

Implementation of Precautionary Principles in Environmental Impact Assessment (EIA) in Indonesia

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ABSTRACT

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This study aims to thoroughly examine the implementation of precautionary principles in environmental impact assessment (EIA). In order to achieve the stated objective, a socio-legal study method was adopted. The obtained results showed that in the context of environmental approval requirements in Indonesia, EIA remained a key requirement. Typically, in the process of preparing, implementing, monitoring, and evaluating certain activities to be carried out, the principle of caution is ensured to be upheld optimally. This principle is often introduced to ensure that all projects permitted by the government do not pose a propensity to harm the community. In EIA process, there is an obligation to examine the opinions of individuals who could be directly affected by an activity before its implementation. Despite the effectiveness of this approach, it was observed to still possess certain weaknesses. This includes the fact that even after EIA has passed the assessment phase, continuous monitoring and evaluation are still necessary. The government must ensure that any risks associated with an activity are identified and addressed.

Introduction

The progression of time is a factor that has significantly influenced human life¹. Technological advancement is an inevitable part of this evolution, including in the environmental sector. Although technological progress is associated with numerous positive impacts, no matter how advanced it becomes, the advancements must be in line with the principles of sustainable development². This principle includes the fact that the use of natural resources must be managed with careful consideration of their availability and sustainability for future generations³.

Currently, technological developments are being applied across various fields, including in the analysis of activities that may significantly impact the environment⁴. Environmental Impact Assessment (EIA) is a process used to study the potential environmental effects of a planned business or activity. This assessment has been found to play a very significant role in supporting decision-making regarding whether a proposed venture should proceed. The

¹ Arelys López-Concepción et al., "Social Well-Being for a Sustainable Future: The Influence of Trust in Big Business and Banks on Perceptions of Technological Development from a Life Satisfaction Perspective in Latin America," *Sustainability (Switzerland)* 15, no. 1 (2023): 1–14.

² Justice Mensah, "Sustainable Development: Meaning, History, Principles, Pillars, and Implications for Human Action: Literature Review," *Cogent Social Sciences* 5, no. 1 (2019): 1–21, <https://doi.org/10.1080/23311886.2019.1653531>.

³ A. Sharma, P. Mahajan, and R. Garg, "End-of-Life Solar Photovoltaic Panel Waste Management in India: Forecasting and Environmental Impact Assessment," *International Journal of Environmental Science and Technology* 21, no. 2 (2024): 1961–1980, <https://doi.org/10.1007/s13762-023-04953-2>.

⁴ Andriansyah Andriansyah, Endang Sulastri, and Evi Satispi, "Role of Government Policies in Environmental Management," *Research Horizon* 1, no. 3 (2021): 86–93.

primary purpose of EIA is to identify and evaluate potential impacts so that appropriate alternative solutions can be proposed. However, the outcomes of these analyses must also be approached with precautionary principle⁵. EIA is among several fundamental concepts underpinning environmental protection and management in Indonesia. This study aims to explore the concept of precautionary principle and examine how it can be applied in the planning and implementation of EIA.

Research Methods

This present study was carried out using a normative legal study method, with a primary focus on legal principles as its primary object. The exploration is grounded in applicable positive law and was analyzed through the lens of explicitly formulated legal principles, particularly precautionary principle.⁶

Results and Discussion

1. Precautionary Principles Concept

At the international level, precautionary principle has been incorporated into several international agreements, particularly in the environmental sector. Some significant examples in this context include the Vienna Convention for the Protection of the Ozone Layer (1985), the Ministerial Declaration of the Third International Conference on the Protection of the North Sea (1990), and the Rio Declaration on Environment and Development (1992)⁷. Based on previous observation, the use of precautionary principle in environmental regulation gained wider recognition following the 1972 Stockholm Conference⁸. This principle may be understood as the practice of taking preventive action before environmental harm occurs.⁹ It serves as a strategy for averting environmental degradation and plays a very important role in promoting sustainable development.¹⁰ By adopting precautionary principle, development activities are planned with foresight, in anticipation of potential environmental impacts, so that economic, social, and environmental aspects remain balanced¹¹.

Key elements of precautionary principle include risk uncertainty, scientific risk assessment, the potential for substantial damage, proportional preventive measures, and a shift in the burden of proof¹². These elements invariably emphasize that precautionary principle should be applied during the evaluation stages before the issuance of permits. Accordingly, in Indonesia, the principle is embedded in Law Number 32 of 2009 on

⁵ Pinky Tiara Assa, Muhammad H Soepeno, and Refly R Umbas, "Peran Serta Masyarakat Dalam Proses Penyusunan Analisis Mengenai Dampak Lingkungan Dan Perizinan Lingkungan Hidup," *Lex Administratum* 12, no. 4 (2024): 1-10.

⁶ Harselin Sulaiman and Eka Dewi Kartika, "Aspek Hukum Wanprestasi Terhadap Perjanjian Kemitraan Pengelolaan Lahan Di Desa Kintang Kabupaten Mamaju," *Jurnal Hukum* 7, no. 1 (2024): 32-44.

⁷ Majambere Rodrigue, "The Precautionary Principle in Environmental Law," *Open Journal of Social Sciences* 11, no. 12 (2023): 548-567.

⁸ Nor Akhmal Hasmin et al., "Adoption of the Precautionary Principle on the Safety and Health Risks of Nanofood in Malaysia," *Journal of Legal Studies* 15, no. 1 (2024): 271-302.

⁹ Latifah Emmy, "Precautionary Principle Sebagai Landasan Dalam Merumuskan Kebijakan Publik," *Yustisia Jurnal Hukum* 95, no. 2 (2016): 275-297.

¹⁰ Gitanjali Nain Gill, "Precautionary Principle, Its Interpretation and Application by the Indian Judiciary: 'When I Use a Word It Means Just What I Choose It to Mean-Neither More nor Less' Humpty Dumpty," *Environmental Law Review* 21, no. 4 (December 2019): 293, <https://doi.org/10.1177/1461452919890283>.

¹¹ Anindya Yustika, "Precautionary Principle: Perumusan Kebijakan Pengelolaan Energi Baru Terbarukan," *Zaiken: Journal of Civil and Business Law* 5, no. 1 (2024): 1-11.

¹² Emmy, "Precautionary Principle Sebagai Landasan Dalam Merumuskan Kebijakan Publik."

Environmental Protection and Management¹³. Article 2(f) of this law states that uncertainty about the impacts of an activity due to limitations in science and technology should not be used as a reason to delay efforts to minimize or prevent potential threats of environmental pollution and damage.

2. Implementation of Precautionary Principles in Environmental Impact Assessment (EIA)

EIA is used as an instrument for preventing environmental pollution and damage. In addition to EIA, several other instruments designed specifically to carry out similar tasks include:

- a. Strategic environmental studies
- b. Spatial planning
- c. Environmental quality standards
- d. Standard criteria for environmental damage
- e. Environmental impact assessment (EIA)
- f. Environmental management efforts and environmental monitoring efforts
- g. Permission
- h. Environmental economic instruments
- i. Environmentally based laws and regulations
- j. Environmentally based budget
- k. Environmental risk analysis
- l. Environmental audit, and
- m. Other instruments according to needs and developments in science.

In general, licensing serves as a preventive instrument to regulate public activities and ensure compliance with applicable legal provisions¹⁴. In the same vein, EIA functions as a prerequisite for obtaining environmental approval, which is issued in the form of a decision (*beschikking*). According to J.B.M. ten Berge, *beschikking* is a concrete and individual public legal decision issued by a government authority, which carries legal consequences that must be implemented¹⁵.

EIA, which is an integral part of the licensing process, is expected to serve as a mechanism for screening planned activities that may significantly affect the environment. In this context, precautionary principle is applied by assessing the potential risks and environmental impacts associated with the activities being analyzed. If an activity poses a high environmental risk and lacks a feasible mitigation plan, then EIA cannot be approved. Furthermore, every activity must provide guarantees for the restoration of environmental functions. Precautionary principle, which emphasizes environmental protection through preventive measures, properly corresponds with the purpose of EIA¹⁶. As a component of environmental approval, EIA acts as a safeguard by filtering activities that could have serious

¹³ Althea Serafim Kriswandaru and Arief Fahmi Lubis, "Implementation of Environmental Law and Environmental Preservation Efforts in Indonesia," *Anayasa: Journal of Legal Studies* 1, no. 2 (2024): 90-99.

¹⁴ AL Sentot Sudarwanto and Dona Budi Kharisma, "Omnibus Law Dan Izin Lingkungan Dalam Konteks Pembangunan Berkelanjutan," *Jurnal Rechts Vinding: Media Pembinaan Hukum Nasional* 9, no. 1 (2020): 109-123.

¹⁵ Herman Herman and Hendry Julian Noor, "Doktrin Tindakan Hukum Administrasi Negara Membuat Keputusan (Beschikking)," *Jurnal Komunikasi Hukum (JKH)* 3, no. 1 (2017): 82-95.

¹⁶ Kimmo Jalava et al., "The Precautionary Principle and Management of Uncertainties in EIAs - Analysis of Waste Incineration Cases in Finland," *Impact Assessment and Project Appraisal* (Taylor & Francis, 2013), <http://dx.doi.org/10.1080/14615517.2013.821769>.

environmental consequences. Furthermore, both the requirements established by the government as the policymaker and the implementation of EIA, once approved, require the consistent application of precautionary principle. According to Government Regulation Number 22 of 2021 concerning Environmental Protection and Management, specific criteria determine which activities require EIA. These criteria include:

- a. Changing landforms and natural landscapes.
- b. Exploitation of natural resources, both renewable and non-renewable.
- c. Processes and activities that could potentially cause environmental pollution, damage, waste, and degrade natural resources.
- d. Processes and activities whose results can influence the natural environment, the artificial environment, as well as the social and cultural environment.
- e. Processes and activities whose results will influence the preservation of natural resource conservation areas and the protection of cultural heritage.
- f. Introduction of certain types of plants, animals, and microorganisms.
- g. Manufacture and use of biological and non-biological materials.
- h. Activities that have a high risk and affect national defense.
- i. The application of technology is estimated to have great potential to influence the environment.

Based on Article 25 of Law Number 32 of 2009 concerning Environmental Protection and Management, EIA document must include an assessment of the potential environmental impacts associated with the proposed activity, an evaluation of surrounding activities near the planned site, community input in the form of suggestions and responses, an estimate of the magnitude and significance of potential impacts, a thorough evaluation of these impacts, and detailed environmental management as well as monitoring plans. Each of these components reflects the element of caution inherent in the implementation of EIA. Furthermore, community inclusiveness is a mandatory element in the preparation of EIA.

Communities directly affected by proposed activities are engaged through public announcements and consultations regarding the activity plans. The public is granted the right to submit suggestions, opinions, and responses in 10 working days following the announcement. However, this timeframe is often seen as too limited, specifically considering that affected communities require thorough socialization and understanding of the potential economic, social, and environmental consequences of such activities. It is important to state that although community participation is part of the implementation of precautionary principle, current regulations do not obligate the project proponent to respond to public input¹⁷. This regulatory gap may lead to potential conflicts, as the absence of a clear response mechanism denies communities the certainty needed. Based on the insight, an inference can be made that the application of precautionary principle in this aspect remains suboptimal. EIA serves as a fundamental requirement for environmental feasibility assessments. This environmental approval subsequently becomes a prerequisite for the issuance of business permits, as stipulated in Article 3, paragraph (3) of Government Regulation Number 22 of 2021 concerning Environmental Protection and Management¹⁸.

¹⁷ Dewi Tuti Muryati, Dharu Triasih, and Tri Mulyani, "Implikasi Kebijakan Izin Lingkungan Terhadap Lingkungan Hidup Di Indonesia," *Jurnal Usm Law Review* 5, no. 2 (2022): 693-707.

¹⁸ Prita Hapsari Kertaningrum and Widayati Widayati, "Community Participation In Development Of Environmental Impact Analysis Documents (AMDAL) Based On Arnstein Concept," *Law Development Journal* 3, no. 2 (2021): 175-183.

Various elements are typically considered when determining whether a proposed activity passes EIA assessment. An essential requirement in this context is the compatibility of the proposed location with the regional spatial plan. In assessing the appropriateness of a location, precautionary principle becomes very important. When an activity is planned in a location that does not correspond with the designated spatial plan, it can threaten the sustainability of the surrounding environment. For instance, if a factory that generates liquid waste is proposed in an area designated for agriculture due to its productive potential, it may negatively affect agricultural land productivity, particularly in cases where the liquid waste is not managed in accordance with EIA standards. In this context, precautionary principle is applied in making decisions regarding the appropriateness of a proposed location. All activities with significant environmental impacts must be evaluated either using EIA or an Environmental Management and Monitoring Effort (UKL/UPL) as a prerequisite before any construction begins. When an activity is considered compatible with the regional spatial plan, EIA process proceeds to the next stage, which includes a substantive evaluation based on established assessment criteria.

Conclusion

In conclusion, the implementation of precautionary principles in EIA served to maintain legal responsibility for activities that pose risks or have significant impacts on the environment. Limitations in terms of science and information technology are not an obstacle to implementing precautionary principles. On the flip side, these limitations should serve as motivation to further investigate and explore unknown risks, thereby preventing potential losses, whether economic, social, or environmental.

Suggestion

As a recommendation, the government should consider tightening EIA licensing process to ensure environmental approvals are granted only to activities that meet established standards. Approved EIA must also be subject to continuous oversight through government-led supervision, monitoring, and evaluation. Strict sanctions should also be implemented if the implementation of EIA is not in accordance with the approved plan. By enforcing these measures, precautionary principles can be implemented effectively by both business owners and the government.

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