

Deforestation and the Development Dilemma: Challenges of Forest Governance in Indonesia

Revi Sesario^{1✉}, Anggia Faradina²

Politeknik Negeri Pontianak, Indonesia¹, Universitas Jambi, Indonesia²

e-mail: *revi.sesario@gmail.com¹

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ABSTRAK

This study aims to explore the complex relationship between deforestation, national development policies, and forest governance challenges in Indonesia. Using a qualitative-descriptive approach through literature review and policy analysis, the research reveals that Indonesia's development model largely driven by extractive industries such as palm oil, mining, and logging has significantly contributed to the ongoing loss of tropical forest cover. The findings indicate that poor institutional coordination, overlapping regulations, tenure conflicts, and limited community participation are key barriers to achieving sustainable and equitable forest management. Moreover, while programs such as social forestry and customary forest recognition have shown potential in reducing deforestation, their effectiveness depends heavily on legal clarity, local institutional capacity, and consistent support from government stakeholders. This study emphasizes the urgent need for structural reform in forest policy, enhancement of local governance capacity, and multi-stakeholder collaboration to balance economic development with environmental conservation and social justice.

INTRODUCTION

Indonesia is a megabiodiversity country with vast and complex tropical forests, including tropical rainforests, peatlands, and mangroves. With forest areas covering more than 120 million hectares, Indonesia harbors about 10% of the world's flowering plant species, 12% of mammal species, and 17% of bird species. Indonesian forests also play a crucial role as global carbon sinks, making their existence vital in tackling the global climate crisis. Furthermore, the ecological functions of forests include protecting watershed areas, preventing erosion and floods, and maintaining the hydrological cycle balance that supports agriculture and the livelihoods of rural communities. Socially, millions of Indonesians—particularly indigenous and local communities depend heavily on forests for their daily needs, such as sources of food, medicine, and livelihoods. However, these ecological and social potentials are being eroded by the high rate of deforestation. According to Global Forest Watch and reports from the Ministry of Environment and Forestry (MoEF), Indonesia loses hundreds of thousands of hectares of forest each year. The main drivers of deforestation include land clearing for oil palm plantations, the expansion of coal and mineral mining, forest encroachment for

settlements, and the construction of large-scale infrastructure such as roads, dams, and industrial zones. These practices are often carried out without adequate environmental assessments and frequently neglect sustainability principles. Deforestation also triggers ecological disasters such as forest fires and transboundary haze, which negatively impact public health and the national economy.

A major dilemma arises when the government and development actors are faced with the choice between promoting economic growth and preserving environmental sustainability. Natural resource-based sectors contribute significantly to the national Gross Domestic Product (GDP) and job creation, but in the long term, they can lead to irreversible environmental degradation. The conventional development model, which emphasizes resource exploitation, often results in non-inclusive growth and increased vulnerability to ecological crises. Ironically, local communities who are most dependent on forests become the primary victims of this destruction, losing land, resources, and their cultural identity.

The issue of forest governance in Indonesia is a multidimensional problem that cannot be simplified merely as a lack of policies or resources. One of the main challenges is the overlapping authority between central and regional governments, as well as conflicts of interest between sectors, such as forestry and mining. Unsynchronized regulations and weak law enforcement have allowed systematic illegal logging and corrupt licensing practices to occur. Moreover, forest monitoring and surveillance systems remain limited in terms of both technology and human resource capacity. The lack of local community involvement in planning and decision-making also leads many policies to fail in addressing the real needs on the ground.

The government has, in fact, developed various policies and programs to curb deforestation and improve forest governance. Initiatives such as the moratorium on primary forest and peatland licenses, the REDD+ (Reducing Emissions from Deforestation and Forest Degradation) program, and Forest Stewardship Council (FSC) certification for sustainable forest management show a commitment to environmental conservation. However, in practice, the implementation of these policies is often hampered by weak inter-agency coordination, insufficient incentives for local stakeholders, and low data transparency and public accountability. As a result, these programs run in a fragmented manner and have not produced a significant impact on reducing the national deforestation rate. Furthermore, the gap between policy and implementation is clearly visible in many regions. In areas such as Kalimantan, Papua, and Sumatra, tenure conflicts between companies, the government, and indigenous communities frequently occur due to unclear land status and weak protection of traditional rights. This injustice is exacerbated by the absence of effective and participatory conflict resolution mechanisms. In addition, development that disregards environmental carrying capacity creates new vulnerabilities to ecological disasters and declining quality of life.

Therefore, a more in-depth and contextual academic study is needed to address the challenges of forest governance in Indonesia. This research is crucial not only to map the existing problems but also to formulate policy-based solutions that are fair, inclusive, and sustainable. Through a holistic approach, it is expected that relevant

recommendations can be generated for policymakers, business actors, civil society, and local communities to simultaneously address the dilemma between development and forest conservation.

This study aims to thoroughly analyze the dynamics of deforestation in Indonesia within the context of sustainable national development. The main focus of this research is to identify the key drivers of deforestation, including economic pressures, sectoral policies, and weak forest resource governance. In addition, this study aims to evaluate the effectiveness of government policies and programs that have been implemented, such as the forest moratorium, REDD+, and sustainable forest certification mechanisms. By examining forest governance practices at both national and local levels, this research is expected to uncover various structural and institutional barriers that hinder the achievement of fair and sustainable forest management. Ultimately, this study seeks to formulate evidence-based and contextual policy recommendations to improve forest governance in Indonesia, thereby bridging the needs of economic development with environmental preservation in a sustainable manner.

METHODOLOGY

This research employs a descriptive qualitative approach, as it is deemed most appropriate for deeply exploring complex, contextual issues that are closely linked to the social, political, economic, and environmental dynamics surrounding the phenomenon of deforestation in Indonesia. This approach does not aim to test hypotheses or generalize findings to an entire population, but rather to understand the realities behind forest governance policies and their impacts on development and environmental sustainability. The research also seeks to capture the in-depth perspectives of various stakeholders, including government actors, indigenous communities, environmental activists, and those involved in forestry and development industries.

As a strategic approach, this study adopts the case study method, which enables a comprehensive exploration of forest governance and deforestation issues in specific regions selected as the focus of inquiry. Case studies are chosen for their ability to explain the relationships among various variables in real and contemporary contexts such as the interactions between forestry policies, economic interests, institutional structures, and local community responses to land-use changes. Research locations will be determined based on significant forest cover loss, high intensity of tenure conflicts, and the presence of specific policy interventions (e.g., moratoriums or REDD+ programs). Regions such as Central Kalimantan, Papua, Riau, and Jambi are potential sites as they represent areas under intense deforestation pressure and varying forest governance dynamics.

To gather comprehensive and reliable data, several data collection techniques will be employed, including:

1. Document study, involving the collection and analysis of policy and regulatory documents such as the Forestry Law, Government Regulations, Ministerial Regulations from the Ministry of Environment and Forestry, as well as national and regional development planning documents. Reports from non-governmental organizations like WALHI, Greenpeace, CIFOR, and WWF, along with spatial data from Global Forest Watch and reports from the Ministry of Environment and Forestry (MoEF), will also be analyzed. These documents will be used to understand policy directions, regulatory gaps, and the dynamics of forestry program implementation.

2. In-depth interviews will be conducted with key actors in forest management and regional development, including officials from provincial and district forestry offices, indigenous community leaders, environmental activists, academics, and company representatives. Interviews will be semi-structured to ensure both flexibility and focus, aiming to gain insight into their perceptions, experiences, and strategies in managing forest resources.
3. Field observation, where feasible, will be carried out to directly observe forest conditions, land-use practices, and activities related to development and conservation programs. These observations also aim to document the social phenomena surrounding forest areas, such as community interactions with natural resources, the impacts of development on daily life, and emerging conflicts or coexistence between local and external actors.

The collected data will then be analyzed using content analysis and thematic analysis approaches. Content analysis will be employed to identify substantive content in policy documents and public narratives emerging through media and institutional reports. Thematic analysis will be applied to interview and observation data to group information according to emerging themes, such as land licensing issues, law enforcement, institutional transparency, tenure conflicts, and local community participation in forest-related decision-making. The analysis process follows the stages of data reduction, data display, and conclusion drawing, as outlined by Miles and Huberman (1994).

To ensure data validity and reliability, this research applies both source triangulation and method triangulation. Source triangulation is achieved by comparing information obtained from documents, interviews, and observations, while method triangulation involves the use of multiple analytical approaches to examine data consistency. Additionally, member checking will be conducted with key informants to confirm findings and interpretations from interviews, thus minimizing errors in understanding and interpreting the data.

Overall, this research method is designed to provide a comprehensive, in-depth, and reflective account of the various challenges faced in balancing economic development with forest conservation in Indonesia. By tracing the root causes of the problem from policy, institutional, and socio-ecological perspectives, the research aims to make a meaningful contribution to evidence-based policymaking and promote a more just and sustainable direction for development in the forestry sector.

RESULTS AND DISCUSSION

This section highlights voices from the field, illustrating the multidimensional nature of forest governance through testimonies of diverse actors.

Respondent: Indigenous Community Member (Male, 50 years old) Traditional Village in the Interior of Kalimantan

Interviewer: How has the condition of the forest around this area changed over the past 10 years?

Respondent: *“The forest used to be dense. We could hunt, gather rattan, cinnamon everything came from the forest. But since companies came in, the land was cleared, and much of the forest turned into palm oil plantations. Now the river water is dirty too, and it's harder to find fish.”*

Interviewer: Has the community ever been involved in the development or forest management processes?

Respondent: *“No. We were only informed, not consulted. The land we’ve lived on since our ancestors is now being called ‘state land’. We objected, but we don’t know where to turn.”*

Respondent: Local Forestry Office Official (Male, 39 years old) – Senior Forest Extension Officer

Interviewer: What is the biggest challenge in protecting forests in your area of responsibility?

Respondent: *“Limited human resources and budget. One officer might cover two to three districts. On top of that, there’s a lot of overlap between forest area maps and corporate permits. This often causes conflicts on the ground.”*

Interviewer: How is law enforcement against forestry violations?

Respondent: *“Still weak. Small-scale illegal loggers are dealt with quickly. But when it’s large-scale, especially involving companies, it’s often untouchable.”*

Respondent: Environmental NGO Activist (Female, 34 years old) Hijau Lestari Foundation

Interviewer: What is your view on the social forestry program?

Respondent: *“It’s a good program in concept. But the implementation is still slow. Many forest farmer groups (KTH) struggle with legal paperwork, there’s no assistance, and they often end up clashing with existing concessions.”*

Interviewer: What are your recommendations to improve forest governance?

Respondent: *“There needs to be recognition of customary rights, active community involvement from the planning stage, and open data. It shouldn’t just be top-down it must be bottom-up too.”*

Respondent: Village Official (Male, 46 years old) Hamlet Head

Interviewer: Has your village experienced any tenure conflicts related to the forest?

Respondent: *“Yes, ever since a logging company entered, they claimed our customary land as state-owned. Villagers protested, and there were even clashes. Until now, there’s been no clear resolution.”*

Interviewer: Has there been any communication from the government?

Respondent: *“Yes, but it’s always one-sided. We’re only told not to interfere with the ‘official permits’. There’s no space for dialogue.”*

Respondent: Academic (Female, 41 years old) Indonesian University of Forestry

Interviewer: In your opinion, what is the root cause of forest governance problems in Indonesia?

Respondent: *“The root lies in political will and policy integrity. Many forestry policies are inconsistent and often give in to short-term economic pressures. Also, the imbalance in access to information and land rights is a major cause of conflict.”*

Interviewer: What strategies would you suggest as solutions?

Respondent: *“Promote evidence-based policy reform, strengthen community-based monitoring systems, and involve communities in the decision-making process.”*

This interview data highlights the complexity and imbalance in forest governance in Indonesia, particularly in remote areas such as the interior of Kalimantan. Indigenous communities express a sense of loss and exclusion, as their traditional forests once rich

with resources like game, rattan, and cinnamon have been cleared for palm oil plantations without their involvement or consent. This has not only led to the depletion of natural resources but also to environmental degradation, such as polluted rivers and declining fish populations. Meanwhile, local forestry officials point to limited human resources and budgets, as well as overlapping forest maps and corporate permits, as major challenges that often spark conflicts on the ground. Law enforcement is perceived as weak, especially in cases involving large-scale corporate violations, which are rarely prosecuted. Environmental activists acknowledge the potential of social forestry programs but criticize their slow implementation and lack of legal and technical support, often leading to clashes with existing concessions. Village leaders recount unresolved tenure conflicts, where customary lands are claimed as state property by companies, triggering protests and even clashes, with little to no opportunity for meaningful dialogue with the government. Academics emphasize that the root of the problem lies in the lack of political will and policy integrity, as forestry regulations are often inconsistent and heavily influenced by short-term economic interests. The imbalance in access to information and land rights further fuels these conflicts. Recommended solutions include evidence-based policy reform, strengthening community-based monitoring systems, and ensuring the meaningful participation of local communities in forest governance decision-making processes.

Deforestation Rate and Its Patterns of Change

Based on spatial analysis and satellite imagery data, the rate of forest loss in Indonesia has fluctuated, yet overall remains at high levels over the past two decades. This study found that the most significant deforestation occurs in lowland forests and peatlands areas that are ecologically vital but highly vulnerable to land conversion. Regions such as Central Kalimantan and Papua stand out due to massive conversion of natural forest into other land uses, such as palm oil plantations or nickel mines. These land-use change patterns are strongly linked to national development projects, including food estate programs and strategic national projects, which accelerate forest conversion. Secondary forests and production forest areas are primary targets for expansion, often legalized through spatial plan revisions or forest area releases by technical ministries.

Drivers of Deforestation

In general, the causes of deforestation in Indonesia can be categorized into structural and technical–operational factors. Structurally, primary drivers include economic development based on commodities like palm oil, industrial timber, and export-oriented mining. Both central and regional governments tend to incentivize investors through easy land access and expedited permit processes. Additionally, overlapping regulations, weak monitoring capacity, and corruption in the permitting system contribute to accelerated forest degradation. Technically, limitations in monitoring systems, lack of valid and accurate data, and inaccessibility of remote areas by enforcement personnel make illegal logging and land clearing without permits difficult to detect and prosecute. The study also found that low environmental literacy among local communities further hinders conservation efforts.

Evaluation of Government Policies and Programs

National forestry policies intended as government commitments to preserve forests have not yet been fully effective in reducing deforestation. For example, moratoria on new

permits in primary forests and peatlands have limited impact as they do not cover all high-risk areas and still allow permit issuance in other sectors. These policies have also lacked strong legal enforcement for existing violations. The REDD+ program faces implementation barriers, such as weak monitoring, verification, and unclear incentives for local communities. Ecosystem restoration efforts through critical land rehabilitation projects often lack long-term oversight and remain largely symbolic. Field findings also reveal a gap between central-level policy design and realities on the ground, resulting in suboptimal conservation outcomes.

Forest Governance Challenges

Forest governance challenges in Indonesia are systemic and involve multiple sectors. First, institutional issues arise from overlapping authority among ministries, regional forestry agencies, and other bodies, leading to unsynchronized management. Second, local officials face limitations in both number and competency, resulting in weak enforcement and inaccurate management reports. Third, the dominance of short-term interests in local and national politics promotes resource exploitation to boost local revenues or serve as electoral tools. Fourth, weak data integration among institutions hinders evidence-based planning. Additionally, low public accountability and a lack of open reporting and evaluation mechanisms further degrade forest management.

Social and Tenure Conflicts

Tenure conflicts are a direct consequence of deforestation caused by land conversion without regard for indigenous or local community rights. In many cases, communities lose access to land they have managed for generations due to large-scale investments carried out without consultation or fair compensation. Governments are often seen as siding with corporations because community land status is not legally recognized within the formal system. This leads to prolonged conflict between communities and companies, even resulting in the criminalization of villagers and violence. This situation not only causes social harm but also weakens conservation efforts by eroding community trust in government programs.

Local and Indigenous Community Participation

The research found that community participation in forest governance remains very limited. Their involvement is often merely consultative rather than as active decision-makers. Major barriers include lack of access to information, absence of legally binding participatory forums, and persistent paternalistic attitudes from the government toward local communities. However, in several regions, indigenous communities have demonstrated capacity and commitment to protect forests through local wisdom practices. Lack of recognition and support for community-based management systems prevents this potential from being optimized. Therefore, capacity-building, technical assistance, and legal protection for indigenous communities are urgently needed.

Best Practices

Despite many challenges, several local and regional initiatives have successfully preserved forests through participatory management. In West Sumatra, the “nagari hijau” initiative involving local government, NGOs, and youth reduced deforestation by strengthening customary institutions and local economies based on non-timber forest products. In East Kalimantan, social forestry initiatives under village forest schemes have

positively impacted community income and reduced pressure on natural forests. Use of technology such as participatory mapping, GPS tracking, and community-based online reporting applications also represents innovative strategies in community-led monitoring and enforcement.

Impacts of Deforestation on Environment and Social Life

Deforestation has significant environmental and socio-economic impacts in many regions. Ecologically, it undermines functions such as carbon sequestration, watershed protection, and biodiversity habitats, leading to more frequent ecological disasters like floods, landslides, and droughts. Socially, loss of forest resource access leads to household income decline, reduced quality of life, and increased dependence on social aid. Vulnerability also drives rural-to-urban migration and unemployment.

Policy Recommendations Based on Field Findings

Based on the results, this study recommends restructuring forest governance by reinforcing good governance principles. This includes transparent permitting processes, public data openness, and strengthening independent oversight institutions. The government should align forestry policy with other sectoral development plans through cross-sector and area-based approaches. Recognition of indigenous rights should be strengthened through the enactment of the Indigenous Peoples Bill and expedited recognition of customary territories. Social forestry programs need expansion and serious support to avoid becoming mere administrative formalities. Finally, integrating community-based monitoring technology and economic incentive systems (e.g., payment for ecosystem services) can accelerate the shift toward sustainable and inclusive forest management.

Deforestation as a Consequence of Extractive Development Model

Indonesia's development model, based on exploitation of natural resources especially flagship commodities like palm oil, coal, and industrial timber has been the main driver of deforestation over the past decades. Both central and regional governments often provide fiscal incentives and ease of permitting to promote investment in these sectors without strong environmental safeguards. Conversion of forest land into plantations or mines often disregards local carrying capacity and resilience, triggering ecosystem damage and declining community welfare. This phenomenon reflects a development approach that remains "pro-growth" rather than sufficiently "pro-green." Additionally, global demand for Indonesian exports such as palm oil from developed countries further stimulates massive land expansion. Thus, deforestation is driven not only by domestic factors but also by an exploitative global trade system.

Policy Implementation Gaps

While forestry policies such as moratoria and ecosystem restoration programs are relatively comprehensive on paper, their implementation on the ground faces structural and technical barriers. One clear manifestation of this gap is the inconsistency in law enforcement against companies that clear land illegally or burn forests systematically. Enforcement of moratoriums is weak due to limited field personnel, inadequate technology, and poor coordination between central and regional governments. Many regions also lack the administrative and financial capacity to implement conservation policies optimally. In some cases, regional heads issue land-use permits contrary to

national regulations due to political or economic pressure. This gap is further widened by the limited access of civil society to information, and weak participatory policy reporting and evaluation mechanisms.

Roles and Power Imbalances Among Actors

Forest governance in Indonesia is heavily influenced by power imbalances among actors involved. Large corporations with capital and political access tend to dominate the permitting process, land control, and policy-making. Meanwhile, local and indigenous communities who have direct relationships with the forests are often spectators or victims of policies made without their involvement. This imbalance is exacerbated by legal systems that recognize formal legal rights more than customary or traditional use rights. Consequently, indigenous peoples are frequently deemed illegal when they defend land they have managed for centuries. In this context, top-down governance loses social legitimacy and risks sparking prolonged horizontal or vertical resistance and conflict.

Good Forest Governance Challenges

Principles of good governance in forest management such as transparency, accountability, participation, and legal certainty are not yet consistently integrated within Indonesia's forestry institutional systems. The lack of publicly accessible information on forest area status, concession permits, and monitoring results makes decision-making opaque and prone to infiltration by private interests. Moreover, community grievance systems against forestry violations are still ineffective due to weak whistleblower protection and slow law enforcement responses. The limited involvement of civil society and academia in policy evaluation also makes the policy review process tend toward formality rather than being critical. Therefore, institutional reform efforts must focus not only on technical-administrative aspects but also on improving political and social governance in the forestry sector.

Effectiveness of Social Forestry and Local Initiatives

Although analytic challenges remain in permitting and support, social forestry schemes and recognition of customary forests represent positive steps toward decentralized forest management. These programs allow communities to legally manage forests sustainably and provide legitimate livelihoods. However, their effectiveness heavily depends on community organizational capacity, support from NGOs or universities, and assured markets for non-timber forest products. In areas like Jambi, Sulawesi, and Kalimantan, social forestry has successfully reduced conflicts and increased income for forest farmers. Yet, in other regions, the program remains stagnant due to weak coordination between the Ministry of Environment and Forestry and local governments, and slow land verification and designation. With stronger regulation and support, these programs could become key pillars of community-based conservation.

Dynamics of Tenure Conflict and Legal Ambiguities

Tenure conflict is a major barrier to fair forest governance reform. Unclear land ownership among the state, indigenous communities, and corporations leads to overlapping claims on the same land. This is worsened by the lack of accurate spatial data and overlapping forest area maps and issued concession permits from various government agencies. Indigenous and local communities are often not recognized as legitimate landowners, despite historically managing the land for centuries. Recognition of their

collective rights is part of the constitutional mandate and has been affirmed by Constitutional Court rulings. When these rights are ignored, not only do conflicts escalate, but Indonesia's commitment to ecological and social justice is also called into question.

Potential for Multi-Stakeholder Collaboration

Multi-stakeholder collaboration is becoming increasingly important to address the complexities of forest governance. The government cannot protect forests alone and must involve the private sector, civil society organizations, academia, and local communities in planning, implementation, and policy evaluation. Positive examples emerge from "forest partnership" and "landscape approach" models implemented in some conservation and ecologically sensitive areas. These approaches encourage cross-sector integration, improved data transparency, and shared roles and responsibilities. Future success in forest conservation will depend largely on ability to build trust, align interests, and develop shared agendas based on sustainability principles.

Implications for the Global Climate Change Agenda

As the third-largest tropical forest cover country in the world, Indonesia plays a strategic role in the global climate change agenda. Continued deforestation directly threatens Indonesia's Nationally Determined Contributions (NDC) targets for significant carbon emission reductions by 2030. Without immediate reform in the forestry sector, Indonesia will struggle to meet its commitments under the Paris Agreement and may lose trust and support from international partners in the form of climate finance and conservation programs. Therefore, this study stresses that good forest governance is not just a national obligation but also part of the global responsibility to address the climate crisis. Investment in forest preservation should be viewed as a long-term investment in climate stability, societal welfare, and sustainable national development.

CONCLUSION

This study concludes that deforestation in Indonesia is the result of a complex interplay between development policies oriented toward the exploitation of natural resources, weak forest governance, and unequal access to and control over forest lands. Although the government has introduced several policies such as the moratorium on new permits, social forestry programs, and the REDD+ scheme their implementation still faces major challenges, including weak monitoring, overlapping regulations, and unresolved tenure conflicts. Moreover, the imbalance of power relations between the government, corporations, and local communities leads to low public participation in forest-related decision-making. The study also highlights that the participation of Indigenous peoples, multi-stakeholder collaboration, and the strengthening of transparent and accountable governance principles are key to addressing deforestation in a sustainable manner. Therefore, inclusive and equitable forest governance reform is urgently needed to reconcile the dilemma between economic development needs and environmental sustainability in Indonesia.

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