

Synchronization and Harmonization of Land Use Regulations in Deforestation Prevention Efforts: A Case Study of Coal Mining Permits in Protected Forest Areas

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Abstract: Deforestation in Indonesia is a complex environmental issue that impacts ecosystem stability, food security, and the hydrological cycle. The mining sector, particularly coal mining, is one of the major contributors to uncontrolled deforestation, especially in protected forest areas. This article examines the synchronization and harmonization of land use regulations related to coal mining in protected forest areas. The primary focus of this study is to analyze the regulatory disharmony between the forestry, mining, and environmental sectors and its impact on the rate of deforestation. The study finds that the inconsistency between the forestry regulations and mining sector policies creates legal gaps, allowing resource exploitation without considering ecological sustainability. Additionally, this article discusses the need for more preventive law enforcement through policy alignment, inter-agency coordination, and active community involvement in monitoring. Harmonizing regulations and reforming the permitting process are expected to reduce the negative impacts on protected forests and strengthen efforts to prevent sustainable deforestation.

Keywords: Deforestation, Regulations, Protected Forests.

Introduction

Deforestation in Indonesia has long been a critical issue that not only threatens ecosystem stability but also affects food security, hydrological cycles, and the livelihoods of communities that depend on forest resources. The persistently high rate of deforestation, particularly over the past few decades, has frequently been associated with the expansion of large-scale extractive activities, with the mining sector—especially coal mining—emerging as one of the principal contributors. This phenomenon is not merely an environmental problem; it also reflects failures in institutional governance and regulatory disharmony in the management of natural resources. The prediction by the Indonesian Forum for the Environment (WALHI) indicating a significant increase in deforestation in 2025 should serve as a serious warning to all stakeholders, considering the irreversible impacts on biodiversity and the global climate system (WALHI, 2025; Putri Pinasti, 2025).

Constitutionally, state control over natural resources, including forests and mineral resources, is mandated to be exercised for the greatest prosperity of the people, as stipulated in Article 33 of the 1945 Constitution of the Republic of Indonesia. This constitutional mandate is operationalized through various sectoral regulations, including Law Number 41 of 1999 on Forestry, Law Number 3 of 2020 on Mineral and Coal Mining, and Law Number 32 of 2009 on Environmental Protection and Management. However, in practice, these legal frameworks often operate in a fragmented manner rather than in a coordinated and harmonious system, thereby creating legal uncertainty, overlapping authorities, and, ultimately, uncontrolled exploitation of natural resources (Muhdar, 2023; Erwin, 2007).

Protected forest areas, which are explicitly designated to preserve ecological functions such as life-support systems, water governance, and flood prevention, have

increasingly become targets for land-use conversion for mining activities. Mining Business Licenses (Izin Usaha Pertambangan/IUP) issued by the Ministry of Energy and Mineral Resources or regional governments frequently overlap with the legal status of protected forest areas administered by the Ministry of Environment and Forestry. Furthermore, the Forest Area Borrow-and-Use Permit (Izin Pinjam Pakai Kawasan Hutan/IPPKH), which is intended to serve as a strict regulatory gateway for non-forestry activities, is often treated as a mere formality. Lengthy and bureaucratic licensing procedures have, paradoxically, contributed to the rise of illegal mining practices or the issuance of permits that fall outside established legal corridors (Epi Syahadat et al., 2018; Tamsil, 2018).

A study conducted by Syahadat et al. (2018) reveals the extraordinary complexity of the mining licensing system within forest areas, involving at least 36 regulatory instruments derived from 11 Laws, 13 Government Regulations, 9 Presidential Regulations, and 3 Ministerial Regulations. This complexity not only imposes a substantial administrative burden on investors but also creates opportunities for regulatory manipulation, corruption, and the issuance of permits that disregard environmental sustainability principles. The One-Stop Integrated Service mechanism (Pelayanan Terpadu Satu Pintu/PTSP), as mandated by Presidential Regulation Number 97 of 2014, has likewise been criticized for remaining predominantly administrative in nature and failing to achieve substantive policy harmonization among relevant ministries (Heryandi, 2009; Shinta Laura Federova et al., 2025).

The tangible consequences of regulatory disharmony are evident in numerous field cases, including those reflected in court decisions such as the Manado District Court Decision Number 248/PID.B/LH/2022. Although perpetrators of unlicensed mining activities were ultimately sanctioned, environmental damage—manifested in forest cover loss, water pollution, and soil degradation—had already occurred and proved difficult to restore. Such cases demonstrate that repressive law enforcement alone is insufficient; a preventive approach grounded in upstream regulatory harmonization is urgently required (Tiafani Arbang et al., 2025).

Moreover, these challenges are exacerbated by political and economic dynamics that position the mining sector as a primary source of state revenue, often at the expense of environmental and social considerations. Research on the harmonization of mining and forestry policies by Heryandi (2009) confirms that regulatory disharmony is not confined to terrestrial areas but also extends to offshore and coastal zones, indicating a systemic governance problem in Indonesia's natural resource management framework. From an environmental ethics perspective, such policy orientations contradict the principles of ecological responsibility and intergenerational justice (Keraf, 2010).

Accordingly, this article aims to critically examine the urgency of regulatory synchronization and harmonization in land-use governance, with a particular focus on coal mining licensing within protected forest areas. The research seeks to address two central questions: first, what forms and impacts does regulatory disharmony between the forestry, mining, and environmental sectors have on deforestation prevention efforts? Second, what strategic measures can be adopted to establish an integrated and effective regulatory framework capable of protecting protected forest areas from environmentally destructive mining activities? Through a normative legal analysis combined with selected case studies, this article is expected to contribute to the development of a more just, coherent, and sustainable natural resource governance system in Indonesia.

Methods

This study employs a normative legal research approach, focusing on the analysis of written law as a system of norms. This approach is selected because the primary objective of the research is to examine legal gaps and the potential for harmonization within the

positive legal framework governing land use for mining activities in protected forest areas. Normative legal research does not seek to test empirical facts in the field; rather, it critically examines the consistency, coherence, and effectiveness of statutory regulations in establishing legal certainty and safeguarding the ecological functions of forests (Erwin, 2007; Muhdar, 2023).

The primary sources of data in this study consist of primary, secondary, and tertiary legal materials. Primary legal materials include statutory instruments such as Article 33 of the 1945 Constitution of the Republic of Indonesia, Law Number 41 of 1999 on Forestry, Law Number 3 of 2020 on Mineral and Coal Mining, and Law Number 32 of 2009 on Environmental Protection and Management. In addition, the Manado District Court Decision Number 248/PID.B/LH/2022/PN MND is utilized as a concrete case study to analyze the practical application and enforcement of environmental and mining law. Secondary legal materials are derived from scholarly journals, including *Jurnal Analisis Kebijakan Kehutanan* and *Lex Privatum*, as well as textbooks and policy documents published by institutions such as WALHI and the Ministry of Energy and Mineral Resources (ESDM). Tertiary legal materials consist of legal dictionaries and encyclopedias used to clarify conceptual definitions and legal terminology (Keraf, 2010; Tamsil, 2018).

Data collection is conducted through a systematic documentary study. This process involves the inventory and mapping of regulations to identify all legal instruments related to mining licensing in forest areas, an in-depth examination of judicial reasoning and factual findings in court decisions, and a systematic literature review of academic articles and research reports addressing policy synchronization and the environmental impacts of mining-related deforestation. This approach enables the researcher to comprehensively reconstruct the regulatory framework before proceeding to further legal analysis (Epi Syahadat et al., 2018; Putri Pinasti, 2025).

Data analysis is carried out using content analysis and comparative analysis techniques. Content analysis is applied to examine the substance and normative consistency of various legal regulations, while comparative analysis is employed to compare provisions across sectoral laws—namely, forestry, mining, and environmental law—to identify points of regulatory disharmony. The study also conducts a legal case analysis of the Manado District Court Decision Number 248/PID.B/LH/2022 to evaluate the effectiveness of law enforcement and its implications for deforestation prevention. All data are analyzed qualitatively to identify legal gaps, overlapping authorities, and the impacts of unharmonized regulations on deforestation rates and social conflict surrounding forest resource utilization (Shinta Laura Federova et al., 2025).

This research is divided into three main phases. The first phase is exploratory, identifying problems and collecting all relevant legal materials. The second phase is analytical, conducting an in-depth analysis of regulatory synchronization and case studies that have been collected. The third phase is conclusive, drawing conclusions based on the findings of the analysis and formulating concrete and implementable policy recommendations to create regulatory harmonization and strengthen efforts to prevent deforestation. Through this methodological series, the research is expected to make an academic and practical contribution to improving the sustainable management of natural resources.

Results and Discussion

The Urgency of Environmental Ethics and Protection of Protected Forests From The Threat of Deforestation

Discussions concerning the preservation of protected forest areas should not be reduced to mere administrative formalities, but rather be understood as a fundamental effort to maintain essential life support systems. From a biological and physical

perspective, protected forests carry an ecological mandate to regulate hydrological cycles, prevent hydrometeorological disasters such as floods and landslides, and maintain microclimatic stability. In relation to coal mining activities, land-use changes within protected forest areas often result in soil structure degradation that cannot be fully restored, even through post-mining reclamation efforts. Consequently, the urgency of protecting protected forests stems from humanity's need to preserve environmental carrying capacity to sustain the survival of all species dependent on these ecosystems (Erwin, 2007; Tamsil, 2018).

From the perspective of environmental philosophy, efforts to protect these areas can be analyzed using the theoretical framework of biocentrism. This theory offers a perspective in which all forms of life within protected forests—both flora and fauna—possess inherent and sacred moral value. Biocentrism rejects anthropocentric views that position humans as the center of the universe with unrestricted rights to exploit nature. Within this framework, protected forests are not merely viewed as objects for coal extraction, but as entities that possess the right to remain preserved and to flourish. Therefore, violations of protected forest boundaries by mining activities may be regarded as violations against the intrinsic value of life itself (Keraf, 2010).

Furthermore, ecocentric theory broadens the scope of moral concern beyond individual living beings to encompass entire ecological communities, including abiotic components such as water, soil, and air. Ecocentrism emphasizes that the integrity and stability of ecosystems represent the highest values that must be safeguarded. Protected forests are perceived as systemic units in which all components are interconnected. Large-scale coal extractive activities that significantly alter landscapes are thus considered to have disrupted this holistic balance. From an ecocentric standpoint, environmental ethics demand that the law not only protect human interests but also preserve ecosystem integrity from permanent deforestation threats (Keraf, 2010; Putri Pinasti, 2025).

The phenomenon of deforestation driven by coal mining permits in forest areas illustrates the dominance of short-term anthropocentric paradigms. This paradigm tends to perceive protected forests merely as economic resource reserves that can be converted for financial gain through fossil energy extraction. Such a perspective generates tangible moral conflicts between the state's obligation to promote public welfare through economic development and its moral responsibility to preserve nature for future generations. The failure to integrate environmental ethics into licensing policies ultimately reduces nature to a mere instrument, thereby exacerbating the global ecological crisis (Muhdar, 2023; WALHI, 2025).

In conclusion, regulatory synchronization and harmonization must be positioned as concrete manifestations of just environmental ethics implementation. Indonesian environmental law, which is founded upon the principle of sustainable development, should function as an instrument capable of reconciling economic interests with ecological protection efforts. Without a strong ethical foundation, regulations governing Forest Area Borrow-and-Use Permits (Izin Pinjam Pakai Kawasan Hutan/IPPKH) risk becoming mere legal tools for legitimizing deforestation. Therefore, strengthening the ethical dimension within legal policy is essential to ensure that every coal mining permit remains subject to the principle of protecting protected forests as areas whose functions must not be compromised (Keraf, 2010; Erwin, 2007).

Inconsistency In the Principle of Sustainable Management

The principle of sustainable development, which should function as a common denominator harmonizing all regulations governing natural resource management in Indonesia, is in practice applied inconsistently and often contradictorily across legal sectors. This principle, which seeks to integrate economic, social, and environmental pillars

in a balanced manner to meet present needs without compromising the ability of future generations to meet their own, has become dysfunctional when confronted with the mining legal regime, particularly within protected forest areas. Rather than serving as a unifying normative framework, sustainable development is fragmented into sectoral interpretations that undermine its integrative purpose (Erwin, 2007; Muhdar, 2023).

Normatively, Law Number 32 of 2009 on Environmental Protection and Management has comprehensively adopted sustainable development principles. Article 2 explicitly enshrines the principles of sustainability and environmental preservation, while Article 23 mandates Environmental Impact Assessments (Analisis Mengenai Dampak Lingkungan/AMDAL) for any business or activity with significant environmental impacts. Furthermore, this law institutionalizes the precautionary principle, reflected in provisions requiring preventive measures even in the absence of full scientific certainty regarding potential environmental harm. Ideally, this principle obliges both government authorities and business actors to adopt the best anticipatory actions to prevent environmental degradation, especially in ecologically sensitive areas such as protected forests (Erwin, 2007; Keraf, 2010).

However, in the implementation of mining licensing, a clear dichotomy emerges between legal norms and administrative practice. The AMDAL process for coal mining activities within forest areas is frequently conducted in a partial and reductive manner. Environmental impact documents tend to focus narrowly on direct and measurable site-specific impacts, such as increased dust levels or mining waste, while neglecting cumulative and long-term impacts on the overall ecological structure and functions of protected forests. Impacts such as biodiversity loss, disruption of regional hydrological cycles, and the release of carbon stocks stored in forest biomass are rarely quantified or seriously assessed. Moreover, the Strategic Environmental Assessment (Kajian Lingkungan Hidup Strategis/KLHS), which should function as a macro-level planning instrument to ensure that sectoral policies such as the designation of Mining Business License Areas (WIUP) align with ecosystem carrying capacity, has not been effectively integrated into licensing decision-making processes (Epi Syahadat et al., 2018; Putri Pinasti, 2025).

The Manado District Court Decision Number 248/PID.B/LH/2022/PN MND provides a concrete illustration of this inconsistency. Although unlicensed mining activities were proven to have caused environmental damage through soil excavation and rock destruction, law enforcement responses remained reactive and curative in nature. Legal proceedings were initiated only after environmental harm had already occurred (ex post), and the sanctions imposed imprisonment and fines were primarily oriented toward penal accountability rather than ecological restoration. This reflects a failure to apply the precautionary principle and preventive approach that lie at the core of sustainable environmental governance. The legal system, in this context, functions more as a “fire extinguisher” than as a “protective barrier” designed to prevent ecological disasters (Tiafani Arbang et al., 2025).

This inconsistency is further exacerbated by the issuance of Government Regulation Number 25 of 2024, which amends Government Regulation Number 96 of 2021 and opens opportunities for religious mass organizations to receive priority in the allocation of Special Mining Business License Areas (WIUPK). Such a policy carries the potential to generate conflicts of interest and to blur environmental-technical standards. Environmental feasibility assessments risk being compromised by dominant socio-political considerations, such as economic empowerment agendas for particular groups. The principle of “alignment with national interests” contained in the Mineral and Coal Mining Law may be narrowly interpreted to prioritize specific group interests, thereby displacing the universal principles of sustainable development that emphasize intergenerational justice and the preservation of environmental functions (Shinta Laura Federova et al.,

2025; Muhdar, 2023).

At a deeper level, this inconsistency stems from divergent development paradigms embedded within Indonesia's legal frameworks. Environmental law adheres to an ecocentric paradigm, positioning environmental preservation as an intrinsic objective, whereas the Mineral and Coal Mining Law and its implementing regulations remain heavily influenced by an anthropocentric-extractive paradigm that views natural resources, including forest areas, primarily as natural capital to be converted into economic growth. This paradigmatic tension produces ambivalent policies: on the one hand, proclaiming commitments to sustainability, while on the other hand designing licensing mechanisms that facilitate the conversion of protected areas. Substantive harmonization, therefore, requires not only technical alignment of statutory provisions but also a philosophical realignment regarding the fundamental relationship between humans and nature across all regulatory instruments governing natural resource management (Keraf, 2010; Erwin, 2007).

The Impact of Regulatory Disharmonization on Deforestation

Regulatory disharmony in land-use governance within the mining sector—particularly coal mining in protected forest areas—has become one of the key factors exacerbating deforestation rates in Indonesia. The imbalance between sectoral regulations governing forestry, mining, and environmental protection frequently generates legal gaps that allow extractive activities to proceed without adequate consideration of ecological sustainability. The impacts of this disharmony not only threaten ecosystem continuity but also weaken environmental resilience in the face of climate change and natural disasters (Erwin, 2007; Putri Pinasti, 2025).

In general terms, regulatory disharmony often originates from inconsistencies between forestry legislation and mining sector regulations. For instance, Law Number 41 of 1999 on Forestry provides strict protection for protected forest areas, designating them as zones that may not be converted without compelling and legally justified reasons. However, in practice, the coal mining sector—regulated under Law Number 3 of 2020 on Mineral and Coal Mining—creates legal pathways through which protected forest areas may be relatively easily converted into mining zones. Such regulatory arrangements not only contradict forest protection principles but also intensify conflicts between economic interests and ecological preservation (Muhdar, 2023).

This inconsistency is further aggravated by the potential abuse of authority by regional governments and relevant ministries, which frequently issue mining permits without adequately considering long-term ecological impacts on protected forest ecosystems. These practices also reflect weaknesses in monitoring and evaluation systems governing permit issuance, which should holistically incorporate environmental considerations. Policies such as the Forest Area Borrow-and-Use Permit (Izin Pinjam Pakai Kawasan Hutan/IPPKH), for example, are often treated as mere administrative formalities rather than as effective oversight mechanisms to safeguard forest sustainability. As a result, an increasing number of protected forest areas face degradation due to land conversion for mining purposes (Epi Syahadat et al., 2018; Tamsil, 2018).

One of the most significant consequences of regulatory disharmony is the occurrence of uncontrolled deforestation. The conversion of protected forest areas for coal mining activities leads to the loss of critical ecological functions, including hydrological regulation, disaster mitigation, and carbon sequestration, all of which are essential for global climate stability. Moreover, such deforestation accelerates soil degradation, deteriorates water quality, and threatens biodiversity conservation within forest ecosystems. As noted by Heryandi (2009), this regulatory mismatch is rooted in a highly fragmented licensing system that lacks effective coordination among the ministries

responsible for natural resource governance.

Another adverse effect is the emergence of legal uncertainty resulting from inconsistent regulatory implementation. Regulatory disharmony creates legal grey areas within the legal system, which may be exploited by actors driven by economic interests. When sectoral regulations fail to operate in a coherent and integrated manner, law enforcement becomes weak and ineffective. This condition further deepens environmental crises, as the state is unable to ensure that natural resource exploitation is conducted in accordance with the precautionary principle and ecological responsibility (Keraf, 2010; Muhdar, 2023).

Overall, the impacts of regulatory disharmony on deforestation underscore the urgent need for more holistic policy synchronization and the strengthening of legal frameworks capable of balancing economic development with ecological protection. Misaligned regulations not only undermine ecosystem sustainability but also exacerbate social impacts experienced by local communities that depend on forest resources for their livelihoods (WALHI, 2025).

Therefore, substantial efforts are required to achieve regulatory harmonization by strengthening oversight of licensing policy implementation and enhancing public participation in decision-making processes. Through such measures, it is expected that greater synergy among sectors can be realized in protecting protected forest areas from deforestation driven by regulatory disharmony and unsustainable extractive practices (Epi Syahadat et al., 2018; Putri Pinasti, 2025).

Law Enforcement and Sanctions Against Permit Violations In Protected Forests As A Preventive Measure

Effective law enforcement and the imposition of firm sanctions for licensing violations in protected forest areas play a crucial role in preventing deforestation. Although various legal provisions governing forest protection have been established, licensing violations continue to occur and often result in irreversible environmental damage. In this context, law enforcement must function not merely as a punitive instrument but as an effective preventive mechanism capable of deterring violations at an early stage (Erwin, 2007; Keraf, 2010).

The effectiveness of preventive law enforcement largely depends on two key aspects: inter-institutional coordination and licensing system reform. In Indonesia, inconsistencies and overlapping authorities persist among institutions responsible for issuing permits, such as the Ministry of Environment and Forestry (KLHK), the Ministry of Energy and Mineral Resources (ESDM), and regional governments. This institutional misalignment creates opportunities for licensing abuse, including the issuance of permits within protected forest areas that should remain strictly conserved. Therefore, stronger coordination among agencies involved in protected forest management is essential to ensure that all licensing decisions adhere to ecosystem sustainability principles and do not threaten forest preservation (Epi Syahadat et al., 2018; Heryandi, 2009).

Reforming the licensing system is also a critical component in preventing permit violations. The issuance of permits without comprehensive environmental impact assessments has enabled mining activities that degrade protected forest ecosystems. Consequently, greater transparency and accountability in licensing procedures are required. The development of systems that allow real-time permit monitoring by both governmental authorities and the public would significantly enhance oversight and reduce the risk of misuse. Moreover, such reforms must include a thorough re-evaluation of the Forest Area Borrow-and-Use Permit (Izin Pinjam Pakai Kawasan Hutan/IPPKH) mechanism to ensure that issued permits genuinely comply with environmental protection standards (Tamsil, 2018; Muhdar, 2023).

However, effective law enforcement does not rely solely on the existence of sanctions; it also depends on active community participation in monitoring and reporting violations. Communities residing in and around protected forest areas possess contextual knowledge of their local environments and therefore, represent vital partners in identifying unlawful activities. Empowering these communities through legal education and community-based environmental monitoring programs can significantly strengthen participatory oversight mechanisms. Such empowerment not only enhances environmental awareness but also provides communities with formal channels to report violations, thereby reinforcing forest protection efforts (WALHI, 2025; Putri Pinasti, 2025).

Stronger law enforcement—through the imposition of higher fines and more severe criminal sanctions for licensing violations in protected forest areas—should be promoted to create a meaningful deterrent effect. At the same time, a more holistic and preventive approach that integrates licensing system reforms, stricter supervision, and active community participation is likely to generate more substantial outcomes in protecting protected forest areas. Through these combined measures, deforestation prevention can be pursued without undermining economic development, thereby fostering a balanced relationship between environmental conservation and sustainable development objectives (Keraf, 2010; Erwin, 2007).

Conclusion

This article has conducted an in-depth review of the synchronization and harmonization of land use regulations in the context of preventing deforestation, with a focus on coal mining permits in protected forest areas. This study shows that regulatory disharmony between the forestry, mining, and environmental sectors is one of the main factors exacerbating the rate of deforestation in Indonesia. This disharmony creates legal loopholes that allow the exploitation of protected forest areas without considering the broader ecological impacts.

As a country that prioritizes sustainability in natural resource management, Indonesia faces a major challenge in harmonizing existing regulations, where there is often an overlap of authority between the ministries that regulate the forestry and mining sectors. This exacerbates legal uncertainty, leading to less transparent licensing and a lack of effective oversight. The lax enforcement of Forest Area Borrow-to-Use Permits (IPPKH) and the practice of permit manipulation further worsen environmental damage.

The impact of this disharmony is very clear, as seen in legal cases that show irreparable environmental damage caused by mining in protected forest areas. Repressive law enforcement alone is not enough to solve this problem. A more preventive approach is needed, involving upstream policy harmonization and reform of the licensing system to create more effective and integrated regulations.

In addition, better coordination between agencies, greater transparency in the issuance of permits, and community involvement in monitoring and reporting illegal mining activities are key to ensuring that protected forest areas are properly protected. An approach based on participatory monitoring by local communities is also expected to increase the effectiveness of law enforcement and strengthen the role of communities in maintaining ecosystem sustainability.

As a recommendation, more holistic regulatory synchronization is needed to consolidate various sectoral regulations into a single policy that balances economic interests and environmental protection. This must be based on the principles of

sustainability and social justice, and supported by a strong commitment from all stakeholders, including the government, the private sector, and the community. Only in this way can Indonesia achieve sustainable development that does not sacrifice the preservation of protected forests and biodiversity.

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