

Nickel Mining and Human Rights in North Maluku: Assessing the Impact of Resource Development on Local Communities

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Abstract

Indonesia's rapid expansion of nickel mining and processing has positioned the country as a major actor in the global energy-transition economy. North Maluku has become an important center of nickel-related investment, but accelerated industrial development has also generated concerns concerning environmental degradation, land access, livelihoods, and community participation. This article examines the human rights implications of nickel development in North Maluku. Using normative juridical and policy analysis, the study evaluates mining regulation, environmental governance, community participation, land rights, and corporate responsibilities. The article argues that the economic importance of nickel for Indonesia's industrial strategy should not reduce the level of protection afforded to communities affected by mining and processing activities. A rights-based approach requires meaningful participation, access to environmental information, protection of livelihoods, environmental safeguards, and effective remedies. The study proposes a human rights due diligence framework for mining and downstream industrial projects that incorporates community consultation, cumulative impact assessment, transparent monitoring, and accessible grievance mechanisms. The article concludes that Indonesia's energy-transition strategy should integrate human rights protections into resource governance to ensure that the costs of green industrialization are not disproportionately borne by local communities.

[Ekspansi pesat pertambangan dan pengolahan nikel di Indonesia telah memposisikan negara ini sebagai aktor utama dalam ekonomi transisi energi global. Maluku Utara telah menjadi pusat penting investasi terkait nikel, tetapi percepatan pembangunan industri juga menimbulkan kekhawatiran mengenai degradasi lingkungan, akses lahan, mata pencaharian, dan partisipasi masyarakat. Artikel ini mengkaji implikasi hak asasi manusia dari pengembangan nikel di Maluku Utara. Dengan menggunakan analisis yuridis dan kebijakan normatif, studi ini mengevaluasi regulasi pertambangan, tata

kelola lingkungan, partisipasi masyarakat, hak atas tanah, dan tanggung jawab perusahaan. Artikel ini berpendapat bahwa pentingnya ekonomi nikel bagi strategi industri Indonesia tidak boleh mengurangi tingkat perlindungan yang diberikan kepada masyarakat yang terkena dampak kegiatan pertambangan dan pengolahan. Pendekatan berbasis hak membutuhkan partisipasi yang bermakna, akses terhadap informasi lingkungan, perlindungan mata pencaharian, pengamanan lingkungan, dan solusi yang efektif. Studi ini mengusulkan kerangka kerja uji tuntas hak asasi manusia untuk proyek pertambangan dan industri hilir yang mencakup konsultasi masyarakat, penilaian dampak kumulatif, pemantauan transparan, dan mekanisme pengaduan yang mudah diakses. Artikel ini menyimpulkan bahwa strategi transisi energi Indonesia harus mengintegrasikan perlindungan hak asasi manusia ke dalam tata kelola sumber daya untuk memastikan bahwa biaya industrialisasi hijau tidak ditanggung secara tidak proporsional oleh masyarakat lokal.]

Keywords: Nickel mining, North Maluku, human rights, environmental rights, resource governance

Introduction

Nickel has become one of the most strategically significant minerals in Indonesia's contemporary development policy. The country's large nickel reserves have encouraged the government to pursue downstream industrialization, restrict the export of raw ore, attract foreign investment, and develop domestic processing capacity linked to stainless steel and electric-vehicle battery supply chains. The policy has transformed nickel from an extractive commodity into a central component of Indonesia's industrial strategy. Lahadalia et al. argue that Indonesia's nickel downstreaming represents an evolving developmental-state strategy in which the government seeks to use domestic mineral resources to construct a localized industrial value chain (Lahadalia et al. 2024). Schruder and Iwasaki similarly demonstrate that Indonesia has attempted to connect domestic nickel resources with a broader value chain extending from mining and processing toward electric vehicles (Schruder and Iwasaki 2024). These developments provide an important economic rationale for nickel expansion, but they do not by themselves resolve the legal and human rights questions created by intensive resource extraction.

North Maluku illustrates this tension particularly clearly. Central Halmahera and East Halmahera have experienced rapid expansion of mining concessions, industrial facilities, transportation infrastructure, and supporting activities. The resulting transformation has generated employment and investment but has also altered landscapes, forests, waterways, customary territories, and traditional livelihood systems. Deni and Kristanto (2024) identify corruption, maladministration of mining permits, agrarian conflict, environmental degradation,

inequality, and health problems as interconnected consequences of problematic nickel governance in North Maluku. Nancy (2022) similarly identifies a fundamental conflict between economic development and environmental sustainability in Halmahera, emphasizing that the expansion of mining can undermine Indigenous rights and intensify social inequality. These findings suggest that nickel development must be evaluated as a multidimensional governance process rather than merely as an economic project. The relevant question is not whether nickel contributes to national development, but whether its development is consistent with the constitutional obligation to protect human dignity, environmental rights, livelihoods, and equality.

The human rights dimension becomes even more significant when nickel is framed as part of the global energy transition. The expansion of electric vehicles and low-carbon technologies creates increasing demand for critical minerals, including nickel. This creates a potentially problematic narrative in which mining is automatically associated with environmental progress because its products contribute to renewable or low-carbon technologies. Such a narrative risks obscuring the environmental and social conditions under which minerals are produced. The energy transition cannot be considered socially sustainable if communities located at extraction frontiers experience land dispossession, polluted water, declining fisheries, health risks, or restrictions on peaceful opposition. Iskandar (2025) demonstrates precisely this tension in Central Halmahera, linking nickel mining with environmental degradation, water-quality concerns, health risks, and human rights implications. The central argument of this article is therefore that the legitimacy of nickel development must be measured not only by its contribution to industrial transformation but also by its compatibility with substantive human rights and environmental justice.

This article uses normative juridical research combined with policy and sociolegal analysis. The normative juridical component examines Indonesian legal rules governing mineral resources, environmental protection, human rights, land, Indigenous communities, and public participation. The principal legal materials include the 1945 Constitution of the Republic of Indonesia, Law No. 39 of 1999 concerning Human Rights, Law No. 32 of 2009 concerning Environmental Protection and Management, Law No. 3 of 2020 concerning Mineral and Coal Mining, and relevant regulations concerning environmental assessment, mining licensing, and community participation. International standards, including the International Covenant on Economic, Social and Cultural Rights, the United Nations Declaration on the Rights of Indigenous Peoples, and the United Nations Guiding Principles on Business and Human Rights, are employed as interpretive standards for assessing the adequacy of domestic governance.

The sociolegal analysis examines how legal rules operate within the unequal social and political relationships surrounding nickel extraction. The article focuses on Central Halmahera and East Halmahera because these areas provide particularly important examples of the interaction between industrial development, Indigenous

and local communities, environmental change, and state regulation. The analysis incorporates recent peer-reviewed scholarship specifically concerning nickel downstreaming, North Maluku, environmental justice, Indigenous rights, and environmental resistance. Particular attention is given to research published several studies, and these sources are used selectively because their substantive focus on human rights, environmental justice, Indigenous rights, civic participation, and structural inequality directly corresponds to the issues examined in this article. The analysis is descriptive, argumentative, and analytical: it describes the transformation produced by nickel development, evaluates the legal and human rights implications of that transformation, and analyzes the institutional conditions that determine whether development produces equitable or disproportionate outcomes.

Nickel Downstreaming and the Transformation of North Maluku

Indonesia's nickel downstreaming policy has a legitimate developmental rationale. For decades, Indonesia's mineral economy was heavily dependent on the export of relatively unprocessed commodities, limiting domestic value creation and exposing the economy to fluctuations in international commodity markets. Downstreaming seeks to change this pattern by encouraging domestic processing, industrial employment, technological development, and integration into higher-value supply chains. Lahadalia et al. (2024) characterize nickel downstreaming as a new form of developmental-state policy that combines industrial intervention with environmental, social, and governance considerations. Their analysis is important because it demonstrates that the policy cannot be understood simply as a mining policy. It is an industrial strategy intended to reorganize Indonesia's position within global production networks. Schruder and Iwasaki (2024), however, show that the construction of an Indonesian nickel-to-electric-vehicle value chain remains heavily influenced by lead firms and foreign investment. This creates a need to examine whether the economic benefits of downstreaming are sufficiently distributed to resource-producing regions and local communities.

The economic significance of downstreaming is particularly visible in North Maluku. Regional production, investment, industrial employment, and infrastructure development have expanded alongside nickel extraction and processing. Herawan and Susilo (2024), using input-output analysis, find that nickel downstreaming can generate positive effects for the regional economy of North Maluku, particularly when nickel reserves are connected to electric-vehicle and battery production. Such findings are important because a human rights analysis should not ignore the legitimate developmental benefits of mining. The problem arises when aggregate economic gains are treated as sufficient evidence that communities are benefiting fairly. Lahadalia et al. (2024) themselves emphasize that nickel-producing regions face challenges involving unemployment, local revenue, community participation, and environmental degradation. Consequently,

the relevant issue is distributive rather than merely aggregate: who receives the benefits, who bears the risks, who participates in decision-making, and who possesses effective remedies when development generates harm?

The transformation of North Maluku must therefore be understood as a process of territorial restructuring. Mining does not simply remove ore from the ground. It transforms forests into concession areas, creates roads and industrial infrastructure, modifies water systems, generates waste, attracts labor migration, and changes the relationship between communities and their territories. This territorial dimension is important because many local communities depend on land and natural resources for agriculture, fishing, forest gathering, and cultural practices. Nancy (2022) argues that the conflict between nickel mining and Indigenous communities in Halmahera demonstrates how economic development can produce ecological and social inequality when community rights are inadequately integrated into development decisions. The transformation of territory consequently becomes a transformation of social relations. A mining permit can legally authorize extraction while simultaneously creating consequences for people whose relationships with land cannot be fully represented through formal ownership documents.

A further difficulty is that industrial expansion creates a complex mixture of opportunities and risks. Local residents may obtain employment, establish businesses, or gain access to infrastructure, while other residents may lose agricultural land, fishing grounds, forest resources, or access to clean water. Migrant workers may obtain employment while local communities experience increased pressure on public services and living costs. The resulting social structure cannot be divided into simple categories of “development beneficiaries” and “development victims.” Rather, nickel industrialization produces differentiated outcomes among workers, customary landholders, farmers, fishers, women, Indigenous groups, local entrepreneurs, migrants, and government institutions. A human rights-based analysis must therefore examine distributional differences rather than assuming that regional economic growth automatically translates into improved welfare for every community member.

Environmental Rights, Public Health, and Ecological Justice

The environmental dimension of nickel mining is central to the human rights analysis because Indonesian law recognizes the right to a good and healthy environment. Mining activities can affect forests, soil, rivers, coastal ecosystems, and biodiversity, while processing and industrial operations may generate additional risks associated with air emissions, wastewater, hazardous materials, and industrial waste. The scale of these impacts means that environmental protection cannot be treated as a peripheral regulatory issue. It is directly connected to the enjoyment of rights to health, food, water, livelihood, and an adequate standard of living. Iskandar (2025) provides particularly important evidence concerning Central

Halmahera, reporting concerns regarding water quality, biological resources, contamination, deforestation, and health impacts. The study argues that nickel mining in Central Halmahera should be understood through the interconnected frameworks of environmental justice, human rights, and climate law rather than as a narrow question of industrial licensing.

This argument is consistent with the recent scholarship published by Kurniawan (2024), argues that environmental defenders in Indonesia frequently face harassment, intimidation, and other forms of pressure when challenging environmental degradation and resource exploitation. The study emphasizes that ecological justice is inseparable from the protection of freedom of expression, assembly, and protest. This perspective is directly relevant to nickel development because environmental governance depends not only on administrative institutions but also on the capacity of communities and civil society to identify and challenge environmental harm. When environmental defenders are intimidated or criminalized, environmental regulation becomes weaker because the social actors capable of monitoring environmental performance are discouraged from acting. Environmental rights therefore require a functioning civic space in which communities can criticize development policies without fear of retaliation.

Rochman, Suryana, and Robertson (2024) strengthen this argument by examining the intersection between Indigenous rights and environmental degradation in Indonesia. Their study emphasizes that environmental justice requires recognition of Indigenous peoples' rights to land, natural resources, cultural survival, participation, and legal redress. This approach is particularly important in North Maluku because the ecological consequences of nickel extraction are inseparable from the territorial relationships of communities living around mining areas. When forests are cleared or water systems are altered, the resulting harm cannot be measured solely in terms of hectares of vegetation or technical water-quality indicators. The consequences may include diminished access to traditional food sources, weakened cultural practices, loss of customary knowledge, and increased economic dependence on wage labor. Environmental degradation therefore becomes simultaneously ecological, economic, cultural, and human-rights harm.

The health consequences of environmental degradation require particular attention because environmental burdens are often distributed unequally. Communities closest to mining and processing operations may have greater exposure to dust, polluted water, industrial emissions, or contaminated food chains than populations located farther from extraction sites. Environmental health justice consequently requires more than the existence of environmental standards; it requires continuous monitoring of actual health outcomes. Zafiroth and Thammasat (2025), argue that extractive industries create disproportionate environmental-health risks for Indigenous communities and that Indonesian law continues to face gaps in enforcement, participation, and access to justice. Although their study examines mining regions more broadly, its analytical framework is highly

applicable to North Maluku because it connects environmental degradation directly to the right to health and Indigenous protection.

The ecological consequences also extend beyond individual mining concessions. A cumulative perspective is necessary because several mining operations, industrial parks, roads, ports, power facilities, and processing plants can affect the same ecological system. A project that appears environmentally manageable when considered individually may contribute to severe cumulative effects when combined with other developments. Environmental impact assessment should therefore examine the carrying capacity of watersheds, forests, coastal areas, and fisheries rather than merely evaluating the boundaries of individual permits. This is particularly important in North Maluku, where nickel industrialization is geographically concentrated. The principle of cumulative impact assessment should become a central element of environmental governance because fragmented licensing can obscure the aggregate consequences of development.

Customary Land, Indigenous Rights, and Meaningful Participation

Land rights represent one of the most sensitive dimensions of nickel development in North Maluku. Mining requires access to territories that may be legally classified through formal administrative categories while simultaneously being understood by communities through customary relationships. Indigenous and local communities may depend on forests, agricultural land, rivers, and coastal resources without possessing individual land certificates corresponding to every part of their traditional territory. This creates an institutional asymmetry: the state and corporations generally possess maps, licenses, technical expertise, and legal resources, while communities may need to translate customary relationships into administrative categories that were not designed to capture collective territorial systems. When mining decisions are made without adequately recognizing these relationships, formal legality may coexist with substantive injustice.

The relevance of substantive justice is strongly supported by scholarship published by Gallego Peca, Perez, and Jimenez (2025) argue that substantive justice concerning Indigenous peoples requires more than formal recognition of collective rights. It requires the actual realization of equality, meaningful participation, cultural respect, and self-determination. This conceptual distinction is crucial for North Maluku. A government may formally recognize Indigenous rights in legislation while permitting development processes that provide communities with little practical ability to influence decisions concerning their territories. In such circumstances, the existence of legal recognition does not necessarily mean that Indigenous rights are effectively protected. Substantive justice therefore requires an evaluation of the real capacity of communities to influence decisions, defend their territories, maintain cultural relationships, and obtain remedies when their rights are infringed.

The principle of Free, Prior and Informed Consent is particularly relevant in this context. FPIC requires that Indigenous peoples receive adequate information and have meaningful opportunities to participate in decisions affecting their territories before development activities commence. Consultation conducted after the essential economic and licensing decisions have already been taken does not satisfy the deeper rationale of participation. Participation must occur early enough to influence the decision itself. It must also involve information that communities can understand and sufficient time for internal deliberation. The process should not assume that community consent can be reduced to signatures obtained from selected individuals. Instead, it should respect legitimate community institutions and decision-making structures.

The experience of the Maba Sangadji community in East Halmahera illustrates the consequences of weak participation safeguards. Rumadan et al. (2025) examine the community's opposition to nickel expansion and report allegations concerning the absence of adequate FPIC, customary land expropriation, environmental degradation, and the criminalization of peaceful resistance. Their study reports that twenty-seven residents were detained in May 2025 and that eleven were charged under broadly interpreted legal provisions. The study further connects the conflict to the loss of customary forest and pollution affecting local rivers. These findings are significant because they demonstrate how land disputes can evolve into human rights disputes involving freedom of expression, due process, Indigenous rights, environmental protection, and access to justice. The issue is therefore not merely whether a mining company possesses a permit, but whether the legal system provides an equitable institutional mechanism for resolving competing claims over territory.

The protection of environmental and Indigenous defenders is consequently essential. Rohmat and Wardhani (2025) argue that environmental advocacy may become subject to criminal proceedings through broadly interpreted legal provisions, thereby restricting civic participation and creating structural inequalities between communities and powerful economic interests. Their critical legal approach is especially relevant to nickel conflicts because the criminalization of protest can transform a substantive dispute about land and environmental rights into a criminal-justice problem. Instead of addressing the underlying questions of land ownership, environmental damage, or participation, state institutions may become focused on regulating the behavior of protesters. This creates a risk of shifting legal attention away from the conduct that generated the conflict in the first place.

Governance, Power, and the Political Economy of Nickel Development

The effectiveness of human rights protection in the nickel sector depends significantly on the institutional structure through which mining decisions are

made. Mining governance involves ministries, regional governments, licensing institutions, environmental authorities, companies, investors, communities, courts, law-enforcement agencies, and civil society organizations. When these institutions possess unequal resources and political influence, formally neutral rules may produce unequal outcomes. Deni and Kristanto (2024) identify corruption, overlapping licenses, abuse of power, land seizure, and environmental degradation as interconnected problems within North Maluku's nickel sector. Their findings indicate that governance quality is not a secondary issue but a determinant of whether natural-resource development produces sustainable or exploitative outcomes.

This concern can also be analyzed through the relationship between law and concentrated economic power. Amiludin et al. (2025), examine how institutional arrangements can facilitate oligarchic influence and constrain popular sovereignty. Although their article addresses constitutional politics rather than nickel mining specifically, its analytical insight is relevant to resource governance: formal democratic and legal institutions do not automatically prevent powerful economic interests from influencing policy outcomes. In extractive sectors, where investment interests are substantial and regulatory decisions have significant economic value, institutional concentration can create risks of regulatory capture. The relevance of this perspective to North Maluku lies in the need to ensure that licensing and development decisions remain accountable to constitutional principles rather than being driven exclusively by investment priorities.

The governance problem is intensified by the strategic framing of nickel as a national resource for the energy transition. Once nickel becomes associated with national economic sovereignty, electric vehicles, green technology, and international competitiveness, criticism of extraction can be portrayed as opposition to national development. Such framing may narrow the political space for communities to question environmental impacts or demand stronger protections. Yet critical-mineral development should not create an exception to ordinary human rights principles. The strategic importance of nickel may justify stronger state involvement in industrial policy, but it cannot justify weaker environmental enforcement or reduced protection for Indigenous and local communities. Developmental urgency must operate within constitutional constraints.

This is where the concept of environmental democracy becomes important. Arifin et al. (2025), argue that climate justice is closely connected to civic space and the capacity of environmental actors to participate in democratic decision-making. Their analysis identifies the criminalization of environmental resistance as a significant threat to climate justice. Although nickel extraction is not identical to climate policy, the conceptual connection is strong because nickel is increasingly justified as an essential mineral for decarbonization. If communities cannot safely participate in debates concerning how critical minerals are extracted, the energy transition risks becoming democratically deficient. A just transition therefore

requires not only lower carbon technologies but also democratic procedures that enable affected communities to influence the conditions under which those technologies are produced.

Corporate Human Rights Responsibility and Environmental Due Diligence

Corporate responsibility is another essential component of rights-compatible nickel governance. Mining companies have legal obligations under Indonesian environmental and mining law, but corporate responsibility should also be evaluated through international human rights standards. The United Nations Guiding Principles on Business and Human Rights establish the corporate responsibility to respect human rights and conduct human rights due diligence. In the nickel sector, this means that companies should identify potential adverse impacts before commencing operations, prevent and mitigate those impacts, monitor their effectiveness, and communicate how they address risks. Due diligence should not be reduced to preparing documents for regulatory approval. It should function as an ongoing system for identifying and addressing actual risks experienced by workers and communities.

Human rights due diligence should also be cumulative. A company's responsibility should not be confined to the immediate boundary of its mining concession when its activities depend on roads, ports, power infrastructure, processing facilities, waste systems, and other connected operations. The combined impacts of these activities may exceed the impact of any individual project. Companies should therefore assess impacts on water, forests, livelihoods, health, customary territories, and community relations across the entire project lifecycle. The approach should be especially rigorous where projects affect Indigenous communities because the consequences may involve collective rights and cultural survival rather than only individual economic interests.

Transparency is equally important. Communities cannot participate meaningfully if environmental information is inaccessible or presented only through highly technical documentation. Environmental monitoring results, water-quality data, waste-management information, permit conditions, and relevant compliance reports should be publicly available and communicated in forms understandable to affected populations. The access-to-justice literature published by several studies reinforce the importance of transparency and meaningful participation in environmental decision-making. Some studies emphasize that environmental governance mechanisms can contain formal safeguards while their implementation remains inconsistent, limiting the practical capacity of communities to protect economic, cultural, and environmental interests. This observation is particularly relevant to mining because procedural rights have little value when communities cannot access the information necessary to exercise them.

Corporate grievance mechanisms should consequently be designed to provide genuine remedies rather than merely manage reputational risk. Complaints concerning land, water, health, employment, environmental damage, or intimidation should be investigated independently and resolved through transparent procedures. Where violations are established, remedies should include compensation, restoration, rehabilitation, livelihood recovery, or institutional changes. Companies should also guarantee protection against retaliation. A grievance mechanism that allows a community to complain but exposes complainants to intimidation or criminalization cannot be regarded as an effective human rights mechanism. Corporate accountability must therefore be connected to independent state oversight, judicial remedies, and community participation.

Toward a Human Rights-Based Model of Nickel Governance

The problems identified above indicate the need for a shift from a permit-centered model of mining governance toward a human rights-based model. A permit-centered system asks whether a company has fulfilled formal licensing requirements. A rights-based system asks whether the project is consistent with constitutional rights, environmental standards, Indigenous rights, meaningful participation, and substantive equality. The distinction is significant because a project may be formally licensed while still generating severe social and environmental consequences. Rights-based governance does not necessarily prohibit mining; rather, it establishes conditions under which mining can legitimately occur. Those conditions should include adequate environmental protection, community participation, recognition of customary rights, protection of livelihoods, and effective remedies.

The first requirement should be meaningful participation from the earliest stage of project development. Communities should receive information before key decisions are made, have sufficient time to deliberate, and possess genuine opportunities to influence project design. For Indigenous peoples, FPIC should be incorporated into licensing and project planning where applicable. Participation should also continue after approval because environmental and social impacts can change during the operational phase. Monitoring committees involving community representatives, government authorities, independent experts, and companies could provide a mechanism for continuous oversight. Such institutions would reduce the distance between formal regulatory processes and the actual experiences of affected populations.

The second requirement should be cumulative environmental and human rights impact assessment. Existing project-by-project assessments should be supplemented by regional assessments capable of examining the combined effects of mining, smelting, roads, ports, energy facilities, and other infrastructure. The assessment should include not only ecological indicators but also livelihoods, health, cultural practices, migration, food security, and access to water. The

principle of intergenerational justice should also be incorporated because environmental degradation may produce consequences extending beyond the operational period of individual mining projects. Environmental restoration obligations should therefore be monitored throughout the project lifecycle rather than postponed until mining ends.

The third requirement should be stronger protection for environmental and Indigenous defenders. The findings of Kurniawan (2024), Arifin et al. (2025), and Rohmat and Wardhani (2025) demonstrate that civic space is an essential component of environmental justice. Communities must be able to organize, protest, criticize, and seek legal remedies without fear of retaliation. Indonesian legal mechanisms protecting environmental defenders should be strengthened and consistently implemented. Anti-SLAPP protections are particularly important where lawsuits or criminal proceedings are used to discourage legitimate environmental advocacy. Protection should extend to Indigenous leaders, journalists, researchers, community organizers, and civil society organizations participating in environmental disputes.

The fourth requirement concerns distributional justice. Nickel-producing regions should receive meaningful and transparent economic benefits from industrialization. Revenue-sharing arrangements, local employment, community development programs, infrastructure investment, health services, education, and livelihood restoration should be evaluated according to actual outcomes rather than expenditure alone. Lahadalia et al. (2024) emphasize the need to reform downstreaming policy to address local revenue, community involvement, and environmental challenges. A fair distribution mechanism should therefore prevent the paradox in which a region rich in mineral resources remains burdened by environmental costs while the largest economic benefits are captured elsewhere.

The final requirement should be accessible and independent remedies. Communities affected by nickel development must have multiple avenues for complaint, including administrative review, environmental courts or judicial mechanisms, human rights institutions, mediation, and corporate grievance procedures. Remedies should not depend exclusively on the willingness of the company to negotiate. Independent institutions must be capable of investigating complaints, ordering corrective measures, and ensuring compensation or restoration where appropriate. The concept of substantive justice emphasized by Gallego Peca, Perez, and Jimenez (2025) is important here: justice should be measured by whether rights are actually realized, not merely by whether legal procedures formally exist.

Conclusion

Nickel development in North Maluku represents one of the clearest contemporary examples of the tension between resource-based industrialization and human rights protection in Indonesia. The sector generates legitimate economic benefits through

investment, employment, downstream processing, and integration into global electric-vehicle supply chains. Nevertheless, these benefits cannot be separated from the environmental and social costs generated at the extraction frontier. Evidence from Central Halmahera and East Halmahera demonstrates concerns involving deforestation, water quality, health, customary land, Indigenous rights, environmental participation, and the treatment of community resistance. The central human rights problem therefore lies not in the existence of nickel mining itself but in the possibility that economic and strategic objectives may be pursued through institutional arrangements that distribute environmental and social burdens disproportionately onto communities with weaker political and economic power.

A rights-compatible nickel policy requires a fundamental shift in the meaning of sustainable development. Sustainability should not be measured only through investment, industrial capacity, export value, or the contribution of nickel to the energy transition. It must also be measured through environmental integrity, protection of customary territories, public health, substantive equality, democratic participation, and access to effective remedies. The scholarship examined in this article, including recent contributions from various studies, reinforces the importance of substantive rather than merely formal protection. Indonesia's critical-mineral strategy can contribute to economic transformation without sacrificing human rights only if state institutions, corporations, and investors accept stronger obligations of transparency, participation, due diligence, environmental protection, and accountability. The energy transition will be genuinely just only when the communities that supply its critical minerals are treated not as externalities of industrial policy but as rights holders whose dignity, territories, livelihoods, and voices are integral to the legitimacy of development.

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