

The Political Economy of Deforestation in Papua: Hegemony, Land Dispossession, and the Global Frontiers of Resource Extraction

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Abstract: This study explores the political economy of deforestation in Papua, Indonesia, by assessing how state development strategies, transnational capital growth, and indigenous land governance interact within a fragile frontier ecosystem. Applying a qualitative method with a critical case study design, the research centers on Merauke Regency, especially areas influenced by large-scale agribusiness and food estate projects. Data were obtained through document review, semi-structured interviews, and field observations, then examined through thematic coding and analytic narrative guided by political ecology, neo-Gramscian international political economy (Cox, 1981; Gill, 1993), structural power theory (Strange, 1988), accumulation by dispossession, and global commodity chain perspectives. The findings show that deforestation in Papua results from the alignment of state-driven development programs, transnational capital interests, and global commodity networks operating through concession-based land governance that often weakens indigenous customary rights. The study also finds that plasma plantation schemes and corporate social responsibility (CSR) programs can serve as institutional tools to lessen socio-ecological inequality. However, their application remains inconsistent across local settings. Furthermore, agribusiness expansion and related infrastructure development have produced complex impacts, including environmental damage, social displacement, declining indigenous livelihoods, and stronger disputes over land and territorial claims. This study contributes to political ecology and critical international political economy by framing Papua as a geopolitical frontier where capitalist accumulation, state territorial control, and indigenous resistance shape contemporary forest governance.

Keywords: Political Ecology, Deforestation, Indigenous Governance, Global Commodity Chains, Papua Frontier.

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INTRODUCTION

Tropical forests not only play a crucial role in maintaining global climate stability and biodiversity, but also serve as a political-economic frontier influenced by the expansion of global capitalism, state territorialization, and natural resource extraction (Benegiamo, 2025). In various regions of the Global South, deforestation is increasing due to the expansion of agribusiness, infrastructure development, mining, and transnational commodity networks that integrate forest areas into global markets (Gao et al., 2026). From a political ecology perspective, deforestation is understood not solely as

an environmental issue but as a manifestation of unequal power relations between the state, corporations, and local communities (Kansanga et al., 2025). Consequently, forest areas have become arenas for contestation over territorial authority, capital accumulation, and environmental justice, particularly in frontier regions with strong customary land rights systems (Erkuş et al., 2025). Over the past two decades, Papua has undergone rapid socio-economic transformation, driven by a combination of national development priorities, large-scale infrastructure projects, natural resource extraction, and agribusiness expansion. State-led initiatives such as the Trans-Papua Highway, special economic zones, and the allocation of millions of hectares for industrial oil palm, sugar cane, and sago plantations have dramatically altered land-use patterns. These processes are embedded in broader global political-economic dynamics: global commodity chains connect Papuan palm oil, timber, and minerals to markets in Asia, Europe, and North America; transnational capital through foreign direct investment and financing from global banks plays a decisive role in shaping land-use trajectories; and trade and investment regimes influence national policy frameworks that facilitate large-scale land conversion.

Unlike the Colombian Amazon, where deforestation is closely tied to a drug-driven conflict economy, forest loss in Papua is rooted in Indonesia's natural resource-based economic growth strategy, geopolitical security interests, and the assertion of state sovereignty in a region with a long history of political tension. This combination of factors makes Papua a crucial case for examining how global economic structures intersect with local and national power relations to reshape forest boundaries (Ungirwalu et al., 2025). Forest exploration in Papua frequently triggers tensions between state interests, corporations, and indigenous communities (Malinda, 2025). The centrality of the customary land system, which treats land as collective community property, complicates land conflicts, particularly when exploration permits are granted without the full consent of customary rights holders (Coral et al., 2026). This situation fosters social resistance and deepens community distrust of the government.

In the dynamics of resource exploration in Papua, the state, corporations, security forces, and local elites play key roles in planning, implementing, and securing development projects. From a political economy and political ecology perspective, the involvement of these actors often reflects power relations that favor capital accumulation and investment interests over the protection of indigenous peoples' rights (Hitch et al., 2025). This situation triggers territorial contestation and deepens social tensions in areas of armed conflict. On the other hand, economic marginalization and weak governance contribute to some local communities engaging in informal and illegal activities, including illegal logging and extortion practices in project areas (Bamidele, 2026). The dynamics of forest exploration in Papua are closely linked to national political-economic networks, encompassing national policies, international capital flows, and geopolitical interests (Dorigné-Thomson, 2026). Papua, as an ecological and political frontier with a strong customary rights system, faces resource struggles that impact sovereignty, social justice, and sustainability, filling an analytical gap rarely addressed in the international literature.

Previous research has shown that deforestation in frontier regions like Papua cannot be understood solely as changes in land cover, but rather as the result of complex interactions among global economic forces, state policies, and local dynamics. Studies from a political ecology perspective confirm that agribusiness expansion, infrastructure development, and natural resource-based investments often drive land dispossession of

indigenous communities through licensing mechanisms and concession-based governance (Kelly & Lu, 2021). Literature in International Political Economy, particularly that published in the *Review of International Political Economy*, also underscores how the integration of peripheral regions into global commodity chains reinforces the logic of capital accumulation, which results in environmental degradation and social inequality (Argent, 2017). Furthermore, various studies in the Global South have shown that despite the existence of policy instruments such as CSR and Free, Prior, and Informed Consent, their implementation often faces challenges in the form of weak oversight, low local community participation, and unequal power relations between global actors, the state, and indigenous communities (Merino, 2018). Thus, previous studies emphasize the importance of a more inclusive, adaptive, and socially-ecologically-just governance approach to addressing deforestation.

This research fills this gap by adapting an analytical framework previously applied to international cases to a national context, integrating perspectives from global political ecology, Gramscian hegemony theory, the concept of accumulation through dispossession, and global commodity chain analysis. The novelty of this study lies in its integration of global political economy perspectives with indigenous territorial governance in Papua. This frontier region remains underrepresented in international scholarship on deforestation. Unlike existing studies that primarily focus on ecological impacts or land-use change, this article conceptualizes Papua as a geopolitical frontier where state sovereignty, transnational capital, and customary land systems intersect, shaping contemporary deforestation dynamics. The study aims to analyze the actors, power relations, and political-economic dynamics driving deforestation in Papua within the context of interactions among state development policies, transnational capital expansion, and customary rights systems. Specifically, this research explores how hegemonic processes and territorial contestation shape forest governance and examines the socio-ecological consequences of deforestation for local communities and global environmental sustainability.

RESEARCH METHODS

This research uses a qualitative, critical case study design to analyze the political economy dynamics of deforestation in Papua, an ecological and political frontier. The research location is focused on Merauke Regency, specifically the Tanah Miring, Kurik, and Merauke Districts, which are strategic areas for expanding food estate projects, sugarcane and bioethanol plantations, and developing infrastructure supporting national food security. These districts were chosen because they represent high pressure for land conversion, large-scale investment, and increasing contestation between state, corporate, and indigenous interests over control of natural resources. This research adopts the perspectives of political ecology and international political economy by integrating the theories of Gramscian hegemony, accumulation by dispossession (Harvey), and global commodity chains to explain how power relations, transnational investment, and global market integration shape the deforestation process and influence the position of indigenous peoples in tropical forest governance.

The population in this study includes all actors involved in and affected by deforestation dynamics in Papua, including indigenous communities holding customary land rights, central and regional government institutions, concession companies, non-governmental organizations, and academics and policy analysts. Given the qualitative

nature of this research and its emphasis on analytical depth, purposive sampling was employed to select informants based on their relevance, experience, and direct involvement in the issues under investigation. The research sample consisted of 25 key informants, including customary and community leaders, government officials, NGO representatives, academics, and company representatives. To broaden perspectives and deepen the empirical evidence, snowball sampling was subsequently used to identify additional participants with strategic knowledge of deforestation governance and land-use dynamics. Data collection continued until thematic saturation was achieved, indicated by the recurrence of similar patterns, explanations, and narratives across interviews, with no substantially new themes emerging from additional participants. The inclusion of 25 informants was therefore considered sufficient to capture the diverse stakeholder perspectives and the complexity of political-economic processes shaping deforestation in Papua.

Data were collected through triangulation techniques to enhance the validity and depth of the analysis. First, document analysis was conducted on forestry, spatial planning, investment, and food estate program policies, as well as NGO reports, company documents, and national and international media publications related to deforestation in Papua. Second, semi-structured interviews were conducted with 25 informants: 10 traditional leaders and customary communities; 5 central and regional government officials related to forestry and investment; 5 environmental NGOs and indigenous rights advocacy institutions; and 5 academics, policy analysts, and company representatives. Interviews focused on issues of forest governance, land conflicts, investment expansion, and the socio-ecological impacts of deforestation. Third, field observations were conducted in concession areas, customary territories, and affected areas to document socio-ecological changes through field notes and visual documentation.

The interviews in this study used a semi-structured approach that was flexible yet focused, allowing for in-depth exploration of the experiences, perceptions, and positions of actors within the political-economic dynamics of deforestation in Papua. The interview guide was developed based on several key indicators that reflect the research's analytical framework, namely the forms and mechanisms of power hegemony in decision-making related to forest utilization, including the role of the state and corporate actors; the process of customary land disposal, including patterns of permit acquisition, negotiations with local communities, and the forms of marginalization that occur; the dynamics of investment expansion and resource extraction, including the involvement of global, national, and local actors; agrarian conflicts and indigenous peoples' resistance to deforestation practices; and perceived socio-ecological impacts, both in terms of environmental change, livelihood sustainability, and the transformation of community social structures. These indicators allow researchers to comprehensively capture the complex relationships between power, economics, and the environment in the context of frontier resource extraction in Papua.

Data were analyzed using thematic coding based on the frameworks of political ecology and international political economy, specifically the concepts of Gramscian hegemony, accumulation by dispossession, extractive capitalism, and global commodity chains. The coding process used NVivo software to identify, group, and compare key themes derived from interviews, documents, and field observations. The analysis also employed triangulation through cross-validation across official documents, informant interviews, and observation results to enhance the validity of the findings and compare

narratives among the government, indigenous communities, and corporate actors. To strengthen the credibility of the data, the initial findings were reconfirmed through brief discussions with key informants. Furthermore, the study used an analytical narrative approach to explain how power relations, transnational investment, and mechanisms of dispossession shape the dynamics of deforestation and forest governance in Papua.

RESULTS AND DISCUSSION

Research has found that deforestation in Papua is shaped by a multiscalar power configuration involving the state, corporations, indigenous communities, and global actors. The central and regional governments act as primary facilitators of frontier expansion through development policies, concession grants, and strategic infrastructure development. Agribusiness corporations and extractive industries act as lead actors in integrating forest areas into global commodity chains. At the same time, indigenous communities are subordinated due to their limited access to decision-making processes. Meanwhile, international environmental organizations and transnational advocacy networks have begun to play a role as countervailing forces against the expansion of extractive capital.

Table 1. Actor Mapping

Focus	Key Findings Supported by Empirical Evidence
Actors	Interview data revealed a complex constellation of actors, including indigenous communities, customary leaders, local and central government agencies, plantation corporations, and international market actors. Indigenous leaders consistently reported limited involvement in strategic land-use decisions, while government and corporate representatives emphasized economic development and investment objectives. This demonstrates that deforestation is shaped by interactions among multiple actors with unequal decision-making power.
Mechanisms of Dispossession	Participants from indigenous communities described the expansion of concessions as occurring through formal licensing procedures recognized by the state but often perceived as inconsistent with customary land tenure systems. Several informants highlighted that development and food security narratives were frequently used to justify land conversion despite concerns regarding environmental degradation and reduced access to traditional livelihoods.
Global Commodity Chains	Interviews with government officials, NGO representatives, and academics indicated that palm oil expansion in Papua is strongly linked to global commodity demand and international investment networks. At the same time, NGO informants emphasized growing pressure from international consumers, environmental organizations, and sustainability certification schemes, which are increasingly influencing corporate practices and public discourse on deforestation.
Impacts	Indigenous leaders and residents reported substantial environmental changes, including forest loss, declining biodiversity, and reduced availability of natural resources traditionally used for subsistence. Participants also described the weakening of customary land control, increased social tensions over territorial rights, and growing concerns regarding the erosion of cultural identity and community resilience in areas experiencing intensive agribusiness expansion.

The actor mapping in this study reveals a power configuration that reflects a state-capital nexus, in which state institutions and economic actors work together to shape land-use transformation and development trajectories. At the national level, relevant ministries promote food estate policies through fiscal incentives and regulatory frameworks that facilitate large-scale investment. In contrast, at the regional level, provincial and district governments act as policy brokers, connecting national

development agendas with local implementation processes. Multinational agribusiness corporations emerge as lead firms that control production, distribution, and integration into global value chains. In contrast, local communities and smallholder farmers often occupy subordinate positions within these governance arrangements, possessing limited bargaining power and restricted access to decision-making processes.

The research further demonstrates that land expropriation occurs through a combination of formal legal mechanisms and informal practices. Formally, land status conversion is implemented through government regulations, spatial planning policies, and business licensing systems that provide legal authority for large-scale land development. In practice, however, these processes frequently involve unequal negotiations between investors and customary landowners, accompanied by socio-economic pressures that weaken indigenous communities' capacity to defend their territorial rights. As a result, legal land acquisition processes often intersect with informal forms of influence and power asymmetries, creating conditions that facilitate the transfer of customary lands into commercial production areas.

Table 2. Land Expropriation

Focus of Findings	Description of Findings Supported by Empirical Evidence	Political Economic Implications	Theoretical Perspective
Legalization of Concessions vs Customary Rights	Interviews with indigenous leaders, NGO representatives, and academics revealed persistent tensions between state-issued concession permits and customary land claims. Participants frequently referred to the case of the Awyu indigenous community as evidence that, despite the government's moratorium on new permits, concession expansion has continued through previously approved licenses and administrative mechanisms. Indigenous informants emphasized that legal recognition of concessions often overrides customary tenure systems, generating disputes and resistance.	The state employs legal instruments, licensing systems, and spatial planning policies to consolidate control over forest territories, while indigenous communities experience reduced bargaining power and diminished authority over customary lands.	<i>Accumulation by dispossession</i> (Harvey, 2003); territorial governance.
Narrative of Development and Modernization	Government officials interviewed in this study consistently framed food estate projects and infrastructure expansion as essential for food security, economic growth, and regional modernization. In contrast, NGO representatives, academics, and indigenous community leaders argued that these narratives frequently obscure the social and environmental costs of large-scale land conversion. Several participants described development discourse as a	Development narratives function as hegemonic instruments that generate political legitimacy for capital expansion, facilitate land conversion, and reduce public scrutiny of socio-ecological consequences.	Gramscian hegemony; political ecology of development.

Focus of Findings	Description of Findings Supported by Empirical Evidence	Political Economic Implications	Theoretical Perspective
Volume of Carbon Emissions	mechanism for justifying external intervention in customary territories. Analysis of policy documents and environmental reports, supported by interviews with environmental experts and NGO representatives, indicates that the sugarcane estate development program in Merauke could generate up to 782 million tons of CO ₂ emissions through large-scale forest and peatland conversion. Participants expressed concerns that the environmental costs of these projects are insufficiently considered within development planning processes.	Agro-industrial expansion reveals a fundamental contradiction between state-driven economic development strategies and national and global commitments to climate mitigation and environmental sustainability.	Socio-ecological crisis; environmental governance.

The table's findings indicate that land expropriation in Papua occurs through a combination of concession legalization, development narratives, and large-scale agro-industrial expansion supported by state policy. This condition reflects Harvey's concept of accumulation by dispossession, in which capitalist expansion occurs through the appropriation of local communities' living spaces and the transformation of forest areas into spaces for economic production. From a Gramscian perspective, development functions as a hegemonic project that constructs social legitimacy for resource exploitation through narratives of prosperity, modernization, and national interests. The involvement of international financial actors, including development banks and investment funds, further reinforces the expropriation process through financing schemes that encourage land consolidation and the integration of frontier regions into the logic of transnational capital accumulation.

The integration of the South Papua food estate into the global value chain follows the upgrading logic discussed, but with an enclave economy characteristic. Strategic agricultural products such as rice and corn are projected to enter export markets through partnerships with international trading companies. While this integration could, in theory, increase added value, field findings indicate limited functional upgrading, as post-harvest processing and distribution remain concentrated outside the region.

Table 3. Global Value Chains

Focus of Findings	Description of Findings Supported by Empirical Evidence	Political Economic Implications
Global Palm Oil Commodity Chain	Interviews with NGOs, academics, government officials, and company representatives confirmed that palm oil from Papua is integrated into global supply chains. Participants highlighted persistent concerns regarding weak implementation of deforestation-free commitments by multinational corporations and financial actors.	Global market demand accelerates frontier expansion and strengthens corporate influence over land and resource governance in Papua.
Pressure on International Trade	Indigenous leaders and NGO representatives reported increasing use of international advocacy campaigns, consumer pressure, and	Transnational advocacy networks and global consumers are becoming

Focus of Findings	Description of Findings Supported by Empirical Evidence	Political Economic Implications
Global Capitalist Integration and Economic Interdependence	Interviews and document analysis revealed that Papua's economy remains largely dependent on commodity exports, external investment, and transnational capital, while local communities receive limited economic benefits.	important counterweights to unsustainable extractive practices. Frontier-region integration into global markets reinforces structural dependence and unequal distribution of economic gains and environmental costs.

The findings indicate that Papua's integration into global commodity chains occurs through an extractive economic pattern that reinforces the dominance of multinational corporations and international markets in natural resource governance. Within this process, indigenous communities and producing regions tend to occupy subordinate positions, with limited influence over the distribution of economic benefits generated from resource extraction and commodity production. Economic activities with higher value-added components, including processing, branding, marketing, and international distribution, are generally concentrated outside the region, while Papua primarily functions as a supplier of raw materials. This condition reflects a structural dependency in which producing regions have limited control over pricing mechanisms, market access, and the broader distribution of economic gains within global trade networks. Consequently, the integration of Papua into international markets has contributed to economic growth opportunities while simultaneously reinforcing unequal power relations and benefit-sharing arrangements.

The socio-ecological and economic impacts of deforestation in Papua are reflected in significant changes to livelihood systems, cultural identity, and environmental sustainability. Expansion of large-scale land conversion has reduced access to customary territories, agricultural land, hunting grounds, and sago forests that have historically supported indigenous livelihoods and food security. Environmental degradation resulting from deforestation has also affected biodiversity, carbon storage capacity, and the ecological functions of forest and wetland ecosystems. These transformations extend beyond technical changes in production systems and represent broader struggles over access, control, ownership, and the meaning of natural resources. Resource exploitation in frontier regions is a contested arena where competing interests related to economic development, environmental sustainability, and indigenous rights intersect. The resulting tensions highlight the importance of ecological justice, equitable resource governance, and the recognition of indigenous communities as key stakeholders in land and natural resource decision-making.

Table 4. Socio-Ecological and Economic Impacts of Deforestation in Papua

Focus of Findings	Description of Findings Supported by Empirical Evidence	Political Economic Implications
Socio-economic Marginalization of Indigenous Communities	Indigenous leaders and residents reported declining access to customary land, forest resources, and traditional livelihoods following agro-industrial expansion and forest conversion.	Frontier development deepens inequalities in resource control and increases the economic vulnerability of indigenous communities.

Focus of Findings	Description of Findings Supported by Empirical Evidence	Political Economic Implications
Ecological Degradation and Climate Crisis	Interviews and document analysis indicated that large-scale deforestation has increased carbon emissions, reduced biodiversity, and weakened the ecological functions of forests and wetlands in Papua.	Resource-based economic expansion exposes tensions between development objectives and environmental sustainability commitments.
Indigenous Resistance and Ecological Justice	Indigenous communities, NGOs, and legal advocates described growing resistance through land claims, legal actions, and international advocacy campaigns against projects affecting customary territories.	Socio-ecological conflicts challenge extractive development models and reinforce demands for environmental justice and the recognition

The table shows that deforestation in Papua not only causes ecological degradation but also triggers significant socio-economic transformations for indigenous communities in frontier regions. Land-use changes and agro-industrial expansion lead to shifts in livelihoods, weakening local food security, and increasing inequality in resource control. In many cases, indigenous communities experience displacement to non-productive areas, triggering social tensions and social stratification due to the loss of access to traditional living spaces and livelihoods. At the same time, the degradation of swamp ecosystems and sago forests demonstrates that the impacts of deforestation are multidimensional, encompassing threats to biodiversity, increased carbon emissions, and the weakening of the ecological function of forest and wetland areas. This situation demonstrates the contradiction between the narrative of sustainable development and the practice of resource exploitation, which actually deepens the ecological crisis and the marginalization of indigenous communities. From a political ecology perspective, this dynamic confirms that resource conflicts in Papua are not merely technical development issues but also reflect contestations over rights, values, and ecological justice in the governance of natural resource frontiers.

The research findings show that deforestation in Papua cannot be explained solely by environmental factors or changes in forest cover. Deforestation develops as part of a political-economic transformation process involving complex interactions among the state, corporations, indigenous communities, and global actors with differing interests in the utilization of natural resources (Alam & Razzaque, 2026). Land-use changes over recent decades demonstrate that Papua's forest areas have become a site of contestation over interests related to national development, investment expansion, global market integration, and the struggle of indigenous communities to defend their territorial rights (Hesketh, 2025). These conditions demonstrate that deforestation not only entails physical changes in the landscape but also reflects shifts in power relations that shape access, control, and the distribution of benefits from natural resources (Paredes & Kaulard, 2023).

The research findings reveal a multiscale actor configuration in the management and utilization of forest areas in Papua. The central government plays a strategic role in determining the direction of development through investment policies, infrastructure development, national food security programs, and the granting of various permits that support the expansion of the agribusiness and extractive industries (Kalaba, 2025). These policies demonstrate the state's central role in establishing an institutional framework that enables the transformation of forest areas into economic production spaces. The role of local governments is evident through their facilitation, coordination, and policy implementation functions that link the national development agenda with local socio-

economic conditions (Chomane & Biljohn, 2023). This position positions local governments as actors that bridge the interests of the state, investors, and communities at the local level (Masuda et al., 2022). The involvement of agribusiness and extractive industry corporations demonstrates the characteristics of dominant actors with strong financial capacity, technology, and market networks (Ashwood et al., 2022). These companies serve as the primary drivers of integrating Papua's natural resources into the global economic system. Control over investment, production, distribution, and market access gives them a powerful position in determining the direction of natural resource utilization (Ababouch et al., 2023). This finding aligns with the Global Production Network perspective, which holds that large corporations can control the flow of capital, commodities, and information in global production chains. This dominant corporate position creates unequal power relations with local communities, who have limited access to economic and political resources.

Indigenous communities in this study occupy a relatively marginal position in decision-making processes related to natural resource management (Carrasco et al., 2023). The strong historical and cultural ties between indigenous communities and their territories are often not reflected in equal recognition in development planning and implementation processes (Dawson et al., 2024). Limited access to information, negotiating capacity, and legal resources leave indigenous communities in a weaker bargaining position than the state and corporations. This situation demonstrates the asymmetrical distribution of power in natural resource governance. This unequal relationship reinforces the argument in the political economy literature that access to resources is determined not only by formal ownership but also by actors' ability to mobilize political, economic, and institutional power (Meyer et al., 2026). The roles of international environmental organizations, indigenous peoples' rights advocacy organizations, and transnational networks demonstrate the emergence of new actors seeking to balance state and corporate dominance (Lozano Flores et al., 2024). These actors' presence expands the scale of resource conflicts from the local to the global level. International attention to deforestation, climate change, and the protection of indigenous peoples' rights creates new pressure on governments and companies to increase accountability in natural resource management. These dynamics demonstrate that the governance of deforestation in Papua has become part of the global debate on environmental sustainability and social justice.

Research findings also show that deforestation occurs through mechanisms of land expropriation that combine legal instruments, development policies, and socio-political practices at the local level. The granting of concessions, changes in land status, and the establishment of spatial plans are formal instruments used to transfer forest areas to various productive economic activities (Mishenina & Dvorak, 2022). The legal authority granted by state regulations provides a legal basis for companies to access and manage land on a large scale (Roestamy et al., 2022). The reality on the ground shows that this formal legality often conflicts with the customary land tenure system, which has long been part of indigenous communities' lives. The conflict between state legality and customary rights demonstrates a paradigm shift in how we view the ownership and control of natural resources (Radhuber & Radcliffe, 2023). State legal systems tend to view land as an economic asset that can be allocated for development and investment. Customary systems view land as an integral part of a community's social, cultural, and spiritual identity. This difference creates a space for conflict that, in many cases, weakens the position of

indigenous communities (Lorca et al., 2022). This situation reinforces the relevance of Harvey's concept of accumulation by dispossession, where capital accumulation occurs through the appropriation of assets and resources previously under the control of local communities.

The development narrative has become a crucial instrument in legitimizing land conversion and investment expansion. Food security, agricultural modernization, job creation, and improved public welfare are the primary arguments for supporting large-scale development projects (Mokgomo et al., 2022). This narrative possesses ideological power that can shape public perception of the importance of economic development (Roos & Reccius, 2024). The Gramscian perspective explains that development can function as an instrument of hegemony, fostering social consent for a particular economic agenda. The legitimacy established through the development narrative allows capital expansion to proceed with less resistance because it is perceived as part of the common good. The involvement of global capital and international financial institutions has strengthened the spatial transformation underway in Papua. Funding for agribusiness projects, infrastructure, and economic zone development creates incentives for land-use expansion. These investment flows demonstrate that land-use changes in Papua are influenced not only by domestic needs but also by global economic dynamics that require a large supply of raw materials and commodities (Jones et al., 2023). The relationship between investment, land expansion, and capital accumulation demonstrates how frontier regions are becoming new spaces for the reproduction of contemporary capitalism.

Papua's integration into global value chains is a key factor explaining the increasing pressure on forest areas. Natural resource-based commodities produced in Papua are increasingly connected to international markets through global trade networks. Demand for palm oil, agro-industrial products, and various other commodities creates a growing need for productive land (Ruml et al., 2022). This relationship demonstrates that the dynamics of deforestation in Papua are inextricably linked to consumption patterns and international market demands. Local land-use changes are essentially reflections of global economic dynamics. Although integration into global value chains is often promoted as a strategy to increase economic growth and social welfare, research findings indicate that the distribution of economic benefits remains unequal (Althouse et al., 2023). Economic activities that generate high added value, such as advanced processing, technology development, marketing, and brand ownership, are largely located outside Papua. Papua functions primarily as a supplier of raw materials with relatively low added value. This situation indicates a pattern of structural dependency that subordinates natural resource-producing regions within the global economic system. This phenomenon aligns with Kaplinsky and Morris's argument regarding locked-in dependency in global value chains. Dependence on primary commodity exports limits producing regions' ability to control prices, profit distribution, and the direction of economic development. The resulting economic gains tend to be concentrated in large corporations and global economic centers, while local communities receive relatively limited benefits. This situation demonstrates that global economic integration does not always result in inclusive and equitable development.

International pressure on production practices deemed unsustainable indicates a shift in global supply chain governance. Consumers, environmental organizations, certification bodies, and international advocacy networks are beginning to play a

significant role in pushing for improved sustainability standards (Miao & Nduneseokwu, 2025). Campaigns on deforestation, climate change, and the protection of indigenous peoples' rights are creating pressure on companies to improve their business practices. The presence of these actors demonstrates that strong social and environmental demands increasingly influence global market mechanisms. The effectiveness of these initiatives remains challenging, as economic interests often remain the dominant factor in investment decision-making. The impacts of deforestation are multidimensional, encompassing social, economic, cultural, and ecological aspects. Reduced access for indigenous communities to agricultural land, hunting grounds, fishing areas, and sago forests has led to significant changes in traditional livelihood systems. Large-scale land-use changes have disrupted the interdependence between indigenous communities and natural resources. These transformations affect communities' ability to maintain the subsistence-based economic systems that have long underpinned local food security.

The shift in livelihoods caused by deforestation has led to greater reliance on market-based economic mechanisms. This situation creates new vulnerabilities as communities must adapt to an economic system that differs from their traditional lifestyles (Knutsson & Ostwald, 2023). Loss of access to productive resources also contributes to increasing socio-economic inequality. The unequal distribution of development benefits results in some communities receiving fewer benefits than actors with greater access to capital and power. The social impacts identified in the research are not only economic but also concern the sustainability of indigenous communities' cultural identity. Forests, rivers, swamps, and customary territories have significance far beyond their economic function. These spaces are part of the collective history, local knowledge systems, spiritual practices, and social identity of indigenous communities (Ciofalo et al., 2022). The loss of customary territories means losing some of the elements that shape the community's identity and cultural sustainability. These changes demonstrate that deforestation has profound implications for the sustainability of indigenous communities in Papua.

The ecological dimensions identified in the study indicate that forest conversion and agro-industrial expansion contribute to increased carbon emissions, biodiversity loss, and the decline in the ecological functions of tropical forest areas (Li et al., 2022). Papua is one of the regions with the largest carbon stocks and biodiversity in the world. Hence, any changes in forest cover have significant consequences for regional and global environmental stability. Degradation of swamp and wetland ecosystems can disrupt the hydrological cycle, increase the risk of ecological disasters, and reduce the environment's capacity to support human life. The relationship between environmental degradation and social inequality demonstrates the relevance of a political ecology approach in explaining the dynamics of deforestation in Papua. Environmental damage cannot be understood as a mere technical consequence of economic activity, but rather as a result of power relations that determine who benefits and who bears the risks of development processes. Indigenous communities are often the most impacted by environmental change, despite their minimal contribution to the underlying causes of deforestation. This inequality highlights environmental justice issues that require attention in the formulation of development policies.

The resistance emerging from indigenous communities, civil society organizations, and international advocacy networks demonstrates that development processes are not without contestation. Various efforts are being made to defend land rights, gain

recognition of customary rights, and promote fairer and more sustainable natural resource governance (Sakapaji et al., 2024). These forms of resistance demonstrate that local communities have the capacity to participate in the political processes that determine the future of their territories. These dynamics demonstrate that natural resource governance in Papua is an evolving arena of negotiation between economic interests, environmental protection, and the recognition of indigenous peoples' rights. Overall, the research findings demonstrate that deforestation in Papua is a manifestation of the interaction between the state, corporations, and global markets within the framework of international political economy. A combination of development policies, investment expansion, and integration into global value chains drives the transformation of forest areas into economic production spaces. The unequal distribution of benefits and risks results in various forms of social, economic, and ecological inequalities that directly impact indigenous communities. This reality demonstrates that development success cannot be measured solely by economic growth indicators; it must also consider social justice, environmental sustainability, and the recognition of indigenous peoples' rights. These findings strengthen the argument that sustainable natural resource governance requires a more inclusive, participatory, and ecologically justice-oriented approach so that development can produce more equitable benefits for all stakeholders.

The findings from Papua reveal several parallels with frontier deforestation dynamics documented in Borneo, the Brazilian Amazon, and the Senegal River Delta, where state-supported resource extraction has facilitated the expansion of agribusiness and large-scale land conversion. Similar to these cases, deforestation in Papua is closely linked to the interaction between political authority, corporate interests, and global commodity markets. However, the Papua case demonstrates that forest loss is not merely an ecological consequence of economic expansion but also a political process through which control over land, resources, and local institutions is restructured. This finding supports existing frontier-deforestation literature while highlighting the importance of examining the broader political-economic mechanisms that enable resource extraction in peripheral regions.

In contrast to the Brazilian Amazon and Borneo, where land conflicts are often characterized by visible contestation and confrontation between local communities and external actors, the Papua case reveals a more subtle and institutionalized form of dispossession. Land acquisition and forest conversion frequently occur through formal legal mechanisms, development agreements, and narratives of modernization that legitimize external intervention. As a result, indigenous communities experience a gradual erosion of territorial control despite the apparent presence of participatory procedures. This finding extends Benegiamo's (2025) argument by demonstrating that contemporary frontier expansion operates not only through coercive power but also through hegemonic processes that shape local perceptions of development, welfare, and economic opportunity. The Papua experience therefore illustrates how consent can be manufactured within resource frontiers, reducing resistance while facilitating large-scale environmental transformation.

The principal analytical contribution of this study lies in its identification of institutional transformation as a critical mechanism linking global capital accumulation to local deforestation processes. Previous studies on frontier regions have primarily emphasized infrastructure expansion, agricultural commercialization, and market integration as drivers of forest loss. The Papua case suggests that these explanations are

incomplete without considering how governance structures, customary land institutions, and decision-making authority are reconfigured during resource extraction. Deforestation emerges not only from the physical conversion of forests but also from the systematic reorganization of power relations that determines who controls land, who benefits from development, and who bears the environmental costs. Consequently, Papua provides new insights into frontier political ecology by demonstrating that hegemony, institutional restructuring, and land dispossession are central components of contemporary deforestation dynamics that remain insufficiently addressed in existing scholarship on frontier deforestation.

CONCLUSION AND RECOMMENDATIONS

This study concludes that deforestation in Papua reflects a complex configuration of global political-economic forces, where state-driven territorialization, transnational capital expansion, and indigenous governance systems interact within a contested ecological frontier. The findings confirm that the state plays a strategic role in facilitating land transformation through regulatory frameworks and development narratives, while also introducing instruments such as CSR and plasma schemes to balance economic growth with social and environmental considerations. However, the effectiveness of these mechanisms remains limited due to uneven implementation, weak institutional oversight, and persistent power asymmetries that marginalize indigenous communities. Theoretically, this research advances the discourse in political ecology and global environmental governance by positioning Papua as a critical site of intersection between global capitalism, state authority, and local resistance, thus emphasizing the need for more inclusive, participatory, and context-sensitive governance models. Despite its contributions, this study has several limitations, particularly its reliance on a qualitative case study approach, which may limit the generalizability of its findings across different frontier regions. In addition, constraints related to access, data availability, and the dynamic nature of policy implementation may affect the comprehensiveness of the analysis. Therefore, future research is recommended to adopt comparative and mixed-method approaches across multiple regions in the Global South to enhance external validity and analytical depth. Further studies should also examine the roles of emerging instruments, such as ESG governance, global financial flows, and carbon market mechanisms, in shaping deforestation trajectories. From a policy perspective, it is essential to strengthen inclusive governance mechanisms, enhance local institutional capacity, implement adaptive and context-specific policy frameworks, develop integrated monitoring systems, and promote global-local knowledge exchange platforms to ensure more equitable and sustainable forest governance outcomes. Based on the findings, it is recommended that policymakers prioritize the recognition and protection of indigenous land rights by strengthening legal frameworks and implementing mechanisms that ensure indigenous participation in land-use planning and decision-making. Greater transparency in concession allocation, stricter monitoring of environmental and social commitments, and stronger accountability mechanisms for corporations are also necessary to reduce power imbalances and prevent unsustainable land conversion. Integrating indigenous knowledge into forest governance, strengthening multi-stakeholder collaboration, and aligning development policies with climate and biodiversity commitments will be essential for achieving more equitable, resilient, and sustainable forest governance in Papua.

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