

Mining vs. Rights: State Responsibility in Protecting Indigenous Communities in Indonesia

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The expansion of nickel mining in Indonesia has accelerated economic growth but intensified environmental harm and rights violations affecting indigenous communities. This study assesses whether the Indonesian state fulfills its obligation to respect, protect, and fulfill indigenous environmental rights in major nickel-producing regions of Sulawesi and Maluku. Using a qualitative case study design, the research combines legal analysis, policy review, and field-based evidence from affected communities. The findings demonstrate three major governance failures: (1) systematic land dispossession without Free, Prior, and Informed Consent (FPIC); (2) regulatory weakening following the 2020 Mining Law and Job Creation Law, which centralized permitting authority and reduced environmental safeguards; and (3) documented environmental degradation linked to public health deterioration, including sharp increases in respiratory illnesses near industrial sites. These patterns reveal a structural implementation gap between Indonesia's constitutional and international human rights commitments and actual regulatory enforcement. The study contributes empirical evidence on the operationalization of state responsibility in resource extraction contexts and offers a rights-based assessment of mining governance in Indonesia. Strengthening enforcement, accountability, and participatory mechanisms is essential to align mineral development with human rights and sustainable development objectives.

Keywords: environmental justice; extractive industry; indigenous identity; legal framework; resource governance

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1. Introduction

Indonesia, home to the world's largest nickel production, supplying nearly 48 percent of global supply in 2022 [1], has presided over a surge in nickel mining and processing, particularly concentrated in Sulawesi and Halmahera, including the massive Indonesia Weda Bay Industrial Park (IWIP). The Indonesian government aims to develop the country into a leading battery producer for the global electric vehicle (EV) industry and has enacted policies favoring nickel industry growth. However, this has often come at the expense of environmental protections and the rights of Indigenous and local communities. Efforts are underway to reduce emissions from the nickel sector, including a roadmap targeting an 81% reduction in emissions by 2045 while supporting sustainable energy transitions [2]. Behind this narrative of economic growth lies a far more troubling reality: nickel mining has generated widespread and irreversible ecological destruction. Deforestation, water contamination, soil erosion, and the collapse of marine and terrestrial ecosystems have become defining features of the industry, exposing the fragility of Indonesia's environmental governance.

For indigenous communities inhabiting these nickel-rich regions, the consequences are profound and unjust. In North Maluku, for example, indigenous groups such as the Maba Sangaji people have been directly affected by rapid nickel mining expansion. Their ancestral lands are being destroyed, leading to displacement, loss of livelihoods, and environmental degradation [3]. There have been reports of indigenous villagers being criminalized and jailed for peacefully protesting against mining activities that threaten their

environment and way of life. The environment is not merely a physical space but the very basis of cultural identity, spirituality, and survival. Mining expansion has eroded this foundation, disrupting health, livelihoods, and indigenous stewardship of ancestral lands. According to Mulya et al. [4], nickel extraction has disrupted the delicate balance between communities and their environment, undermining indigenous cultural obligations to protect and preserve nature. These harms are not accidental byproducts but symptoms of a development model that prioritizes profit and global demand over indigenous rights and ecological justice.

While international and regional frameworks increasingly recognize environmental rights as fundamental human rights, and while Indonesia has ratified various treaties affirming these obligations, the state's response to mining-related harm remains inadequate and inconsistent.

Specifically, in relation to mining-related environmental harm, Indonesia has legal frameworks in place, such as Law No. 32 of 2009 on Environmental Protection and Management and the Mining Law (Law No. 4 of 2009 and its amendments), that mandate mining companies to operate responsibly and mitigate environmental damage [5]. The gap between legal commitments and on-the-ground realities reflects not only weak regulatory oversight but also systemic exclusion of indigenous voices from decision-making and persistent failure to enforce accountability. Such failures expose a pattern of neglect in which the state enables corporate exploitation while leaving vulnerable communities to bear the costs of development.

This research, therefore, asks: to what extent does the Indonesian state fulfill its responsibility to respect, protect, and fulfill the environmental rights of indigenous peoples in nickel mining areas? Addressing this question is urgent in light of the state's repeated failures to reconcile its economic ambitions with its human rights obligations. The objective of this study is to critically assess Indonesia's legal and institutional frameworks, regulatory practices, and indigenous community experiences in order to expose state shortcomings, demonstrate the disjuncture between commitments and practice, and propose pathways for accountability and rights-based, sustainable governance in the nickel sector.

2. Literature Review

In recent years, the Indonesian government, in collaboration with private enterprises, has pursued a strategic position in global nickel mining, with the aim of supporting the electric vehicle (EV) battery industry. Despite the promise of economic advancement, field investigations and independent studies have highlighted a range of adverse consequences resulting from these mining activities. The environmental impacts are particularly severe, including widespread ecological degradation, water and air pollution, deforestation, and the contamination of mangrove ecosystems.

From 2011 to 2018, villages situated near nickel mining sites in Sulawesi experienced deforestation at nearly twice the rate of comparable non-mining areas, largely due to land being cleared for mineral extraction [6]. This surge in forest loss not only accelerates global warming but also obliterates habitats and endangers wildlife, particularly Sulawesi's 17 endemic primate species, posing a significant threat to biodiversity and ecosystem health.

Beyond environmental damage, the local communities have experienced systemic violations of their fundamental rights. Access to clean water, breathable air, and a safe climate has been severely compromised. Traditional livelihoods have been disrupted, particularly among coastal communities such as those in Baliara Village on Kabaena Island, where fishermen and seaweed farmers have lost their primary sources of income due to the destruction of marine and coastal environments [7]. Furthermore, agricultural production, specifically of coconuts, cashews, cloves, and nutmeg, has been adversely affected, exacerbating food insecurity and economic vulnerability.

Affected residents have demanded fair and adequate compensation; however, their grievances extend beyond material losses. Indigenous communities have reported cases of land dispossession, alleging that government and corporate actors engaged in land-grabbing practices without proper legal or ethical justification [1]. Crucially, these stakeholders were excluded from meaningful participation in the decision-making processes preceding the initiation of mining projects [8].

Understanding Environmental Rights and Rights of Indigenous Peoples

Environmental sustainability and human rights are intrinsically linked, forming the bedrock of sustainable development. States are obligated to prevent environmental harm that infringes upon human rights, and businesses must act responsibly to prevent such infringements. While the UN champions the connection between human rights and the environment, universal recognition of a standalone right to a healthy environment remains outstanding. International mechanisms have addressed environmental aspects impacting fundamental human rights, such as the rights to life and health. Effective environmental sustainability necessitates legal frameworks that uphold human rights, ensuring access to information, participation, and justice, especially when addressing global environmental challenges [9].

Indigenous peoples' rights are not separate but are elaborations of fundamental human rights within their specific circumstances, encompassing both individual and collective rights. Protecting these collective rights is vital for their continued existence. The recognition of indigenous peoples' collective rights, such as the right to their lands and resources and to self-determination, is necessary to ensure their continued existence and well-being as distinct peoples [10].

International Norms and Mechanisms on Protection of Environmental Rights

Even though there is no specific declaration or convention on environmental rights introduced by the UN, international agreements and bodies are increasingly recognizing the intrinsic connection between human rights and environmental protection. Multilateral environmental agreements, core human rights instruments, and decisions from regional human rights bodies highlight this important linkage. Global entities like the Human Rights Council and the International Court of Justice are also addressing the connection between environmental issues and human rights. The 2030 Agenda for Sustainable Development specifically acknowledges the relationship between human rights, development, and the environment. This includes the critical understanding that a healthy environment, biodiversity, and a stable climate are fundamental for human health, dignity, and well-being. The Paris Agreement highlights climate change as a shared threat, urging consideration of human rights in climate action. The UN highlights several international environmental agreements that intersect with human rights. These include:

1. Convention on Biological Diversity (1992) and its Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity (2010). This convention regulates access to the generic resources on the basis of equitable sharing of benefits.
2. UN Economic Commission for Europe Convention on Access to Information, Public Participation and Access to Justice in Environmental Matters (Aarhus Convention-1998). This convention points out that the citizens and civil society organizations have the right to actively participate in environmental issues by providing them access to information and means to participate in the environmental decision-making process. Individuals and groups have the right to seek judicial reviews if they believe that the public authorities have violated environmental rights.
3. The Ramsar Convention on Wetlands (1971). This agreement obligates the state parties to achieve sustainable development by using wetlands wisely and conserving them for water supply, fisheries,

agriculture, timber production, and tourism. Hence, the state shall establish a framework for national action to protect wetlands from drainage, pollution, over-exploitation, and conversion.

4. Convention on the International Trade in Endangered Species and many others. This convention obligates the state parties to ensure the international trade of fauna and flora is legal, traceable, and protected from overharvesting through a system of licensing and regulations.

Special Rapporteur on the Human Rights to a Healthy Environment

States are frequently questioned about their practices regarding the adaptation of measures such as land use planning, environmental impact assessments (EIA), or risk assessment procedures to integrate human rights consideration during the project design, approval, and implementation of all activities, whether undertaken by the state or business sectors.

The Special Rapporteur on the Human Rights to clean, healthy and sustainable environment calls for input for a thematic report to submit to the UN General Assembly regarding environmental impact assessment (EIA) and strategic impact assessment (SEA) as a state obligation to respect, protect and fulfill human rights, including a clean, healthy and sustainable environment. The report analyses how human rights standards and policies are integrated in EIA and SEA, including the procedural elements of access to information, participation of indigenous people, small-scale fisher communities, peasants, and other communities, and access to justice. Further, it includes the notification of assessment of outcomes to the affected individuals and communities (UNHRO, 2018).

International Norms and Mechanisms on the Rights of Indigenous Peoples

The United Nations Declaration on the Rights of Indigenous Peoples (2007) Article 8 states that the states shall provide an effective mechanism for the prevention of any action that has the effect of dispossessing them of their land territories and resources. Core human rights instruments such as ICCPR, ICESCR, ICERD, CEDAW, and CRC also provide recognition of the rights of indigenous peoples. ICCPR Article 27 states that indigenous peoples' rights are collective rights. The state shall establish and implement a process for recognizing and adjudicating indigenous peoples' rights.

Further, there are three mechanisms especially available within the UN system to protect the rights of indigenous peoples, including the Expert Mechanism on the Rights of Indigenous Peoples, the Special Rapporteur on the Rights of indigenous peoples, and the Permanent Forum on Indigenous Issues [9].

Regional Mechanism on Protection of Indigenous Rights of Environmental Governance

The Draft ASEAN Declaration on Environmental Rights (2024) states in Article 1 that every person has the right to a safe, clean, healthy, and sustainable environment which includes clean air, a safe and stable climate, healthy ecosystems and biodiversity, safe and sufficient water and adequate sanitation, healthy and sustainably produced food, and non-toxic environment.

Article 4 states that the declaration should be implemented in line with international and ASEAN standards, national circumstances, and domestic law, and with the adoption of necessary legislative, regulatory, administrative, or other measures guided by international law. Article 12 states that states should develop, enact, and enforce legislation and policies to provide legal protection to individuals, groups, and communities who strive to protect and promote the environment and human rights. Further, every person has right to access to information in environmental matters (Article 14.1), right to participate in decision making process (Article 15), ethnic communities have the right of free, prior, informed consent (FPIC) for activities impacts their communities (Article 17), Hence, the environmental impact assessment and due diligence should be incorporated by the states for both public and business sectors (Article 18).

Furthermore, it states that the state has an obligation to promote effective enforcement of environmental law to prevent. Reduce and remedy environmental harm that interferes with human rights [12].

Tran et al. [13] critique ASEAN's environmental rights declaration for failing to address Indigenous Peoples' rights. This oversight undermines environmental governance, as Indigenous knowledge and resource management are crucial for sustainability. The absence of recognition results in inequality, conflict, and the loss of valuable knowledge. The authors recommend explicitly including "Indigenous Peoples" in the declaration, recognizing their rights to land and resources, and ensuring Free, Prior, and Informed Consent. Inconsistent sectoral policies and human rights violations further highlight the need for recognition. Addressing these issues is vital for achieving just and effective environmental governance in Southeast Asia.

National Laws and Mechanisms on the Protection of Environmental Rights

The Constitution of Indonesia (1945) states, 'everyone has a right to enjoy a good and healthy environment' (Article 28H). The Environmental Protection and Management Law No. 32/2009 mandates the Public Participation and Environmental Impact Assessments (AMDAL) before project approvals, requiring consultation with affected communities, including indigenous groups. The Management of Coastal Zones and Small Islands Law No. 27/2007 and its amendment by Law No. 1 of 2014 prohibit mineral mining in islands smaller than 2,000 square kilometers when such activities could cause environmental damage or harm local communities. Hence, the Law No. 2/2012 on Land Acquisitions in the Public Interest, amended by GR in Lieu of Law No. 2/2022, ensures that the land can be acquired only for the public interest, and it defines the procedures to acquire land to safeguard property rights of communities, including indigenous people.

Although the national laws and mechanisms ensure the protection of environmental rights and human rights of the indigenous people, there are questions about the efficacy of law enforcement in protecting the environmental rights of the indigenous people. The analysis part of this paper is discussed critically in this regard.

The theoretical foundation of this study is rooted in the concept of state responsibility under international human rights law, especially as it pertains to environmental rights and indigenous peoples' protections. According to the United Nations human rights framework, states bear the obligation to respect, protect, and fulfill human rights, which includes environmental rights. To respect means that the state must refrain from activities or policies that infringe upon the environmental rights of indigenous peoples. To protect means the state must prevent third parties, such as corporations, from violating these rights. To fulfill means that the state must take proactive measures, including legislative, administrative, and judicial actions, to ensure the realization of environmental rights [14].

This tripartite obligation aligns with the principles of environmental justice theory, which emphasizes the fair treatment and meaningful involvement of all people, regardless of race, ethnicity, or socioeconomic status, in environmental policy decisions. Indigenous peoples often bear disproportionate environmental burdens due to their marginalization and historical disenfranchisement, leading to environmental injustices. The theory argues for an equitable distribution of environmental benefits and burdens, as well as recognition of cultural and spiritual ties to land and resources [15].

Furthermore, the rights-based approach to sustainable development integrates human rights norms into environmental governance and economic development policies, insisting that sustainability must include social equity and the protection of vulnerable groups such as indigenous communities [16]. This approach provides a normative framework guiding this research in evaluating the Indonesian state's performance.

Several studies have explored mining impacts on indigenous communities in Indonesia and globally. For example, Gamu & Soendergaard [17] examine socio-environmental conflicts in mining regions, highlighting weak governance and consultation failures. Swardhana & Jenvitchuwong [18] focus on legal protections for indigenous land rights amid resource extraction but note enforcement gaps. Regional reports, such as those from Project Multatuli [19], provide recent empirical evidence of environmental degradation due to nickel mining.

Internationally, Boyd [20] research elaborates on evolving environmental human rights frameworks, while Anaya [21] emphasis is on indigenous peoples' rights in international law. However, these studies rarely analyze the operationalization of state duties in Indonesia's nickel mining context, revealing a research gap. This study addresses this gap by empirically examining legal frameworks, policy implementation, and community perspectives to offer a nuanced assessment of state action.

While extant literature acknowledges the environmental harms of mining and highlights indigenous land rights issues, there is a notable gap concerning the comprehensive evaluation of state responsibility in protecting environmental rights, specifically of indigenous peoples affected by nickel mining. Most studies focus on land tenure or social impacts but do not systematically analyze how the Indonesian state operationalizes its obligations under international and national law in this context. This research addresses this gap by empirically examining legal frameworks, policy implementation, and community perspectives to offer a nuanced assessment of state action.

3. Method

This study employs a qualitative research design, appropriate for investigating complex socio-legal issues involving human rights, environmental governance, and indigenous peoples' lived experiences. Qualitative methods allow for an in-depth exploration of the legal frameworks, policy environment, and perceptions of stakeholders affected by nickel mining. The design centers around a case study approach [22], focusing on nickel mining areas in Sulawesi and Maluku, regions with significant indigenous populations and intensive mining activity.

The data collection process involved a comprehensive document analysis. This phase entailed a systematic review of relevant Indonesian national laws, regulations, and governmental policy frameworks, alongside international legal instruments ratified by Indonesia, such as the International Covenant on Economic, Social and Cultural Rights (ICESCR) and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). In addition to statutory and treaty-based sources, the analysis incorporated critical reports and findings published by non-governmental organizations, including Project Multatuli and Human Rights Watch, to ensure a holistic understanding of the legal and socio-political dimensions of the issue.

The study used thematic analysis to analyze interview transcripts and policy documents. Themes were identified around the three pillars of state responsibility: respect, protect, and fulfill. Legal texts were subjected to content analysis to determine alignment with international human rights norms and the degree of enforcement. Triangulation between data sources enhanced validity. The study acknowledges limitations such as potential respondent bias due to political sensitivities, limited geographic focus, and reliance on available legal documents that may not capture informal state practices or community adaptations.

4. Results and Discussion

This section presents the empirical findings derived from document analysis and field-based evidence, organized around the state's tripartite obligations to respect, protect, and fulfill indigenous environmental rights. The results highlight patterns of regulatory practice, land governance, environmental impact, and

community experience in major nickel-producing regions. These findings provide the basis for evaluating the extent to which Indonesia operationalizes its legal and human rights commitments in the context of extractive development.

Result

The nickel industry in Indonesia is causing a range of negative impacts on local communities, including land rights violations. Nickel mining and smelting activities have led to land grabbing, often with little to no compensation for community members. In some instances, companies, with the coordination of Indonesian police and military personnel, have been known to use coercion and intimidation toward Indigenous communities. Some community members who refused to sell their land experienced intimidation, threats, and faced retaliation from company representatives, police officers, and members of the military [23].

The representatives of Indonesia Weda Bay Industrial Park (IWIP) grabbed the land of 38 hectares for nickel mining without consent of Maklon Lobe, a 42 years old Swai man from Gemaf, owned farm land in 2018, they cut down the cocoa, sago and nutmeg trees form, and blocked the road to cut off access to his land, and excavated his land [1]. The victim met the IWIP representative several times from 2018 to 2022 to discuss the compensation. During this time, police officers visited his house and warned him. When they found the legal document of the land from the victim, they paid compensation only for 8 hectares. The IWIP and upstream nickel mining have devastated the lives of many indigenous peoples [23].

The expansion of the nickel mining and smelting industry in Indonesia has raised significant human rights and environmental concerns, particularly in relation to the rights of Indigenous Peoples and local communities. A central issue is the failure of companies and government authorities to obtain free, prior, and informed consent (FPIC) from affected communities. Numerous Indigenous groups have reported that they were neither properly informed about land acquisitions nor consulted on project details. In many instances, community members were unaware of the intended purpose of the land acquisitions, and no meaningful dialogue occurred between them and the nickel companies.

This lack of consent has coincided with the widespread loss of traditional livelihoods. In regions such as Central and Eastern Halmahera, the destruction of forests, seizure of farmland, degradation of freshwater sources, and damage to fisheries have made it increasingly difficult for local populations to maintain their customary subsistence practices. For generations, these communities have relied on natural resources for their survival, engaging in small-scale fishing, farming, sago production, and hunting. The environmental degradation associated with nickel mining has severely undermined these practices.

The ecological damage is extensive. Deforestation, air and water pollution, and habitat destruction caused by nickel mining and smelting operations have resulted in the contamination of local ecosystems. These environmental impacts threaten the rights of local communities to access clean water and a healthy environment. Industrial activities and land clearing continue to pollute the waterways on which many residents depend for drinking water and domestic use.

Accompanying these environmental harms are significant public health concerns. The Indonesia Weda Bay Industrial Park (IWIP) area has experienced a significant rise in respiratory illnesses and skin disorders in recent years, which local health officials and communities link directly to industrial pollution from mining and processing activities. Data from community health centers near IWIP, particularly in villages like Lelilef Sawai, show a dramatic increase in respiratory infections, known as Acute Respiratory Tract Infections. The number of ISPA cases surged from 434 in 2020 to 10,579 in 2023, representing more than a 24-fold increase over three years [24].

These violations are not occurring in isolation; they are the consequence of a broader policy framework that prioritizes industrial expansion over human and environmental well-being. Although Article 28H of the Indonesian Constitution guarantees every citizen the right to a clean and healthy environment, recent legislative developments suggest otherwise. For example, the 2020 Mineral and Coal Mining Law centralized the authority to issue mining permits under the national government, effectively stripping local and regional officials of the power to regulate mining activities. Similarly, the 2020 Job Creation Law (commonly referred to as the Omnibus Law) weakened environmental regulations, labor protections, and Indigenous land rights by expediting infrastructure development and simplifying business licensing processes [25]. This legal restructuring has facilitated land grabbing, deforestation, pollution, and various human rights abuses associated with nickel mining and smelting.

The Indonesian government, through these policies, has not only failed to uphold its obligation to protect citizens' rights but has also contributed to the worsening climate crisis. According to Climate Rights International [1], these actions demonstrate a lack of commitment to climate protection and a disregard for the rights of vulnerable communities.

In response, the National Human Rights Commission of Indonesia (Komnas HAM) received its first formal complaint on the human rights impacts of climate change on July 14, 2022 [26]. The petition was submitted by a group of children (aged 7–15), as well as farmers, fishers, and other vulnerable individuals from Java, Kalimantan, Nusa Tenggara, and Papua [27]. Komnas HAM affirmed that the Indonesian state had violated the petitioners' rights in relation to climate change, underscoring the human rights dimensions of environmental mismanagement and industrial expansion [26]. The investigation into nickel mining operations in Indonesia reveals pervasive environmental degradation and human rights violations, disproportionately impacting indigenous communities in key mining regions such as Sulawesi and Maluku.

The findings illustrate a significant divergence between Indonesia's formal legal commitments to environmental and indigenous rights and the realities experienced by affected communities. The documented land grabbing and coercive tactics contravene the state's obligation to respect indigenous land tenure and ensure FPIC, as mandated by international human rights instruments, including UNDRIP and ICESCR [9].

The environmental degradation underscores the failure to fulfill the state's duty to protect indigenous environmental rights, which encompass the right to clean water, air, and a healthy ecosystem. The direct linkage between pollution from mining operations and adverse health outcomes further highlights the interconnectedness of environmental and public health rights [14]. Communities near nickel mining areas report higher incidences of respiratory illness, skin disease, and reduced access to potable water, conditions that illustrate how extractive industries exacerbate structural inequalities in health and welfare. These harms are not isolated incidents but are symptomatic of broader governance failures in enforcing environmental standards and safeguarding vulnerable populations.

Legal reforms aimed at streamlining mining development have inadvertently eroded environmental justice, demonstrating a policy preference that undermines the principle of equitable distribution of environmental burdens and benefits, as emphasized in environmental justice theory [15]. The weakening of local and indigenous governance mechanisms marginalizes communities and perpetuates historical disenfranchisement. Decision-making processes surrounding mining permits and land use often exclude indigenous participation, stripping communities of agency in shaping the future of their territories.

The reported lack of meaningful indigenous participation in mining decisions contravenes procedural rights fundamental to sustainable and rights-based development, reinforcing power imbalances that perpetuate

environmental injustices [13]. These dynamics contribute to social conflict, loss of traditional knowledge, and cultural erosion, jeopardizing indigenous peoples' identity and survival.

This exclusion is compounded by the securitization of extractive projects, where police and military forces are deployed to suppress resistance and secure mining concessions, further curtailing indigenous rights and reinforcing patterns of coercion and dispossession. Such practices highlight not merely gaps in state protection but active complicity in human rights violations. In this sense, the state's actions betray its constitutional and international obligations, illustrating how extractive governance entrenches structural violence against indigenous peoples. Addressing these injustices requires more than regulatory adjustments—it demands a fundamental reorientation of state priorities toward environmental democracy, accountability, and the recognition of indigenous stewardship as central to sustainable resource governance.

Moreover, the Komnas HAM's acknowledgment of rights violations linked to climate change and environmental harm signifies growing institutional recognition of these issues within Indonesia's human rights framework. This development aligns with global trends emphasizing the integration of environmental and human rights protections, as articulated by the Special Rapporteur on the Human Rights to a Healthy Environment [14].

Nevertheless, without robust enforcement, legislative reform, and genuine inclusion of indigenous voices, these challenges will likely persist. From the perspective of environmental governance theory, effective resource management requires a balance between state regulation, market forces, and community participation, with transparency and accountability as central pillars [28]. Meanwhile, contemporary environmental governance theory by Morrison et al. [29] emphasizes that truly effective governance is not merely top-down; it must be polycentric, embracing multiple centers of authority, including communities, local governments, civil society, and the state, working across scales to adapt, innovate, and hold each other accountable.

In the Indonesian context, governance structures remain heavily centralized and oriented toward investment facilitation, which weakens checks on corporate power and sidelines indigenous participation. This imbalance reflects a governance deficit where rules exist on paper but lack enforcement, allowing extractive interests to override environmental protection and human rights. To reconcile economic development with environmental stewardship, Indonesia must not only strengthen its institutional frameworks but also integrate principles of polycentric and participatory governance that empower local actors and recognize indigenous stewardship as legitimate authority. Embedding free, prior, and informed consent (FPIC) into all mining-related decisions is therefore not merely a procedural safeguard but a transformative step toward redressing historical injustices, ensuring distributive equity, and realigning governance with principles of justice and sustainability.

In conclusion, the results underscore the urgency for Indonesia to operationalize its tripartite state obligations: to respect, protect, and fulfill the environmental rights of indigenous peoples, in alignment with international law and sustainable development goals. Only through such comprehensive reform can Indonesia address the socio-environmental injustices wrought by nickel mining and secure the well-being of its indigenous populations.

Discussion

This study exposes a profound disjunction between Indonesia's formal legal commitments and the on-the-ground realities faced by indigenous communities impacted by nickel mining activities. Despite comprehensive legal frameworks and international obligations recognizing environmental and indigenous

rights, the findings reveal persistent violations manifested in environmental degradation, forced land dispossession, and systemic marginalization of indigenous voices. The widespread land grabbing, often facilitated through coercive measures involving corporate actors and state security forces, contravenes the fundamental principle of Free, Prior, and Informed Consent (FPIC) enshrined in international norms such as the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

Environmental impacts documented, including deforestation, contamination of waterways, destruction of marine and terrestrial ecosystems, and air pollution, directly undermine indigenous peoples' ability to maintain their traditional livelihoods and cultural practices intimately tied to the natural environment. The health consequences, notably the surge in respiratory and dermatological ailments near industrial zones like the Indonesia Weda Bay Industrial Park (IWIP), further illustrate the inseparable link between environmental harm and public health risks within affected communities.

These findings signify critical failures by the Indonesian state to fully discharge its tripartite obligations to respect, protect, and fulfill the environmental rights of indigenous peoples. While national laws formally uphold these rights, enforcement remains inadequate, and policies have increasingly favored rapid industrial expansion at the expense of environmental justice. This misalignment fosters structural inequities whereby indigenous communities disproportionately bear environmental burdens without commensurate benefits, perpetuating cycles of disenfranchisement and social injustice.

The empirical evidence presented aligns with and deepens insights from previous scholarship documenting socio-environmental conflicts in Indonesian mining regions. Consistent with Gamu & Soendergaard [17], governance weaknesses and insufficient community consultation emerge as salient contributors to indigenous grievances and rights violations. Likewise, Sarwosaputro et al. [30] critique of legal protections highlights enforcement gaps that this study elucidates through concrete examples of intimidation, land dispossession, and inadequate compensation.

Internationally, the results resonate with Boyd's [20] exposition of environmental human rights frameworks and Anaya's [21] emphasis on indigenous rights within international law, yet this study advances the discourse by providing a context-specific evaluation of Indonesia's legal and policy landscape. The detrimental effects of recent reforms, such as the 2020 Mineral and Coal Mining Law and the Omnibus Law, which recentralize mining permit authority and relax environmental safeguards, underscore the unintended consequences of legal restructuring, an aspect less thoroughly examined in extant literature.

Furthermore, this research corroborates Tran et al. [13] critique of the ASEAN Declaration on Environmental Rights for omitting explicit recognition of Indigenous Peoples' rights. The practical ramifications of this omission are evident in the sustained exclusion of indigenous perspectives from decision-making, exacerbating environmental injustices, and undermining regional governance effectiveness. This highlights the necessity of incorporating indigenous rights explicitly within both regional frameworks and national policies to achieve equitable environmental governance.

Theoretically, this study reinforces the applicability of environmental justice and rights-based sustainable development frameworks by demonstrating how state responsibilities materialize, or fail to materialize, in resource extraction contexts. The findings underscore the imperative of recognizing indigenous peoples not merely as stakeholders but as rights holders with collective entitlements to land, resources, and cultural survival. This aligns with Schlosberg's [15] articulation of environmental justice that integrates distributive fairness, procedural equity, and recognition of cultural identities into environmental policy analysis.

From a practical perspective, the research offers critical policy-relevant insights. The demonstrated inadequacies in legal enforcement and community engagement point to urgent needs for institutional

strengthening. Ensuring meaningful participation through genuine FPIC mechanisms is essential to redressing power imbalances and restoring indigenous agency in mining governance. Enhancing transparency and accountability in land acquisition processes, alongside rigorous environmental monitoring, are necessary steps to mitigate ongoing harms.

Moreover, the documented public health impacts call for integrated policy responses that address the intersection of environmental and health rights. The acknowledgment by Indonesia's National Human Rights Commission (Komnas HAM) of climate-related human rights violations signals a growing institutional readiness that could be leveraged to advance reforms. Policymakers should consider revising or repealing legislation that weakens environmental protections, while explicitly embedding human rights norms in mining and industrial policies. Finally, these implications extend to development practice and advocacy, emphasizing the need for multi-stakeholder collaborations that prioritize indigenous knowledge and stewardship as integral to sustainable and just resource governance.

While the qualitative case study approach employed enables rich, contextualized insights into legal frameworks, policy environments, and community experiences, certain limitations merit acknowledgment. The geographic focus on select mining areas in Sulawesi and Maluku may limit the generalizability of findings across Indonesia's diverse mining landscapes. Additionally, potential respondent bias, influenced by political sensitivities surrounding resource governance, may have constrained the breadth of perspectives captured.

Reliance on documented legal texts and formal interviews may also overlook informal or customary governance practices and the adaptive strategies employed by indigenous communities in navigating mining pressures. The complex, evolving nature of mining policies requires ongoing monitoring to capture changes over time.

Future research should pursue quantitative assessments of environmental pollution levels and health outcomes linked to mining operations, offering empirical validation to complement qualitative insights. Expanding the geographic scope and incorporating longitudinal designs would deepen understanding of the temporal dynamics of state responsibility and community resilience. Comparative studies involving other resource-rich, indigenous-inhabited countries could yield valuable lessons for policy transfer and regional cooperation.

Moreover, investigations into corporate accountability, including the role of multinational corporations and global supply chains in influencing local environmental and human rights conditions, represent important avenues for future inquiry. Such research would contribute to comprehensive strategies aimed at securing environmental justice and indigenous rights amid ongoing global demand for critical minerals.

5. Conclusion

This study reveals a critical gap between Indonesia's formal legal commitments and the lived experiences of indigenous peoples affected by nickel mining operations. Despite comprehensive laws and international obligations aimed at protecting environmental and indigenous rights, mining activities in regions such as Sulawesi and Maluku continue to inflict significant environmental degradation, land dispossession, and violations of the principle of Free, Prior, and Informed Consent (FPIC). The environmental harms, including deforestation, water pollution, and ecosystem destruction, coupled with adverse public health outcomes, disproportionately burden indigenous communities and threaten their cultural survival. Additionally, recent policy reforms that centralize mining authority and dilute environmental protections have exacerbated these injustices, further marginalizing local and indigenous governance.

This research contributes important empirical insights to the academic discourse on state responsibility, environmental justice, and indigenous rights within the context of resource extraction. By critically examining legal frameworks, policy implementation, and community perspectives, the study addresses a notable gap in understanding how Indonesia operationalizes its human rights obligations in the nickel mining sector. The findings bridge international normative frameworks and local realities, underscoring the complex challenges of aligning economic development with environmental stewardship and social equity. Drawing from the empirical findings and legal analysis presented in this study, several strategic recommendations are proposed to advance environmental justice and uphold the rights of Indigenous Peoples within Indonesia's mining governance framework.

Strengthen policy implementation and legal enforcement. To address persistent rights violations and environmental degradation, it is imperative that Indonesia rigorously enforces its existing environmental and human rights legislation. This includes ensuring that Free, Prior, and Informed Consent (FPIC) is not merely a procedural formality but a foundational requirement in all decision-making processes related to mining and land use. Community participation, particularly that of Indigenous groups, must be institutionalized and made meaningful through legally binding mechanisms that provide space for dissent, deliberation, and negotiation. Legislative reforms that have centralized permitting authority at the national level, such as the 2020 Mineral and Coal Mining Law and the Job Creation Law (Omnibus Law), should be reevaluated. These reforms have weakened environmental safeguards and undermined the regulatory roles of local governments and customary institutions. Restoring the authority of regional and Indigenous governance structures is essential for creating a decentralized, context-sensitive approach to environmental protection and resource management.

Enhance institutional capacity and accountability. Government institutions, particularly those tasked with human rights and environmental oversight, must be equipped with adequate resources, authority, and independence to investigate and respond to violations. The National Human Rights Commission (Komnas HAM), for instance, should be supported in expanding its mandate to address the full scope of environmental and climate-related human rights issues. Transparent and accountable governance can be further achieved by fostering institutional partnerships with Indigenous communities, civil society organizations, and environmental watchdogs. These collaborations can ensure that monitoring, enforcement, and grievance redress mechanisms are accessible, culturally appropriate, and responsive to local realities.

Promote integrated environmental and health monitoring. The government should develop and operationalize integrated monitoring systems that assess environmental and public health conditions in and around mining areas. Such systems should track indicators related to air and water quality, deforestation, biodiversity loss, and health outcomes, particularly in vulnerable populations exposed to pollution from nickel smelting and related industrial activities. Real-time and publicly accessible data can empower communities, researchers, and policymakers to take timely action in mitigating adverse impacts. These monitoring efforts must also be informed by traditional ecological knowledge and community-based observations, ensuring inclusivity in environmental governance.

Encourage further research and international engagement. To deepen understanding of the socio-ecological impacts of nickel mining, future research should include quantitative assessments of environmental degradation and public health burdens across various regions. Such investigations should explore not only the local consequences of mining but also the broader role of multinational corporations and global supply chains in shaping environmental outcomes and corporate accountability. Comparative research with other resource-dependent nations can provide valuable insights for harmonizing regional

policies and strengthening protections for Indigenous rights. Cross-national studies may also reveal best practices in balancing economic development with environmental stewardship and cultural preservation. In sum, advancing environmental justice in Indonesia's nickel mining sector requires a multi-faceted approach that integrates legal reform, institutional strengthening, participatory governance, and evidence-based policymaking. Upholding the rights of Indigenous Peoples must be central to this agenda if Indonesia is to achieve sustainable and equitable development.

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