



Regional Autonomy-Based Environmental Management for Sustainable Development in Indonesia

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Abstract

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Environmental management in Indonesia cannot be separated from the use of natural resources that are directly related to the welfare of the community. However, the limitations of the quantity, quality, space, and time of natural resources pose serious challenges in realizing sustainable development. Within the framework of the constitution, the 1945 Constitution provides a legal basis through Article 28H paragraph (1) which guarantees the right to a healthy environment, and Article 33 paragraph (4), which emphasizes the principle of environmental insight. The implementation of regional autonomy that is supposed to strengthen environmental governance still faces institutional constraints, limited human resources, and a lack of budget. This study uses the literature method to examine environmental management policies in the perspective of regional autonomy. The results show the importance of synergy between the central government, regions, and communities in maintaining a balance between economic development and environmental conservation. Thus, strengthening environmental governance based on regional autonomy is a crucial strategy to achieve sustainable development in Indonesia.



1. Introduction

Natural resources are fundamental elements in supporting human life. The existence of land, water, air, forests, and minerals is the main support for economic and social activities. However, the limited nature of natural resources both in quantity and quality makes their use need to be managed wisely. The limitations of space and time show that the sustainability of the use of natural resources is not only determined by their availability, but also by the way humans maintain their balance with the environment.¹ The mutual relationship between humans and the environment is very close, where the damage caused by human activities will eventually have a negative impact on human life itself.

The Indonesian Constitution provides a strong foundation for environmental management. Article 28H paragraph (1) of the 1945 Constitution guarantees that everyone has the right to a good and healthy environment, while Article 33 paragraph (4) emphasizes the principle of sustainable and environmentally sound economic development. This provision serves as a guideline in the formulation of national and regional policies, including the implementation of Law No. 32 of 2009 concerning Environmental Protection and Management. The policy emphasizes that environmental management is not only the responsibility of the central government, but also of local governments, especially after the implementation of decentralization through regional autonomy.²

¹ Abdul Khair. "Sustainable Development in the Protection and Management of Environment in the Local Autonomy Framework." *Unram Law Review* 1, no. 1 (2017): 149-167.

² Xiaohui Yang, Ji Yan, Kun Tian, Zihao Yu, Rebecca Yu Li, and Senmao Xia. "Centralization or decentralization? the impact of different distributions of authority on China's environmental regulation." *Technological Forecasting and Social Change* 173 (2021): 121172.

In fact, environmental damage in Indonesia shows an alarming trend. Data from the Ministry of Forestry shows an increase in the rate of deforestation from the 1980s to the early 2000s. In addition to forest destruction, water, air, and soil pollution also worsens environmental quality. Natural resource exploitation activities that do not pay attention to the carrying capacity of the ecosystem are the main cause of environmental degradation. Various studies confirm that economic development that is only oriented towards short-term growth often comes at the expense of environmental sustainability.³ Therefore, the integration of sustainable development principles in every development policy is a necessity that cannot be delayed.

The implementation of regional autonomy provides opportunities as well as challenges in environmental management. On the one hand, regional autonomy provides space for local governments to design policies that are in accordance with local characteristics. On the other hand, decentralization often faces obstacles, such as limited human resources, lack of budget, weak regulations, and low political concern for environmental issues. This condition results in environmental management goals at the regional level not being fully achieved.⁴ Some regions even showed a decline in environmental quality after the enactment of autonomy, because natural resource management concessions were more influenced by short-term economic interests than environmental conservation.

³ Muhammad Wasif Zafar, Asif Saeed, Syed Anees Haider Zaidi, and Abdul Waheed. "The linkages among natural resources, renewable energy consumption, and environmental quality: A path toward sustainable development." *Sustainable Development* 29, no. 2 (2021): 353-362.

⁴ Fajrian Noor Anugrah. "The Authority of Environmental Governance by Local Governments in the Perspective of Regional Autonomy." *Wasaka Law* 9, no. 2 (2021): 202-222.

Community participation is an important factor in answering the weaknesses of local government institutions. Participatory democracy allows the community to play an active role in preserving the environment. Public involvement is not only limited to supervision, but also to decision-making, so that synergy is created between the state and society. This management model that prioritizes collaboration is believed to be able to increase the effectiveness of environmental protection in the era of regional autonomy⁵. In addition, public awareness of the importance of a healthy environment needs to be continuously increased through education, socialization, and strengthening civil society institutions.

Taking into account this background, this study aims to examine the dynamics of environmental management within the framework of regional autonomy in Indonesia. The focus is on how the central government, local governments, and communities can work together to maintain a balance between economic development and environmental sustainability. This study is expected to make a conceptual contribution to strengthening sustainable environmental governance strategies. The urgency of this research is even more relevant given the global challenges related to climate change and environmental degradation that are increasingly evident at the local level.

⁵ Laetitia M. Navarro, Nestor Fernandez, Carlos Guerra, Rob Guralnick, W. Daniel Kissling, Maria Cecilia Londono, Frank Muller-Karger et al. "Monitoring biodiversity change through effective global coordination." *Current opinion in environmental sustainability* 29 (2017): 158-169.

2. Literature Review

A lot of studies on environmental management within the framework of regional autonomy in Indonesia have been carried out, especially after the rollout of decentralization policies in the early 2000s. Several studies highlight that regional autonomy brings great opportunities for environmental management because local governments have direct proximity to the ecological and social conditions of the community. However, these opportunities are often not accompanied by adequate institutional capacity.⁶ Weak regional regulations and lack of human resources in the environmental field cause management carried out at the local level to be far from optimal.

Other research emphasizes the importance of environmental law as a policy instrument in encouraging sustainable development. Akib et al.⁷ show that the success of development is not only determined by economic growth, but also by the courage of local governments in enforcing fair and sustainable environmental regulations. In other words, economic development that is not accompanied by environmental impact control will only cause long-term degradation.

In addition, the latest study confirms that community participation is the key to environmental governance in the region. According to Rahma et al.⁸ community involvement in policy formulation and implementation of environmental programs

⁶ Lara Bartocci Liboni Amui, Charbel Jose Chiappetta Jabbour, Ana Beatriz Lopes de Sousa Jabbour, and Devika Kannan. "Sustainability as a dynamic organizational capability: a systematic review and a future agenda toward a sustainable transition." *Journal of cleaner production* 142 (2017): 308-322.

⁷ Muhammad Akib, F. X. Sumarja, and Heryandi. "Environmental Law Policy as an Approach to Achieve Sustainable Development and Prosperity in an Era of Regional Autonomy." *Environmental Policy and Law* 49, no. 1 (2019): 83-87.

⁸ Hania Rahma, Akhmad Fauzi, Bambang Juanda, and Bambang Widjojanto. "Development of a composite measure of regional sustainable development in Indonesia." *Sustainability* 11, no. 20 (2019): 5861.

will increase the legitimacy and effectiveness of management. This is in line with the spirit of participatory democracy which is emphasized in regional autonomy. Therefore, the literature shows that the success of environmental management in Indonesia is highly dependent on a combination of a strong legal framework, local government capacity, and active community participation.

3. Method

This study uses the library research method as the main approach. The literature study was chosen because the research aims to examine the dynamics of environmental management within the framework of regional autonomy through conceptual and normative analysis based on relevant literature. This approach allows the author to examine various theories, regulations, and previous research results related to the themes of sustainable development, environmental policy, and government decentralization in Indonesia.

The first step in this research is to identify relevant literature from various sources, especially scientific journal articles, books, policy documents, and laws and regulations. Primary sources are obtained from academic databases such as Google Scholar, ResearchGate, and national journal portals, with a range of publications between the last five years to maintain the relevance of the findings. Several articles on environmental governance authority in the perspective of regional autonomy are used as one of the key references because they directly discuss the main issues of this research.

The second stage is to categorize literature based on central themes, namely: (1) natural resource and environmental management, (2) legal and constitutional frameworks that govern the environment, (3) decentralization and regional autonomy, and (4) community participation in maintaining environmental sustainability. With this categorization, research can map the relationship between policies, practices, and challenges faced by local governments in managing the environment.

Furthermore, the analysis was carried out using a qualitative approach. The data obtained from the literature were analyzed in a descriptive-analytical manner, namely describing existing phenomena while analyzing the relationship between theory and practice in the field. The analysis is also directed to find gaps between normative expectations in regulation and empirical realities in policy implementation. Thus, this study not only outlines the state of environmental management in Indonesia, but also offers a critical reflection on the role of regional autonomy in maintaining a balance between economic development and environmental sustainability. Finally, the validity of the study is maintained through triangulation of sources by comparing results from different literature. By relying on varied and credible sources, this study seeks to produce comprehensive findings, so that it is able to make a conceptual contribution to strengthening environmental management policies based on regional autonomy.

4. Results

4.1. Environmental Conditions in Indonesia in the Perspective of Regional Autonomy

The environmental conditions in Indonesia still face serious challenges even though there is a strong legal basis to ensure the sustainability of natural resources. Facts on the ground show that environmental degradation occurs in almost all sectors, from forest destruction, water and air pollution, to degradation of soil quality. Deforestation, for example, is still a chronic problem with a significant rate of forest loss from the 1980s to the present. Land-use changes due to large-scale plantations, mining, and infrastructure development have a serious impact on biodiversity and ecosystem balance. This shows that there is a huge gap between the legal norms that govern the environment and real practices in the field.

In the context of regional autonomy, local governments should have greater authority to manage the environment according to the characteristics of their respective regions. Autonomy provides opportunities for regions to formulate policies that are more responsive and participatory. However, the reality shows that this authority has not been balanced with adequate institutional capacity. Many regions experience limited human resources in the environmental sector, so that supervision and policy implementation are not optimal. According to Khair⁹, the principle of sustainable development has indeed become the normative basis in

⁹ Abdul Khair. "Sustainable Development in the Protection and Management of Environment in the Local Autonomy Framework." *Unram Law Review* 1, no. 1 (2017): 149-167.

many regulations, but its application is still weak because the regions have not been able to integrate environmental aspects into every development plan consistently.

On the other hand, the pressure of economic development oriented towards short-term growth often trumps efforts to preserve the environment. Natural resource exploitation activities are driven more by investment interests than by paying attention to the carrying capacity of the environment. Zafar et al.¹⁰ emphasized that weak regulatory enforcement causes many industrial activities to operate without paying close attention to Environmental Impact Analysis (EIA). This exacerbates the damage to ecosystems, especially in industrial and urban areas that have high economic activity.

Furthermore, the problem of coordination between the central and regional governments is also one of the factors that worsen environmental conditions. Overlapping policies between the central and regional governments cause environmental management to run inefficiently. Taufiqurokhman et al.¹¹ emphasized that this weak coordination causes insynchronization in the implementation of environmental protection programs, so that the results achieved are not optimal. As a result, despite various regulations that govern it, environmental degradation still continues to occur.

Thus, it can be concluded that Indonesia's environmental conditions within the framework of regional autonomy are still facing serious problems. The clear legal

¹⁰ Muhammad Wasif Zafar, Asif Saeed, Syed Anees Haider Zaidi, and Abdul Waheed. "The linkages among natural resources, renewable energy consumption, and environmental quality: A path toward sustainable development." *Sustainable Development* 29, no. 2 (2021): 353-362.

¹¹ Taufiqurokhman, Endang Sulastri, and Harits Hafid. "Indonesian Governments Policy on Environmental Law in the Era of Regional Autonomy." *Systematic Reviews in Pharmacy* 11, no. 12 (2020): 1203-1209.

basis has not been able to be implemented effectively due to weak regional capacity, dominance of economic interests, and poor coordination between levels of government. This emphasizes the importance of strengthening institutions in the regions in order to be able to respond to the challenges of environmental management in a sustainable manner.

4.2. Challenges of Environmental Policy Implementation at the Regional Level

The implementation of environmental policies at the regional level faces various complex challenges. One of the main obstacles is the weak local legal instruments. Although the national legal framework has established the principles of sustainable development, many local governments do not yet have comprehensive local regulations (*Peraturan Daerah/perda*) to specifically regulate environmental protection. As a result, policy space that should be able to prevent environmental damage is often left loose. According to Rahma et al.¹² environmental policies at the local level tend to be reactive, namely responding to problems when damage has occurred, rather than being preventive in nature that can prevent it early. This condition shows that local governments still face difficulties in translating the principles of sustainable development into applicable policies.

In addition to the regulatory aspect, the limitation of Human Resources (HR) and technical facilities is also a significant challenge. Many regions do not have enough environmental experts, so the implementation of policy supervision and

¹² Hania Rahma, Akhmad Fauzi, Bambang Juanda, and Bambang Widjojanto. "Development of a composite measure of regional sustainable development in Indonesia." *Sustainability* 11, no. 20 (2019): 5861.

evaluation is weak. Sulastrri and Hafid¹³ emphasized that the lack of environmental laboratories and the limitations of technical infrastructure facilities at the regional level make the quality of environmental data often inaccurate. As a result, the resulting policies are not based on strong evidence, but are more influenced by political or economic considerations. This reduces the effectiveness of environmental protection efforts, as the decisions taken are not supported by an adequate scientific basis.

On the other hand, local political dynamics also affect the implementation of environmental policies. Many regional heads place more emphasis on physical development that is visible quickly, such as the construction of roads, bridges, or other infrastructure, because the program is considered more popular and politically profitable. Meanwhile, investment in environmental programs with long-term results is often under-prioritized. According to Bakri et al.¹⁴, this is increasingly evident in the era of the implementation of the Sustainable Development Goals (SDGs), where local governments are expected to contribute to the global agenda, but in reality are still trapped in local pragmatic politics. This condition shows that there is a gap between the vision of sustainable development and real practices in environmental governance in the regions.

By paying attention to these various challenges, it can be said that the implementation of environmental policies at the regional level has not been running

¹³ Endang Sulastrri and Harits Hafid. "Indonesian Government's Policy on Environmental Law in the Era of Regional Autonomy." *Systematic Reviews in Pharmacy* 11, no. 12 (2020).

¹⁴ Bachril Bakri, Ernan Rustiadi, Akhmad Fauzi, and Soeryo Adiwibowo. "Regional sustainable development indicators for developing countries: case study of provinces in Indonesia." *International Journal of Sustainable Development* 21, no. 1-4 (2018): 102-130.

optimally. Weak legal instruments, limited resources, and the dominance of local political interests make environmental policies often lose their effectiveness. Therefore, strengthening regional regulations, increasing institutional capacity, and changing local political orientation are the main keys to improving the implementation of environmental policies within the framework of regional autonomy.

4.3. The Role of Community Participation in Environmental Management

Community participation is one of the important factors in supporting the success of environmental management, especially in the era of regional autonomy. The role of the community is not only limited to the supervisory function, but also in the planning, implementation, and evaluation stages of environmental policies. With community involvement, environmental policies can gain stronger social legitimacy while increasing the accountability of local governments. Muawanah et al.¹⁵ show that in the context of coastal area management, the involvement of local communities can increase conservation effectiveness and encourage more sustainable use of natural resources. This confirms that empowered communities can be the main actors in maintaining ecological balance.

In addition, the community also has an important role in supporting the implementation of waste management policies. The waste problem is one of the pressing environmental issues in many regions, and without public involvement,

¹⁵ Umi Muawanah, Gellwynn Yusuf, Luky Adrianto, Jimmy Kalther, Robert Pomeroy, Habibi Abdullah, and Toni Ruchimat. "Review of national laws and regulation in Indonesia in relation to an ecosystem approach to fisheries management." *Marine Policy* 91 (2018): 150-160.

waste management efforts will be difficult to run effectively. Oyedotun et al.¹⁶ emphasized that the integration of national and local policies in waste management must be accompanied by active community participation, both in household waste sorting, plastic waste reduction, and involvement in recycling programs. This engagement not only helps local governments reduce the technical burden of waste management, but also raises collective awareness of the importance of an eco-friendly lifestyle. However, community participation is often still constrained by limited access to information and low transparency of local governments. Without clear information about environmental conditions, it will be difficult for the community to carry out the function of social control effectively.

According to Anugrah¹⁷, participatory democracy in the environmental sector must be seen as the main strategy to strengthen governance based on regional autonomy. Community involvement in the process of licensing, supervising, and granting natural resource concessions can suppress the practice of abuse of authority and increase the effectiveness of environmental management. Therefore, local governments need to strengthen public participation mechanisms, for example through consultation forums, environmental data disclosure, and empowerment of civil society organizations. The role of the community is a key element in improving the weaknesses of environmental policies at the regional level. By increasing public participation, environmental management is not only the responsibility of the

¹⁶ Temitope D. Oyedotun, Timothy, Stephan Moonsammy, Temitayo Deborah Oyedotun, Gordon Ansel Nedd, and Ronika Natoya Lawrence. "Evaluation of waste dynamics at the local level: The search for a new paradigm in national waste management." *Environmental Challenges* 4 (2021): 100130.

¹⁷ Fajrian Noor Anugrah. "The Authority of Environmental Governance by Local Governments in the Perspective of Regional Autonomy." *Wasaka Law* 9, no. 2 (2021): 202-222.

government, but also a collective movement that involves all stakeholders. This is important to ensure that regional development is truly aligned with the principles of sustainability and ecosystem balance.

5. Discussion

The results of this study show that environmental management in Indonesia within the framework of regional autonomy faces various fundamental problems. Despite a strong and comprehensive legal foundation, the reality of policy implementation is still influenced by weak institutional capacity at the regional level, the dominance of short-term economic interests, and low public participation. This condition creates a gap between normative expectations and empirical realities that occur in the field. First, the issue of environmental regulation is still a major challenge. Many regions do not have adequate legal instruments to support environmental protection policies. This shows that regional autonomy has not been fully able to translate into concrete policies that are oriented towards sustainability.

According to Akib et al.¹⁸, weak regional legal instruments cause regulatory loopholes that are often used for the exploitation of natural resources. In fact, the success of sustainable development is highly dependent on the extent to which environmental policies are consistently and decisively enforced. Second, the limited human resources and technical facilities also have a great influence on the effectiveness of environmental management. Many local governments do not have

¹⁸ Muhammad Akib, F. X. Sumarja, and Heryandi. "Environmental Law Policy as an Approach to Achieve Sustainable Development and Prosperity in an Era of Regional Autonomy." *Environmental Policy and Law* 49, no. 1 (2019): 83-87.

enough experts in the field of environment, so the supervisory function of industrial or mining activities does not run optimally. This condition causes various environmental violations to go undetected from the start.

According to Taufiqurokhman et al.¹⁹ this weakness in technical capacity is further exacerbated by the lack of coordination between the central and regional governments. As a result, environmental protection policies often overlap, thus reducing their effectiveness in maintaining the quality of the environment. Third, community participation is a very decisive aspect in environmental management based on regional autonomy. Without public involvement, environmental monitoring will be difficult to carry out comprehensively given the size of the area and the limitations of local governments. Anugrah²⁰ emphasized that participatory democracy is an important strategy to strengthen environmental governance. By involving the community in the planning and monitoring process, local governments not only gain social legitimacy, but can also strengthen transparency and accountability in natural resource management.

This discussion emphasized that environmental management in the era of regional autonomy requires a collaborative approach. The central government needs to strengthen regulations and supervisory mechanisms, while local governments are required to increase institutional and technical capacity. On the other hand, the community must be empowered so that they can actively participate in preserving

¹⁹ Taufiqurokhman, Endang Sulastri, and Harits Hafiid. "Indonesian Governments Policy on Environmental Law in the Era of Regional Autonomy." *Systematic Reviews in Pharmacy* 11, no. 12 (2020): 1203-1209.

²⁰ Fajrian Noor Anugrah. "The Authority of Environmental Governance by Local Governments in the Perspective of Regional Autonomy." *Wasaka Law* 9, no. 2 (2021): 202-222.

the environment. The synergy of these three parties is the key to realizing sustainable development that is balanced between economic, social, and environmental aspects. Thus, it can be concluded that the main challenge in environmental management in Indonesia does not lie in the absence of regulations, but in the weak implementation at the regional level. Through institutional strengthening, technical capacity building, and community participation, regional autonomy can be a strategic instrument to strengthen more sustainable environmental governance.

6. Conclusion

Environmental management in Indonesia within the framework of regional autonomy is a complex issue, because it involves legal, institutional, economic, and community participation aspects. The results of the study show that despite the strong constitutional and regulatory foundations of the country, policy implementation at the regional level still faces serious challenges. Weak local legal instruments, limited human resources and technical facilities, and the dominance of pragmatic political interests are factors that hinder the effectiveness of environmental protection. On the other hand, the role of the community has proven to be very important in supporting sustainable environmental management. Public participation in the planning, monitoring, and implementation of environmental programs can strengthen policy legitimacy while increasing local government accountability.

Therefore, strengthening institutional capacity, improving the quality of human resources, and creating a more inclusive community participation mechanism

needs to be a priority in environmental policies in the era of regional autonomy. With these steps, it is hoped that environmental management in Indonesia can be more aligned with the principles of sustainable development. Regional autonomy is not only understood as a delegation of administrative authority, but also as an opportunity to build a more responsive, collaborative, and sustainability-oriented environmental governance for current and future generations.

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