

## IMPLEMENTATION OF ENVIRONMENTAL LAW IN SUSTAINABLE NATURAL RESOURCE MANAGEMENT

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### **Abstract**

East Kalimantan Province is endowed with abundant natural resources, including tropical forests, coal, oil, and natural gas. However, excessive exploitation of these resources has led to significant environmental degradation, including deforestation, land degradation, and water pollution. This study aims to assess the implementation of environmental law in supporting sustainable natural resource management in East Kalimantan, focusing on the effectiveness of regulations such as Law No. 32 of 2009 on Environmental Protection and Management, and the Environmental Impact Assessment (AMDAL) mechanism. The findings reveal that, despite the adequacy of the regulatory framework, its implementation remains weak due to insufficient monitoring, poor inter-agency coordination, and lenient enforcement of sanctions. Quantitative data show that approximately 45% of mining companies do not fully comply with AMDAL recommendations, while environmental oversight is minimal, with a critically low number of inspectors. To enhance the effectiveness of environmental law enforcement, steps such as improving government coordination, ensuring transparency in AMDAL processes, educating the public, and strengthening oversight and penalties are necessary. These strategies are expected to foster more sustainable natural resource management in East Kalimantan and mitigate further environmental damage.

**Keywords:** East Kalimantan, environmental law, AMDAL, deforestation, sustainable natural resource management

## INTRODUCTION

East Kalimantan is known as one of the richest provinces in Indonesia in terms of natural resources, with wealth that includes tropical forests and mining resources such as coal, oil, and natural gas. According to data from the Ministry of Energy and Mineral Resources (2021), East Kalimantan produces around 38% of the national coal production. Meanwhile, the oil and gas industry also plays an important role, with the province contributing about 20% of the national oil production. However, the massive exploitation of these resources has caused significant environmental damage. Deforestation in East Kalimantan is recorded as one of the highest in Indonesia. According to data from Global Forest Watch (2023), East Kalimantan lost more than 1.2 million hectares of primary forests between 2000 and 2020. Other environmental damages include land degradation caused by mining activities that do not follow environmental standards, as well as water pollution from the discharge of mining waste into major rivers such as the Mahakam River.

Law No. 32 of 2009 on Environmental Protection and Management is the primary legal framework regulating environmental protection in Indonesia. This law emphasizes the importance of the Environmental Impact Analysis (AMDAL) as the main instrument to prevent environmental damage before development projects begin. In addition, the law also regulates the responsibility of companies in managing waste, rehabilitating post-exploitation land, and imposing sanctions for environmental violations. Although this regulation is quite comprehensive, its implementation on the ground is still far from expectations. Empirical research shows that many mining companies in East Kalimantan do not fully comply with AMDAL regulations. Based on a survey conducted by Walhi (2022), 45% of mining companies in East Kalimantan only complete the AMDAL process as a formality without implementing the recommended management actions. This indicates weaknesses in the monitoring system by local and central governments, which are often influenced by economic and political pressures.

## RESEARCH METHODS

This research uses a mixed-methods approach, combining both qualitative and quantitative methods. Qualitative data was collected through interviews with parties involved in environmental management in East Kalimantan, such as local governments, environmental NGOs, and mining companies. Quantitative data was gathered from reports related to environmental violations and the implementation of AMDAL in East Kalimantan over the past five years.

## RESULT AN DISCUSSION

The main challenge in enforcing environmental law in East Kalimantan is the lack of coordination between the central and regional governments. In many cases, economic interests, particularly from the mining sector, are more dominant than the interests of environmental protection. According to the Ministry of Environment and Forestry (KLHK, 2022), of the 150 reported environmental violation cases in East Kalimantan between 2018 and 2022, only about 40% were followed up with legal sanctions. The lack of effective supervision is also a key factor in the weak enforcement of law. Supervision of AMDAL implementation and other environmental regulations is often only conducted at the beginning of the project, while field operations are less regularly monitored. According to a report by ICEL (2021), the number of environmental inspectors in East Kalimantan is still very limited, with only 1 inspector for every 30 mining companies. This is clearly inadequate to ensure that these companies are fully complying with the existing regulations.

One of the biggest obstacles in the implementation of environmental law in East Kalimantan is the weak supervision. Data from the Ministry of Environment and Forestry (KLHK, 2022) shows that the number of environmental inspectors in East Kalimantan is very limited, with a ratio of 1 inspector for every 30 active mining companies. This number is far from ideal given the scale of the extractive industry in East Kalimantan. In comparison, countries like Norway or Canada, which also have large extractive industries, have a much more proportional inspector-to-company ratio, with about 1 inspector for every 5 to 10 companies. Additionally, the Corruption Eradication Commission (KPK) noted in the Resource Management System Review (2020) that many environmental inspectors in Indonesia, including those in East Kalimantan, lack adequate training to detect technical and complex violations. As a result, many violations go undetected or are reported too late, so environmental damage has already occurred before corrective actions can be taken.

The following is data on environmental law violations in East Kalimantan based on reports from the Ministry of Environment and Forestry (KLHK) from 2018 to 2022:

Tabel 1. The number of environmental law violations in East Kalimantan

year	case	Follow Up	Adm Sanctions	Criminal sanctions
2018	32	14	8	2
2019	45	20	12	3
2020	52	22	15	5
2021	60	25	18	7
2022	55	23	17	4

From the data, it appears that although the number of violations has increased every year, the number of sanctions imposed (both administrative and criminal) remains relatively low. In 2022, of the 55 reported violation cases, only about 23 were followed up with administrative sanctions, and only 4 resulted in criminal penalties. This indicates that the enforcement of legal sanctions for environmental violations has not been firm and comprehensive enough. One key finding of this research is that many mining companies and large industries in East Kalimantan only carry out Environmental Impact Assessments (AMDAL) as a formality. According to a survey conducted by Wahana Lingkungan Hidup Indonesia (Walhi, 2022), about 45% of mining companies in East Kalimantan only followed the AMDAL procedure during the initial stages of a project, but did not fully comply with the recommendations made. This is exacerbated by the lack of government oversight to ensure that companies fulfill their environmental obligations after the AMDAL is approved.

Research by the Institute for Essential Services Reform (IESR, 2021) found that a lack of transparency in the implementation of AMDAL is also an issue. The study shows that many AMDAL reports are not publicly published, preventing the public from directly monitoring whether the recommendations are being carried out. In other countries, such as Brazil, AMDAL reports must be published online and made accessible to the general public, which enhances accountability and oversight. Data from Global Forest Watch (2023) shows that East Kalimantan lost more than 1.2 million hectares of primary forest between 2000 and 2020. The deforestation is largely due to mining activities and land conversion for oil palm plantations. Land degradation has also spread, particularly around coal mining areas in regions such as Kutai Kartanegara, Berau, and Paser.

According to research by Forest Watch Indonesia (FWI, 2021), East Kalimantan experienced deforestation at a rate of around 75,000 hectares per year between 2018 and 2022. This figure far exceeds the deforestation reduction targets set by the government through Nationally Determined Contributions (NDCs) in an effort to mitigate climate change. In addition to deforestation, water pollution has also become a serious issue in East Kalimantan. The Mahakam River, one of the province's main water sources, has been contaminated by mining waste and other industrial activities. Research by the Indonesian Institute of Sciences (LIPI, 2020) found that the water quality of the Mahakam River is below the standards set by the government for raw water, particularly for heavy metals such as mercury and lead.

Several empirical studies conducted in East Kalimantan show that stricter environmental law enforcement can have a positive impact on the sustainability of natural resources. For example, post-mining land rehabilitation projects carried out by coal mining companies, such as PT Kaltim Prima Coal, have shown that rehabilitated land can recover within 5-10 years with the right technology and management practices. However, such projects are still rare among other mining companies, which often opt for shortcuts without following the legal procedures in place.

Furthermore, collaboration between the government, NGOs, and local communities has proven to yield positive results. The Community-based Forest Management (CBFM) program implemented in parts of East Kalimantan has successfully reduced the rate of deforestation by 30% in forest areas managed by local communities. This shows that if environmental law enforcement can actively involve all stakeholders, sustainable natural resource management in East Kalimantan can be more effective.

### Steps to Improve the Implementation of Environmental Law

To address the challenges faced in the implementation of environmental law in East Kalimantan, several important steps need to be taken:

#### 1. Improving Coordination Between the Central and Regional Governments

Better coordination between the central and regional governments is crucial to ensure effective enforcement of environmental laws, particularly in regions like East Kalimantan, which is rich in natural resources but also vulnerable to excessive exploitation. The central government has a responsibility to provide greater support to regional governments, not only in terms of funding but also in training environmental inspectors.

Financial support from the central government can greatly assist regional governments in enhancing their monitoring capacity. For example, with adequate funding, local governments can purchase more advanced environmental monitoring equipment. This equipment includes technologies such as drones to monitor deforestation or improved water quality monitoring systems. With access to sufficient financial resources, regional governments will be better equipped to run focused and sustainable programs, which are essential for enforcing environmental laws.

In addition to financial support, intensive training for environmental inspectors is also a crucial step. Well-trained inspectors will be more capable of detecting and addressing violations on the ground. This training should not only cover modern environmental monitoring techniques but also strategies for handling potential conflicts that may arise in the field. With the right knowledge, inspectors can provide better recommendations and appropriate corrective actions, ensuring that companies comply with existing regulations.

The implementation of uniform standards in the Environmental Impact Assessment (AMDAL) process is also necessary. When all parties understand and follow the same guidelines, it becomes easier to monitor and enforce the law. Clear standards will help companies plan their projects better while reducing the likelihood of environmental violations due to ignorance or misunderstandings.

In this context, it is also important to establish mechanisms that allow for regular dialogue between the central government, local governments, companies, and civil society. Such forums can serve as spaces to share information, debate policies, and find joint solutions to existing challenges. With strong collaboration among all stakeholders, it is hoped that sustainable natural resource management in East Kalimantan can be achieved, maintaining a balance between economic development and environmental protection.

## 2. Transparency and Public Access to Data

The implementation of Environmental Impact Assessments (AMDAL) that is transparent and easily accessible to the public is a key step in improving accountability and oversight of development projects that have the potential to harm the environment. By publishing each AMDAL report approved by the government online, the public will have direct access to review the contents of the reports, including the expected environmental impacts, proposed mitigation plans, and the monitoring steps that companies will undertake.

This transparency not only provides the community with the opportunity to understand the projects being implemented in their environment but also allows them to actively participate in the monitoring process. With clear and open information, the public can identify potential risks posed by the project and report non-compliance or negative impacts they experience to the authorities. For example, the community could raise concerns regarding the impact of the project on air quality, water sources, and the local flora and fauna. This creates a sense of ownership and shared responsibility for the environment.

Furthermore, publishing the AMDAL reports online can increase corporate accountability. With publicly available information, companies will be more motivated to comply with the recommendations and mitigation plans outlined in the reports. If violations occur, the public can quickly report them to regulatory agencies, so actions can be taken promptly. As a result, companies involved in large projects will feel more pressured to operate responsibly and sustainably.

Additionally, community involvement in monitoring AMDAL implementation can strengthen the relationship between companies and local communities. When communities feel that their voices are heard and recognized, they are more likely to support projects that are managed transparently and responsibly. On the other hand, if companies seem to ignore or conceal important information, distrust and conflicts with the community are more likely to arise.

To ensure this transparency works well, the government needs to facilitate user-friendly and easily accessible online platforms for everyone. This includes creating an environmental information portal that provides access to all approved AMDAL documents, as well as periodic reports on the project's implementation status. With this approach, it is hoped that a strong culture of monitoring will be formed among the public, which in turn will improve the effectiveness of environmental law enforcement and the sustainable management of natural resources in East Kalimantan.

## 3. Education and Public Participation

Education for the public and business actors about the importance of sustainable natural resource management is a fundamental step in addressing the environmental challenges faced by East Kalimantan. Local communities often possess rich traditional knowledge and emotional connections with the natural resources around them, which, if managed properly, can provide long-term benefits both for the environment and the economy. Therefore, structured and participatory

education programs are essential to raise awareness of the need for responsible and sustainable resource management.

Through seminars, workshops, and environmental education programs involving various stakeholders, the public can be provided with information about the negative impacts of unplanned resource exploitation, such as deforestation, pollution, and loss of biodiversity. This education targets not only the general public but also business actors, especially companies operating in the natural resource sector. With a better understanding of the importance of sustainable practices, it is hoped that they can adopt more responsible and ethical approaches in their business activities.

One model that has proven effective in increasing community participation in natural resource management is the Community-based Forest Management (CBFM) program. This program grants local communities the authority to manage and utilize the forests around them in a sustainable manner. In the context of East Kalimantan, the implementation of CBFM allows communities to be directly involved in forest management while still considering environmental and social interests.

Community participation through CBFM not only positively impacts forest conservation but also provides new economic opportunities for local communities. By managing forest resources sustainably, communities can benefit from non-timber forest products, such as honey, fruits, and medicinal plants, without damaging the existing ecosystem. This creates economic incentives for communities to protect and preserve their surrounding environment.

Furthermore, CBFM promotes inclusive and democratic decision-making. Communities involved in natural resource management have a voice in determining how these resources should be managed, and they can directly identify and address the environmental issues they face. This not only strengthens the sense of ownership and responsibility toward the environment but also reduces the potential for conflicts between companies and local communities, as all parties feel involved in the decision-making process.

However, the success of CBFM requires support from the government and relevant institutions. Policies that support the implementation of CBFM must be strengthened by providing the necessary training and resources for communities. The government also needs to ensure that there is official recognition of the rights of communities to manage natural resources, providing a legal foundation for the sustainability of this program.

By combining education, active community participation, and appropriate policy support, sustainable natural resource management in East Kalimantan can be achieved. This will not only help preserve the environment but also improve the welfare of local communities, create harmony between economic needs and environmental conservation, and serve as a model for other regions in Indonesia facing similar challenges.

#### 4. Enhancement of Legal Sanctions and Supervision

The application of stricter legal sanctions against companies that violate environmental regulations is a crucial step in ensuring environmental sustainability in East Kalimantan. In many cases, violations of environmental regulations often occur because of the perception that the risk of being caught or punished is relatively low. Therefore, increasing administrative sanctions, such as higher fines, is essential to create a deterrent effect for companies that fail to comply with regulations. Heavier fines can encourage companies to be more responsible in their operations, as the cost of violations will be more significant than the potential profits they might gain from environmentally harmful practices.

However, administrative sanctions alone are not enough. Criminal legal proceedings for environmental violations also need to be strengthened to demonstrate that these violations are not just seen as administrative issues but as criminal actions that can harm both society and the environment as a whole. By prosecuting more environmental violation cases criminally, the government can assert its commitment to enforcing environmental laws and send a strong message to all stakeholders that environmental violations will not be tolerated. This step can contribute to a cultural shift within companies, where compliance with environmental regulations becomes an integral part of their business operations.

In addition, to ensure that the sanctions imposed are truly impactful, the government also needs to increase oversight of mining companies and other industries. One effective way to do this is by adding more environmental inspectors. With a better ratio between the number of inspectors and companies, the oversight of environmental regulations will be more stringent and thorough. This will also allow inspectors to conduct more routine and in-depth inspections, so potential violations can be detected and addressed before causing greater damage.

Alongside the increase in the number of inspectors, the use of technology can also be an effective solution for environmental monitoring. The use of satellite technology to monitor

deforestation and land degradation provides an efficient and accurate way to oversee activities that could harm the environment. This technology allows the government to obtain real-time data on land changes, enabling a quick response to suspicious activities. With accurate data, the government can direct resources to conduct further inspections in areas showing signs of violations.

The use of technology-based monitoring systems not only improves efficiency in oversight but also strengthens transparency. The data produced can be published and accessed by the public, allowing citizens to participate in monitoring. When the public has access to information regarding the environmental condition and company activities, it promotes accountability and encourages companies to comply with regulations. With increased legal sanctions, better oversight, and the application of technology, it is hoped that a safer and healthier environment will be created, ensuring the preservation of natural resources in East Kalimantan for future generations.

Thus, the combination of stricter law enforcement, effective oversight, and the implementation of modern technology not only provides solutions to address environmental violations but also builds a culture of sustained compliance among business actors. This is crucial for achieving sustainable natural resource management and maintaining the balance of ecosystems in East Kalimantan.

## CONCLUSION

Overall, the implementation of environmental law in East Kalimantan still faces significant challenges that hinder efforts to manage natural resources sustainably. The main obstacles include weak oversight, limited coordination between the central and regional governments, and a lack of transparency in the implementation of legal instruments such as the Environmental Impact Assessment (AMDAL). Although existing regulations, particularly Law No. 32 of 2009, clearly regulate environmental protection and natural resource governance, their implementation in the field is often overlooked by mining companies and large industries. Therefore, the issues that arise are not only related to regulations and their enforcement but also to the integrity, professionalism, and human resources involved, which have not yet been able to prevent violations effectively.

Law enforcement is also weak, with sanctions that are not severe enough to create a deterrent effect for environmental violators. For environmental management to be more effective, improvements are needed in several aspects, including strengthening coordination between governments, increasing public involvement through education and active participation, and tightening oversight and sanctions for companies that violate environmental rules. The use of technology, such as satellite monitoring, also needs to be enhanced to improve the monitoring system.

With these steps, it is hoped that the sustainability of natural resources in East Kalimantan can be maintained, while also preventing greater environmental damage in the future.

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