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Who Gains from Nickel Downstreaming? Distributional Justice and Local Economic Inclusion in Indonesia's Morowali Industrial Zone

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Abstract

Indonesia's nickel downstreaming policy has become a central component of its industrialization strategy, seeking to increase domestic value added, attract investment, and strengthen the country's position in global mineral supply chains. However, aggregate economic gains do not necessarily imply equitable distribution among local communities. This study examines who benefits from nickel downstreaming in Morowali Industrial Zone and evaluates the extent of local economic inclusion generated by industrial development. Using a case-study approach, the research combines policy and regulatory analysis with secondary evidence concerning employment, investment, local business participation, and regional economic development. The analysis applies a distributional justice framework to distinguish between benefits captured by investors, government institutions, workers, local enterprises, and surrounding communities. Particular attention is given to access to employment and business opportunities for local residents and the potential exclusion of smaller economic actors from industrial value chains. The study argues that the success of downstreaming should not be measured solely through investment inflows, export value, or regional output, but also through the distribution of economic opportunities and risks. The study contributes to the literature on resource-based industrialization by introducing a justice-oriented assessment of Indonesia's downstreaming strategy. It offers policy implications for strengthening local economic participation within mineral-based industrial development.

[*Kebijakan hilirisasi nikel Indonesia telah menjadi komponen sentral dari strategi industrialisasinya, yang bertujuan untuk meningkatkan nilai tambah domestik, menarik investasi, dan memperkuat posisi negara dalam rantai pasokan mineral global. Namun, keuntungan ekonomi agregat tidak selalu berarti distribusi yang adil di antara masyarakat lokal. Studi ini meneliti siapa yang mendapat manfaat dari hilirisasi nikel di Kawasan Industri Morowali dan mengevaluasi sejauh mana inklusi ekonomi lokal yang dihasilkan oleh* *pembangunan industri. Dengan menggunakan pendekatan studi kasus, penelitian ini menggabungkan analisis kebijakan dan regulasi dengan bukti sekunder mengenai lapangan kerja, investasi, partisipasi bisnis lokal, dan pembangunan ekonomi regional. Analisis ini menerapkan kerangka kerja keadilan distributif untuk membedakan antara manfaat yang diperoleh oleh investor, lembaga pemerintah, pekerja, perusahaan lokal, dan masyarakat sekitar. Perhatian khusus diberikan pada akses terhadap lapangan kerja dan peluang bisnis bagi penduduk lokal dan potensi pengecualian pelaku ekonomi yang lebih kecil dari rantai nilai industri. Studi ini berpendapat bahwa keberhasilan hilirisasi tidak boleh diukur hanya melalui arus masuk investasi, nilai ekspor, atau output regional, tetapi juga melalui distribusi peluang dan risiko ekonomi. Studi ini berkontribusi pada literatur tentang industrialisasi berbasis sumber daya dengan memperkenalkan penilaian berorientasi keadilan terhadap strategi hilirisasi Indonesia. Studi ini menawarkan implikasi kebijakan untuk memperkuat partisipasi ekonomi lokal dalam pengembangan industri berbasis mineral.*]

Keywords: nickel downstreaming, distributional justice, local economic inclusion, industrialization, Morowali

Introduction

Indonesia's aggressive implementation of its mineral downstreaming policy (*hilirisasi*) represents a dramatic paradigm shift in the governance of resource-based industrialization across the Global South. Driven by national economic mandates, particularly Law No. 3/2020 on Mineral and Coal Mining, the state banned raw nickel ore exports to force foreign and domestic capital into establishing in-country smelting and refining infrastructure (Warburton 2017). By forcing the domestic processing of critical transition minerals, the central government aims to capture higher value-added margins, foster technological transfer, and position Indonesia as a central hub in global electric vehicle (EV) battery supply chains (Resosudarmo et al. 2021). The flagship site of this strategy is the Indonesia Morowali Industrial Park (IMIP) in Central Sulawesi, which has attracted tens of billions of dollars in foreign direct investment—predominantly from Chinese industrial conglomerates—and generated extraordinary macroeconomic growth metrics (Hamilton-Hart and Schulze 2016).

However, high aggregate macroeconomic metrics such as regional gross domestic product (GDP) growth and surging export volumes frequently obscure deep structural inequalities operating at the local level. While national balance sheets and corporate financial statements register record gains, the socio-economic benefits accruing to host communities in Morowali remain deeply uneven and fraught with structural barriers (Gellert 2019). The influx of mega-capital into a rural coastal economy creates an enclave industrial model where advanced capital-intensive operations sit alongside vulnerable local populations, raising urgent questions regarding economic inclusion and distributional fairness (Phelps, Atienza, and Arias 2015).

Applying a distributional justice framework is essential to disaggregating the societal winners and losers of Indonesia's nickel boom. Distributional justice in environmental and resource governance demands that economic benefits, market opportunities, and associated socio-environmental risks be distributed equitably across all stakeholders, with explicit protections for historically disadvantaged or local populations (Schlosberg 2007). In resource extraction zones, industrial expansion typically concentrates wealth among multinational corporations and state coffers, while shifting severe externalized costs—such as ecological degradation, price inflation, and cultural disruption—onto local communities (Bebbington et al. 2008).

Local economic inclusion serves as a critical operational metric for evaluating distributional justice within mineral-rich industrial enclaves. Genuine inclusion requires more than the passive absorption of low-skilled labor into industrial workforces; it demands that local residents and small-to-medium enterprises (SMEs) secure meaningful access to high-value employment, public supply chains, and technology transfer (Heffron and McCauley 2018). In Morowali, structural bottlenecks—such as educational disparities, capital constraints, and institutional corruption—frequently prevent local actors from participating in high-value secondary markets, leading to systemic economic marginalization (Resosudarmo et al. 2021).

Furthermore, the environmental liabilities generated by nickel processing—including coal-fired power generation emissions, tailing management issues, and marine pollution—directly undermine traditional coastal and agricultural livelihoods. Local fishing and farming communities bear the brunt of resource degradation without receiving proportional compensation or alternative economic security (Gellert 2019). This misalignment highlights a profound deficit in distributive justice, as the structural risks of industrial expansion are localized while the financial dividends are externalized to distant capital centers.

Addressing these structural inequities requires an analytical approach that combines political economy with environmental justice frameworks. A purely market-driven model of downstreaming assumes an automatic "trickle-down" effect that rarely materializes in enclave economies without deliberate state intervention and strong institutional governance (Phelps, Atienza, and Arias 2015). Analyzing the spatial, institutional, and economic arrangements in Morowali illuminates how current policy frameworks favor capital accumulation over community-centered development (Warburton 2017).

This study evaluates the distribution of gains and losses resulting from nickel downstreaming policies in the Morowali Industrial Zone through a distributional justice lens. By mapping the socio-economic interactions between multinational investors, state institutions, local workers, and surrounding host communities, the paper aims to identify the structural mechanisms driving inclusion and exclusion. The ultimate goal is to propose targeted policy interventions that transform raw industrial expansion into inclusive, equitable, and socio-ecologically sustainable regional development.

Enclave Industrialization and Capital Capture: Macro-Growth vs. Micro-Disparity

The rapid industrialization of Morowali through nickel downstreaming demonstrates a fundamental structural disconnect between macro-level capital accumulation and micro-level socio-economic development. Driven by massive capital inflows into the Indonesia Morowali Industrial Park (IMIP), national export statistics and provincial economic growth rates have reached historical highs, leading policymakers to celebrate the strategy as an unqualified industrial success (Warburton 2017). However, an analysis of the spatial and financial architecture of IMIP reveals an enclave industrial model, where capital, technology, and high-value profits remain tightly concentrated within corporate networks while failing to integrate with the local economy (Phelps, Atienza, and Arias 2015).

Under the current downstreaming model, foreign direct investment—primarily originating from Chinese corporate consortiums—enjoys significant tax holidays, duty exemptions, and streamlined regulatory approvals granted by the central government (Hamilton-Hart and Schulze 2016). While these fiscal incentives were designed to de-risk mega-infrastructure investments in remote regions, they systematically limit the state's capacity to capture ground rent and redistribute industrial profits toward regional social development (Gellert 2019). Consequently, the overwhelming majority of surplus value generated from Morowali's nickel deposits is repatriated to foreign parent corporations or captured by national political-economic elites in Jakarta.

The structural insulation of the industrial zone creates a dual-economy dynamic in Morowali, where a hyper-modern industrial complex exists alongside underdeveloped local infrastructure. The local municipality bears the immediate burdens of industrial expansion—such as damaged road networks, inadequate waste management systems, and strained public healthcare facilities—without receiving a proportional share of tax revenues (Resosudarmo et al. 2021). Because fiscal revenues from mineral processing are overwhelmingly centralized before being selectively redistributed through regional balance funds, local government institutions lack the financial autonomy needed to address immediate social and environmental shocks (Warburton 2017).

The concentration of financial benefits among multinational firms and corporate shareholders exemplifies a severe structural deficit in distributive justice. From a political economy perspective, nickel downstreaming in Morowali functions as a primary mechanism for resource extraction where local land and labor are mobilized to service global supply chains, while the primary financial yields accrue elsewhere (Bebbington et al. 2008). This dynamic reinforces long-standing periphery-core dependencies, positioning rural host communities as passive sites of resource extraction rather than active beneficiaries of industrial transformation.

Furthermore, the market dominance of mega-smelters distorts regional commodity and property markets, disproportionately penalizing non-industrial residents. The rapid influx of industrial workers has triggered severe local inflation, driving up the cost of food, housing, utilities, and basic consumer goods (Gellert 2019). While platform workers and smelter employees receive money wages that partially offset these rising costs, local farmers, fishermen, and non-industrial service workers face declining purchasing power, which deepens economic inequality within host communities.

The corporate enclave structure also restricts technology transfer and local capital accumulation. Smelting and refining operations rely heavily on imported heavy equipment, specialized technology, and foreign engineering expertise, minimizing opportunities for domestic industrial backward linkages (Phelps, Atienza, and Arias 2015). Local entrepreneurs are routinely relegated to low-margin, non-strategic secondary sectors, such as basic catering, low-tier housing rentals, or manual logistics, keeping them trapped on the margins of the industrial value chain (Resosudarmo et al. 2021).

Efforts by local business associations to secure supply contracts with major processing firms are consistently stymied by rigorous capital requirements, complex corporate procurement policies, and institutional bias toward foreign vendors (Hamilton-Hart and Schulze 2016). This institutional exclusion prevents local capital from upgrading its technical capabilities, thereby entrenching the dominance of foreign firms across the regional economy. Rather than creating a multi-tiered industrial network, downstreaming in Morowali has established an insular economic hub operating largely independent of regional business networks.

The spatial configuration of IMIP further illustrates this physical and economic isolation. Enclosed behind security perimeters, the industrial park functions as an autonomous zone equipped with its own captive power plants, private port facilities, and internal logistics networks (Phelps, Atienza, and Arias 2015). This structural autonomy minimizes the need for industrial operators to interact with or rely on local public infrastructure, insulating corporate operations from regional developmental deficiencies while reinforcing community alienation.

The rhetoric of national industrial sovereignty that surrounds the downstreaming policy frequently erases these localized socio-economic disparities. National political discourse frames the sacrifice of host regions as a necessary contribution to broader state-building and macroeconomic modernization initiatives (Warburton 2017). However, applying a distributional justice framework demonstrates that national wealth generation achieved through the structural marginalization of local populations is inherently inequitable and socially unstable over the long term (Schlosberg 2007).

Ultimately, the enclave industrialization model operating in Morowali illustrates that high investment figures and rapid GDP expansion are poor indicators of inclusive regional development. Without structural reforms that mandate localized value-capture, direct tax redistribution, and meaningful economic integration, nickel downstreaming will continue to exacerbate regional inequality (Resosudarmo et al. 2021). Reconciling downstreaming with distributional justice requires breaking down the enclave structure and re-embedding industrial capital into the broader socio-economic fabric of the host region.

Labor Dynamics, Skill Asymmetries, and the Illusion of Inclusion

Labor absorption is frequently cited by policymakers as the primary channel through which nickel downstreaming yields local socio-economic benefits, yet a critical examination of employment dynamics in Morowali reveals deep structural exclusions. While the expansion of IMIP has created tens of thousands of direct and indirect jobs, access to these opportunities is highly stratified along geographic, educational, and demographic lines (Resosudarmo et al. 2021). Local residents from Morowali and surrounding regions in Central Sulawesi are predominantly concentrated in low-skilled, low-wage, and high-hazard operational roles, while high-paying managerial and technical positions are overwhelmingly occupied by foreign workers or skilled domestic migrants from urban centers (Gellert 2019).

This labor stratification is rooted in severe pre-existing educational and skill asymmetries that the state and corporate actors have failed to remediate. The sudden shift from agrarian and maritime livelihoods to capital-intensive metallurgical processing required technical competencies that local educational institutions were ill-equipped to provide (Hamilton-Hart and Schulze 2016). Rather than establishing comprehensive vocational training infrastructure prior to industrial launch, corporate operators met their technical labor demands by importing specialized personnel, treating the local labor pool as a secondary source of raw, replaceable manpower.

The resulting workplace hierarchy creates deep social friction and widespread perceptions of procedural and distributive injustice among local workers. Indonesian labor force participants frequently work alongside foreign counterpart technicians, performing similar operational duties while experiencing notable disparities in compensation, housing allowances, and working conditions (Warburton 2017). These structural wage gaps are defended by corporate management as reflections of skill differentials, yet the lack of transparent skill classification systems and vocational upgrading pathways leaves domestic workers feeling marginalized within their ancestral homeland.

Occupational health and safety hazards represent another dimension where operational risks are disproportionately shifted onto front-line industrial labor. Smelting operations, captive coal plant management, and heavy equipment transportation involve high risks of industrial accidents, respiratory illnesses, and chronic physical fatigue (Gellert 2019). Reports of workplace fatalities, furnace explosions, and inadequate protective equipment highlight institutional deficits in labor inspection and regulatory enforcement by state agencies, leaving workers vulnerable to unsafe operational practices in the drive to meet corporate production targets.

Furthermore, the precarious nature of employment contracts in the industrial zone weakens worker agency and income security. A substantial portion of the domestic workforce is employed through third-party outsourcing agencies or short-term fixed-contract arrangements, stripping workers of long-term job security, collective bargaining power, and comprehensive health benefits (De Stefano 2016; Resosudarmo et al. 2021). This contractual precarity prevents industrial laborers from translating temporary wage gains into long-term wealth accumulation or intergenerational economic mobility.

Gendered exclusion within the nickel labor market further restricts the equitable distribution of industrial benefits. The heavy industrial processing sector in Morowali remains overwhelmingly male-dominated, with corporate recruitment practices favoring male applicants for operational roles based on gendered assumptions regarding physical labor (Gellert 2019). Local women are largely excluded from direct industrial employment, finding themselves pushed into informal, precarious service roles—such as managing boarding houses, small food stalls, or laundry services—which yield significantly lower and less stable returns.

The rapid influx of tens of thousands of domestic and international migrant workers has also destabilized the social fabric of host communities. Local infrastructure, health systems, and public security networks are chronically overwhelmed by the demographic boom, leading to social friction, ethnic tensions, and rising crime rates in residential areas adjacent to the industrial park (Resosudarmo et al. 2021). Host communities bear these socio-cultural disruptions without access to adequate public services or municipal compensation programs.

Workplace organizing and union representation face significant institutional barriers within the industrial zone. Corporate management often views organized labor movements with suspicion, employing aggressive administrative measures to curb strike actions, grievance reporting, and collective wage negotiations (Warburton 2017). The suppression of labor activism deprives workers of formal channels to contest unsafe conditions or demand fair wage adjustments, compounding the procedural injustice embedded in industrial governance.

The narrative that industrial expansion automatically generates local economic inclusion functions as an ideological shield that conceals structural labor exploitation. While employment numbers appear impressive in aggregate statistics, the quality, safety, and distributive fairness of that employment remain deeply problematic (Standing 2011; Gellert 2019). True inclusion requires moving beyond simple employment headcounts to ensure that local workers secure dignified working conditions, fair compensation, and clear pathways to occupational advancement.

Addressing labor inequalities in Morowali requires a structural overhaul of regional human capital development and industrial oversight policies. State institutions must compel platform operators and smelting firms to fund dedicated technical academies, enforce equitable wage structures, and guarantee robust safety standards through independent labor inspections (Resosudarmo et al. 2021). Without mandatory local content requirements for skilled employment, the job creation promised by nickel downstreaming will remain an exclusionary mechanism that deepens local economic precarity.

Environmental Externalities, Livelihood Displacement, and Regulatory Frameworks for Just Transitions

The environmental consequences of nickel downstreaming in Morowali illustrate an asymmetrical distribution of risks, where local ecosystems and traditional primary producers absorb the ecological costs of global industrial transformation. Transforming raw nickel ore into battery-grade nickel and ferro-nickel requires highly energy-intensive smelting processes, powered almost exclusively by dedicated, captive coal-fired power plants (Gellert 2019). The resulting carbon emissions, sulfur dioxide output, and heavy metal dust emissions severely degrade regional air quality, exposing nearby communities to heightened risks of respiratory illnesses and environmental contamination (Schlosberg 2007).

Marine and coastal ecosystems—the foundation of traditional livelihoods in Morowali—face severe impacts from industrial effluent discharge, thermal pollution, and coastal land reclamation. Smelting operations dump large volumes of heated cooling water and industrial wastewater into neighboring bays, disrupting marine biodiversity and destroying local coral reef habitats (Gellert 2019). Consequently, traditional fishing communities report dramatic declines in local fish stocks, forcing artisanal fishermen to voyage further offshore into hazardous waters, which significantly increases operational costs and safety risks.

Agricultural communities face similar patterns of ecological displacement due to land conversion and environmental degradation. The rapid physical expansion of mining concessions, industrial processing sites, and transportation corridors has stripped vast areas of forest cover, causing severe soil erosion, sedimentation of local river systems, and frequent flash flooding during rainy seasons (Resosudarmo et al. 2021). Runoff contaminated with heavy metals systematically degrades neighboring rice paddies and agricultural plots, rendering long-standing farming activities economically unviable and compromising local food security.

This systemic destruction of primary livelihoods represents a profound violation of environmental and distributional justice. Artisanal fishermen, smallholder farmers, and indigenous communities lose access to the natural capital that sustained their families for generations, receiving negligible financial compensation from corporate actors or state agencies (Bebbington et al. 2008; Gellert 2019). Displaced primary producers are rarely absorbed into the industrial workforce in meaningful capacities due to age or skill mismatches, leaving them stranded in perpetual economic insecurity.

The regulatory governance framework surrounding nickel downstreaming in Indonesia has consistently prioritized rapid capital accumulation and project execution over environmental safeguards and local community rights. Under the national framework for Strategic National Projects (*Proyek Strategis Nasional* / PSN), industrial zones like IMIP are granted accelerated environmental impact assessment (AMDAL) approvals and streamlined licensing procedures (Warburton 2017). This regulatory fast-tracking systematically marginalizes local community consultation, limiting public participation and weakening environmental compliance monitoring.

State environmental inspection agencies in Central Sulawesi operate under severe resource constraints, technical limitations, and institutional pressures, rendering effective oversight of complex industrial complexes nearly impossible (Resosudarmo et al. 2021). Corporate operators face minimal regulatory penalties for environmental violations, treating minor fines as routine operational costs rather than incentives for ecological compliance. This regulatory capture creates an environment where industrial firms pollute with near-impunity, leaving local residents without institutional protection or legal recourse.

Corporate social responsibility (CSR) programs implemented by industrial operators in Morowali fail to address these structural socio-ecological damages. Existing CSR initiatives focus primarily on cosmetic public relations projects—such as constructing small community halls, donating basic medical supplies, or hosting ceremonial cultural events—rather than restoring destroyed ecosystems or compensating communities for lost primary livelihoods (Gellert 2019). These token gestures do not compensate for the loss of sustainable economic foundations, functioning instead as co-optation tools designed to suppress local dissent.

Achieving a "just transition" within Indonesia's nickel sector requires reconfiguring regulatory institutions to prioritize ecological integrity, local community rights, and distributional equity alongside industrial output (Heffron and McCauley 2018). Regulatory frameworks must mandate strict environmental standards, including the mandatory transition from captive coal plants to renewable energy sources, closed-loop water recycling systems, and ecologically sound tailings management practices. Furthermore, state agencies must establish independent environmental monitoring boards that include local community representatives, scientific experts, and civil society organizations.

Institutional mechanisms for financial compensation must also be overhauled to ensure that host communities receive direct economic restitution for environmental damages. A dedicated regional environmental restoration and community compensation fund—financed through mandatory corporate levies on nickel processing throughput—should be established to fund ecosystem restoration, healthcare services, and alternative sustainable livelihood initiatives (Resosudarmo et al. 2021). Land acquisition processes must adhere to international standards of

Free, Prior, and Informed Consent (FPIC), protecting vulnerable communities from land grabs and forced displacement.

Ultimately, the long-term viability of Indonesia's nickel downstreaming strategy depends on its ability to balance global industrial ambitions with local ecological and social justice. If downstreaming continues to rely on environmental degradation and the socio-economic marginalization of host communities, it will generate mounting social conflict, international supply chain backlash, and long-term ecological destruction (Heffron and McCauley 2018; Gellert 2019). Reclaiming nickel downstreaming as an instrument of inclusive national development requires placing environmental justice, community rights, and local economic inclusion at the absolute center of industrial policy.

Conclusion

This study has critically evaluated the distributional justice implications of Indonesia's nickel downstreaming policy within the Morowali Industrial Zone, demonstrating that aggregate macroeconomic expansion does not automatically generate local economic inclusion. While the state's resource-based industrialization strategy has successfully driven capital accumulation, export growth, and global supply chain integration, these macro-level achievements mask severe micro-level structural inequities. The enclave architecture of the Morowali Industrial Park concentrates financial gains among foreign capital and national political elites, while systematically externalizing the socio-ecological burdens—such as environmental degradation, inflation, and social disruption—onto local host communities. Consequently, the prevailing downstreaming model reproduces peripheral vulnerability under the banner of modern industrialization.

Addressing these deep structural exclusions requires a fundamental realignment of Indonesia's industrial policy framework around principles of distributional, procedural, and environmental justice. Regulatory regimes must move beyond prioritizing rapid capital investment to institute enforceable local content mandates, mandatory human capital upgrading, transparent wage structures, and robust occupational safety standards. Furthermore, state governance must restore ecological oversight by ending regulatory fast-tracking, requiring captive energy decarbonization, and establishing independent environmental monitoring mechanisms with binding local representation. Reconciling resource-based industrialization with genuine social equity demands that the success of downstreaming be judged not by export volumes alone, but by its capacity to protect human dignity, preserve local livelihoods, and deliver inclusive prosperity to the communities hosting industrial development.

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