



Conception of The Precautionary Principle in International Environmental Law: Ecosystem or Humanity?

Dony Yusra Pebrianto; Akbar Kurnia Putra; Budi Ardianto
Faculty of Law, Universitas Jambi
*Corresponding author : dony_yusra@unja.ac.id

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Abstract

This paper discusses the concept of the precautionary principle as a bridge between the dichotomy of ecosystem protection and human safety. A pertinent example is the proposed evacuation road in Kerinci, which has yet to receive permission due to its planned route through Kerinci Seblat National Park. The issue is analyzed using a normative approach. The research concludes that the precautionary principle establishes a balance between the objectives of ecosystem safety and human safety as a fundamental right. Therefore, the state must not neglect its responsibilities and should maintain oversight of all policies, ensuring that prior decisions are guided by stringent risk analysis. This approach emphasizes the importance of integrating ecological considerations into development policies, ultimately aiming for sustainable coexistence between human needs and environmental preservation.

Keywords: ecosystem; dichotomy, precautionary principle



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Abstrak

Tulisan ini membahas konsep prinsip kehati-hatian sebagai jembatan antara dikotomi perlindungan ekosistem dan keselamatan manusia. Salah satu contoh yang relevan adalah rencana pembangunan jalan evakuasi di Kerinci, yang belum mendapatkan izin karena rutenya yang direncanakan melewati Taman Nasional Kerinci Seblat. Masalah ini dianalisis menggunakan pendekatan normatif. Penelitian ini menyimpulkan bahwa prinsip kehati-hatian menetapkan keseimbangan antara tujuan keselamatan ekosistem dan keselamatan manusia sebagai hak dasar. Oleh karena itu, negara tidak boleh mengabaikan tanggung jawabnya dan harus menjaga pengawasan atas semua kebijakan, memastikan bahwa keputusan sebelumnya didasarkan pada analisis risiko yang ketat. Pendekatan ini menekankan pentingnya mengintegrasikan pertimbangan ekologis ke dalam kebijakan pembangunan, dengan tujuan akhir untuk mencapai koeksistensi yang berkelanjutan antara kebutuhan manusia dan pelestarian lingkungan.

Kata Kunci: dikotomi; ekosistem; prinsip kehati-hatian

A. Introduction

The Rio Declaration, adopted in 1992, is a landmark document in international environmental law that establishes fundamental principles for achieving sustainable development. Among its key principles is the "precautionary principle," which asserts that precautionary measures should be taken to prevent environmental damage, even in the absence of conclusive scientific evidence. This principle has significantly influenced international environmental agreements and legal frameworks by shifting the focus from reactive to preventive actions,

particularly in the context of climate change, biodiversity loss, and pollution. While the Rio Declaration itself is not legally binding, it has played a critical role in shaping global environmental governance, encouraging states to balance development with environmental protection and to adopt policies that mitigate risks to both human and ecological well-being. The precautionary principle, as outlined in the Declaration, has become a cornerstone of modern environmental law, fostering greater responsibility and cooperation among nations to address global environmental challenges.

The dichotomy between ecosystems and humanity presents a fundamental challenge that must be addressed within the context of environmental law. As human development often conflicts with the need to preserve the environment, critical questions arise about how to balance these two interests. A healthy ecosystem is the foundation for human life; without the sustainability of natural resources, our survival is at risk. However, in many instances, the urgent need for economic and infrastructure development often overlooks the negative impacts on the environment. Therefore, critical thinking in environmental law is

essential to create solutions that consider not only human progress but also the preservation of ecosystems. The conception of environmental law should bridge the gap between the interests of ecosystems and humanity, creating a framework that promotes synergy between the two.

In an increasingly interconnected world, the impacts of human actions cross geographical boundaries, highlighting the necessity for strong collaboration and regulation at both national and international levels. Adaptive and inclusive environmental law can serve as an effective tool to address these challenges by integrating sustainability principles into every policy. Thus, the efforts to safeguard ecosystems and meet human needs should not only be the responsibility of governments but also a shared responsibility for all of society. Environmental issues have become a pressing global concern, affecting various aspects of human life around the world.¹ Climate change, pollution, and the decline of biodiversity are some of the main

¹Carmela Andrena. Kebangkitan Negeri Tirai Bambu dan Melemahnya Pengaruh Barat pada Rekonstruksi Global Tiongkok. *Jurnal Humaniora dan Sosial Sains*. Vol. 1 No. 1. 2024. p. 11.

challenges faced today. Unsustainable industrial activities, deforestation, and the use of fossil fuels have led to rising global temperatures, extreme weather, and the loss of natural habitats. These impacts not only threaten ecosystems but also pose potential food, health, and economic crises for communities, particularly in developing countries that are more vulnerable.

In addition, environmental issues require strong international cooperation, as well as fair, democratic collaboration that benefits all parties involved.² Issues such as air and sea pollution, as well as climate migration, cross national borders and require a collective approach to find effective solutions. International conferences, such as the COP (Conference of the Parties) under the UNFCCC framework, serve as platforms for countries to discuss and formulate policies aimed at mitigating these negative impacts.³ However, differences in interests among countries, along with a lack of commitment to

²Adirini Pujayanti. Inter-Parliamentary Union (IPU) dan Lingkungan Hidup. *Jurnal Politica: Dinamika Masalah Politik Dalam Negeri dan Hubungan Internasional*. Vol. 3, No. 1. 2016. p. 112.

³Vidia Syahbani PutriRahman. Strategi Indonesia dalam Mengatasi Perubahan Iklim Melalui Kerjasama Internasional. *Mimbar: Jurnal Penelitian Sosial dan Politik*. Vol. 13, No. 1. 2024. p. 248.

policy implementation, often hinder efforts to achieve common goals.⁴ Therefore, awareness and collective action from all levels of society are crucial in addressing these increasingly complex environmental challenges. Recognizing the urgency of global environmental issues, the international legal framework is being strengthened to accommodate solutions for these complex matters. Various international agreements and conventions, such as the Kyoto Protocol and the Paris Agreement, have been established to set commitments for countries to reduce greenhouse gas emissions and tackle climate change.

Moreover, principles of environmental law, such as the precautionary principle, are increasingly integrated into international regulations to ensure that preventive measures are taken before greater damage occurs. By reinforcing this legal framework, it is hoped that collaboration among countries can be enhanced, leading to more effective and sustainable solutions to the pressing environmental challenges

⁴Mutia Hariati Hussin. Realisme dalam Pemikiran Ekologis. *Jurnal Hubungan Internasional*. Vol. 1, No. 1. 2012. p. 53

we face today. This approach can significantly benefit all parties involved.⁵

The precautionary principle is generally regarded as an extension of the principle of environmental resource sovereignty. This means that a government has the responsibility to protect its own environment from negative impacts that may arise from its activities or behaviors that could harm the environment of other countries. Therefore, the government must take the necessary preventive measures before engaging in activities that could potentially be harmful.⁶ By applying this principle, it is hoped that harmony can be created between economic development and environmental preservation, as well as maintaining good relations with other countries. This principle also emphasizes the importance of moral and ethical responsibility in the management of natural resources, ensuring that every action considers not only short-term benefits

⁵Emas Septaria. "Penguatan Perjanjian Paris Melalui Kepemimpinan Negara Maju: Analisis Janji Partai Labour." *Jurnal Ilmiah Kutei*. Vol. 23, No. 1. 2024. p. 59.

⁶Nila Amanita. "Problematika Undang-Undang Cipta Kerja Sektor Lingkungan Hidup." *Syariat: Jurnal Studi Al-Qur'an dan Hukum*. Vol. 6, No. 02. 2020. p. 218

but also the long-term impacts on the global ecosystem.⁷

As a follow-up to the global concept of environmental protection, many countries have begun to establish regulations and national policies aimed at protecting natural resources and biodiversity. One significant step is the establishment of protected forests in the form of national parks, which serve as conservation areas to preserve ecosystems and endangered species. These national parks not only function as protected spaces but also as centers for environmental education and ecotourism, helping to raise public awareness about the importance of nature conservation. Thus, through integrated national policies, countries strive to support global commitments in addressing environmental challenges while sustainably utilizing natural resources.

However, strict policies for environmental protection often clash with the unavoidable needs for development, such as infrastructure, industry, and

⁷Kaiyue dan Zheng Xing. Study on the Precautionary Principle in Environmental Justice from the Perspective of Kunming Declaration. *Science of Law Journal*. Vol. 3, No. 2. 2024. p. 64

urbanization. At times, the pressure to boost economic growth tends to overshadow conservation efforts, leading to conflicts between economic interests and nature protection. Aggressive development can result in deforestation, pollution, and habitat loss, ultimately negatively impacting ecosystem balance.

Additionally, local communities that rely on natural resources for their daily livelihoods sometimes feel marginalized by policies that restrict their access to land and resources they have managed for years. Therefore, there is a need for a more holistic and sustainable approach that integrates environmental aspects with development needs, ensuring that both interests can coexist harmoniously. The urgency of humanitarian protection often clashes with the mission of environmental protection, especially when the necessary infrastructure development for human safety is confronted with conservation areas, such as national parks. For example, the plan to build evacuation roads in disaster-prone areas, like Kerinci, is crucial for enhancing accessibility and the safety of residents threatened by natural disasters.

However, this discourse may have significant impacts on the ecosystem in Kerinci Seblat National Park, which is a habitat for various rare species and serves as an important carbon sink. This situation creates a moral and practical dilemma, where the urgent need to protect human lives must be weighed against efforts to preserve biodiversity. As a result, this discourse has yet to be implemented due to the lack of permits for such actions.

This certainly creates a dilemma when there is a dichotomy between ecosystem protection and human safety. If infrastructure development, such as evacuation roads, is not carried out, communities will remain vulnerable to disaster risks, potentially leading to greater losses. Therefore, a balanced solution is needed that considers both human safety and environmental sustainability. Through careful planning and the use of environmentally friendly technology, infrastructure development can be undertaken while minimizing negative impacts on national parks, allowing both goals—human protection and environmental preservation—to be achieved simultaneously.

On the other hand, the existence of the precautionary principle in international environmental law should serve as a guideline for governments in making decisions related to resource management and development. This principle emphasizes the importance of taking preventive actions before greater environmental damage occurs, thereby encouraging governments to consider the long-term impacts of every policy.

However, this raises a complex dichotomy between ecosystem protection and human salvation. In many cases, decisions made to protect the environment can contribute to limiting access for communities to the resources they need for survival, while on the other hand, human-centered development often overlooks potentially damaging environmental impacts. This issue demands a more holistic approach, where a balance between both interests can be achieved without sacrificing one for the other. Therefore, it is necessary to discuss the points of intersection and the bridging mechanisms between ecosystem protection and human salvation from the perspective of the precautionary principle, as this principle requires us to act cautiously in the face

of uncertainty and potential risks that could harm both the environment and humanity. Often, the implementation of this principle is hindered by short-term economic interests dominating decision-making, ignoring the fact that environmental damage caused by reckless actions can lead to far greater consequences for human life in the future. In this context, the question arises: to what extent can the precautionary principle be integrated into public policy to ensure that ecosystem protection is not viewed as an obstacle, but rather as a foundation for sustainable and equitable development? Limitations in applying this principle reflect our inability to recognize the interdependence between human well-being and environmental health, which calls for a more proactive and innovative approach to achieve the necessary balance. This creates an urgent dilemma, where international law must clearly articulate views regarding the precautionary principle, emphasizing the importance of taking preventive measures before greater damage occurs. In such situations, international law should actively guide balanced decision-making, considering that ecosystem sustainability is not only vital for the

survival of existing species but also for ensuring the quality of human life in the future. By understanding and applying this principle, we can seek solutions that not only protect humanity from disasters but also preserve the integrity of the environment.

B. Discussion

1. The Conception of the Precautionary Principle in International Environmental Law

The precautionary principle is one of the fundamental concepts in international environmental law that emphasizes the importance of taking preventive action against risks that may harm the environment or human health, even when scientific evidence is not yet fully clear.⁸ This principle emerged as a response to increasingly urgent environmental challenges, where decisions made without considering potential negative impacts can lead to severe damage. Thus, the precautionary principle serves as a guideline

⁸Masummy, Naimeh, dan Sara Hourani. The Invocation of the Precautionary Principle within the Investor–State Dispute Settlement Mechanism: Not Seizing the Occasion. *Laws*. Vol. 13, No. 2. 2024. p. 4

to ensure that actions taken are not only reactive but also proactive in preventing future harm.⁹

The Rio Declaration on Environment and Development, adopted at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, is a key instrument in international environmental law. It consists of 27 principles aimed at guiding the global community towards sustainable development. The Declaration emphasizes the importance of integrating environmental protection and economic growth, advocating for a balance between development needs and environmental sustainability. It highlights the responsibility of states to ensure that their development policies do not harm the environment, and calls for international cooperation to address global environmental issues, such as climate change, biodiversity loss, and pollution.

One of the central principles of the Rio Declaration is the "precautionary principle," which asserts that states should take proactive measures to

⁹Rhett D. Martin dan David B. Lindenmayer. Applying the Precautionary Principle to Hidden Collapse. *Sustainability*. Vol. 16, No. 10. 2024. p. 20

prevent environmental harm, even when scientific evidence is not yet conclusive. This principle has become a cornerstone in environmental law, influencing the development of policies and regulations in various countries and international agreements. The Declaration also stresses the right of individuals and communities to access information and participate in environmental decision-making processes, reinforcing the role of transparency and public participation in fostering good governance.

As an instrument of international law, the Rio Declaration is not legally binding, but it has had a profound influence on shaping environmental policy and law worldwide. Many of its principles have been incorporated into subsequent international agreements, such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD). Although the Declaration itself does not impose specific legal obligations on states, it provides a moral and political framework for governments to adopt sustainable development practices and pursue global cooperation on pressing environmental issues.

The Rio Declaration establishes this principle as Principle 15. The declaration outlines:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

The precautionary principle emphasizes the importance of careful actions that must be taken by states when formulating policies. When an activity has the potential to cause serious and irreversible impacts, this principle demands that precautionary measures be taken to avoid harmful consequences. In this context, scientific uncertainty should not be an excuse to delay preventive actions. On the contrary, such uncertainty calls for extra attention, as unknown risks can lead to greater and more lasting environmental damage.¹⁰ Furthermore, the application of the precautionary principle creates a framework that allows for more responsible and sustainable decision-making. By

¹⁰Elly Kristiani Purwendah. "Perlindungan Lingkungan dalam Perspektif Prinsip Kehati-Hatian (Precautionary Principle)." *Jurnal Media Komunikasi Pendidikan Pancasila dan Kewarganegaraan*. Vol. 1, No. 2. 2019. p. 90.

prioritizing preventive actions, states can protect natural resources and public health, as well as preserve biodiversity. In the face of global challenges such as climate change and environmental degradation, policies grounded in this principle will become increasingly relevant. Therefore, states are called upon to be proactive in evaluating potential risks that may arise from human activities, allowing for mitigation measures to be implemented early, before negative impacts occur. In a world facing various environmental challenges, there is an urgent need to address critical gaps on a global scale to effectively reduce and control environmental pollution. As the consequences of climate change become more severe, the importance of environmental policies and proactive preventive management strategies cannot be overlooked.¹¹

This condition demands stronger international collaboration, where countries must unite to formulate policies that are not only reactive but also prevention-oriented. The implementation of the precautionary principle in policy-making becomes highly relevant,

¹¹Jonathan Awewomom et al. "Addressing Global Environmental Pollution Using Environmental Control Techniques: A Focus on Environmental Policy and Preventive Environmental Management." *Discover Environment*. Vol. 2, No. 1. 2024. p. 2.

with a focus on preventive actions before risks materialize. In its application, the precautionary principle encourages decision-makers to conduct a comprehensive assessment of risks and uncertainties before carrying out any activity.¹² This means that when there is a possibility of negative impacts on the environment, even in the absence of strong scientific consensus, precautionary measures must be taken to protect ecosystems and human health. With this approach, it is hoped that decision-making is not solely based on existing data, but also takes into account potential risks that may arise in the future.

Furthermore, the precautionary principle requires collaboration among various stakeholders, including governments, the scientific community, and civil society. The involvement of all parties in the decision-making process is crucial for creating comprehensive and effective policies. An informed public regarding environmental risks will be more supportive of the necessary precautionary actions, while governments need to ensure transparency and

¹²Yvonne Donders dan Monika Plozza. Look Before You Leap: States' Prevention and Anticipation Duties Under the Right to Science. *The International Journal of Human Rights*. Vol. 28, No. 3. 2024. p. 367

accountability in the application of this principle. Thus, the precautionary principle not only serves as a tool to protect the environment but also acts as a foundation for fostering collective awareness and joint action in addressing increasingly complex global environmental challenges.

This concept has begun to be officially adopted in various international declarations, including the Rio Declaration on Environment and Development in 1992. In this document, world leaders agreed that environmental protection should be a top priority in all aspects of development, including economic and social decision-making. The declaration emphasizes that scientific uncertainty should not be used as an excuse to avoid necessary precautionary actions in the face of serious and unacceptable risks.¹³ This marks an important shift in perspective regarding environmental issues, where precautionary actions are seen as a shared responsibility, rather than merely a choice taken when clear evidence of existing dangers is available.

¹³Noya, Brigitta Caecilia Putri, Agis Ardhiansyah, dan Dony Aditya Prasetyo. Analisis Pembentukan Perjanjian Internasional untuk Menangani Krisis Penipisan Ozon akibat Emisi Orbital Spacecraft. *RechtJiva*. Vol. 1 no. 2 2024. p. 220.

Furthermore, the recognition of the precautionary principle continues to evolve across various international forums, including in multilateral environmental agreements. This principle is integrated into various policies regulating the use of new technologies and the management of natural resources, emphasizing the importance of decision-making based on comprehensive risk assessments. In the context of international law, the precautionary principle is integrated into various agreements and conventions governing activities that may harm the environment. For example, the UN Convention on Climate Change also acknowledges the importance of precautionary actions to address climate change. By adopting this principle, countries are expected to formulate policies that are not only responsive to existing damage but also preventive in nature to protect the environment and public health.

One crucial aspect of the precautionary principle is proactive decision-making. This principle encourages governments and stakeholders to consider the risks that may arise from an activity before it is permitted to proceed. In many cases, this means that actions must be taken even in the presence of significant scientific

uncertainty..¹⁴ In the context of climate change and other environmental issues, decisions based on the precautionary principle become crucial for reducing risks that could threaten human life and the sustainability of ecosystems.

However, the application of the precautionary principle also faces challenges. There is a viewpoint that excessive precautionary measures can hinder innovation and economic progress. Additionally, allowing too much uncertainty in decision-making may lead to ineffective or even counterproductive policies. Therefore, it is essential to find a balance between environmental protection and socio-economic advancement, so that this principle can be effectively implemented without sacrificing the innovation necessary for development. The involvement of various stakeholders is also vital in applying the precautionary principle. Governments, civil society, and the private sector must collaborate in the decision-making process to ensure that all perspectives and interests are considered. This engagement not only enhances the

¹⁴Rhett D. Martin and David B. Lindenmayer. "Applying the Precautionary Principle to Hidden Collapse." *Sustainability*. Vol. 16, No. 10. 2024. p. 7.

legitimacy of the policies adopted but also enriches the process with diverse knowledge and experiences. Thus, the precautionary principle can be applied more effectively, given the complexity of existing environmental issues.

The implications of implementing the precautionary principle for public policy are extensive. This principle encourages policymakers to design stricter regulations for activities that may harm the environment and promotes research and development of safer and more sustainable technologies. By incorporating the precautionary principle into public policy, countries can mitigate risks and ensure that actions taken are not only effective but also sustainable in the long term.

The implementation of the precautionary principle in public policy necessitates a shift in how governments approach risk management, particularly in relation to environmental protection. By emphasizing the need for preventive measures, the principle encourages policymakers to act in advance of potential harm, even when scientific evidence may be incomplete or uncertain. This proactive stance allows governments to adopt more rigorous environmental

standards and regulations, ensuring that potential threats to ecosystems, human health, and biodiversity are minimized before they escalate into serious issues. In practice, this could mean placing restrictions on industries that produce pollutants or introducing stricter guidelines for land development in sensitive areas, thereby reducing the likelihood of environmental degradation.

Furthermore, integrating the precautionary principle into policy frameworks encourages collaboration between various sectors, including science, technology, industry, and public health. Governments may invest in research and innovation to develop alternatives to harmful practices, such as renewable energy sources or green technologies, which can replace more environmentally damaging practices. This approach not only mitigates potential environmental risks but also fosters the growth of sustainable industries that prioritize long-term ecological balance. It may also lead to the creation of new regulatory mechanisms that promote transparency, accountability, and public participation, ensuring that environmental concerns are addressed in a comprehensive and inclusive manner.

Education and public awareness are also important aspects of implementing the precautionary principle. An educated public regarding environmental risks and the importance of preventive actions will be more supportive of policies focused on environmental protection. Environmental education programs and public awareness campaigns are essential for building a better understanding of the impacts of human activities on the environment and the significance of precautionary measures. By raising this awareness, society can play an active role in supporting sustainable decisions.

In addition to formal education, public awareness campaigns can help shape public perceptions and attitudes toward environmental risks, thereby influencing policy outcomes. Effective campaigns use accessible language, visual media, and real-life examples to illustrate the consequences of inaction. For instance, highlighting the impact of plastic waste on marine life or the long-term effects of deforestation on climate change can motivate individuals to adopt more sustainable lifestyles. By reaching a broad audience, including local communities, businesses, and policymakers, these campaigns create a shared sense of

urgency. This can generate widespread support for precautionary policies, making it easier for governments to implement regulations and initiatives that prioritize environmental health and sustainability.

Overall, the precautionary principle is a highly relevant concept in international environmental law and is essential for application in sustainability-focused decision-making. By prioritizing precautionary actions, we can protect ecosystems and human health from potential risks that may arise. In facing increasingly complex environmental challenges, the application of this principle will not only help address current issues but also create a stronger foundation for future generations in maintaining the balance between development and environmental protection.

C. Precautionary Principle in the Dichotomy of Environmental Policy and the Urgency of Human Safety

Environmental policies must be designed to achieve a harmonious balance between ecosystem interests and human welfare, especially since human welfare is closely tied to the concept of human rights. In the context of sustainable development, it is crucial

to consider the environmental impact of every action taken. Effective policies should protect natural resources and biodiversity while still meeting the needs of society. When conflicts arise between environmental interests and human needs, priority should be given to solutions that not only provide short-term benefits but also consider the long-term impacts on ecosystems.

The integration of human rights within environmental policies highlights the interconnectedness between individual well-being and the broader health of the environment. Access to clean air, water, and a stable climate is essential for the enjoyment of fundamental human rights, such as the right to life, health, and livelihood. As environmental degradation continues to threaten these rights, it becomes increasingly important for policymakers to align legal frameworks that protect both the environment and human rights. This can be achieved through regulations that guarantee equitable access to natural resources, protect vulnerable communities from environmental harm, and ensure that future generations have the same opportunities for health and prosperity.

In designing environmental policies, it is necessary to create frameworks that recognize and address the various ways human activities impact ecosystems. Agricultural practices, urbanization, deforestation, and industrial development all contribute to the depletion of natural resources and the disruption of ecosystems. These activities often occur with little regard for the long-term environmental consequences, leading to biodiversity loss, soil degradation, and the depletion of water sources. Effective environmental policies should incorporate comprehensive assessments of these impacts, encouraging practices that minimize harm while still supporting economic growth and meeting the needs of society. Furthermore, policies should be flexible enough to adapt to new scientific findings and shifting environmental conditions, ensuring that ecosystems are protected in the face of changing circumstances.

Addressing the conflict between immediate human needs and long-term environmental sustainability requires careful consideration of both the social and ecological dimensions of each decision. For example, land-use policies that prioritize

agricultural expansion may provide short-term economic gains, but they can lead to the destruction of vital habitats and the loss of biodiversity, which, in turn, can undermine future agricultural productivity. Therefore, balancing human welfare with ecological protection requires considering alternative solutions that integrate environmental conservation into development strategies. This includes promoting sustainable agricultural practices, renewable energy sources, and conservation initiatives that maintain biodiversity while still supporting economic growth. Policymakers must work to ensure that these solutions are not only effective in the short term but also create lasting benefits that protect ecosystems for future generations.

The protection of the environment and human rights are interlinked, interconnected, and responsive to each other, as both aim for the well-being of humanity. A safe and healthy environment is a prerequisite for enjoying fundamental human rights. The relationship between these two approaches has been recognized in various international and regional instruments, resolutions from UN agencies, documents from international conference outcomes, and judicial

decisions from various courts that consider the human rights framework as an effective means to achieve environmental protection goals.¹⁵ In the context of environmental policy, this principle is highly relevant, especially when considering development activities that can have significant impacts, such as the proposed evacuation road in Kerinci that would pass through Kerinci Seblat National Park. The proposal for this road has not yet been realized due to conflicts with permits, given that the road is planned to cross the national park.

This evacuation road is proposed to enhance accessibility and safety for communities in disaster-prone areas. However, there are substantial risks that must be considered, specifically the negative impacts on the sensitive ecosystems within the national park. Kerinci Seblat National Park is an important area that hosts high biodiversity and functions as an environmental buffer. Therefore, the application of the Precautionary Principle is crucial in the decision-making process related to this policy.

¹⁵Puneet Pathak. "Human Rights Approach to Environmental Protection." 2017. p. 17

In the context of the proposed evacuation road in Kerinci, which is planned to pass through Kerinci Seblat National Park, the application of this principle becomes essential. This policy could significantly affect sensitive ecosystems, making it important to conduct a thorough evaluation to understand the long-term implications of such development actions. Thus, any policy with environmental impacts should be assessed for its long-term effects.¹⁶

In the context of the dichotomy in environmental policy, this road construction reflects the debate between the need to enhance human safety and the protection of the environment. On one hand, adequate infrastructure development can save lives in emergency situations; on the other hand, if such development damages habitats and threatens protected species, the long-term consequences can be very detrimental. In this case, the Precautionary Principle encourages decision-makers to carefully consider the potential risks before proceeding with the policy.

¹⁶Febrian Chandra, Adithiya Diar, and Hartati Hartati. "Konstitusi Hijau (Green Constitution) dalam Upaya Pelestarian Lingkungan Hidup yang Berkeadilan." *Jurnal Penelitian Inovatif*. Vol. 4, No. 3. 2024. p. 893.

Therefore, it is necessary to refer to Radbruch's views regarding the objectives of law, one of which is utility. Utility can be understood as an effort to fulfill the diverse desires and needs of various parties, creating harmony in social interactions. In this context, utility is not merely focused on individual satisfaction but also on creating greater value for society as a whole. Philosophically, every action taken should consider its impact on the common good, thereby creating mutually beneficial and sustainable conditions.¹⁷

Utility reflects the social responsibility inherent in every individual and institution. By serving diverse desires, we not only meet current needs but also ensure that future generations have access to the same resources and opportunities. From this perspective, utility serves as a driver for creating balance between individual aspirations and collective interests, making the world a better place for all. The importance of human safety must be balanced with a commitment to protecting the environment. By adopting a

¹⁷E. Fernando M. Manullang. "Misinterpretasi Ide Gustav Radbruch Mengenai Doktrin Filosofis tentang Validitas dalam Pembentukan Undang-Undang." *Undang: Jurnal Hukum*. Vol. 5, No. 2. 2022. p. 459

precautionary approach, stakeholders need to conduct comprehensive risk assessments, consider alternative, more environmentally friendly options, and involve local communities in the planning process. This will not only ensure that the construction of evacuation roads does not sacrifice biodiversity but also help build public trust in the policies enacted. In the context of the urgent need for environmental protection and public safety, the application of the precautionary principle is crucial to accommodate both interests. This principle encourages decision-makers to take preventive actions before irreversible damage occurs, even when there is scientific uncertainty regarding the impacts of an activity on the environment.

By applying this principle, the policies enacted will not only consider the potential negative impacts on the ecosystem of Kerinci Seblat National Park (TNKS) but will also protect the safety and well-being of the surrounding communities, such as the people of Kerinci who rely on natural resources and ecosystems for their livelihoods. The urgency of constructing evacuation roads in Kerinci Regency and Sungai Penuh City is crucial, especially in the face of potential natural disasters such as the eruption of Mount Kerinci. As one

of Indonesia's active volcanoes, Mount Kerinci poses a threat to the safety of surrounding communities. In emergency situations, having well-planned and swift evacuation routes can be lifesaving, allowing people to quickly escape to safer locations. Without adequate evacuation roads, access out of disaster-prone areas becomes extremely difficult, potentially increasing the risk of casualties and property loss.

Moreover, these evacuation roads can also serve as alternative transport routes that facilitate quicker disaster response efforts by rescue teams. In emergencies, every second counts, and rapid access can assist in delivering aid, evacuating people, and other mitigation efforts. Thus, the construction of evacuation roads is not merely about infrastructure but is a strategic step to enhance community preparedness for disasters, ensuring that all residents have better access to safety. The author believes that while opening roads through the Kerinci Seblat National Park (TNKS) could offer benefits in terms of accessibility and increased economic activities, this cannot be separated from various potential negative impacts. Easier access to remote areas often invites illegal practices such as logging and mining. With adequate infrastructure,

irresponsible entrepreneurs may exploit natural resources without regard for the resulting ecological impacts. This phenomenon can exacerbate environmental damage and disrupt the existing ecosystem balance.

Furthermore, road construction may contribute to habitat fragmentation, which poses a serious threat to the flora and fauna within TNKS. Species that depend on expansive, unfragmented habitats may struggle to find food, mates, and shelter. This can lead to population declines for some species, potentially resulting in local extinctions. Additionally, interactions between humans and wildlife may increase, often leading to conflicts, such as hunting or the displacement of animals from their natural habitats. In the long term, these impacts will disrupt biodiversity and ecosystem health.

Moreover, the author suggests that these negative effects are not limited to environmental damage but can also create social and economic issues for local communities. When natural resources are overexploited, communities that depend on forest products and other natural resources will directly feel the consequences of declining environmental quality.

However, this situation cannot be separated from the state's existence and its function to effectively oversee activities occurring in Kerinci Seblat National Park (TNKS). The state has the responsibility to ensure that road construction does not solely focus on economic development aspects but also considers the ecological impacts that may arise. Strict oversight must be implemented to prevent illegal logging and mining, which often occur in newly accessible areas. Without decisive action from authorities, the potential for environmental damage and natural resource exploitation will increase, ultimately harming community welfare and threatening biodiversity. This aligns with the concept of state responsibility in environmental policy.

The state plays a crucial role in preventing the exploitation of natural resources that can lead to pollution and environmental degradation. Through clear and stringent regulations, the state can set limits on resource exploitation and ensure that every industrial or developmental activity does not compromise ecosystem balance. Effective oversight of business and industrial activities is essential, where the state needs to involve regulatory agencies to monitor

environmental impacts regularly. Additionally, public education and awareness regarding the negative effects of pollution are vital to support existing policies. By fostering a collaborative approach among the government, communities, and the private sector, the state can create a safer and healthier environment where natural resource utilization is conducted with sustainability and environmental protection in mind.¹⁸

Furthermore, oversight should also include the involvement of local communities in natural resource management. The state needs to build strong partnerships with surrounding communities to create a participatory monitoring system. By engaging them in the decision-making and oversight processes, communities can take the lead in protecting ecosystems from illegal practices. This not only enhances the effectiveness of monitoring but also empowers communities to have a sense of ownership over their environment. Active community involvement in preserving TNKS will be a strategic step to ensure that

¹⁸Sudi Fahmi. "Asas Tanggung Jawab Negara Sebagai Dasar Pelaksanaan Perlindungan dan Pengelolaan Lingkungan Hidup." *Jurnal Hukum Ius Quia Iustum* 18.2 (2011). p. 226.

development remains sustainable and environmentally friendly.

D. Conclusion

The precautionary principle is a principle of caution adopted in international environmental law especially on Rio declaration, emphasizing the importance of balancing the interests of ecosystems and humanity. In this context, human safety must be the top priority, especially in the policies regarding the construction of evacuation roads in Kerinci. To achieve an effective balance between environmental protection and community needs, strengthening oversight by the state becomes a crucial step. Thus, the implementation of this precautionary principle is expected to ensure that development not only meets urgent needs but also preserves ecosystem sustainability for a better future.

Reference

- Adirini Pujayanti. Inter-Parliamentary Union (IPU) dan Lingkungan Hidup. *Jurnal Politica: Dinamika Masalah Politik Dalam Negeri dan Hubungan Internasional* Vol 3, No. 1 (2016).
- Andrena, Carmela. *Kebangkitan Negeri Tirai Bambu dan Melemahnya Pengaruh Barat pada Rekonstruksi*

- Global Tiongkok. *Jurnal Humaniora dan Sosial Sains* Vol. 1, No. 1 (2024).
- Chandra, Febrian, Adithiya Diar, and Hartati Hartati. Konstitusi Hijau (Green Constitution) dalam Upaya Pelestarian Lingkungan Hidup yang Berkeadilan. *Jurnal Penelitian Inovatif* Vol. 4, No. 3 (2024).
- E. Fernando M. Manullang. Misinterpretasi Ide Gustav Radbruch Mengenai Doktrin Filosofis tentang Validitas dalam Pembentukan Undang-Undang. *Undang: Jurnal Hukum* Vol. 5, No. 2 (2022).
- Ema Septaria. Penguatan Perjanjian Paris Melalui Kepemimpinan Negara Maju: Analisis Janji Partai Labour. *Jurnal Ilmiah Kutei* Vol. 23, No. 1 (2024).
- Hussin, Mutia Hariati. Realisme dalam Pemikiran Ekologis. *Jurnal Hubungan Internasional* Vol. 1, No. 1 (2012).
- Kaiyue, and Zheng Xing. Study on the Precautionary Principle in Environmental Justice from the Perspective of Kunming Declaration. *Science of Law Journal* Vol. 3, No. 2 (2024).
- Masumy, Naimeh, and Sara Hourani. The Invocation of the Precautionary Principle within the Investor-State Dispute Settlement Mechanism: Not Seizing the Occasion. *Laws* 13, No. 2 (2024).
- Martin, Rhett D., and David B. Lindenmayer. Applying the Precautionary Principle to Hidden Collapse. *Sustainability* Vol. 16, No. 10 (2024).
- Nilu Amania. Problematika Undang-Undang Cipta Kerja Sektor Lingkungan Hidup. *Syariat: Jurnal Studi Al-Qur'an dan Hukum* Vol. 6, No. 02 (2020).
- Noya, Brigitta Caecilia Putri, Agis Ardhiansyah, and Dony Aditya Prasetyo. Analisis Pembentukan Perjanjian Internasional untuk Menangani Krisis Penipisan Ozon akibat Emisi Orbital Spacecraft. *RechtJiva* Vol. 1, No. 2 (2024).

- Pathak, Puneet. Human Rights Approach to Environmental Protection. (2017).
- Putri Rahman, Vidia Syahbani. Strategi Indonesia dalam Mengatasi Perubahan Iklim Melalui Kerjasama Internasional. *Mimbar: Jurnal Penelitian Sosial dan Politik*, No. 1 (2024).
- Rhett D. Martin and David B. Lindenmayer. Applying the Precautionary Principle to Hidden Collapse. *Sustainability* No. 10 (2024).
- Sudi Fahmi. Asas Tanggung Jawab Negara Sebagai Dasar Pelaksanaan Perlindungan dan Pengelolaan Lingkungan Hidup. *Jurnal Hukum Ius Quia Iustum* Vol. 18, No. 2 (2011).
- Yvonne Donders and Monika Plozza. Look Before You Leap: States' Prevention and Anticipation Duties Under the Right to Science. *The International Journal of Human Rights* Vol. 28, No. 3 (2024).