presented in the five previous sub-sections, the Rempang Island case can be understood as a systemic and multidimensional policy failure. This failure cannot be explained from a single perspective, but rather results from an accumulation of mutually reinforcing weaknesses: the state's weak recognition of indigenous peoples' rights, the absence of comprehensive environmental risk mitigation studies before investment designation, the dominance of capital interests over ecological and humanitarian interests, and regulatory inconsistency producing prolonged legal ambiguity. This case proves that a development model premised on the speed of investment designation, without meaningful participation processes and in-depth environmental studies, will ultimately only generate conflicts that harm all parties, including investors themselves who lose the certainty to realize their projects.

From a public policy perspective, the Rempang case demonstrates that the designation of PSN status through ministerial regulations that can be rapidly issued without adequate checks and balances represents a highly dangerous institutional gap. When investment acceleration instruments such as PSN are granted authority that supersedes sectoral laws on environmental protection, spatial planning, and indigenous peoples' protection, what occurs is not sustainable development acceleration but conflict acceleration that claims victims among the most vulnerable communities. Meanwhile, from an environmental risk mitigation perspective, analysis across nine ecological dimensions consistently shows that Rempang Island as a small island ecosystem does not possess adequate carrying capacity to support large-scale glass industry development without experiencing permanent and irreversible ecological degradation. Not a single one of the nine environmental perspectives produces a low-risk assessment, meaning the project is ecologically unviable at its designated location without fundamentally transformative mitigation engineering.

Finally, the Rempang Island case leaves invaluable policy lessons for Indonesia in managing the relationship between investment ambition, environmental protection, and respect for indigenous peoples' rights. The revocation of PSN status through Perpres Number 12 of 2025, unaccompanied by an official statement or a clear rights restoration mechanism, reflects that the state has yet to



responsibly resolve the conflict legacy left by previous policies. A far more holistic policy approach is required going forward — one that places ecosystem preservation and justice for indigenous peoples not as obstacles to development, but as primary prerequisites for development that is truly sustainable, just, and dignified for all Indonesian citizens.

4. CONCLUSION

This research demonstrates that the Rempang Island case represents a systemic and multidimensional policy failure rooted in four interrelated dimensions: the overlapping and ambiguous legal status of land, an entirely non-participatory policy planning process, a recurring pattern of violence based on capital interests without adequate punishment, and the deep irony between the ecological sustainability claims embedded in the “eco-city” label and the destructive realities on the ground. The indigenous Malay community, Orang Laut, and Orang Darat who have inhabited 16 ancient villages since 1834 were forced to face eviction threats without meaningful consultation a clear violation of both Indonesia’s constitution and international human rights instruments. Compounding this, disaster risk analysis from nine environmental perspectives consistently confirms that Rempang Island as a small island ecosystem lacks adequate carrying capacity for large-scale glass industrial development, with every dimension from air and water quality, coastal ecosystems, biodiversity, community health, to climate change vulnerability producing unacceptably high-risk assessments.

Although Presidential Regulation Number 12 of 2025 de facto removed Rempang Eco City from Indonesia’s National Strategic Projects list, the absence of an explicit revocation of Permenko Number 7 of 2023 leaves communities in prolonged legal uncertainty, demonstrating that the state has yet to responsibly resolve the conflict legacy of previous policies. The Rempang Island case ultimately affirms that Indonesia urgently requires fundamental reform in its investment-based development paradigm, encompassing three key pillars: strengthening indigenous community participation mechanisms at every stage of policy planning, elevating AMDAL as a non-circumventable legal prerequisite prior to any investment designation, and applying the ecological precautionary principle to all development on small island territories. Rempang must serve as a turning point toward a development model that genuinely places social justice and environmental preservation as its foundation, not as obstacles to be circumvented in the pursuit of investment acceleration.

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