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Regulating Ecocide in Indonesia Based on the Precautionary Principle

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ABSTRACT
Ecocide, as a massive and far-reaching environmental crime, is gaining increasing attention in various countries including Indonesia. However, Indonesian national law has not explicitly regulated ecocide as a stand-alone crime. In this context, administrative law theory, particularly the Precautionary Principle, plays an important role in formulating legal policies that are responsive to environmental threats. This research uses a normative juridical method with a statutory approach and a conceptual approach. This article analyzes the legal construction of ecocide in Indonesia using the Precautionary Principle theory as an analytical knife to explore whether the current legal policy is sufficient in preventing and overcoming environmental crimes. The results of the research show that there are still many laws and regulations that were born without paying attention to the precautionary principle. This analysis concludes with recommendations for the establishment of more comprehensive ecocide regulations to provide more effective legal protection for the environment.

Keywords:
Ecocide, Precautionary Principle, Environmental Crime.

INTRODUCTION

The discourse on ecocide, understood as the large-scale destruction of ecosystems, has increasingly attracted global attention due to the escalating intensity of environmental degradation resulting from both deliberate and unintentional human activities (Aurelien, 2022). The term *ecocide* was first introduced in the 1970s in response to the "Agent Orange" incident in Vietnam. In recent years, several jurisdictions have begun to recognize ecocide as an international crime, subjecting perpetrators to severe legal sanctions. However, within the Indonesian legal context, the regulatory framework governing ecocide remains ambiguous, despite the tangible threats to ecosystems and the severe damage already evident (KLHK, 2020).

Within Indonesia's environmental law, several statutory instruments—most notably Law No. 32 of 2009 on Environmental Protection and Management (hereinafter referred to as *UUPPLH*)—provide a legal basis for environmental protection. Nevertheless, this law does not explicitly categorize ecocide as an independent criminal offense. This legal gap raises the fundamental question of whether the existing framework is adequate to address the complex and multifaceted threats posed to ecosystems.

One theoretical perspective that is particularly relevant for assessing environmental legal policy is the *Precautionary Principle* in environmental administrative law. This principle posits that where there is a risk of serious and irreversible environmental harm, preventive measures must be undertaken even in the absence of conclusive scientific certainty regarding the impacts (Sands, 2018). Although Indonesia has incorporated this principle into several legislative and regulatory provisions, particularly within the *UUPPLH*, the extent and effectiveness of its implementation remain subject to further critical evaluation.

Accordingly, this article seeks to analyze the extent to which the *Precautionary Principle* can serve as a foundational basis for constructing a legal framework to

address ecocide in Indonesia. The analysis proceeds by examining the principle's relevance to current environmental law and policy while formulating recommendations for the development of more comprehensive regulatory measures. In this regard, the central problems addressed in this study are as follows: (1) How is the *Precautionary Principle* currently applied in Indonesian environmental law with respect to the prevention of ecocide? and (2) To what extent is the existing environmental legal framework in Indonesia sufficient to confront the threats posed by ecocide?

METHOD

This research adopts a normative legal research method, employing both a statute approach and a conceptual approach. The statute approach was implemented by examining various regulations pertinent to environmental protection and the application of the precautionary principle in Indonesia, including Law No. 32 of 2009 and its derivative regulations. This approach enabled a systematic review of the existing legal framework to identify the extent of legal provisions governing environmental issues.

In addition, the conceptual approach was utilized to analyze the theoretical underpinnings of ecocide and the operationalization of the precautionary principle within the realm of environmental law. This involved a comprehensive study of secondary data sources, including legal literature, peer-reviewed scientific journals, and official government documents. Through this method, the study sought to establish a more coherent understanding of ecocide as an emerging legal concept and its implications for strengthening environmental governance in Indonesia.

RESULTS AND DISCUSSION

1. Application of the Precautionary Principal Theory in Indonesian Environmental Law

The Precautionary Principle first appeared in international environmental law through the 1992 Rio Declaration. This principle states that a lack of scientific certainty should not be used as a reason to delay action that prevents potential serious or irreversible environmental damage (Sands, 2018). In this context, governments and policymakers must prioritize preventive rather than reactive measures to avoid further damage.

In Indonesia, the precautionary principle has been adopted in several laws and regulations, including Article 2 letter f of Law Number 32 of 2009 concerning Environmental Protection and Management, which states that one of the principles in environmental management is the precautionary principle. However, although it has been recognized normatively, the application of this principle in the field is still limited. This is due to several factors, such as a lack of awareness among business actors, weak law enforcement, and unclear implementation mechanisms at the operational level (Soerjani, M, 2022).

This principle of precaution is particularly relevant in the context of addressing and preventing ecocide or crimes against the environment, given the severe and widespread damage caused to ecosystems, which is often irreversible. Therefore, the application of this principle in environmental law policy can be an important instrument for preventing ecocide before greater damage occurs.

One example of the suboptimal application of the precautionary principle is in cases of forest clearing for plantation activities. Despite the potential for significant risks to ecosystems, preventive measures are often inadequate, so that damage is only addressed after serious impacts such as forest fires or river pollution have occurred (KLHK, 2020). This shows that the precautionary principle has not yet become a strong foundation for decision-making in the environmental field.

Table 1. Suboptimal Application of the Precautionary Principle in Cases of Environmental Damage in Indonesia Over the Past Three Years.

Case	The Principle of Prudence Is Not Yet Optimal	Explanation
Forest and Land Fires (Karhutla)	Lack of early prevention and supervision of land clearing activities (Greenpeace Indonesia, 2022).	Despite regulations prohibiting forest burning (Law No. 32 of 2009), weak oversight of companies and individuals clearing land by burning has led to large forest fires, particularly in Kalimantan and Sumatra.
Pollution of the Citarum River	The lack of decisive action against industries that dump hazardous waste into rivers (KLHK, 2023).	The Citarum River, one of the main sources of water in West Java, continues to be polluted by industrial waste. The government has not been effective in ensuring that all industries comply with waste treatment standards in accordance with the precautionary principle.
Oil Spill in Balikpapan Sea (2022)	Lack of oversight of oil and gas infrastructure and company operations (Mongabay Indonesia, 2022).	The oil spill in Balikpapan was caused by a damaged underwater pipeline. This shows a lack of caution, including routine inspections and supervision of oil and gas company operations.
Nickel Mine in Southeast Sulawesi	Suboptimal waste management and anticipation of the environmental impact of mining activities (WALHI, 2023).	Nickel mining activities in Southeast Sulawesi have caused environmental pollution, including damage to marine ecosystems due to mining waste. The precautionary principle has not been fully applied in the management of tailings and other mining waste.
Damage to Mangrove Ecosystems in West Papua	There was no adequate environmental impact assessment (AMDAL) prior to land clearing for infrastructure development (JATAM, 2023).	The clearing of mangrove forests for infrastructure development in West Papua occurred without adequate environmental impact assessments. This violates the precautionary principle, as mangroves play an important role in maintaining coastal ecosystems and mitigating climate change.
Air Pollution in Greater Jakarta	Slow regulation and action on vehicle and industrial emissions that pollute the air (Center for Energy and Environmental Studies, 2023).	The increase in air pollution in Greater Jakarta due to emissions from vehicles and industry shows a lack of application of the precautionary principle, such as strict regulations on emission standards and supervision of industrial actors who do not comply with the rules.
The Plastic Waste Crisis on Bali's Beaches	Lack of supervision of waste and plastic waste management (Coalition for a Plastic-Free Indonesia, 2023)	Plastic waste polluting Bali's beaches shows a lack of caution in waste management, especially in preventing plastic waste from entering the sea. The government has not been effective in implementing policies to reduce plastic waste.
East Kalimantan Capital City Project (IKN)	Potential environmental damage due to a lack of transparency in environmental impact assessments and	The development of the new capital city in East Kalimantan has raised concerns about deforestation and ecosystem damage. The precautionary principle has not been optimally

Case	The Principle of Prudence Is Not Yet Optimal	Explanation
	oversight of project implementation (Tempo, 2023)	applied because environmental impact assessments are considered to lack transparency and impact mitigation has not been carried out to the fullest extent possible.
Pollution of Jakarta Bay	The lack of integration between domestic and industrial waste management polluting waterways (LIPI, 2022)	Pollution in Jakarta Bay continues to increase due to poorly managed domestic and industrial waste. The precautionary principle is not being optimally applied because there is no supervision or strict action against polluters.
Groundwater Crisis in Central Java	Uncontrolled groundwater extraction without regard for water resource sustainability (Indonesian Geological Agency, 2023)	Massive exploitation of groundwater for industrial and domestic purposes has caused land subsidence in several areas of Central Java. The principle of caution has not been properly applied in regulating quotas or limits on water extraction.

This table shows that the application of the precautionary principle in Indonesia in dealing with environmental damage still needs to be improved. This includes improving supervision, law enforcement, and more transparent and comprehensive environmental impact assessments.

2. Evaluation of the Weaknesses of Indonesian Environmental Law in Addressing Ecocide

Although Indonesia has a number of laws governing environmental protection, such as Law No. 41 of 1999 on Forestry and Law No. 32 of 2009 on Environmental Protection and Management, these regulations have not been able to address the complexity of large-scale environmental crimes, such as ecocide. One of the main weaknesses of existing regulations is the lack of explicit recognition of ecocide as a crime subject to severe criminal penalties.

For example, in the case of forest fires that occurred in Riau in 2019, a number of companies involved were only subject to administrative sanctions in the form of fines and revocation of business licenses, without any criminal proceedings against the company leaders responsible (Walhi, 2020). However, the damage caused was enormous and had an impact on the ecosystem and the lives of local communities. This shows that even though there are laws regulating environmental protection, law enforcement is often ineffective. In addition, the lack of recognition of ecocide as a serious crime also hinders prevention efforts.

Data from the Ministry of Environment and Forestry also shows that in 2019, there were more than 2,000 reported cases of environmental violations, but only a small fraction resulted in legal proceedings in court (KLHK, 2020). This indicates gaps in environmental law enforcement that require serious attention.

Table 2. Evaluation of weaknesses in Indonesian environmental law in addressing ecocide

Aspect	Weakness	Explanation
Definition of Ecocide	There is no specific definition of ecocide in Indonesian law.	Indonesian environmental law does not yet explicitly recognize or define the crime of ecocide, making it difficult to identify and prosecute cases of large-scale environmental destruction.
Legal Protection	Regulations that are scattered and not integrated	The Environmental Law (Law No. 32 of 2009) and other related regulations do not yet provide a

Aspect	Weakness	Explanation
		comprehensive legal framework to prevent or punish perpetrators of ecocide.
Law Enforcement	Weak law enforcement against perpetrators of environmental destruction	Many cases of environmental destruction are not followed up with strict sanctions, often due to a lack of technical evidence, corruption, or political and economic pressure.
Legal Sanctions	Sanctions that are not severe enough and do not serve as a deterrent	Penalties for perpetrators of environmental destruction are often fines or light sentences, which are not commensurate with the damage caused, and therefore do not prevent future violations.
Law Enforcement Capacity	Lack of technical competence among law enforcement officials in handling environmental cases	Many law enforcement officials do not yet have a deep understanding of environmental issues, making it difficult to handle complex cases such as ecocide.
Supervision	Weak environmental surveillance and monitoring systems	The government often fails to effectively supervise industrial activities or companies that have the potential to damage the environment.
Public Participation	Lack of community involvement in decision-making related to environmental protection	Public access to information and environmental decision-making processes is often limited, meaning that public aspirations are not fully accommodated in related policies.
Corruption and Conflict of Interest	Corruption and collusion in the granting of business licenses or law enforcement	Many cases of environmental damage are caused by business licenses being issued improperly or collusion between businesses and authorities.
International Legal Framework	There has been no ratification of international rules recognizing ecocide as a crime.	Indonesia has not officially adopted the concept of ecocide as proposed in international law, so there is no legal obligation to punish perpetrators of ecocide according to global standards.
Environmental Protection Funding	Insufficient funding allocation for environmental protection and restoration efforts	The budget available for monitoring, law enforcement, and environmental restoration is often limited, hindering the implementation of effective environmental policies.
Environmental Restoration	Ineffectiveness of post-damage environmental restoration efforts	Environmental restoration mechanisms often do not work well due to lack of funds, lack of supervision, or indecisiveness in holding perpetrators accountable.

Source: Secondary Legal Materials, compiled in 2024

The above explanation illustrates various aspects of weaknesses in Indonesian environmental law in dealing with ecocide. Resolving this issue requires legal reform, increased capacity of law enforcement, and strengthened community participation and environmental monitoring.

3. The Legal Construction of Ecocide in Indonesia

At the global level, ecocide has been proposed to be included as an international crime equivalent to genocide, war crimes, and crimes against humanity (Higgins, P, 2021). However, discussions on ecocide in Indonesia are still very limited. Although there are several laws governing environmental protection, such as the Forestry Law and the Environmental Protection and Management Law, this legal framework does not explicitly recognize ecocide as a category of crime that can be subject to severe criminal sanctions.

The absence of specific regulations on ecocide means that serious environmental violations are not dealt with appropriately. In some cases, major environmental violations are only subject to administrative sanctions or relatively light

fines, which are not commensurate with the damage caused. Therefore, there is a need for legal reform that accommodates ecocide as a serious crime, with the application of the Precautionary Principle as its main foundation (WALHI, 2020).

Ecocide, as a legal concept, refers to actions that cause massive and irreparable environmental damage, whether intentional or unintentional. At the global level, this term has begun to gain attention as a serious crime that impacts the international community, especially when it was proposed to be included as a category of international crime in the Rome Statute by several countries (Higgins, 2021). However, in Indonesia, to date, ecocide has not been explicitly recognized as a separate crime in legislation.

Based on data from the Ministry of Environment and Forestry (KLHK), Indonesia faces a number of cases of environmental damage that could potentially be categorized as ecocide. Data from 2020 shows that more than 1.65 million hectares of forest in Indonesia have been deforested, mostly due to land clearing for palm oil plantations and mining (KLHK, 2020). In addition, water pollution caused by industrial waste in several areas, such as the Citarum River, also shows that severe environmental damage continues to occur.

However, despite the enormous scale of the damage, the existing legal framework still tends to impose light sanctions on perpetrators. For example, in cases of forest fires involving large companies, the sanctions imposed are often only administrative fines, which are not commensurate with the impact of the damage. This shows that there is a legal vacuum in the regulation of ecocide in Indonesia.

4. Recommendations for Strengthening Ecocide Regulations in Indonesia

To strengthen the existing legal framework, Indonesia needs to consider establishing specific regulations that recognize ecocide as a serious crime punishable by severe criminal sanctions. This can be done by revising Law No. 32 of 2009 on Environmental Protection and Management or by proposing new regulations that specifically address ecocide.

Additionally, the application of the Precautionary Principle must be strengthened in environmental policies and law enforcement. This principle should be the basis for the licensing process for businesses that have the potential to damage the environment and for decision-making related to large development projects (Soerjani, M, 2022). Thus, massive environmental damage can be prevented before it occurs, and Indonesia can be better prepared to face the challenges of ecosystem protection in the future.

CONCLUSION

Regulations to protect and prevent environmental damage in Indonesia still need to be strengthened and updated. For example, Law No. 32 of 2009 on Environmental Protection and Management has proven unable to provide a clear legal framework and still has many weaknesses. Although the Precautionary Principle has been adopted in some regulations, its implementation is still not optimal in preventing and addressing serious threats to the environment. Therefore, there is a need to establish more comprehensive regulations on ecocide as a standalone environmental crime, with the application of the precautionary principle as the main foundation to ensure more effective ecosystem protection.

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