

The Effectiveness of Environmental Law within Regional Development Policies in Disaster-Prone Areas of Sumatra

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Abstract

This study aims to analyze the effectiveness of environmental law within the framework of regional development policies in Sumatra Island, specifically in mitigating ecological disaster risks. Sumatra faces a dual challenge: accelerated infrastructure development and high disaster vulnerability. The research method employed is juridical-normative with a statutory and case study approach, supported by a systematic literature review of secondary data regarding spatial planning and disaster mitigation policies. The results indicate that although legal instruments such as Environmental Impact Assessment (AMDAL) and Strategic Environmental Assessment (KLHS) are regulated, their implementation is often neglected in favor of short-term investment interests, especially after the enactment of the Job Creation Law. There is a significant gap between national green-oriented planning and the reality of regional planning (RTRW/RPJMD) in Sumatra, where planning documents have not fully adopted low-carbon development principles. This research recommends harmonizing central and regional regulations and strengthening administrative law enforcement grounded in political ecology to ensure sustainable, disaster-resilient development.

Keywords: *environmental law, development policy, disaster mitigation, green development.*

Abstrak

Penelitian ini bertujuan untuk menganalisis efektivitas hukum lingkungan dalam kerangka kebijakan pembangunan daerah di Pulau Sumatra, khususnya dalam memitigasi risiko bencana ekologis. Pulau Sumatra menghadapi tantangan ganda berupa percepatan pembangunan infrastruktur dan kerentanan tinggi terhadap bencana. Metode penelitian yang digunakan adalah yuridis-normatif dengan pendekatan perundang-undangan dan studi kasus, didukung oleh tinjauan literatur sistematis terhadap data sekunder terkait kebijakan tata ruang dan mitigasi bencana. Hasil penelitian menunjukkan bahwa meskipun instrumen hukum seperti Analisis Mengenai Dampak Lingkungan (AMDAL) dan Kajian Lingkungan Hidup Strategis (KLHS) telah diatur, implementasinya seringkali terabaikan demi kepentingan investasi jangka pendek, terutama pasca berlakunya UU Cipta Kerja. Terdapat kesenjangan signifikan antara perencanaan nasional yang berorientasi hijau dengan realitas perencanaan daerah (RTRW/RPJMD) di Sumatra, di mana dokumen perencanaan belum sepenuhnya mengadopsi prinsip pembangunan

rendah karbon. Dampak dari penelitian ini merekomendasikan perlunya harmonisasi regulasi pusat dan daerah serta penguatan penegakan hukum administrasi berbasis ekologi politik untuk memastikan pembangunan yang berkelanjutan dan tangguh bencana.

Kata Kunci: hukum lingkungan, kebijakan pembangunan, mitigasi bencana, pembangunan hijau.

INTRODUCTION

Sumatra Island is one of Indonesia's key economic regions, yet it is simultaneously vulnerable to natural disasters. As the sixth-largest island in the world, Sumatra serves as an international production hub for commodities such as palm oil, rubber, and coal. However, this abundance of natural resources is disproportionate to the environmental hazards faced. Data indicates that in the last ten years, there has been a significant increase in disasters such as flash floods, landslides, and forest and land fires (karhutla). These disasters are closely linked to severe environmental damage caused by human activity.

Aggressive economic development in Sumatra often disregards the environment. Regional development policies typically focus on achieving short-term economic growth goals by exploiting natural resources. This leads to a development paradox: investment and infrastructure increase, but the environmental carrying capacity decreases, thereby increasing community vulnerability to disasters. This demonstrates a failure to incorporate sustainable development principles into practical regional policy.

Constitutionally, the state guarantees every citizen's right to a good and healthy environment as mandated in Article 28H of the 1945 Constitution. Furthermore, Article 33, paragraph (3) of the 1945 Constitution mandates that the earth, water, and natural resources are controlled by the state and used for the greatest prosperity of the people. Jazuli (2015) asserts that this constitutional mandate requires natural resource management to be conservation-oriented to

ensure the sustainability of environmental functions.¹ However, the effectiveness of these regulations is tested by political and economic realities in the regions.

This constitutional mandate is then derived into various legal instruments, primarily Law Number 32 of 2009 concerning Environmental Protection and Management (UUPPLH). This law is designed as an umbrella act to ensure that no development activity exceeds ecological tolerance limits. However, the gap between *das sollen* (what the law ought to be) and *das sein* (what happens in the field) remains very wide in Sumatra.

The legal landscape changed following the ratification of Law Number 6 of 2023 concerning the Stipulation of Government Regulation instead of Law Number 2 of 2022 concerning Job Creation into Law (hereinafter referred to as the Job Creation Law/UU Cipta Kerja), adding new complexity. The Job Creation Law carries the spirit of simplifying business licensing to spur investment. The paradigm shift from license-based to a risk-based approach raises concerns regarding the loosening of environmental protection standards, especially in geographically disaster-prone areas like Sumatra.

The main problem that arises is the lack of synchronization between spatial planning policies and disaster risk maps. Often, Regional Spatial Planning (RTRW) documents are compiled without adequate consideration of Strategic Environmental Assessments (KLHS). The Partnership for Governance Reform's Green Development Team (2019) found a planning gap at the regional level, such as in Jambi Province, where green development indicators have not been maximally integrated into the Regional Medium-Term Development Plan (RPJMD) or the RTRW.²

As a result of this unintegrated planning, zones that should be water catchment areas or protected zones are converted into plantation, mining, or residential areas. When high rainfall or geological shocks occur, these converted areas become the

¹ Ahmad Jazuli, "Dinamika Hukum Lingkungan Hidup dan Sumber Daya Alam dalam Rangka Pembangunan Berkelanjutan," *Jurnal Rechts Vinding: Media Pembinaan Hukum Nasional* 4, no. 2 (2015): 182.

² Tim Green Development, *Meneropong Pembangunan Hijau di Indonesia: Kesenjangan dalam Perencanaan Nasional dan Daerah (Studi Kasus: Provinsi Jambi dan Provinsi Kalimantan Timur)* (Jakarta: Kemitraan bagi Pembaruan Tata Pemerintahan, 2019), 65.

primary triggers for ecological disasters that claim lives and property. Jambi and Riau serve as clear examples of how peatland conversion impacts annual smog disasters.

Weak inter-agency coordination is also a determining factor. Disaster management is often viewed as a sectoral task of the National Disaster Management Agency (BNPB) or the Regional Disaster Management Agency (BPBD). In contrast, the root of the problem lies in licensing and spatial planning policies, which fall within the purview of local governments and relevant ministries. This sectoral ego leads to disaster management being more reactive (emergency response) rather than preventive, through strict development control.³

The theory of legal effectiveness proposed by Soerjono Soekanto states that factors of legal substance, law enforcement apparatus, facilities, society, and legal culture influence the operation of law. In the context of Sumatra, these five factors face serious challenges. Overlapping legal substance between central and regional governments, an apparatus vulnerable to local political intervention, and a societal legal culture pressed by economic needs all contribute to weak environmental law enforcement.

Previous research shows a significant gap. Sarjito (2023) evaluated government policies related to climate change but did not specifically highlight the impact of the latest legislative changes on disaster-prone regions.⁴ Meanwhile, Husein and Iuchi (2025) emphasized the importance of environment-based disaster governance but did not detail the legal obstacles arising from the Job Creation Law.⁵ This research seeks to fill that void by examining the implications of the latest laws for ecological realities in Sumatra.

The political factor of forestry law cannot be ignored. Berenschot et al. highlight how clientelism networks and money politics in forestry licensing in

³ Hartati, Hartati, Febrian Chandra, and Adithiya Diar. "Spatial planning for mining exploitation rights in forest area." *ADLIYA: Jurnal Hukum dan Kemanusiaan* 17 no. 1 (2023): 19-34.

⁴ Aris Sarjito, "Evaluation of Indonesian Government Policies in Addressing Climate Change and Natural Disasters," *Jurnal Ilmu Sosial Dan Humaniora* 2, no. 1 (2023): 105.

⁵ Rahmawati Husein dan Kanako Iuchi, "Towards Sustainable Disaster Prevention: Strengthening Environment-based Disaster Governance in Indonesia," *IOP Conference Series: Earth and Environmental Science* 1566, no. 1 (2025): 2.

Indonesia worsen deforestation.⁶ In Sumatra, where tropical forests and peatlands dominate, this practice is highly destructive. Concession permits are often granted on ecologically fragile land simply due to political exchanges between businessmen and local elites.

Multiple hazards characterize Sumatra's vulnerability. In addition to the threat of earthquakes from subduction zones and the Semangko Fault, the threats of floods and landslides are derivative disasters of environmental degradation. Santoso et al. (2025) assert that vulnerability assessment must serve as the basis for risk management.⁷ However, current laws are not fully capable of "forcing" development actors to strictly comply with disaster mitigation standards.

Public policy analysis in natural resource management also indicates structural problems. Daaris and Marwah (2024), in a case study of coastal areas, highlight that the failure of policy integration often leads to environmental degradation and a decline in community quality of life.⁸ A similar situation occurs on the east coast of Sumatra, where reclamation and industrial policies often clash with the sustainability of mangrove ecosystems, which are vital as disaster buffers.

In addition to physical aspects, socio-cultural aspects are also neglected. Indigenous peoples and local communities who possess local wisdom in maintaining the balance of nature are often marginalized. Darmadi et al. (2023) note that the conversion of forests into palm oil plantations frequently violates the rights of indigenous peoples, thereby eliminating the frontline guardians of the forest.⁹ Formal state law often overrides customary law, which is more effective at preserving environmental functions.

The urgency of this research stems from the need to re-evaluate the direction of development policy in Sumatra. Are existing legal instruments still relevant and

⁶ Ward Berenschot et al., *Forest Politics in Indonesia: Drivers of Deforestation and Dispossession* (KITLV & Forest Peoples Programme), 16.

⁷ Imam Santoso, Achmad Sudiro, dan Sukir Maryanto, "Assessing Vulnerability in the Face of Multiple Hazards: Insights from a Literature Review on Indonesia's Disaster Risk Management," *IOP Conference Series: Earth and Environmental Science* 1486, no. 1 (2025).

⁸ Yuli Yanti Daaris dan Marwah, "Sinergi Kebijakan Publik dan Pengelolaan Sumber Daya Alam Dalam Pembangunan Berkelanjutan di Wilayah Pesisir Kabupaten Bima," *JIAN: Jurnal Ilmu Administrasi Negara* 21, no. 2 (2024): 15.

⁹ Nanang Sri Darmadi, Bambang Tri Bawono, dan Jawade Hafidz, "Forest Land Conversion for Oil Palm Plantations and Legal Protection and Social Welfare of Indigenous Communities," *Environment and Ecology Research* 11, no. 3 (2023): 470.

strong enough to withstand the rate of environmental destruction amidst investment ambitions?. This question becomes crucial given the increasingly visible impacts of climate change and the rising frequency of disasters.

The challenge of regional autonomy also adds a unique dimension. Mahoro and Samekto (2025) argue that free-market domination and regional autonomy act as barriers to environmental law enforcement.¹⁰ Regions compete to increase Locally-Generated Revenue (PAD) by selling natural resources, often in violation of environmental laws set by the central government.

In the context of administrative law, the shift from environmental permits to environmental approvals in the Job Creation Law needs to be examined for effectiveness. Is this simplification balanced by stricter supervision (post-audit), or does it create a loophole for passing high-risk projects without in-depth review? This is a crucial point in discussing legal effectiveness. The novelty of this research is the regulation changes post-Job Creation Law, the specific disaster vulnerability characteristics of Sumatra Island, and the national-regional planning gap in the context of green development. This research examines law as text (law in books) and as reality (law in action) in a disaster-vulnerable society.

RESEARCH METHODS

This research employs a juridical-normative method, supported by a socio-legal approach, to examine the operation of law in society.¹¹ The data sources used are secondary data consisting of primary legal materials (Law No. 41 of 1999, Law No. 32 of 2009, Law No. 6 of 2023, and related regulations) as well as secondary legal materials in the form of literature, scientific journals, and relevant agency reports from the last 5 years. Data analysis was carried out qualitatively using systematic and grammatical interpretation techniques.

RESULTS AND DISCUSSION

¹⁰ Jean Claude Geofrey Mahoro dan F.X. Adji Samekto, "Barriers to the Enforcement of Environmental Law: An Effect of Free Market Domination and Regional Autonomy in Indonesia," *Hasanuddin Law Review* 7, no. 1 (2025): 35.

¹¹ Irwansyah, *Penelitian Hukum* (Yogyakarta: Mirra Buana Media, 2022).

The Gap in Green Development in the Regions

Preventive tools included in development planning are essential for the success of environmental law in Sumatra. Strategic Environmental Assessment (KLHS) and Environmental Impact Assessment (Amdal) are the main instruments established by law. However, facts on the ground show that spatial planning and environmental carrying capacity are not aligned. This is worsened by changes made by the Job Creation Law, which aims to make the licensing process easier for investment.

Under Law No. 32 of 2009 on Environmental Protection and Management, preventive instruments are strictly regulated. Article 15, paragraph (1) explicitly states the obligation of local governments to create a KLHS.

Article 15, paragraph (1) of Law No. 32 of 2009 reads:

"The Government and regional governments are obliged to create a KLHS to ensure that sustainable development principles have become the basis and are integrated into the development of a region and/or policies, plans, and/or programs."

This provision mandates that, before a Regional Spatial Plan (RTRW) is ratified, an in-depth study of environmental capacity must be conducted. However, empirical studies show a wide gap. The Partnership for Governance Reform's Green Development Team (2019) identified that in Jambi Province, the technocratic process of drafting the KLHS is often out of sync with the political process of drafting the RPJMD and RTRW. "Green" or low-carbon indicators set at the national level (Bappenas) usually disappear or become blurred when translated into regional planning documents under pressure from local economic interests, such as coal mining and palm oil plantations.¹²

This gap creates ecological vulnerability. When an RTRW is compiled without a strong KLHS basis, land conversion becomes uncontrolled. Azzahra et al. (2024) found that in West Sumatra, spatial planning policies have not been effective in mitigating disasters due to the limited integration of risk considerations into

¹² Tim Green Development, *Meneropong Pembangunan Hijau*, 66.

planning. Green Planning theory emphasizes that spatial planning without ecological consideration is a recipe for future environmental disasters.¹³

The problem becomes more complex in light of Law No. 6 of 2023 (the Job Creation Law). This regulation changes the paradigm of environmental licensing. Article 22, number 3, of the Job Creation Law amends Article 24 of Law 32/2009.

Article 22, number 3 of Law No. 6 of 2023 (Amending Article 24 of Law 32/2009) reads:

"The Amdal document, as referred to in Article 22, constitutes the basis for the environmental feasibility test for a business plan and/or activity."

This change removes the Regional Amdal Assessment Commission and replaces it with a Feasibility Test Team formed by the Central Government. This centralization has the potential to distance the assessment process from the specific local ecological realities of each province in Sumatra.

Furthermore, the Job Creation Law also facilitates the utilization of forest areas that were previously prohibited or strictly limited. This is seen in the amendment to Article 18 of Law No. 41 of 1999 concerning Forestry.

Article 37, number 3 of Law No. 6 of 2023 (Amending Article 18 paragraph (2) of Law 41/1999) reads:

"The Central Government stipulates and maintains the adequacy of forest area and forest cover for each watershed and/or island to optimize environmental, social, and economic benefits for the local community."

This amendment removes the 30% minimum forest area previously mandated by Law 41/1999. The removal of this quantitative limit gives the government broad discretion to reduce forest areas in the name of "optimizing economic benefits," which is very dangerous for Sumatra's already critical ecosystem.

Ecological Modernization theory might argue that economic efficiency and environmental protection can go hand in hand. However, in the context of Sumatra, the removal of the minimum forest limit actually legalizes further deforestation.

¹³ Azzahra, Nabila, Jelibседа, Nurhasan Syah, Heldi, dan Indra Catri. "Evaluation of the Effectiveness of Disaster Mitigation Based Spatial Planning Policies in West Sumatra: Literature Review." *Science and Environmental Journal for Postgraduate* 7, no. 1 (2024): 30–34. <https://doi.org/10.24036/senjop.v7i1.266>.

Deforestation in upstream river areas in Sumatra is the leading cause of repeated flash floods. Mahendra et al. (2024) state that government policies often balance the economy and the environment in ways that harm the environment.¹⁴

The weakening of preventive instruments is also seen in the concept of Risk-Based Licensing (Risk-Based Approach). Low- and medium-risk businesses no longer require an Amdal; they simply require Environmental Management Efforts – Environmental Monitoring Efforts (UKL-UPL) or a Business Identification Number (NIB). In disaster-prone areas like Sumatra, activities considered technically "low risk" can turn into major disasters if placed in the wrong location.

Facts in Jambi show that, although there is a "Jambi Green" commitment, on-the-ground implementation is hampered by regional regulatory inconsistencies. Regional Regulations on Spatial Planning (Perda RTRW) are often revised to accommodate large-scale investments that actually damage ecological structures. This confirms the Partnership's finding that "regional planning documents such as RPJMD and RTRW have not fully become the commander in development control."¹⁵

Article 19 of Law No. 32 of 2009 actually provides a strong mandate regarding ecosystem-based spatial planning.

Article 19 paragraph (1) of Law No. 32 of 2009 reads:

"To maintain the sustainability of environmental functions and public safety, every regional spatial plan must be based on KLHS."

The phrase "public safety" indicates that environmental law has a strong dimension of disaster mitigation. However, violations of spatial planning in Sumatra are often whitewashed or forgiven. The mechanism for "whitewashing" palm oil within forest areas regulated under Articles 110A and 110B of the Job Creation Law constitutes clear evidence of legal pragmatism.

Article 37, number 16 of Law No. 6 of 2023 (Inserting Article 110A into Law 41/1999) reads:

¹⁴ Januar Rahadian Mahendra, Rizal Akbar Aldyan, dan Silas Oghenemaro Emowwodo, "Examining Indonesian Government Policies in Tackling Deforestation: Balancing Economy and Environment," *Journal of Law, Environmental and Justice* 2, no. 1 (2024): 50.

¹⁵ Tim Green Development, *Meneropong Pembangunan Hijau*, 70.

"Every Person who carries out business activities that have been built and possesses a Business License within a Forest Area before the enactment of this Law, who has not met the requirements in accordance with the provisions of laws and regulations in the forestry sector, must complete the requirements no later than 3 (three) years after this Law comes into effect."

This article grants administrative amnesty to violators of forestry spatial planning, the majority of whom are palm oil plantations in Riau and Jambi. Theoretically, this violates the principle of environmental justice because it benefits the violators. The impact of this "whitewashing" policy is the loss of the functions of protected forests and conservation forests, which have been converted into palm oil monocultures. Fatma (2024) notes that existing legal frameworks fail to mitigate the negative impacts of industrial expansion, leading to the loss of critical water catchment areas.¹⁶

The lack of synchronization between forestry, environmental, and spatial planning regulations creates legal loopholes. Lawrence Friedman's Legal System Theory is relevant here: conflicting legal substances (antinomies) make law enforcement impossible. On one hand, the Disaster Management Law mandates mitigation, while on the other, the Job Creation Law facilitates land conversion.

Public participation in the preparation of Amdal is also limited in the Job Creation Law.

Article 22, number 5 of Law No. 6 of 2023 (Amending Article 26 of Law 32/2009) reads:

"The preparation of the Amdal document is carried out by involving the community directly affected by the business plan and/or activity."

The limitation to "communities directly affected" eliminates the participation of environmental observers (NGOs) and experts who were previously recognized. This reduces public checks and balances. Without broad public participation, development decisions become elitist. Husein and Iuchi (2025) emphasize the need to strengthen environment-based disaster governance.¹⁷ Community involvement,

¹⁶ M. Fatma, "Legal Frameworks Addressing the Environmental Consequences of Industrial Expansion," *Advances in Public Law and Crime (PRICE)* 1, no. 1 (2024): 14.

¹⁷ Husein dan Iuchi, "Towards Sustainable Disaster Prevention," 4.

especially in disaster-prone areas, is key to ensuring that development does not create new risks.

This analysis shows that in terms of regulatory substance (*regeling*), there has been a shift from a strict protection paradigm to investment facilitation. In a region as vulnerable as Sumatra, this shift significantly increases exposure to ecological disaster risks, rendering environmental law ineffective as an instrument for controlling development impacts.

Law Enforcement Challenges and Political Ecology Dynamics

The effectiveness of law is determined not only by the quality of its norms but also by the power structure surrounding it. In Sumatra, environmental law enforcement faces heavy challenges in the form of a shift in the sanctions paradigm within the Job Creation Law and the strong influence of local politics (clientelism) that hinders decisive action.

Law No. 32 of 2009 adheres to the very progressive principle of Strict Liability.

Article 88 of Law No. 32 of 2009 reads:

"Every person whose actions, business, and/or activities use hazardous and toxic materials (B3), produce and/or manage B3 waste, and/or pose a serious threat to the environment is absolutely responsible for the losses that occur without the need to prove the element of fault."

This article should be a powerful weapon to entrap plantation corporations in Sumatra whose lands are burning. However, the implementation of Article 88 is often hampered in court.

Daaris and Marwah (2024) use a political ecology approach to analyze power dynamics in environmental degradation. They found that policy conflicts and natural resource management issues often arise from unequal power distribution.¹⁸ In Sumatra, local elites often have business interests in the natural resource sector, creating a "structural conflict of interest". This causes law enforcement to be "blunt towards the top" (i.e., lenient toward the powerful).

¹⁸ Daaris dan Marwah, "Sinergi Kebijakan Publik," 18.

Challenges become even heavier with the enactment of the Job Creation Law, which prioritizes the principle of *Ultimum Remedium* excessively. Administrative sanctions have now become the primary choice, displacing criminal sanctions.

Article 22, number 29 of Law No. 6 of 2023 (Amending Article 82C of Law 32/2009) reads:

"Every person who carries out a business and/or activity without possessing a Business License, or an activity that is not in accordance with the obligations in the Business License resulting in casualties/damage to health, safety, and/or the environment, is subject to administrative sanctions in the form of: a. written warning; b. government coercion; c. administrative fines; and/or d. freezing or revocation of Business License."

This shift is worrying because, for large corporations, administrative fines are often treated as "operational costs". Jazuli (2015) highlights that the low understanding of law enforcement officials and the public regarding the importance of sustainable natural resource management remains a significant obstacle.¹⁹ Often, officials focus more on the formality of permits than on their substantial environmental impact.

In Jambi and Riau, the handling of forest and land fire cases often stops at the field level, with perpetrators (small farmers) left to deal with them. At the same time, the corporations holding concessions are rarely subject to criminal law. Yet Law No. 41 of 1999 on Forestry contains harsh criminal provisions.

Article 50 paragraph (2) of Law No. 41 of 1999 reads: "Every person is prohibited from damaging forest protection infrastructure and facilities." And the sanction in Article 78 paragraph (1) of Law No. 41 of 1999: "Anyone who intentionally violates the provisions as referred to in Article 50 paragraph (1) or Article 50 paragraph (2), is threatened with imprisonment for a maximum of 10 (ten) years and a maximum fine of Rp. 5,000,000,000.00 (five billion rupiah)."

Although the criminal threat is heavy, its enforcement in the field is often inconsistent. Environmental law enforcement theory emphasizes the importance of an integrated enforcement system. However, in Sumatra, coordination between

¹⁹ Jazuli, "Dinamika Hukum Lingkungan Hidup," 190.

Forestry Police, Civil Servant Investigators (PPNS) for the Environment, and the Police often does not run smoothly. Sectoral egos and differences in legal interpretation become obstacles. Djafar et al. (2023) highlight that sustainable forest management requires consistent policies.²⁰

Local political factors or "Local Strongmen" play a significant role. Berenschot et al., in their study of forest politics in Indonesia, explain the phenomenon of clientelism, in which businessmen finance local politicians' campaigns in exchange for easier permit approvals.²¹ In Sumatra, this symbiotic mutualism relationship makes environmental law enforcement impotent.

Weak law enforcement also impacts indigenous peoples. Article 18B of the 1945 Constitution recognizes the rights of customary law communities, but in practice, customary rights (hak ulayat) are often violated in the name of investment. Darmadi et al. (2023) show that forest conversion into palm oil plantations usually occurs without the consent of indigenous peoples.²² Additionally, post-licensing oversight instruments are very weak. The ratio of Environmental Supervisory Officers (PPLH) to businesses/activities in Sumatra is highly unbalanced. Consequently, violations of waste quality standards or land clearing by burning often go undetected until a disaster occurs.

In the context of corporate crime, proving the causal relationship between company activities and natural disasters is often difficult. Article 116 of Law 32/2009 regulates functional criminal liability.

Article 116, paragraph (1) of Law No. 32 of 2009 reads:

"If an environmental crime is committed by, for, or on behalf of a business entity, criminal charges and criminal sanctions are imposed on: a. the business entity; and/or b. the person who gave the order to commit the crime or the person acting as the leader of the activity in the crime."

This article should entrap company directors, but it is often difficult to apply because of layered corporate protections.

²⁰ E. M. Djafar et al., "Forest management to Achieve Sustainable Forestry Policy in Indonesia," *IOP Conference Series: Earth and Environmental Science* 1181 (2023): 012021.

²¹ Berenschot et al., *Forest Politics in Indonesia*, 20.

²² Darmadi, Bawono, dan Hafidz, "Forest Land Conversion," 472.

Analysis from a Socio-Legal perspective shows that environmental law in Sumatra does not operate in a vacuum. It works within an unequal social structure. Puturuhu and Christianty (2020) highlight the specific vulnerability of archipelagic regions.²³ Uniform law enforcement, regardless of geographical characteristics, is often ineffective.

One of the root causes is that regional development planning documents (RPJMDs) are often compiled solely to meet administrative requirements for budget disbursement, rather than as a substantive guide for green development.²⁴ This leads to weak supervision of spatial planning implementation.

Corrective Justice Theory demands the restoration of the damaged environment. However, the environmental restoration guarantee funds that companies are required to deposit are often insufficient to restore ecosystems destroyed by disasters. The combination of weakened norms in the Job Creation Law, structural political-economic obstacles (clientelism), and the planning gap between the center and the regions causes environmental law in Sumatra to experience a crisis of effectiveness. Ecological disasters are no longer just a potential, but a logical consequence of the failure of the legal system.

CONCLUSION

Based on the in-depth analysis presented, it can be concluded that the effectiveness of environmental law in regional development policies in disaster-prone areas of Sumatra Island is at its nadir. Substantially, environmental protection norms have been degraded by the enactment of the Job Creation Law, which shifts the paradigm from license-based to risk-based and provides amnesty for past spatial planning violations. The gap between national green development planning and its implementation in regions, as seen in Jambi, exacerbates regional vulnerability.

Structurally and culturally, law enforcement in Sumatra is stunted by practices of political clientelism and the dominance of short-term economic interests. Administrative sanctions, which are now the primary recourse, have proven not to

²³ Ferad Puturuhu dan Restia Christianty, "Disaster risk on review scale and spatial planning Archipelago Region: the risk based island cluster in Moluccas Province," *Jambura Geoscience Review* 2, no. 2 (2020): 98.

²⁴ Tim Green Development, *Meneropong Pembangunan Hijau*, 75.

provide a deterrent effect for large corporations. At the same time, indigenous and local communities continue to be marginalized from access to justice. A political ecology approach shows that the main problem is not merely technical law, but the inequality of power relations in natural resource management.

This research suggests the need for regulatory harmonization that mandates the strict adoption of national green development indicators in the RTRW and RPJMD in Sumatra. The central government needs to strengthen ecological fiscal incentive and disincentive mechanisms for regions. Furthermore, law enforcement reform free from local political intervention is required in order to adjudicate environmental crimes fairly and decisively.

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