

Indigenous Land Rights and Infrastructure Development in Papua: Assessing the Human Rights Implications of Indonesia's National Development Projects

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Abstract

Large-scale infrastructure development in Papua has been promoted as part of Indonesia's broader strategy to improve connectivity, stimulate economic development, and reduce regional disparities. However, infrastructure projects may significantly affect Indigenous communities whose livelihoods, cultural identities, and social relationships are closely connected to customary territories. This article examines the human rights implications of infrastructure development in Papua, focusing on Indigenous land rights, participation, and access to remedies. Using normative juridical and policy analysis, the study evaluates Indonesian land law, Indigenous rights protection, development policies, and relevant administrative mechanisms. The article argues that formal development authorization does not by itself resolve questions concerning the rights of Indigenous communities affected by projects. Meaningful participation, recognition of customary land interests, adequate compensation, livelihood protection, and accessible remedies are essential components of a rights-compatible development framework. The study proposes a human rights-based approach to infrastructure governance that integrates Indigenous participation into project planning and monitoring. It further argues that development policies should assess cumulative social and cultural impacts rather than focusing exclusively on physical infrastructure outcomes. Strengthening procedural and substantive safeguards would help reconcile national development objectives with Indonesia's constitutional and international human rights commitments.

[Pembangunan infrastruktur skala besar di Papua telah dipromosikan sebagai bagian dari strategi Indonesia yang lebih luas untuk meningkatkan konektivitas, merangsang pembangunan ekonomi, dan mengurangi kesenjangan regional. Namun, proyek infrastruktur dapat secara signifikan memengaruhi masyarakat adat yang mata pencaharian, identitas budaya, dan hubungan sosialnya terkait erat dengan wilayah adat. Artikel ini mengkaji implikasi hak asasi manusia dari pembangunan infrastruktur di Papua, dengan fokus pada hak atas tanah masyarakat adat, partisipasi, dan akses terhadap

upaya hukum. Dengan menggunakan analisis hukum dan kebijakan normatif, studi ini mengevaluasi hukum tanah Indonesia, perlindungan hak masyarakat adat, kebijakan pembangunan, dan mekanisme administratif yang relevan. Artikel ini berpendapat bahwa otorisasi pembangunan formal saja tidak menyelesaikan pertanyaan mengenai hak-hak masyarakat adat yang terdampak proyek. Partisipasi yang bermakna, pengakuan kepentingan tanah adat, kompensasi yang memadai, perlindungan mata pencaharian, dan akses terhadap upaya hukum merupakan komponen penting dari kerangka pembangunan yang sesuai dengan hak asasi manusia. Studi ini mengusulkan pendekatan berbasis hak asasi manusia terhadap tata kelola infrastruktur yang mengintegrasikan partisipasi masyarakat adat ke dalam perencanaan dan pemantauan proyek. Lebih lanjut, studi ini berpendapat bahwa kebijakan pembangunan harus menilai dampak sosial dan budaya kumulatif daripada hanya berfokus pada hasil infrastruktur fisik. Penguatan perlindungan prosedural dan substantif akan membantu menyelaraskan tujuan pembangunan nasional dengan komitmen konstitusional Indonesia dan komitmen hak asasi manusia internasional.]

Keywords: Indigenous rights, Papua, land rights, infrastructure development, human rights

Introduction

Infrastructure occupies a central position in Indonesia's contemporary development strategy. Roads, ports, airports, energy systems, telecommunications networks, and other forms of public infrastructure are generally expected to improve connectivity, facilitate market integration, reduce logistical costs, and address long-standing regional inequalities. In Papua, infrastructure development has particular political and economic significance because geographical conditions, sparse settlement patterns, and limited transportation networks have historically contributed to high costs of mobility and uneven access to public services (Saktina and Khoirunnurrofik 2022). Consequently, the Indonesian government has consistently presented infrastructure expansion as an important mechanism for overcoming regional isolation and promoting more inclusive development.

Yet development in Papua raises questions that cannot be resolved solely through conventional measurements of infrastructure output. Roads and other strategic projects operate within territories that are socially, culturally, and legally complex. For many Indigenous Papuan communities, land is not merely an economic asset or a physical space available for conversion. Land constitutes the foundation of collective identity, kinship, customary authority, spiritual relationships, food production, hunting, gathering, and intergenerational continuity. Development projects that alter access to customary territories may

therefore affect a broader range of rights than formal property analysis ordinarily captures.

Research concerning Papua demonstrates that development interventions may produce mixed outcomes. Road infrastructure can increase mobility, improve market access, and create new opportunities for communities to sell agricultural products. At the same time, infrastructure corridors may accelerate forest conversion, increase access by external actors, transform local economies, and create pressures on customary land and natural resources (Pattiselanno and Krockenberger 2021; Kambu et al. 2022). Similar tensions are visible in large-scale agricultural and extractive projects, particularly where development requires extensive land acquisition or facilitates subsequent commercial expansion.

The central problem is therefore not whether infrastructure development is inherently incompatible with Indigenous rights. Infrastructure can contribute positively to the realization of economic and social rights when communities have improved access to health care, education, markets, and other public services. The more important question concerns the institutional conditions under which development occurs. Projects become rights-sensitive when affected communities can meaningfully influence decisions, when customary territories are adequately recognized, when the distribution of benefits and burdens is equitable, and when effective remedies are available for those who suffer harm.

This article addresses the following research question: How should Indonesia's infrastructure and national development projects in Papua be governed to ensure compatibility with Indigenous land rights and human rights obligations? To answer this question, the article examines three interrelated issues. First, it analyzes the legal status of Indigenous land rights in Indonesia and Papua. Second, it assesses the principal human rights implications associated with infrastructure and strategic development projects. Third, it proposes a human rights-based framework for infrastructure governance.

The article advances the argument that the principal challenge is not the complete absence of legal recognition. Indonesian constitutional law, agrarian law, environmental law, and Papua's special autonomy framework provide important normative foundations for the recognition of customary communities and their traditional rights. However, recognition remains fragmented, conditional, and vulnerable to restrictive administrative procedures. The resulting gap between formal recognition and practical protection becomes particularly significant when projects are implemented through accelerated development mechanisms or when land administration systems do not adequately correspond with customary territorial arrangements.

A rights-compatible development model must therefore move beyond the narrow proposition that state authorization or statutory compliance automatically legitimizes intervention in Indigenous territories. Legal authorization is necessary, but it is not sufficient. The legitimacy of development also depends on participation,

substantive protection of land and livelihood, cultural safeguards, accountability, and accessible mechanisms for dispute resolution.

Methods

This study employs normative juridical and policy analysis. The research examines the legal relationship between infrastructure development, customary land rights, and human rights through three principal approaches: the statute approach, the conceptual approach, and the policy approach. The statute approach analyzes the 1945 Constitution of the Republic of Indonesia, Law No. 5 of 1960 concerning Basic Agrarian Principles, Law No. 39 of 1999 concerning Human Rights, Law No. 32 of 2009 concerning Environmental Protection and Management, Law No. 2 of 2012 concerning Land Acquisition for Development in the Public Interest, Law No. 21 of 2001 concerning Special Autonomy for Papua as amended by Law No. 2 of 2021, and relevant Constitutional Court decisions, particularly Decision No. 35/PUU-X/2012 concerning customary forests.

The conceptual approach draws upon scholarship concerning Indigenous rights, customary tenure, legal pluralism, participation, Free, Prior and Informed Consent (FPIC), human rights-based development, environmental justice, and access to remedies. International human rights instruments, including the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), are also used as interpretive standards for evaluating the adequacy of domestic safeguards.

The policy approach examines the relationship between national development priorities and their implementation in Papua. Particular attention is given to road development, strategic projects, agricultural development, and other interventions requiring access to land and natural resources. The study is based primarily on secondary materials, including legislation, judicial decisions, policy documents, and peer-reviewed journal literature. The analysis is qualitative and normative. Rather than measuring the impact of a single project, the article identifies recurring structural risks within the governance of development projects affecting Indigenous territories. The purpose is to develop a rights-based analytical framework applicable to infrastructure governance in Papua.

Results and Discussion

A. Indigenous Land Rights in Papua: Legal Recognition and Structural Ambiguity

1. Constitutional Recognition of Indigenous Peoples

Indonesia's constitutional framework recognizes customary law communities and their traditional rights. Article 18B paragraph (2) of the 1945 Constitution provides that the state recognizes and respects customary law communities and their traditional rights as long as they remain alive and are in accordance with the development of society and the principles of the Unitary State of the Republic of Indonesia. Article 28I paragraph (3) further affirms respect for cultural identity and the rights of traditional communities.

These constitutional provisions are significant because they establish that Indigenous rights are not merely matters of government discretion. At the same time, constitutional recognition is qualified. The rights of customary communities are frequently made dependent on conditions relating to continued existence, social development, and compatibility with national interests. Such conditionality can create uncertainty because the state may retain substantial authority in determining whether a community is formally recognized.

This problem is particularly relevant in Papua, where customary tenure systems may predate and operate independently of formal land registration. Pelupessy (2017) argues that although Indonesian law provides legal recognition for Indigenous land rights, the overall legal structure remains ambivalent. Recognition exists across different legal regimes, yet the practical protection of customary rights can be weakened by inconsistent regulations and competing claims to authority.

Moeliono (2015) similarly identifies a fundamental question concerning whether state recognition of customary communities is declaratory or constitutive. If recognition is declaratory, the state's formal acknowledgment merely confirms a community's pre-existing rights. If recognition is constitutive, rights become practically enforceable only after government recognition. The latter model creates substantial risks for communities whose territories are historically occupied and governed through customary systems but have not completed administrative recognition procedures.

2. The Basic Agrarian Law and Hak Ulayat

Law No. 5 of 1960 concerning Basic Agrarian Principles recognizes customary rights, commonly described as *hak ulayat*. Article 3 provides that the implementation of customary rights and similar rights of customary communities shall be recognized as long as such communities still exist and the exercise of those rights does not conflict with national interests and applicable legislation.

This recognition is important but not absolute. Customary rights are recognized within a legal framework that also gives the state extensive authority over land and natural resources. In development practice, the state may therefore prioritize projects considered necessary for the public interest or national development. The resulting tension is particularly pronounced where formal development planning encounters territories that are collectively governed but insufficiently documented in official cadastral systems. Customary tenure in Papua often cannot be understood through individual ownership categories alone. Rights may be organized through clans, lineages, kinship groups, villages, or other collective arrangements. Authority over land may also include differentiated rights to hunt, gather, cultivate, access forests, or regulate the use of particular natural resources. Simplifying these relationships into a single transactional land-acquisition process may therefore fail to capture the actual holders and users of customary rights.

3. Papua's Special Autonomy Framework

Papua's special autonomy framework was intended to provide greater recognition of the historical, political, and cultural specificity of the region. Law No. 21 of 2001 introduced provisions concerning the protection of Indigenous Papuans, customary communities, and traditional institutions. The legal framework acknowledges that the rights of Indigenous Papuans are closely connected to customary institutions and collective territorial relationships.

Nevertheless, special autonomy has not eliminated conflicts concerning customary land. Research has found that legal recognition can coexist with weak implementation, overlapping administrative authority, and uncertainty concerning the operational mechanisms through which communities protect their territories (Pelupessy 2017; Luhukay, Djatmiati, and Sujatmoko 2022). The problem is therefore partly institutional. Formal recognition must be translated into procedures that are capable of operating before project approval and land acquisition decisions become irreversible. If a community's rights are recognized only after land has been classified, allocated, or converted for development, legal protection may arrive too late.

4. Constitutional Court Decision No. 35/PUU-X/2012

A major development in the protection of Indigenous rights was Constitutional Court Decision No. 35/PUU-X/2012, which rejected the classification of customary forests as state forests. The decision strengthened the constitutional position of customary communities by recognizing that customary forests belong within the broader category of forests associated with Indigenous communities rather than being automatically treated as part of state forest property.

The decision did not, however, resolve the administrative difficulties associated with formal recognition. As Tobroni (2014) observes, the decision has important implications for the strengthening of Indigenous rights over customary forests, but implementation requires consistency in legislation and administration. For Papua, the decision reinforces the principle that development planning cannot simply assume that all forested land is unencumbered state territory. Yet the effective application of this principle depends on the identification and recognition of customary communities and territories before land-use decisions are finalized.

B. Infrastructure Development and the Transformation of Indigenous Territories

1. Infrastructure as a Development Strategy

Infrastructure development is often justified in Papua on the basis of geographic isolation and unequal access to public services. Road construction can reduce travel times, connect previously isolated areas, facilitate the transportation of goods, and potentially improve access to health and education services. Research on the Trans-Papua Road indicates that local communities may recognize significant potential benefits from improved connectivity (Kambu et al. 2022).

However, infrastructure must not be evaluated exclusively as a neutral physical intervention. Roads transform the social and economic environment through which people interact with markets, government institutions, migrants, corporations, and other external actors. In remote Indigenous territories, a road may be both a public service and a mechanism that changes the accessibility and economic value of land.

Pattiselanno and Krockenberger (2021) demonstrate this complexity in their study of road development and Indigenous hunting in Tanah Papua. Improved road access may enable Indigenous communities to market agricultural products, but it may also increase pressure on wildlife and forests and facilitate broader economic transformation. Their findings underline the importance of integrating Indigenous knowledge and sustainable resource management into infrastructure planning.

2. The Trans-Papua Road and Community Participation

The Trans-Papua Road has become one of the most significant symbols of Indonesia's infrastructure ambitions in Papua. Supporters emphasize its potential contribution to connectivity and economic development. Critics have raised concerns relating to environmental degradation, Indigenous participation, land rights, and the broader transformation of remote territories.

Kambu et al. (2022) argue that local community perspectives are essential to infrastructure planning. Their research indicates that inadequate public involvement can contribute to resistance and social conflict. Community participation should therefore not be treated merely as a public-relations requirement. It is an important mechanism for identifying local knowledge, understanding territorial relationships, and determining whether project design appropriately responds to community needs.

The participation of traditional leaders may also be important in specific local contexts. Bagau, Rompas, and Plangiten (2016) found that Indigenous leadership can play a significant role in decision-making, communication, and community mobilization in road infrastructure development. However, consultation with leaders alone cannot always substitute for broader participation. Communities are not legally or socially homogeneous, and women, younger generations, land users, and other groups may possess interests that are not fully represented by a single authority.

3. Infrastructure as a Catalyst for Subsequent Land Conversion

The human rights implications of infrastructure frequently extend beyond the construction footprint. New roads can increase the accessibility of forests and customary territories, alter land values, attract investors, and facilitate agricultural or extractive expansion. The appropriate assessment unit is therefore not always the physical road corridor.

Studies of resource expansion in Papua demonstrate that large-scale land conversion may produce extensive externalities for Indigenous communities.

Gaveau and colleagues' broader research on Indonesian land-use transformation, together with Papua-specific scholarship, shows that infrastructure and commercial expansion can be mutually reinforcing.

Acosta and Curt (2019) found that oil palm expansion in Papua involved complex interactions between economic incentives and forest ecosystem services. More specifically, Benami et al. (2018) demonstrate that the expansion of plantations can impose substantial externalities on local and Indigenous communities, including the loss of livelihood opportunities and food-security concerns. Sophie Chao's ethnographic work further demonstrates that land conversion in Merauke is experienced not only as an economic transformation but also as a disruption of relations among people, forests, nonhuman life, and customary identity (Chao 2020). This perspective is important because conventional land-acquisition frameworks often measure harm primarily through monetary compensation. Such frameworks may be inadequate where the affected relationship is not reducible to market value.

C. Human Rights Implications of Development Projects

1. The Right to Land and Security of Tenure

The most direct human rights concern relates to security of tenure. Indigenous communities require legal protection against arbitrary dispossession and the loss of access to territories essential for subsistence and cultural life. Land acquisition conducted under statutory authority does not automatically eliminate the need to determine whether customary rights exist or whether compensation reflects the full range of losses suffered.

International human rights principles increasingly recognize the relationship between Indigenous survival and territorial security. Under UNDRIP, Indigenous peoples possess rights concerning the lands, territories, and resources that they traditionally own, occupy, or otherwise use. UNDRIP also establishes standards concerning participation and consent where projects affect Indigenous territories. Although UNDRIP is a declaration rather than a treaty, it provides an important interpretive framework for evaluating development governance. A rights-compatible approach requires the state to take customary tenure seriously as a substantive interest rather than treating it as an obstacle that becomes relevant only after formal objection.

2. Participation and Free, Prior and Informed Consent

Meaningful participation is a central procedural requirement of a human rights-based approach. Participation differs from information dissemination. A meeting conducted after a project has already been approved may provide information without providing meaningful influence over the decision.

Effective participation should begin before project authorization, continue throughout implementation, and allow affected communities to influence project design. Communities should receive understandable information regarding the

project's location, expected benefits, environmental risks, land requirements, compensation mechanisms, and potential long-term consequences.

The concept of Free, Prior and Informed Consent is particularly relevant where development affects Indigenous territories. “Free” requires that decisions are not obtained through coercion or undue pressure. “Prior” means that consultation occurs sufficiently early to influence decisions. “Informed” requires adequate and comprehensible information. “Consent” requires more than passive attendance at a consultation process. The application of FPIC remains challenging in Indonesian domestic law. Nevertheless, it offers an important standard for improving the quality of participation, particularly in projects with major and potentially irreversible impacts on customary territories.

3. Cultural Rights and Collective Survival

Infrastructure can affect cultural rights when it disrupts access to sacred places, ancestral territories, forests, rivers, hunting grounds, and other locations essential to Indigenous identity. Cultural harm is often difficult to compensate because the loss may be collective and intergenerational.

In Papua, the relationship between customary communities and territory frequently includes spiritual and cosmological dimensions. Research concerning the Marind community demonstrates that land transformation can alter relationships not only among community members but also between people and forests, animals, plants, and ancestral landscapes (Chao 2020).

Human rights impact assessment should therefore include cultural mapping and the identification of sacred or socially significant sites. Standard environmental assessments may not adequately capture these dimensions unless Indigenous knowledge and community-defined indicators are incorporated.

4. Livelihoods, Food Security, and the Right to Development

Development projects may create employment or improve market access, but they can also undermine subsistence systems. Land conversion may reduce access to hunting, fishing, gardens, forests, and water. A compensation payment may be insufficient if the community loses a long-term system of food production and resource security.

The experience of large-scale agricultural development in Merauke illustrates this concern. Butt (2015) argues that agricultural modernization and the Merauke Integrated Food and Energy Estate raise significant questions regarding Indigenous rights, food security, and the meaning of development. Large-scale agricultural projects may be presented as advancing national food security while simultaneously creating risks for the local communities whose customary territories are transformed. This tension highlights the importance of a rights-based understanding of development. The right to development cannot be interpreted merely as the aggregate growth of infrastructure or investment. Development should improve the substantive capabilities of the people affected by it and should not

produce a situation in which national economic objectives are pursued at the expense of local food security and autonomy.

5. Environmental Rights

Environmental degradation is closely connected to Indigenous rights because many communities depend directly on forests, rivers, and other ecosystems. Infrastructure development may contribute to deforestation, habitat fragmentation, water pollution, and broader changes in land use.

Recent research concerning Indigenous communities in Indonesian Papua found that plantation expansion can affect water resources and create additional risks for communities dependent on river systems (Mamahit et al. 2025). Although this study concerns plantation development rather than infrastructure alone, it demonstrates why development impacts should be assessed cumulatively. Infrastructure that facilitates subsequent land conversion may contribute indirectly to environmental harm. The right to a good and healthy environment therefore has implications for infrastructure governance. Project assessments should consider both immediate construction impacts and reasonably foreseeable secondary effects.

6. Access to Justice and Effective Remedies

Rights are ineffective if affected communities cannot obtain accessible remedies. Indigenous communities may face substantial obstacles when seeking administrative, judicial, or non-judicial redress. These obstacles may include geographic distance, financial costs, lack of legal representation, language barriers, difficulties obtaining documentary evidence, and unequal bargaining power.

Papua's legal pluralism also creates a need to consider the role of customary dispute-resolution mechanisms. Reumi (2018) argues that customary courts have a distinctive position within Papua's special autonomy framework but that their institutional relationship with the formal judicial system remains insufficiently synchronized. A rights-compatible grievance system should therefore be accessible, independent, culturally appropriate, and capable of providing meaningful remedies. Remedies should not be limited to financial compensation. Depending on the circumstances, appropriate responses may include project modification, land restitution, environmental restoration, recognition of customary rights, livelihood recovery, or other forms of corrective action.

7. The Limits of a Permit-Based Approach to Development

A recurring weakness in development governance is the assumption that compliance with formal permits conclusively establishes legitimacy. Projects may obtain environmental approval, land authorization, and construction permits while affected communities continue to experience significant rights violations.

This occurs because legal authorization and human rights legitimacy operate at different analytical levels. A permit may demonstrate compliance with an administrative procedure, but it does not necessarily prove that the consultation

process was meaningful, that all customary rights holders were identified, or that compensation adequately addressed cultural and livelihood losses.

A permit-based approach can also produce procedural formalism. Consultations may occur, but only after critical decisions have been made. Environmental assessments may be completed, but cumulative impacts may be excluded. Compensation may be calculated, but collective and intergenerational losses may not be included. These concerns are particularly important in Papua because development projects often intersect with territories where customary rights are socially recognized but not fully represented in state registration systems. In such circumstances, administrative documentation should not become the sole determinant of whether rights exist. The state has a duty to investigate and identify rights before authorizing interventions that may affect Indigenous territories. The burden should not rest entirely on communities to produce documentary evidence according to systems that historically failed to recognize their forms of tenure.

D. Toward a Human Rights-Based Framework for Infrastructure Governance

A more adequate approach to infrastructure development in Papua should integrate human rights throughout the project cycle. The following framework is proposed.

1. Ex Ante Recognition of Customary Territories

The first requirement is to identify and map customary territories before project routes and land-acquisition plans are finalized. Participatory mapping should be conducted with affected communities and should include land-use areas, sacred sites, water sources, forests, gardens, hunting grounds, and other culturally significant spaces. Mapping should not be used merely to facilitate the acquisition of land. Its primary purpose should be to determine whether and how a project should proceed.

2. Human Rights and Cumulative Impact Assessment

Environmental impact assessment should be supplemented by a dedicated human rights assessment for projects affecting Indigenous territories. The assessment should address land rights, participation, cultural impacts, livelihoods, food security, gender, environmental conditions, and access to remedies. Importantly, the assessment should examine cumulative impacts. A road, plantation, mining project, and industrial facility may produce interconnected effects that cannot be understood in isolation. Development planning should therefore assess the foreseeable consequences of infrastructure-enabled land conversion.

3. Meaningful Participation and FPIC-Oriented Procedures

Participation must occur early enough to influence project alternatives. Communities should be involved in decisions concerning route selection, project

design, mitigation measures, compensation, and monitoring. Where projects create substantial and irreversible impacts on Indigenous territories, consent-oriented procedures consistent with FPIC principles should be applied. The state should establish transparent criteria for determining who may represent communities while ensuring that representation does not silence women, younger members, or other rights holders.

4. Substantive Protection of Livelihoods

Compensation should not be limited to the market value of land or physical assets. Where customary territories support livelihoods, the project should assess the long-term economic consequences of lost access to forests, water, gardens, and hunting grounds. Livelihood restoration should be monitored after compensation is paid. A project should not be considered socially successful merely because a financial settlement was concluded.

5. Benefit-Sharing and Local Development

Where infrastructure generates significant economic benefits, affected communities should not be treated solely as recipients of compensation. Appropriate mechanisms for benefit-sharing should be considered, including employment, local procurement, community infrastructure, revenue-sharing arrangements, and long-term development programs determined with community participation. Benefit-sharing must not, however, be used to purchase acceptance where fundamental rights have not been respected. It should complement, rather than replace, rights protection.

6. Independent Monitoring

Monitoring should include independent institutions, civil society, customary representatives, and, where appropriate, academic experts. Community-based monitoring can provide important information concerning environmental and social impacts that may not be captured by government or contractor reporting. Monitoring results should be publicly accessible, subject to legitimate protections for sensitive Indigenous knowledge.

7. Accessible and Culturally Appropriate Remedies

Grievance mechanisms should be available before, during, and after project implementation. Communities should be able to submit complaints without prohibitive financial costs or excessive procedural requirements. Mechanisms should recognize the importance of customary dispute-resolution institutions while ensuring compatibility with constitutional and human rights standards. Serious violations should remain subject to independent judicial or administrative review.

E. Reconciling Development and Indigenous Rights

The relationship between infrastructure development and Indigenous rights should not be framed as a binary choice between economic development and cultural protection. Such framing is analytically misleading because Indigenous communities themselves may support roads, health facilities, schools, markets, and other public services. The critical issue is whether development is designed and governed in a way that recognizes communities as rights holders and participants rather than as passive beneficiaries.

The evidence examined in this article suggests that three structural problems require particular attention. *First*, there is a recognition gap. Customary rights may be recognized in constitutional and statutory language but remain difficult to enforce because formal administrative recognition is incomplete or inconsistent. *Second*, there is a participation gap. Consultation may occur without providing communities genuine influence over project decisions. Participation becomes meaningful only when it can alter the project. *Third*, there is an impact-assessment gap. Infrastructure evaluation often emphasizes physical construction, economic benefits, and direct environmental impacts while insufficiently considering cumulative effects on land tenure, culture, livelihoods, and social relationships.

These gaps suggest that the governance of development projects must be reoriented from administrative compliance toward substantive accountability. The relevant question should not simply be whether a project followed the minimum required procedure. It should also be whether the project has protected the rights of affected communities in practice.

Papua's special autonomy framework provides a normative basis for such an approach. However, special autonomy must operate through effective institutions and procedures. Legal recognition that remains dependent on delayed or restrictive administrative processes cannot provide adequate protection where development decisions proceed rapidly.

The human rights-based framework proposed in this article does not require the abandonment of infrastructure development. Rather, it requires that development be treated as a process of rights realization. Connectivity should coexist with territorial security; economic development should coexist with cultural survival; and national development should coexist with meaningful local participation.

Conclusion

Indonesia's infrastructure development agenda in Papua has the potential to improve connectivity, reduce geographical isolation, expand access to public services, and support regional economic development. However, the human rights implications of infrastructure projects cannot be evaluated solely through measures of economic growth or physical construction. For Indigenous communities in Papua, customary territories are integral to identity, culture, governance, livelihoods, food security, and collective survival.

Indonesian law provides important foundations for the recognition of customary communities and customary land rights. The Constitution, the Basic Agrarian Law, the Human Rights Law, the Special Autonomy Law, and Constitutional Court Decision No. 35/PUU-X/2012 collectively demonstrate that Indigenous rights possess substantial legal significance. Nevertheless, legal recognition remains fragmented and often dependent on administrative formalization. This creates a structural gap between the existence of customary rights and their effective protection during development processes. The article therefore argues that formal authorization does not, by itself, resolve questions concerning the human rights legitimacy of development projects. A rights-compatible project must ensure early identification of customary territories, meaningful participation, FPIC-oriented procedures where appropriate, adequate protection of livelihoods, recognition of cultural impacts, cumulative impact assessment, independent monitoring, and accessible remedies.

A human rights-based approach to infrastructure governance should be integrated throughout the entire project cycle. Indigenous communities should participate in determining whether projects proceed, how they are designed, how harms are mitigated, and how benefits are distributed. Development must also be evaluated beyond the project footprint, particularly where roads and other infrastructure facilitate broader processes of land conversion and resource extraction. Ultimately, the challenge is not to choose between development and Indigenous rights. The challenge is to ensure that development itself becomes compatible with human dignity, constitutional commitments, and the collective rights of Indigenous peoples. Strengthening procedural and substantive safeguards would help Indonesia pursue national development objectives while respecting the distinctive territorial, cultural, and social foundations of Indigenous life in Papua.

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