



POLICY EVALUATION OF THE REMPANG–GALANG GLASS FACTORY DEVELOPMENT FROM SOCIAL AND ENVIRONMENTAL JUSTICE PERSPECTIVES

EVALUASI KEBIJAKAN PENGEMBANGAN PABRIK KACA REMPANG–GALANG DARI PERSPEKTIF KEADILAN SOSIAL DAN LINGKUNGAN

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DOI: <https://doi.org/10.62567/micjo.v3i3.2666>

Abstract

The development of a glass manufacturing plant within the Rempang Eco City project on Rempang Island, Riau Islands Province, represents the Indonesian government's strategy to promote investment and accelerate economic growth through the National Strategic Project (PSN) framework. Despite its potential to increase investment, create employment opportunities, and strengthen industrial competitiveness, the project has generated social conflict and environmental concerns. This study aims to analyze the policy rationale underlying the Rempang–Galang glass factory development, examine its implications for social and environmental justice, and evaluate the policy using William N. Dunn's policy evaluation model. This research employs a qualitative case study approach. Data were collected through a systematic literature review of policy documents, reports from government institutions and civil society organizations, and relevant academic publications. The data were analyzed using content analysis based on the theoretical frameworks of social justice, environmental justice, and public policy evaluation. The findings reveal that the Rempang–Galang development policy is primarily driven by economic growth and investment-oriented objectives. Its implementation has led to an unequal distribution of development benefits and burdens, reflected in the risks of community relocation, loss of living space, pressure on coastal ecosystems, and the emergence of agrarian conflicts. Evaluation based on Dunn's criteria indicates persistent challenges related to equity, responsiveness, adequacy, and appropriateness. The study concludes that a more participatory, equitable, and sustainable development approach is required through stronger protection of local community rights, inclusive environmental governance, and a fairer distribution of development benefits.

Keywords : Rempang, Social Justice, Environmental Justice, Policy Evaluation, Agrarian Conflict.

Abstrak

Pembangunan pabrik pembuatan kaca dalam proyek Kota Ramah Lingkungan Rempang di Pulau Rempang, Provinsi Kepulauan Riau, merupakan strategi pemerintah Indonesia untuk mendorong investasi dan mempercepat pertumbuhan ekonomi melalui kerangka Proyek Strategis Nasional (PSN). Meskipun berpotensi meningkatkan investasi, menciptakan lapangan kerja, dan memperkuat daya



saing industri, proyek ini telah menimbulkan konflik sosial dan kekhawatiran lingkungan. Studi ini bertujuan untuk menganalisis rasionalitas kebijakan yang mendasari pembangunan pabrik kaca Rempang-Galang, meneliti implikasinya terhadap keadilan sosial dan lingkungan, dan mengevaluasi kebijakan tersebut menggunakan model evaluasi kebijakan William N. Dunn. Penelitian ini menggunakan pendekatan studi kasus kualitatif. Data dikumpulkan melalui tinjauan pustaka sistematis terhadap dokumen kebijakan, laporan dari lembaga pemerintah dan organisasi masyarakat sipil, serta publikasi akademis yang relevan. Data dianalisis menggunakan analisis konten berdasarkan kerangka teoritis keadilan sosial, keadilan lingkungan, dan evaluasi kebijakan publik. Temuan menunjukkan bahwa kebijakan pembangunan Rempang-Galang terutama didorong oleh tujuan pertumbuhan ekonomi dan berorientasi investasi. Implementasinya telah menyebabkan distribusi manfaat dan beban pembangunan yang tidak merata, yang tercermin dalam risiko relokasi masyarakat, hilangnya ruang hidup, tekanan pada ekosistem pesisir, dan munculnya konflik agraria. Evaluasi berdasarkan kriteria Dunn menunjukkan tantangan yang terus-menerus terkait dengan kesetaraan, daya tanggap, kecukupan, dan kesesuaian. Studi ini menyimpulkan bahwa pendekatan pembangunan yang lebih partisipatif, adil, dan berkelanjutan diperlukan melalui perlindungan yang lebih kuat terhadap hak-hak masyarakat lokal, tata kelola lingkungan yang inklusif, dan distribusi manfaat pembangunan yang lebih adil.

Kata Kunci : Rempang, Keadilan Sosial, Keadilan Lingkungan, Evaluasi Kebijakan, Konflik Agraria.

1. INTRODUCTION

Industrialization has been one of the most widely adopted development strategies among developing countries to accelerate economic growth, enhance national competitiveness, and attract foreign direct investment. Over recent decades, the expansion of industrial zones has no longer been confined to traditional manufacturing centers and urban areas but has increasingly extended into coastal regions and small islands that previously functioned as living spaces for local communities while also possessing high ecological sensitivity. This phenomenon has occurred across many developing countries, including Indonesia, the Philippines, India, and Vietnam, where coastal areas have been utilized as export-oriented industrial bases due to their proximity to international trade routes and the availability of natural resources that support industrial production.

On the one hand, industrialization is regarded as a crucial instrument for promoting regional economic transformation. Industrial development is believed to increase investment, expand employment opportunities, strengthen infrastructure, and stimulate regional economic growth. On the other hand, numerous studies indicate that industrialization in coastal and small-island areas frequently generates complex socio-ecological challenges, including land-use transformation, agrarian conflicts, marginalization of local communities, environmental degradation, and the loss of community access to resources that have traditionally sustained their livelihoods (Bavinck et al., 2018; Bennett et al., 2019). These conditions suggest that development success cannot be measured solely by the volume of investment attracted or the level of economic growth achieved, but also by its capacity to maintain a balance among economic interests, social justice, and environmental sustainability.

Attention to this balance has intensified since the emergence of the concept of sustainable development, which positions economic, social, and environmental dimensions as the three fundamental pillars of development. Global commitment to sustainable development was further reinforced through the 2030 Agenda and the Sustainable Development Goals (SDGs), which emphasize inclusive development, inequality reduction, environmental protection, and the strengthening of participatory and accountable institutions (United Nations, 2015). From this perspective, development is not merely aimed at generating economic growth but also at ensuring that its benefits are distributed equitably across society without compromising the sustainability of natural resources for future generations.



The need for sustainable development becomes even more critical when development activities are undertaken in coastal and small-island regions. Unlike mainland areas, small islands possess limited land space, relatively fragile ecological capacities, and communities that are highly dependent on local natural resources. Ostrom (1990) explains that resources such as coastal zones, fisheries, mangrove forests, and marine spaces constitute common-pool resources whose sustainability depends heavily on governance systems capable of balancing economic utilization with resource protection. When development interventions alter patterns of access to and control over these resources, the potential for social conflict and environmental degradation increases significantly. Consequently, development in coastal regions concerns not only investment and economic growth but also the sustainability of collective resource governance that forms the foundation of local livelihoods.

In the Indonesian context, the investment-driven development paradigm has gained increasing legitimacy through the National Strategic Projects (Proyek Strategis Nasional/PSN) policy framework. The government views PSNs as a primary instrument for accelerating infrastructure development, enhancing national economic competitiveness, and attracting large-scale investments. Since their introduction through Presidential Regulation No. 3 of 2016 and subsequent implementing regulations, PSNs have become a central pillar of the national development agenda. These projects receive various forms of support, including accelerated licensing procedures, fiscal incentives, land acquisition facilitation, and administrative simplification to ensure the rapid realization of investments.

This approach reflects the characteristics of a developmental state, a development model that positions the state as the primary actor in driving economic transformation through industrialization and investment. However, numerous studies have demonstrated that investment-oriented development acceleration often intersects with the logic of neoliberal development, which prioritizes economic growth and capital accumulation as the principal indicators of development success (Harvey, 2005). Consequently, social and environmental dimensions may be marginalized when perceived as obstacles to investment acceleration. It is therefore unsurprising that several National Strategic Projects have generated agrarian conflicts, community resistance, and environmental concerns, highlighting tensions between economic development objectives and the protection of local community rights.

One of the most prominent examples of this dynamic is the development of Rempang Eco City on Rempang Island, Batam City, Riau Islands Province. The project is designed as an integrated industrial zone that will host investment from Xinyi Glass Holdings Ltd of China, with an estimated investment value of approximately USD 11.5 billion. The area is planned to become a center for glass manufacturing, renewable energy development, commercial activities, and various supporting facilities expected to strengthen Indonesia's position within global industrial supply chains. From the government's perspective, the project represents a strategic opportunity to stimulate regional economic growth while enhancing national competitiveness.

Nevertheless, the Rempang Eco City project has encountered strong resistance from local communities. Rempang Island is not an empty space that can be treated merely as an investment object. The island has been inhabited for centuries by Malay communities and consists of several traditional villages that maintain deep historical, social, economic, and cultural ties to their living environment. Plans to relocate residents from the project area have triggered prolonged conflicts involving local communities, government agencies, security forces, civil society organizations, and state institutions concerned with human rights protection and environmental governance.

Various reports indicate that the Rempang conflict extends beyond issues of land acquisition. It also concerns the distribution of development benefits, the allocation of ecological risks, the recognition of local identities, and the extent of community participation in decision-making processes. The Consortium for Agrarian Reform (2024) notes that agrarian conflicts related to National Strategic Projects have increased significantly in recent years. Reports from the Indonesian Ombudsman, the National Human Rights Commission (Komnas HAM), Trend Asia, and WALHI further reveal serious concerns regarding public participation, community rights protection, and the potential ecological impacts of development activities in Rempang. These findings suggest that the



conflict should not be understood merely as a land dispute but rather as a reflection of deeper issues related to justice in development processes.

From a social justice perspective, Rawls (1999) argues that public policies must guarantee the protection of fundamental rights and ensure that the benefits of development are accessible to the most vulnerable groups. Fraser (2008) further conceptualizes justice through three interconnected dimensions: redistribution, recognition, and representation. These dimensions are highly relevant to the Rempang case because local communities face not only the potential loss of livelihoods but also challenges related to identity recognition and limited opportunities to influence decisions that shape the future of their territory. The issue of representation becomes particularly important when linked to Arnstein's (1969) ladder of citizen participation, which emphasizes that meaningful participation should extend beyond formal consultation and provide communities with substantive influence over decision-making processes.

At the same time, the Rempang case highlights the significance of environmental justice perspectives. Bullard (2000) argues that environmental injustice occurs when certain groups disproportionately bear environmental burdens relative to the benefits they receive. Schlosberg (2007) expanded this concept by emphasizing the interconnected dimensions of distribution, recognition, and participation. In the context of Rempang's development, ecological risks associated with land-use changes, pressures on mangrove ecosystems, declining coastal environmental quality, and potential disruptions to local livelihoods demonstrate that environmental concerns cannot be separated from issues of social justice.

Furthermore, the conflict in Rempang can be understood through Harvey's (2005) concept of *accumulation by dispossession*, which refers to capital accumulation processes that occur through the appropriation of space, resources, and community access to assets that previously constituted the basis of their livelihoods. From this perspective, development is not merely an economic process but also a political process involving struggles over space, resources, and the legitimacy of development trajectories.

Although numerous studies have examined the Rempang case from legal, investment, agrarian conflict, and development governance perspectives, most have focused on these dimensions separately. Research that integrates social justice, environmental justice, and public policy evaluation within a single analytical framework remains relatively limited. Yet the complexity of the Rempang case indicates the necessity of a multidimensional approach capable of capturing the simultaneous social and ecological consequences of development policies.

Against this background, the present study offers a novel contribution by integrating Rawls' and Fraser's perspectives on social justice, Bullard's and Schlosberg's environmental justice frameworks, and William N. Dunn's public policy evaluation model. The integration of these three approaches enables a more comprehensive analysis of the rationale underlying the Rempang–Galang glass factory development policy, the distribution of benefits and risks arising from the project, and the extent to which the policy achieves the objectives of equitable and sustainable development.

Based on the foregoing discussion, this study seeks to address the following research questions:

1. What rationale underlies the Rempang–Galang glass factory development policy within the framework of investment-driven development and industrialization?
2. What are the implications of the Rempang–Galang glass factory development policy for the social justice of local communities?
3. How does the Rempang–Galang glass factory development policy affect environmental justice and the distribution of ecological risks in the coastal area of Rempang?
4. How can the agrarian conflict in Rempang be explained through the perspective of *accumulation by dispossession*?
5. To what extent can the Rempang–Galang glass factory development policy be evaluated based on William N. Dunn's public policy evaluation criteria?



6. What type of policy model can be developed to promote a more equitable and sustainable development approach in the Rempang–Galang area?

2. RESEARCH METHOD

This study employs a qualitative approach with a case study design to analyze the glass factory development policy in the Rempang–Galang area from the perspectives of social and environmental justice. The case study approach was selected because it enables researchers to gain an in-depth understanding of complex policy phenomena within interconnected social, economic, political, and ecological contexts (Yin, 2018).

Research data were collected through a systematic literature review of various relevant sources, including government policy documents, legislation and regulations, reports from state institutions, reports from civil society organizations, scholarly journal articles, academic books, and other publications addressing industrial development, agrarian conflicts, social justice, and environmental justice. In addition, the study utilized documents directly related to the Rempang case, such as reports from the Indonesian Ombudsman, the National Commission on Human Rights (Komnas HAM), the Consortium for Agrarian Reform (KPA), WALHI, Trend Asia, and BP Batam.

Data were analyzed using content analysis techniques to identify, categorize, and interpret information contained within the research documents. The analysis was organized around several key themes, including policy rationality, social justice, environmental justice, agrarian conflict, and public policy evaluation. To enhance the validity of the findings, document triangulation was applied by comparing information from multiple sources to obtain a more comprehensive understanding and reduce potential bias.

The analytical framework integrates John Rawls' theory of justice (1999), Nancy Fraser's social justice perspective (2008), Schlosberg's concept of environmental justice (2007), and William N. Dunn's public policy evaluation model (2018). The integration of these four approaches is employed to evaluate the rationality of development policies, the distribution of benefits and risks arising from such policies, and the extent to which they succeed in promoting equitable and sustainable development.

3. RESULT AND DISCUSSION

Policy Rationality of the Rempang–Galang Glass Factory Development

The development of the glass factory in the Rempang–Galang area cannot be separated from a development paradigm that positions investment as the primary instrument of economic growth and structural transformation. Within the national policy framework, this project forms part of Rempang Eco City, which was previously designated as a National Strategic Project (Proyek Strategis Nasional/PSN) and envisioned as a new industrial hub in Indonesia's border region facing Singapore. The designation reflects the state's view of industrialization as a mechanism for accelerating economic growth through increased investment, job creation, infrastructure development, and enhanced national competitiveness amid global economic competition.

From the perspective of the developmental state, the government acts as the primary actor in directing economic development through industrialization policies, investment management, and strategic infrastructure development. Johnson (1982) and Evans (1995) argue that the success of industrialization in several East Asian countries was largely determined by the state's capacity to coordinate relationships between the public and private sectors in pursuit of national development goals. In the Rempang context, the state's role is evident in land provision, the granting of licensing incentives, and regulatory support designed to create a favorable investment climate for large-scale capital inflows. From this standpoint, the glass factory development is positioned as an instrument for strengthening the national industrial base, reducing dependence on imported industrial raw materials, and supporting the expansion of renewable energy industries that rely on glass products as key components.



However, the rationale underlying this development policy also reflects strong characteristics of the neoliberal development paradigm, which regards investment as the principal indicator of development success. Within this framework, policy achievements are commonly measured by the volume of investment attracted, the rate of economic growth generated, and a region's ability to attract global capital. Harvey (2005) explains that neoliberalism encourages states to create conditions that facilitate intensified capital accumulation through economic liberalization, deregulation, and the opening of new spaces for investment. Consequently, social and ecological considerations are often treated as secondary variables that must adapt to the requirements of economic development.

Harvey (2007) further argues that neoliberalism frequently produces processes of creative destruction, whereby social, economic, and political spaces are transformed to accommodate the needs of capital accumulation. In the context of Rempang, such transformation is reflected in the conversion of residential areas and coastal territories that have been inhabited for generations into industrial zones designed to serve global investment interests. This transformation demonstrates that development not only generates economic growth but also reshapes the relationship between communities and the living spaces that constitute the foundation of their identity, culture, and livelihoods.

Rempang's status as part of a National Strategic Project further reinforces this investment-oriented development approach. As an instrument for accelerating development, PSNs provide various administrative and regulatory incentives aimed at expediting investment realization. Nevertheless, such acceleration may create challenges when decision-making processes are not accompanied by adequate mechanisms for public participation. The Indonesian Ombudsman (2024) identified a number of issues in the development of Rempang Eco City, particularly regarding policy communication, public services, and the involvement of affected communities. Similarly, the National Commission on Human Rights (Komnas HAM, 2023) emphasized the importance of protecting the rights of communities affected by relocation and ensuring that development is implemented in accordance with human rights principles.

These dynamics indicate that the development of Rempang should not be understood solely as an economic project but also as a political process involving multiple actors and competing interests. While the state seeks to promote economic growth through investment, local communities strive to preserve the living spaces and social identities that have been attached to the area for generations. Therefore, the policy rationale underlying the Rempang–Galang glass factory development demonstrates the dominance of an economic growth logic centered on investment and industrialization. Although the policy can be understood as part of a broader national development strategy, it has not fully integrated social justice, community participation, and environmental sustainability as fundamental components of the development process.

Social Justice in the Rempang Policy

From a social justice perspective, the Rempang case raises a fundamental question regarding how the benefits and burdens of development are distributed among affected communities. Rawls (1999) argues that social institutions and public policies should be designed in such a way that they provide the greatest benefit to the most vulnerable groups in society. This principle, known as the difference principle, places the protection of disadvantaged groups as a key indicator of justice. In the context of development, a policy cannot be assessed solely based on its ability to generate economic growth, but also on its capacity to ensure that those most affected receive adequate protection and proportional benefits.

In the Rempang case, communities that have lived for generations in traditional villages are among those facing the greatest risks from the development project. They potentially face the loss of living space, sources of livelihood, social networks, and cultural identities that have long been attached to their place of residence. If the primary economic benefits of the project are enjoyed mainly by investors and the state, while the social costs are borne by local communities, such a distribution of benefits and burdens can hardly be considered just from a Rawlsian perspective. This situation reveals



a disparity between the objectives of economic development and the protection of the communities most vulnerable to its impacts.

The analysis of social justice in the Rempang case can be further deepened through Fraser's (2008) framework, which conceptualizes justice through three primary dimensions: redistribution, recognition, and representation. The dimension of redistribution concerns the allocation of resources and economic benefits. In the context of Rempang, important questions arise regarding the extent to which local communities will receive tangible benefits from the planned investment, whether through employment opportunities, improved welfare, or access to the economic growth generated by the project. If economic gains are concentrated primarily among investors and external actors, the development process risks creating new forms of inequality in resource distribution.

The second dimension is recognition, which refers to respect for the identity, values, and existence of particular social groups. The traditional villages of Rempang are not merely residential areas but historical spaces that represent the cultural identity of the coastal Malay community. Consequently, relocation does not simply imply the physical movement of residents; it also carries the potential to sever the historical relationship between communities and the living spaces inherited across generations. From Fraser's (2008) perspective, the failure to recognize the identity and cultural values of specific groups constitutes a form of injustice as significant as economic inequality.

The third dimension is representation, namely the involvement of communities in decision-making processes that affect their lives. Various criticisms of the Rempang project indicate that local residents feel they have not been provided with adequate opportunities to participate in development planning. According to Fraser (2008), this condition reflects a form of misrepresentation, in which affected groups do not possess equal opportunities to influence decisions that determine their future.

The issue of representation can also be explained through Arnstein's (1969) ladder of citizen participation. Arnstein argues that meaningful public participation cannot be achieved merely through information dissemination or formal consultation; rather, it requires granting communities substantive influence over decision-making processes. In the case of Rempang, the various forms of resistance and opposition that have emerged suggest a gap between the principles of participatory development and the policy practices implemented on the ground. Communities tend to be positioned as objects of development who receive decisions rather than as subjects who actively shape the direction of development.

Therefore, the central issue in the Rempang case lies not only in the physical relocation of communities but also in how the state manages the relationship between economic development and the social rights of local residents. Social justice requires more than the provision of material compensation; it also demands recognition of cultural identities, protection of fundamental community rights, and guarantees of meaningful participation throughout the entire development process. Consequently, evaluations of the Rempang policy must consider not only the magnitude of economic benefits generated but also the extent to which the development process realizes principles of social justice for those directly affected.

Environmental Justice and the Distribution of Ecological Risks

In addition to issues of social justice, the development of the glass factory in Rempang–Galang has also generated significant debate regarding environmental justice. Bullard (2000) argues that environmental justice is concerned not only with the protection of natural resources but also with how development benefits and environmental risks are distributed among different social groups. In many industrial development projects, communities with weaker political and economic positions tend to bear a disproportionate share of environmental impacts. Schlosberg (2007) further develops the concept of environmental justice through three interconnected dimensions: distribution, recognition, and participation. These dimensions are highly relevant in explaining the dynamics of the Rempang–Galang development project, which reflects tensions between investment interests and the protection of coastal communities' living spaces.



Schlosberg (2013) later expanded the discourse on environmental justice by emphasizing that justice is not only about the distribution of environmental impacts but also about a community's capacity to maintain its socio-ecological sustainability. In the context of Rempang, local communities face not only the possibility of environmental degradation but also threats to the social, cultural, and economic systems that depend upon the sustainability of coastal ecosystems. Therefore, any evaluation of the glass factory development must consider multiple interrelated environmental dimensions.

From the perspective of ecosystems and biodiversity, industrial development has the potential to significantly alter the ecological structure of Rempang Island. The coastal area of Rempang forms part of an ecological system consisting of mangrove forests, seagrass beds, coral reefs, and habitats supporting numerous marine species that sustain coastal livelihoods. Trend Asia (2024) and WALHI (2024) have highlighted that industrial expansion may intensify pressures on coastal ecosystems that function as natural coastal protection systems, carbon sinks, and critical habitats for marine biodiversity. From Bullard's (2000) perspective, this demonstrates that ecological risks are manifested not only through environmental degradation but also through reduced community access to resources essential for their livelihoods.

The second perspective concerns air quality. Glass manufacturing is an industry that requires high-temperature combustion processes and the use of various mineral materials, including silica. Such activities may generate particulate emissions, silica dust, sulfur dioxide, and nitrogen oxides, all of which can affect air quality in surrounding areas. This risk is particularly significant because communities living near industrial zones are the first groups exposed to the health impacts of air pollution. From an environmental justice perspective, this situation illustrates an unequal distribution of risk, as those experiencing direct health consequences are not necessarily the groups receiving the greatest economic benefits from the project.

The third perspective relates to water quality. As an island region highly dependent on marine and coastal resources, the sustainability of life in Rempang cannot be separated from the quality of the waters utilized by local communities on a daily basis. Industrial waste, changes in water quality, and increasing pressure on coastal ecosystems may affect the productivity of fisheries, which constitute a primary source of livelihood for many residents. Consequently, ecological risks emerge not only in the form of physical environmental degradation but also as threats to local economic security and community resilience.

The fourth perspective concerns land and territory. Large-scale spatial conversion for industrial purposes has the potential to alter ecological functions while simultaneously transforming the relationship between communities and their living spaces. From Schlosberg's (2007) perspective, this issue is closely linked to the dimension of recognition, because land and territory viewed as development assets by the state and investors are, in reality, living spaces imbued with social, historical, and cultural significance for the traditional villages of Rempang. When these meanings are ignored, environmental injustice occurs not only through the unequal distribution of impacts but also through the failure to recognize the ecological rights of local communities.

The fifth perspective concerns climate change. The IPCC (2021) reports that coastal regions and small islands are among the areas most vulnerable to sea-level rise, changing weather patterns, and the increasing frequency of extreme weather events associated with global climate change. Within this context, energy-intensive industrial development may further increase pressure on the environmental carrying capacity of the region. This situation creates a development paradox in which projects intended to stimulate economic growth may simultaneously increase the ecological vulnerability of communities already exposed to climate-related risks.

The sixth perspective concerns public health. The accumulation of environmental risks, including air pollution, declining water quality, and coastal environmental degradation, ultimately translates into public health concerns. Exposure to silica dust and other pollutants may increase the incidence of long-term health problems. In environmental economics, this phenomenon is often referred to as externalized environmental costs, a situation in which environmental costs are not borne



by industrial actors but instead are transferred to surrounding communities and ecosystems. In other words, economic benefits remain private while social and environmental costs become public burdens.

The seventh perspective relates to socio-cultural values and local wisdom. For the Malay communities of Rempang, the coastal environment is not merely a physical space but also an integral component of cultural identity, local knowledge systems, and social practices passed down through generations. Environmental changes resulting from industrialization may disrupt the continuity of local values that have historically guided coastal resource management. According to Ostrom (1990), coastal resources constitute common-pool resources whose sustainability depends heavily on community participation in their management. When community access to living spaces is reduced, the socio-ecological systems that have long sustained these resources may also weaken.

The eighth perspective concerns environmental economics. Numerous studies demonstrate that mangrove ecosystems, coastal zones, and marine resources possess significant economic value, even though such value is often not reflected in market mechanisms. A central issue in the Rempang development project is the tendency of policy decisions to prioritize investment value over the economic value of existing ecosystems. This condition is consistent with Martinez-Alier's (2002) concept of ecological distribution conflicts, which arise from unequal distributions of economic benefits and environmental burdens. In the Rempang case, the economic benefits of development tend to be concentrated among investors and the state, whereas ecological risks are borne primarily by local communities.

The ninth perspective concerns environmental governance and legal frameworks. Various criticisms of the Rempang project indicate that public consultation processes, information transparency, and community participation remain inadequately addressed. The Indonesian Ombudsman (2024), Komnas HAM (2023), and numerous civil society organizations have emphasized the importance of meaningful community involvement at every stage of development. From Schlosberg's (2007) perspective, the failure to provide communities with equal opportunities for participation constitutes one of the most fundamental forms of environmental injustice, because those who bear ecological risks have limited influence over decisions regarding the direction of development.

Table 1. Synthesis of Environmental Justice Analysis and the Distribution of Ecological Risks in the Rempang–Galang Glass Factory Development

Environmental Perspective	Key Findings in the Rempang Case	Environmental Justice Implications
Ecosystems and Biodiversity	Potential conversion of coastal areas, mangrove forests, and marine habitats due to industrial expansion	The risk of losing ecological functions is disproportionately borne by communities that depend on coastal resources
Air Quality	Potential emissions of particulate matter, silica dust, and combustion-related gases	Nearby communities become the groups most vulnerable to adverse health impacts
Water Quality	Potential industrial waste discharge and increasing pressure on coastal waters	Reduction in the quality of fisheries resources that serve as the economic foundation of local communities
Land and Territory	Land-use transformation from living spaces into industrial zones	Reduced community access to living spaces and livelihood resources
Climate Change	Increased energy consumption and carbon footprint associated with industrial development	Greater vulnerability of small islands to the impacts of climate change
Public Health	Risks of air pollution and declining environmental quality	Health-related costs are likely to be borne primarily by local communities



Environmental Perspective	Key Findings in the Rempang Case	Environmental Justice Implications
Socio-Cultural Values and Local Wisdom	Relocation threatens the sustainability of traditional villages and cultural identity	Loss of recognition of the historical relationship between communities and their living spaces
Environmental Economics	Investment value is prioritized over the valuation of coastal ecosystem services	Policy bias toward short-term economic gains
Environmental Governance and Law	Criticism regarding public participation and policy transparency	Community involvement in decision-making processes remains limited

Source: Compiled by the author based on Bullard (2000), Schlosberg (2007; 2013), Martinez-Alier (2002), Trend Asia (2024), WALHI (2024), and various policy documents related to Rempang.

Overall, the analysis of these nine environmental perspectives demonstrates that the ecological risks associated with the Rempang–Galang glass factory development are not merely physical in nature but also encompass social, economic, cultural, and political dimensions. These risks are largely concentrated among local communities whose livelihoods depend heavily on coastal resources. Therefore, the central issue in the Rempang case is not simply industrial development itself, but rather the unequal distribution of economic benefits and ecological burdens among the state, investors, and affected communities.

Agrarian Conflict as a Manifestation of Accumulation by Dispossession

The agrarian conflict occurring in Rempang cannot be understood merely as a dispute over land ownership or land control. Rather, it reflects a broader clash between investment-driven development interests and the rights of local communities to the living spaces they have occupied and managed for generations. In this context, the Rempang conflict illustrates how economic development often produces not only physical transformations of territory but also significant changes in social structures, patterns of resource control, and the relationships between communities and their living environments.

To understand these dynamics, Harvey's (2005) concept of accumulation by dispossession provides a highly relevant analytical framework. Harvey argues that capital accumulation in the neoliberal era occurs not only through market mechanisms but also through processes involving the appropriation of space, resources, and assets that were previously under community control. Through various policy instruments, regulatory frameworks, and state interventions, spaces that once served as the foundation of community livelihoods can be transformed into economic commodities that support investment interests and capital accumulation.

In the Rempang case, the development of industrial zones and the glass manufacturing complex transforms areas that have long functioned as residential settlements, fishing grounds, cultural landscapes, and sources of community livelihood into components of an industrial zone oriented toward global investment. Communities that previously enjoyed direct access to coastal resources now face the possibility of losing control over their living spaces as a consequence of relocation processes and land-use transformation. This condition demonstrates how development may generate processes of dispossession, whereby communities experience reduced access to the resources that have traditionally sustained their economic, social, and cultural lives.

Harvey (2007) characterizes this process as a form of creative destruction, namely the transformation of space undertaken to create new opportunities for capital accumulation. In the context of Rempang, this transformation is evident in the shift from a coastal village-based development orientation toward an integrated industrial zone designed to attract large-scale investment. Although the project is expected to generate economic benefits in the form of investment inflows, employment opportunities, and infrastructure improvements, the social costs borne by local communities are



equally substantial, as they involve the loss of living space, cultural identity, and historically established social networks.

The conflict that subsequently emerged does not merely represent a difference of interests between communities and the government. It also reveals significant inequalities in power relations within the development process. The state and investors possess greater capacity to determine policy directions, while local communities often occupy a weaker position in influencing decisions concerning the future of their territory. Consequently, the agrarian conflict in Rempang can be understood as a manifestation of accumulation by dispossession, illustrating how investment-oriented development may generate social and environmental injustices when it is not accompanied by adequate protection of local community rights.

Policy Evaluation Based on William N. Dunn's Model

To assess the extent to which the Rempang–Galang glass factory development policy achieves its intended objectives, this study employs William N. Dunn's (2018) policy evaluation model, which comprises six principal criteria: effectiveness, efficiency, adequacy, equity, responsiveness, and appropriateness. This approach enables an evaluation that extends beyond economic achievements and incorporates the social and environmental dimensions that are essential components of sustainable development.

From the perspective of effectiveness, the Rempang development policy demonstrates the potential to achieve the economic objectives established by the government, particularly in terms of attracting investment, developing industrial zones, and creating new economic opportunities. The inflow of large-scale investment indicates that the policy has been successful in attracting investor interest and strengthening Batam's position as one of Indonesia's major economic growth centers. However, policy effectiveness cannot be measured solely through investment indicators. The prolonged resistance expressed by local communities suggests that the development objectives have not been fully accepted by those directly affected. Therefore, the effectiveness of the policy remains partial, as economic achievements have not been accompanied by adequate social acceptance.

From the perspective of efficiency, the Rempang development project was designed to generate economic benefits that exceed the resources invested. Nevertheless, the various social and environmental costs associated with the project must also be considered as part of the policy evaluation. Social conflict, relocation costs, security management expenses, potential environmental degradation, and the loss of socio-ecological functions represent costs that are often excluded from formal economic calculations. When these costs are incorporated comprehensively, the assessment of policy efficiency becomes considerably more complex than a simple evaluation based on the volume of realized investment.

The criterion of adequacy concerns the extent to which a policy is capable of addressing the problems that motivated its formulation. In the Rempang context, the primary objectives of the policy are to accelerate economic growth and enhance regional competitiveness. However, the economic growth generated by the project does not automatically resolve the social issues arising from community relocation, the loss of living space, and increasing agrarian conflicts. Consequently, although the policy may contribute to economic growth, its adequacy in addressing the broader spectrum of development challenges remains debatable.

Equity represents one of the most critical dimensions in evaluating the Rempang policy. Dunn (2018) emphasizes that public policies should consider the distribution of both benefits and burdens. In this case, the economic benefits of development tend to be concentrated among investors, government institutions, and the formal economic sector, whereas the majority of social and environmental risks are borne by local communities directly affected by the project. This unequal distribution of benefits and burdens indicates that the criterion of equity has not been fully achieved.

From the perspective of responsiveness, public policies are evaluated based on their ability to respond to the needs, aspirations, and expectations of affected communities. The various forms of opposition expressed by Rempang residents reveal a gap between policy objectives and community



perceptions regarding the planned development. Findings from the Indonesian Ombudsman (2024), the National Commission on Human Rights (Komnas HAM, 2023), and various civil society organizations indicate that issues of participation, policy communication, and community rights protection require greater attention. These conditions suggest that the responsiveness of the policy remains relatively limited.

The final criterion is appropriateness, which concerns the compatibility of a policy with social values, local conditions, and broader development goals. From the perspective of sustainable development, an effective policy should not only generate economic growth but also promote environmental sustainability and social justice (Sachs, 2015; United Nations, 2015). In the case of Rempang, the various conflicts that have emerged indicate that development has not yet fully succeeded in balancing investment interests with the protection of local communities and the environment. Consequently, the appropriateness of the policy requires improvement through a development approach that is more inclusive, participatory, and sustainable.

Overall, the evaluation based on Dunn's (2018) model demonstrates that the Rempang–Galang glass factory development policy possesses significant economic potential but continues to face substantial challenges in terms of equity, responsiveness, adequacy, and appropriateness. These findings suggest that development success cannot be measured solely through investment and economic growth indicators but must also be assessed according to the policy's capacity to promote social justice and environmental sustainability.

Alternative Policy Model Based on Social and Environmental Justice

The findings of this study indicate that the conflict in Rempang stems from an imbalance between investment interests, the protection of community rights, and environmental sustainability. Therefore, an alternative policy model is required—one that integrates these three dimensions in a more balanced manner. A development approach focused exclusively on economic growth is no longer sufficient to address the complexity of challenges emerging in coastal regions and small islands characterized by high levels of social and ecological sensitivity.

The first principle that should be adopted is Free, Prior and Informed Consent (FPIC), a mechanism that ensures communities receive complete information, have the opportunity to provide consent freely, and are involved before development decisions are made. The implementation of FPIC not only strengthens policy legitimacy but also reduces the potential for conflict arising from insufficient community participation in development processes.

The second principle is participatory development, which positions communities as subjects rather than merely objects of development. Arnstein (1969) argues that meaningful participation must provide communities with genuine opportunities to influence decisions that affect their lives. In the Rempang context, this approach can be implemented through inclusive public consultations, multi-stakeholder dialogues, and active community involvement in both development planning and monitoring.

The third principle is ecological sustainability. Development in coastal regions and small islands must consider environmental carrying capacity, the protection of coastal ecosystems, and climate change risks. This perspective is consistent with Sachs' (2015) concept of sustainable development and the global commitments embodied in the Sustainable Development Goals (United Nations, 2015). Accordingly, development success should be measured not only by economic growth but also by the ability to maintain environmental sustainability over the long term.

The fourth principle is community benefit sharing, which refers to mechanisms that ensure a more equitable distribution of development benefits to affected communities. This approach may be realized through prioritizing local employment, strengthening community enterprises, enhancing human resource capacity, and implementing empowerment programs that ensure local residents derive tangible benefits from investments entering their region.



Figure 1. Conceptual Model for Evaluating the Rempang-Galang Glass Factory Development Policy from Social and Environmental Justice Perspectives

Source: Developed by the author based on Rawls (1999), Fraser (2008), Bullard (2000), Schlosberg (2007; 2013), Harvey (2005; 2007), Dunn (2018), Ostrom (1990), Sachs (2015), United Nations (2015), and empirical findings from the Rempang-Galang case.

The figure above illustrates the causal relationship between the rationale of investment-driven development and the emergence of various social and ecological issues in the Rempang-Galang area. The diagram demonstrates that the glass factory development policy is rooted in the paradigms of the developmental state and neoliberal development, both of which position investment, industrialization, and economic growth as the primary objectives of development. This orientation is subsequently manifested through spatial transformation and industrial expansion, which directly affect the social and ecological structures of the Rempang region. At this stage, development not only generates new economic opportunities but also creates consequences in the form of community relocation, agrarian conflicts, the loss of living space, and increasing pressure on coastal ecosystems.

Furthermore, the figure indicates that the central issue in the Rempang case lies in the unequal distribution of development benefits and burdens. Economic benefits tend to be concentrated among the state and investors, while local communities bear the majority of the social and ecological risks. This imbalance gives rise to two simultaneous forms of injustice: social injustice, which concerns the redistribution, recognition, and representation of local communities as conceptualized by Rawls and Fraser; and environmental injustice, which relates to the distribution of ecological risks, the recognition of ecological rights, and community participation as explained by Bullard and Schlosberg. The accumulation of these two forms of injustice ultimately triggers agrarian conflicts and social resistance, which have become defining characteristics of the development dynamics in Rempang.

As a final synthesis, the figure also emphasizes that resolving the Rempang conflict cannot be achieved solely through compensation schemes or relocation programs. Instead, a shift in the development paradigm is required toward a model that is more participatory, equitable, and sustainable through the implementation of the principles of Free, Prior and Informed Consent (FPIC), participatory development, ecological sustainability, and community benefit sharing. Accordingly, the figure demonstrates that the Rempang conflict is fundamentally a consequence of the imbalance between investment interests, community protection, and environmental sustainability, while simultaneously offering an alternative policy direction that can facilitate more inclusive and sustainable development.



4. CONCLUSION

The findings of this study indicate that the Rempang–Galang glass factory development policy is grounded in a development rationale that prioritizes investment acceleration, industrialization, and economic growth through the framework of the National Strategic Project (PSN). From the perspectives of the developmental state and neoliberal development, the project is positioned as an instrument for enhancing regional economic competitiveness and attracting large-scale investment. However, this orientation has not fully succeeded in integrating the social and ecological dimensions inherent to Rempang as a living space for coastal communities whose historical and cultural ties to the area have developed over generations.

From the perspectives of social and environmental justice, the study finds that the benefits and burdens of development are distributed unevenly. Residents of the traditional villages in Rempang face risks associated with relocation, the loss of living space, and reduced access to livelihood resources. From an environmental standpoint, the project poses potential pressures on coastal ecosystems, including impacts on biodiversity, air and water quality, land-use change, public health, and the sustainability of local socio-cultural systems. These findings indicate that the Rempang issue extends beyond a mere land dispute; it also concerns the recognition of community rights, participation in decision-making processes, and the distribution of ecological risks that are disproportionately borne by local communities rather than investment actors.

Based on the evaluation conducted using William N. Dunn's policy evaluation model, the Rempang development policy continues to face significant challenges in terms of effectiveness, efficiency, adequacy, equity, responsiveness, and appropriateness. Therefore, the conflict in Rempang fundamentally represents a clash between an investment-oriented development paradigm and the demands of social justice and environmental sustainability. Moving forward, development in coastal regions and small islands should be directed toward a more participatory, equitable, and sustainable approach through stronger protection of local community rights, preservation of ecosystems, and more inclusive mechanisms for distributing the benefits of development.

5. REFERENCES

- Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners*, 35(4), 216–224. <https://doi.org/10.1080/01944366908977225>
- Bavinck, M., Pellegrini, L., & Mostert, E. (2018). Conflicts over natural resources in the global South: Conceptual approaches. *CRC Press*.
- Bennett, N. J., Blythe, J., White, C. S., & Campero, C. (2019). Blue growth and blue justice: Ten risks and solutions for the ocean economy. *Marine Policy*, 125, 104387. <https://doi.org/10.1016/j.marpol.2020.104387>
- Bullard, R. D. (2000). *Dumping in Dixie: Race, class, and environmental quality* (3rd ed.). Westview Press.
- Dunn, W. N. (2018). *Public policy analysis: An integrated approach* (6th ed.). Routledge.
- Evans, P. (1995). *Embedded autonomy: States and industrial transformation*. Princeton University Press.
- Fraser, N. (2008). *Scales of justice: Reimagining political space in a globalizing world*. Columbia University Press.
- Harvey, D. (2005). *A brief history of neoliberalism*. Oxford University Press.
- Harvey, D. (2007). *Neoliberalism as creative destruction*. *The ANNALS of the American Academy of Political and Social Science*, 610(1), 21–44. <https://doi.org/10.1177/0002716206296780>
- Intergovernmental Panel on Climate Change (IPCC). (2021). *Climate change 2021: The physical science basis*. Cambridge University Press. <https://www.ipcc.ch/report/ar6/wg1/>
- Johnson, C. (1982). *MITI and the Japanese miracle: The growth of industrial policy, 1925–1975*. Stanford University Press.



- Komisi Nasional Hak Asasi Manusia. (2023). *Laporan dan rekomendasi Komnas HAM terkait konflik pembangunan Rempang Eco City*. Komnas HAM.
- Konsorsium Pembaruan Agraria. (2024). *Catatan akhir tahun konflik agraria dan proyek strategis nasional di Indonesia tahun 2024*. KPA.
- Martinez-Alier, J. (2002). *The environmentalism of the poor: A study of ecological conflicts and valuation*. Edward Elgar Publishing.
- Ombudsman Republik Indonesia. (2024). *Laporan hasil pemeriksaan terkait pelayanan publik dan pengembangan kawasan Rempang Eco City*. Ombudsman Republik Indonesia.
- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.
- Rawls, J. (1999). *A theory of justice* (Revised ed.). Harvard University Press.
- Sachs, J. D. (2015). *The age of sustainable development*. Columbia University Press.
- Schlosberg, D. (2007). *Defining environmental justice: Theories, movements, and nature*. Oxford University Press.
- Schlosberg, D. (2013). Theorising environmental justice: The expanding sphere of a discourse. *Environmental Politics*, 22(1), 37–55. <https://doi.org/10.1080/09644016.2013.755387>
- Trend Asia. (2024). *Analisis dampak sosial dan lingkungan pembangunan Rempang Eco City*. Trend Asia.
- United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. United Nations. <https://sdgs.un.org/2030agenda>
- Wahana Lingkungan Hidup Indonesia (WALHI). (2024). *Kajian lingkungan dan hak masyarakat dalam pembangunan Rempang Eco City*. WALHI.
- Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Sage Publications.