

Fulfillment of the Right to a Good and Healthy Environment through Air Pollution Control Policies in Jakarta

Serly Wulandari[✉] 
Institut Pemerintahan Dalam Negeri

✉ serlywulandari@ipdn.ac.id

Abstract

Air pollution in Jakarta has become one of the major urban environmental issues that affects the fulfillment of citizens' rights to a good and healthy environment, as guaranteed under Article 28H paragraph (1) of the 1945 Constitution of the Republic of Indonesia. The Provincial Government of Jakarta has implemented various air pollution control policies, including the Jakarta Governor Instruction Number 66 of 2019, Jakarta Governor Decree Number 576 of 2023 on the Air Pollution Control Strategy, and Jakarta Governor Decree Number 593 of 2023 on the Air Pollution Control Task Force. However, the persistence of air quality problems indicates ongoing challenges in ensuring the effectiveness of these policy implementations. This study aims to analyze the fulfillment of the right to a good and healthy environment through air pollution control policies in Jakarta and to examine the effectiveness of governmental governance in implementing such policies. This research employs a normative-empirical legal method (*socio-legal research*) using statutory, conceptual, case, and policy implementation approaches. The analysis applies Philipus M. Hadjon's (1987) legal protection theory, Soerjono Soekanto's (2014) legal effectiveness theory, and George C. Edwards III's (1980) policy implementation theory. The findings indicate that the government has established sufficient legal foundations and policy instruments to control air pollution in Jakarta; however, the fulfillment of citizens' rights to a good and healthy environment continues to face challenges related to policy

implementation, supervision, inter-institutional coordination, and public participation. From a legal perspective, air pollution control represents a state obligation to protect citizens' rights. Meanwhile, from a governance perspective, the success of air pollution control policies largely depends on effective governance mechanisms, cross-sectoral coordination, and collaboration among the government, communities, and private sector. Strengthening governance capacity is therefore essential to ensure that air pollution control policies provide tangible protection for citizens' rights to a healthy and sustainable environment

Keywords

Environmental Rights, Air Pollution, Government Policy, Governance, Jakarta.

Introduction

The environment plays a fundamental role in ensuring the sustainability of human life. Environmental quality is not only associated with the availability of natural resources but also closely related to the fulfillment of citizens' basic rights to live a healthy and decent life.¹ The development of modern environmental law demonstrates a paradigm shift in which the environment is no longer viewed merely as an object of state management, but rather as an integral part of human rights that must be respected, protected, and fulfilled by the state.² The right to a good and healthy environment has become an important indicator in assessing the extent to which the state fulfills its obligation to protect citizens' rights.³

The Indonesian Constitution guarantees this right through Article 28H paragraph (1) of the 1945 Constitution of the Republic of Indonesia, which stipulates that everyone has the right to obtain a good and healthy environment.⁴ This provision indicates that environmental protection constitutes a constitutional right of citizens rather than

¹ Justice Mensah, "Sustainable Development: Meaning, History, Principles, Pillars, and Implications for Human Action: Literature Review," *Cogent Social Sciences* 5, no. 1 (2019): 1653531, <https://doi.org/10.1080/23311886.2019.1653531>.

² M. Yasir Said dan Yati Nurhayati, "Paradigma Filsafat Etika Lingkungan dalam Menentukan Arah Politik Hukum Lingkungan," *Al-Adl: Jurnal Hukum* 12, no. 1 (2020): 39–60, <https://doi.org/10.31602/al-adl.v12i1.2598>.

³ Yevhen Leheza dkk., "The Human Right to an Environment Safe for Life and Health: Legal Regulation, Contemporary Challenges and Comparative Perspectives," *Syariah: Jurnal Hukum Dan Pemikiran* 23, no. 2 (2023): 138–50, <https://doi.org/10.18592/sjhp.v23i2.12257>.

⁴ Dian Agung Wicaksono dan Bimo Fajar Hantoro, "Struggle for Eco-Constitutionalism: The Role of the Constitutional Court in Realising the Right to a Good and Healthy Environment in Indonesia," dalam *Judicial Responses to Climate Change in the Global South: A Jurisdictional and Thematic Review*, ed. oleh Shuma Talukdar dan Valéria Emília de Aquino (Springer Nature Switzerland, 2023), https://doi.org/10.1007/978-3-031-46142-2_3.

merely a component of government development policy. The state is therefore obligated to ensure that every development policy does not eliminate or diminish the community's right to a healthy environment.⁵

The principle of environmental protection is further affirmed through Article 33 paragraph (4) of the 1945 Constitution, which places sustainable development and environmental considerations as fundamental principles in the implementation of the national economy.⁶ Development should not be oriented solely toward economic growth but must also consider the balance between economic interests, social welfare, and environmental sustainability. This principle demonstrates that government policies must integrate development objectives with efforts to protect environmental quality.⁷

The regulation of the right to a good and healthy environment is further strengthened through Law Number 39 of 1999 on Human Rights and Law Number 32 of 2009 on Environmental Protection and Management. Both legal instruments recognize a healthy environment as part of citizens' rights that must be fulfilled by the state. The government is not only authorized to formulate environmental policies but also bears the responsibility to ensure that such policies are effectively implemented and provide tangible protection for society.⁸

The issue of fulfilling environmental rights becomes increasingly complex when associated with air pollution in urban areas, particularly Jakarta. As the center of national government, economic activities, and social interaction, Jakarta experiences significant environmental pressure due to increasing mobility, motor vehicle use, industrial activities, infrastructure development, and urban expansion. These

⁵ David V. Ogunkan, "Achieving sustainable environmental governance in Nigeria: A review for policy consideration," *Urban Governance* 2, no. 1 (2022): 212–20, <https://doi.org/10.1016/j.ugi.2022.04.004>.

⁶ "Transforming Trade, Investment and Environmental Law for Sustainable Development? in: Austrian Review of International and European Law Online Volume 26 Issue 1 (2021)," diakses 28 Agustus 2026, https://brill.com/view/journals/ario/26/1/article-p1_2.xml.

⁷ Dini Intan Veronica dan Muhammad Iqbal Fasa, "Pemanfaatan Sumber Daya Alam Terhadap Pembangunan Berkelanjutan Dalam Persepektif Ekonomi Islam," *Jurnal Dinamika Ekonomi Syariah* 9, no. 2 (2022): 200–210.

⁸ Muhammad Arba'in, "Tanggung jawab pemerintah daerah dalam kasus kebakaran hutan dan lahan sebagai perwujudan perlindungan hak asasi manusia berdasarkan Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup" (PhD Thesis, Universitas Islam Riau, 2022), <https://repository.uir.ac.id/id/eprint/16746>.

activities contribute to rising air pollutant emissions, which affect environmental quality and public health.⁹

Air pollution in Jakarta is not merely a technical issue concerning air quality but also involves legal and governance dimensions because it reflects the state's capacity to fulfill citizens' constitutional rights. When air quality continues to deteriorate, the government faces demands to demonstrate the effectiveness of its existing policies. The state cannot merely establish regulations but must ensure that these policies are capable of controlling pollution sources and protecting affected communities.¹⁰

The complexity of Jakarta's air pollution problem is further evident from the fact that pollution sources are not limited to Jakarta's administrative boundaries but are also influenced by activities within the Jabodetabek metropolitan area. Transportation, industrial activities, and urban development in surrounding regions have a direct relationship with Jakarta's air quality. This condition indicates that addressing air pollution requires cross-governmental and cross-sectoral coordination, as a single institutional approach is insufficient to resolve complex environmental problems.¹¹

The Provincial Government of Jakarta has implemented various policies to control air pollution. One of the initial policies was Jakarta Governor Instruction Number 66 of 2019 on Air Quality Control, which established strategic measures to reduce pollution sources. This policy was subsequently strengthened through Jakarta Governor Decree Number 576 of 2023 on the Air Pollution Control Strategy, which provides a more integrated framework for pollution control. Furthermore, Jakarta Governor Decree Number 593 of 2023 on the Air Pollution Control Task Force demonstrates the local government's effort to establish an institutional coordination mechanism in addressing Jakarta's air quality challenges.¹²

⁹ Nadira Tatyana dan Achmad Ramadhandhy Y. Putra, "Pemenuhan Hak atas Akses Informasi Lingkungan Hidup dan Partisipasi Publik terhadap Pencemaran Udara DKI Jakarta," *Jurnal Hukum Lingkungan Indonesia* 8, no. 2 (2022): 372–401.

¹⁰ Muhammad Haris Makarim, "Pasca Putusan Pencemaran Udara di Jakarta: Dialektika Politik Hukum dan Hak Asasi Manusia," *Jurnal Hukum Lingkungan Indonesia* 9, no. 2 (2023): 425–55.

¹¹ Anna Ida Sunaryo Purwiyanto, "Dinamika dan Emisi Mikroplastik di Teluk Jakarta," *Institut Pertanian Bogor*, 2023.

¹² Ernyasih Ernyasih, "Model Intervensi Potensi Resiko Exposure S02, N 02, CODan PM2i5 Dari Emisi Kendaraan Serta Strategi Mitigasi Di Kota Tangerang Selatan= Intervention Model Of Potential S02, N 02, CO, And PM25 Exposure Risks From Vehicle Emissions And

Despite the implementation of various policies, air pollution in Jakarta remains an unresolved issue. This situation indicates a gap between the existence of government policies and their effectiveness in practice. The primary concern is not only whether the government has established air pollution control regulations, but also how these policies are implemented, monitored, and transformed into measurable improvements in environmental quality.¹³

This issue has received further attention through the citizen lawsuit concerning Jakarta's air pollution in the Central Jakarta District Court Decision Number 374/Pdt.G/LH/2019/PN.Jkt.Pst. The case demonstrates a strong relationship between air pollution and government responsibility in fulfilling citizens' rights to a good and healthy environment. The decision represents an important development in environmental law because it confirms that environmental quality can serve as a basis for citizens to demand the fulfillment of state obligations in environmental protection.¹⁴

Research on the fulfillment of the right to a good and healthy environment through air pollution control policies in Jakarta is important because previous studies have largely focused on technical aspects of air pollution, such as emission sources and health impacts. This study offers a different perspective by examining air pollution as a legal and governance issue, particularly how state obligations are translated into public policies and how governmental capacity determines the success of fulfilling citizens' rights to a healthy environment.

Method

This study employs a normative-empirical legal research method (*socio-legal research*) that combines legal analysis with the examination of policy implementation practices. The normative approach is used to analyze legal provisions concerning the right to a good and healthy environment and the government's obligations in controlling air pollution. Meanwhile, the empirical approach is applied to examine the

Mitigation Strategies In South Tangerang City" (PhD Thesis, Universitas Hasanuddin, 2023), <https://repository.unhas.ac.id/id/eprint/30122/>.

¹³ Cesilia Aprianes dan Aiska Rahima Az-Zahra, "Memahami penerapan terhadap ketentuan pengelolaan kualitas udara di DKI Jakarta," *Innovative: Journal Of Social Science Research* 3, no. 5 (2023): 10979–90.

¹⁴ Fairuziah Putri Adristi dkk., "Posisi Hak Asasi Manusia sebagai Dasar Gugatan dalam Litigasi Perubahan Iklim Indonesia," *Jurnal Hukum Lingkungan Indonesia* 9, no. 2 (2023): 209–38.

implementation of government policies and their effectiveness in fulfilling citizens' rights to a healthy environment. This approach was selected because air pollution is not only related to regulatory aspects but also involves policy implementation and governance practices.¹⁵

This research applies several approaches, namely the statutory approach, conceptual approach, case approach, and policy implementation approach. The statutory approach is used to examine various legal instruments related to environmental protection, including the 1945 Constitution of the Republic of Indonesia, Law Number 32 of 2009 on Environmental Protection and Management, as well as Jakarta provincial government policies, including Jakarta Governor Instruction Number 66 of 2019, Jakarta Governor Decree Number 576 of 2023 on the Air Pollution Control Strategy, and Jakarta Governor Decree Number 593 of 2023 on the Air Pollution Control Task Force. The conceptual approach is employed to analyze the concepts of environmental rights, legal protection, and state responsibility, while the case approach is used to examine the Central Jakarta District Court Decision Number 374/Pdt.G/LH/2019/PN.Jkt.Pst concerning Jakarta's air pollution

The policy implementation approach is used to assess the effectiveness of air pollution control policy implementation. The analysis applies the policy implementation theory of George C. Edwards III (1980), which explains that successful policy implementation is influenced by four main factors: communication, resources, disposition of implementers, and bureaucratic structure. This theory is used to analyze the extent to which Jakarta's government policies can be effectively implemented in controlling air pollution.

The research data consist of primary and secondary data. Primary data are obtained through interviews with relevant stakeholders involved in air pollution control, including local government officials, academics, environmental organizations, and affected communities. Secondary data are collected through document analysis of legislation, government policies, court decisions, books, and scientific articles related to the research topic.

Data collection techniques include document studies, interviews, and observations. Document studies are conducted to obtain information regarding legal regulations and government policies, while interviews are conducted to identify policy implementation processes and the challenges faced by relevant stakeholders. Observation is

¹⁵ Wahyudin Darmalaksana, "Metode penelitian kualitatif studi pustaka dan studi lapangan," *Pre-Print Digital Library UIN Sunan Gunung Djati Bandung*, 2020, <https://etheses.uinsgd.ac.id/id/eprint/32855>.

carried out to examine the factual conditions of air pollution control practices in Jakarta. The collected data are analyzed using a descriptive qualitative method through the stages of data reduction, data presentation, and conclusion drawing to explain the relationship between legal regulations, policy implementation, and the fulfillment of citizens' rights to a good and healthy environment.

Result And Discussion

1. The Fulfillment of the Right to a Good and Healthy Environment as a State Obligation in Controlling Air Pollution in Jakarta

The right to a good and healthy environment represents an important development in the concept of human rights, placing environmental quality as a fundamental element of human well-being. A healthy environment serves as a prerequisite for the fulfillment of other fundamental rights, including the right to life, the right to health, and the right to an adequate standard of living. The development of modern environmental law demonstrates a paradigm shift in which the environment is no longer perceived merely as a resource to be exploited for development purposes, but also as a living space that requires protection for present and future generations.¹⁶

The recognition of environmental rights has gained constitutional legitimacy through Article 28H paragraph (1) of the 1945 Constitution of the Republic of Indonesia, which stipulates that everyone has the right to obtain a good and healthy environment. This provision demonstrates that the state has an obligation to ensure the availability of an environment that supports human life. Environmental rights are not merely declarative principles; they create legal consequences by requiring the state to take concrete actions through the establishment of regulations, policy formulation, environmental supervision, and law enforcement.¹⁷

¹⁶ Anastasha Ruth Nugroho dan Fatma Ulfatun Najicha, "Pemenuhan hak asasi manusia atas lingkungan hidup yang sehat," *Yustitia* 9, no. 1 (2023): 108–21.

¹⁷ Fatma Ulfatun Najicha dan I. Gusti Ayu Ketut Rachmi Handayani, "Legal Protection 'Substantive Rights for Environmental Quality' on Environmental Law Against Human Rights in the Constitution in Indonesia," *International Conference on Law, Economics and Health*

The state's obligation to guarantee environmental rights can be analyzed through the concept of the rule of law. Julius Stahl explains that one of the fundamental elements of the *rechtsstaat* is the protection of human rights. The state does not merely perform governmental functions based on legal authority but also carries the responsibility to protect citizens' rights. From this perspective, Jakarta's air pollution problem is not merely an administrative issue but also reflects how the state fulfills its obligation to guarantee citizens' rights to a healthy environment.

Jakarta's air pollution represents a concrete challenge for the state in fulfilling environmental rights. As a metropolitan region characterized by intensive economic activities and high mobility, Jakarta faces various sources of pollution originating from motor vehicles, industrial activities, energy production, construction, and urban expansion. These activities contribute to increasing air pollutant emissions, making air quality a public concern because its impacts are experienced not only by individuals but also by society as a whole.

Air pollution has a different character from other forms of environmental degradation because air does not recognize administrative boundaries. Emissions generated in one area may affect surrounding regions. Therefore, Jakarta's air pollution requires a cross-regional and cross-sectoral approach. The government cannot merely regulate pollution sources within its administrative boundaries but must develop policies capable of integrating various governmental authorities and interests.¹⁸

The obligation of the government in addressing air pollution can be examined through Philipus M. Hadjon's (1987) legal protection theory. Hadjon explains that legal protection consists of preventive and repressive protection. Preventive protection aims to prevent violations of citizens' rights, while

(ICLEH 2020), 2020, 719–24, <https://www.atlantispress.com/proceedings/icleh-20/125940498>.

¹⁸ Naeem Abas dkk., "Cooperative Control of Regional Transboundary Air Pollutants," *Environmental Systems Research* 8, no. 1 (2019): 10, <https://doi.org/10.1186/s40068-019-0138-0>.

repressive protection provides mechanisms for resolving legal violations that have occurred.¹⁹

In relation to Jakarta's air pollution control, preventive legal protection can be identified through various government policies aimed at reducing pollution sources. The Provincial Government of Jakarta issued Governor Instruction Number 66 of 2019 on Air Quality Control as an initial effort to strengthen air pollution management policies. This policy was subsequently reinforced through Jakarta Governor Decree Number 576 of 2023 on the Air Pollution Control Strategy.

Jakarta Governor Decree Number 576 of 2023 reflects a shift in the government's approach from merely responding to deteriorating air conditions toward implementing a more structured and strategic pollution control framework. The policy demonstrates that air pollution control requires integrated measures across various sectors, including transportation, industry, energy, and urban environmental management. This approach indicates that air pollution cannot be addressed through a single program but requires comprehensive and coordinated policy interventions.

In addition to strengthening pollution control strategies, the Provincial Government of Jakarta established an institutional coordination mechanism through Jakarta Governor Decree Number 593 of 2023 on the Air Pollution Control Task Force. The establishment of this task force reflects the government's effort to strengthen institutional capacity in managing air pollution. Such an institutional mechanism is important because air pollution involves multiple government agencies and requires effective coordination among stakeholders.

Although various policies have been introduced, the main challenge remains the effectiveness of policy implementation. The existence of regulations does not automatically guarantee the fulfillment of citizens' rights to a healthy environment. A gap may

¹⁹ Wardah Yuspian dkk., "The Impact of Deforestation on Sustainable Development Goals Regulations: An Empirical Studies on Tawangmangu.," *International Journal of Sustainable Development & Planning* 18, no. 7 (2023): 2127.

exist between established legal norms and their implementation in practice. Therefore, air pollution control is not only related to regulatory development but also concerns how policies are implemented, monitored, and transformed into measurable improvements in environmental quality.

Soerjono Soekanto's (2014) legal effectiveness theory explains that the success of legal implementation is influenced by five factors: the legal substance itself, law enforcement institutions, supporting facilities, society, and legal culture. This theory is relevant for analyzing Jakarta's air pollution control efforts.

From the perspective of legal substance, Jakarta has established various regulatory instruments governing air quality control. However, the success of these policies depends largely on implementation factors, particularly the government's capacity to conduct supervision and coordination. For example, vehicle emission testing policies require not only legal provisions but also effective monitoring systems, adequate testing facilities, and public compliance.

Public participation is also an important factor in determining the effectiveness of environmental policies. Air pollution control requires behavioral changes among citizens, such as the use of public transportation, proper vehicle maintenance, and compliance with emission standards. Without public support, government policies will face difficulties in achieving their intended objectives.

This issue is also reflected in the Central Jakarta District Court Decision Number 374/Pdt.G/LH/2019/PN.Jkt.Pst concerning a citizen lawsuit against the government regarding Jakarta's air pollution. The decision demonstrates that citizens perceive air quality as part of the rights that must be fulfilled by the state. This case confirms that environmental issues have developed into matters of citizens' rights and governmental responsibility.

From a legal perspective, Jakarta's air pollution control demonstrates that the state has established a relatively strong legal foundation to guarantee environmental rights. However, the main

challenge lies in the state's ability to translate legal norms into effective governmental actions. Protecting environmental rights requires integration between regulations, supervision, law enforcement, and public participation.

2. The Effectiveness of Governance in Implementing Jakarta's Air Pollution Control Policies

Air pollution control in Jakarta is not only an environmental law issue but also a matter of governmental governance. The government has a strategic position as the main actor responsible for formulating policies, coordinating institutions, and ensuring that environmental policies are effectively implemented. The complexity of Jakarta's air pollution problem demonstrates that policy success largely depends on the government's capacity to manage various interests, authorities, and available resources.²⁰

From a public administration and governance perspective, the government is not merely a regulatory institution but also an institution responsible for regulation, public service delivery, development, and community empowerment. In the context of air pollution control, the government must perform these functions simultaneously by establishing appropriate regulations, providing public services that support environmental quality improvement, supervising pollution sources, and involving society in environmental management efforts.

The effectiveness of Jakarta's air pollution control policy implementation can be analyzed through the policy implementation theory developed by George C. Edwards III (1980). Edwards III argues that successful policy implementation is influenced by four main factors: communication, resources, disposition of implementers, and bureaucratic structure. These four factors provide an analytical framework for understanding how government policies are translated into practical actions and whether they are capable of achieving their intended objectives.

²⁰ Erna Setijaningrum, *Tata kelola kebijakan di era VUCA*, 2024.

■ Fulfillment of the Right....

The first factor is communication. Effective policy implementation requires clear communication between policymakers, implementing agencies, and policy targets. Air pollution control policies, such as vehicle emission testing, emission restrictions, and the promotion of public transportation, require public understanding and participation. The government must ensure that communities do not merely know the existence of regulations but also understand the objectives, benefits, and consequences of these policies. Weak communication may reduce public compliance and limit the effectiveness of environmental policies.

The second factor is resources. Policy implementation requires adequate resources, including financial support, human resources, technological capacity, and supporting infrastructure. Air pollution control requires accurate air quality monitoring systems, competent environmental officers, sufficient funding, and adequate facilities to monitor and reduce pollution sources. Without sufficient resources, policies that have been carefully designed may fail to produce significant environmental improvements.

The third factor is the disposition of policy implementers. This factor relates to the commitment, willingness, and consistency of government officials in implementing policies. Environmental policies require long-term commitment because improvements in air quality cannot be achieved instantly. Government agencies must have a shared commitment to implementing air pollution control strategies consistently, including monitoring, evaluation, and enforcement activities.

The fourth factor is bureaucratic structure. Effective environmental governance requires institutional coordination because air pollution involves multiple sectors and administrative authorities. The establishment of the Air Pollution Control Task Force through Jakarta Governor Decree Number 593 of 2023 represents an effort to strengthen governmental institutional arrangements. However, because air pollution is a cross-sectoral and cross-regional issue, coordination is not only required among Jakarta's governmental agencies but also between the central

government and surrounding regions within the Jakarta metropolitan area.

The need for cooperation among multiple actors is consistent with the concept of collaborative governance introduced by Ansell and Gash (2008). They argue that complex public problems require collaboration between government institutions and non-governmental actors. Air pollution in Jakarta cannot be effectively addressed through governmental action alone; it requires the involvement of businesses, communities, academics, and environmental organizations.

A collaborative governance approach is particularly important because pollution sources originate from various social and economic activities. The government should act not only as a regulator but also as a facilitator that encourages cooperation among stakeholders. Meanwhile, communities and private sector actors become active participants in pollution control efforts. Such collaboration is necessary to ensure that environmental policies are not implemented solely through a top-down approach but also receive support and participation from society.

The implementation of Jakarta's air pollution control policies demonstrates that the government has made efforts to strengthen regulatory frameworks and institutional mechanisms. However, policy effectiveness remains dependent on the government's ability to improve coordination, ensure compliance, provide adequate resources, and encourage public participation. Good governance is therefore a crucial factor in ensuring that citizens' rights to a good and healthy environment can be effectively realized.

From a governance perspective, Jakarta's air pollution problem illustrates that environmental protection requires more than regulatory instruments. It requires institutional capacity, effective coordination, and collaborative action among various stakeholders. The fulfillment of environmental rights depends not only on the existence of legal norms but also on the ability of government institutions to transform those norms into effective and sustainable public policies.

Conclusion

The right to a good and healthy environment is a constitutional right of citizens and constitutes a state obligation that must be fulfilled. The Provincial Government of Jakarta has issued various air pollution control policies, including Governor Instruction Number 66 of 2019, Governor Decree Number 576 of 2023 on the Air Pollution Control Strategy, and Governor Decree Number 593 of 2023 on the Air Pollution Control Task Force. However, the implementation of these policies continues to face several challenges, particularly regarding supervision, inter-institutional coordination, and public participation.

From a legal perspective, air pollution control represents a state obligation to protect citizens' rights to a healthy environment. The effectiveness of such protection does not solely depend on the existence of legal regulations but also on the effectiveness of their implementation and enforcement. From a governance perspective, the success of air pollution control policies is strongly influenced by the government's capacity to coordinate institutions, provide adequate resources, and establish cooperation with various stakeholders.

Therefore, addressing Jakarta's air pollution requires more effective and collaborative governance. Strengthening institutional capacity, improving coordination among stakeholders, and increasing public participation are essential steps to ensure that air pollution control policies can effectively fulfill citizens' rights to a good and healthy environment.

References

- Abas, Naeem, Muhammad Shoaib Saleem, Esmat Kalair, dan Nasrullah Khan. "Cooperative Control of Regional Transboundary Air Pollutants." *Environmental Systems Research* 8, no. 1 (2019): 10. <https://doi.org/10.1186/s40068-019-0138-0>.
- Adristi, Fairuziah Putri, Graciella Annette, dan Saffanah Rezky Azzahrah Andrian. "Posisi Hak Asasi Manusia sebagai Dasar Gugatan dalam Litigasi Perubahan Iklim Indonesia." *Jurnal Hukum Lingkungan Indonesia* 9, no. 2 (2023): 209–38.
- Aprianes, Cesilia, dan Aiska Rahima Az-Zahra. "Memahami penerapan terhadap ketentuan pengelolaan kualitas udara di DKI Jakarta." *Innovative: Journal Of Social Science Research* 3, no. 5 (2023): 10979–90.

- Arba'in, Muhammad. "Tanggung jawab pemerintah daerah dalam kasus kebakaran hutan dan lahan sebagai perwujudan perlindungan hak asasi manusia berdasarkan Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup." PhD Thesis, Universitas Islam Riau, 2022. <https://repository.uir.ac.id/id/eprint/16746>.
- Darmalaksana, Wahyudin. "Metode penelitian kualitatif studi pustaka dan studi lapangan." *Pre-Print Digital Library UIN Sunan Gunung Djati Bandung*, 2020. <https://etheses.uinsgd.ac.id/id/eprint/32855>.
- Ernyasih, Ernyasih. "Model Intervensi Potensi Resiko Exposure S02, N 02, CODan PM2i5 Dari Emisi Kendaraan Serta Strategi Mitigasi Di Kota Tangerang Selatan= Intervention Model Of Potential S02, N 02, CO, And PM25 Exposure Risks From Vehicle Emissions And Mitigation Strategies In South Tangerang City." PhD Thesis, Universitas Hasanuddin, 2023. <https://repository.unhas.ac.id/id/eprint/30122/>.
- Leheza, Yevhen, Olena Sinkevych, Zorina Kravtsova, Olena Kudriavtseva, dan Ievgeniia Cherniak. "The Human Right to an Environment Safe for Life and Health: Legal Regulation, Contemporary Challenges and Comparative Perspectives." *Syariah: Jurnal Hukum Dan Pemikiran* 23, no. 2 (2023): 138–50. <https://doi.org/10.18592/sjhp.v23i2.12257>.
- Makarim, Muhammad Haris. "Pasca Putusan Pencemaran Udara di Jakarta: Dialektika Politik Hukum dan Hak Asasi Manusia." *Jurnal Hukum Lingkungan Indonesia* 9, no. 2 (2023): 425–55.
- Mensah, Justice. "Sustainable Development: Meaning, History, Principles, Pillars, and Implications for Human Action: Literature Review." *Cogent Social Sciences* 5, no. 1 (2019): 1653531. <https://doi.org/10.1080/23311886.2019.1653531>.
- Najicha, Fatma Ulfatun, dan I. Gusti Ayu Ketut Rachmi Handayani. "Legal Protection 'Substantive Rights for Environmental Quality' on Environmental Law Against Human Rights in the

- Constitution in Indonesia.” *International Conference on Law, Economics and Health (ICLEH 2020)*, 2020, 719–24.
<https://www.atlantis-press.com/proceedings/icleh-20/125940498>.
- Nugroho, Anastasha Ruth, dan Fatma Ulfatun Najicha. “Pemenuhan hak asasi manusia atas lingkungan hidup yang sehat.” *Yustitia* 9, no. 1 (2023): 108–21.
- Ogunkan, David V. “Achieving sustainable environmental governance in Nigeria: A review for policy consideration.” *Urban Governance* 2, no. 1 (2022): 212–20.
<https://doi.org/10.1016/j.ugj.2022.04.004>.
- Purwiyanto, Anna Ida Sunaryo. “Dinamika dan Emisi Mikroplastik di Teluk Jakarta.” *Institut Pertanian Bogor*, 2023.
- Said, M. Yasir, dan Yati Nurhayati. “Paradigma Filsafat Etika Lingkungan dalam Menentukan Arah Politik Hukum Lingkungan.” *Al-Adl: Jurnal Hukum* 12, no. 1 (2020): 39–60.
<https://doi.org/10.31602/al-adl.v12i1.2598>.
- Setijanigrum, Erna. *Tata kelola kebijakan di era VUCA*. 2024.
- Tatyana, Nadira, dan Achmad Ramadhandhy Y. Putra. “Pemenuhan Hak atas Akses Informasi Lingkungan Hidup dan Partisipasi Publik terhadap Pencemaran Udara DKI Jakarta.” *Jurnal Hukum Lingkungan Indonesia* 8, no. 2 (2022): 372–401.
- “Transforming Trade, Investment and Environmental Law for Sustainable Development? in: Austrian Review of International and European Law Online Volume 26 Issue 1 (2021).” Diakses 28 Agustus 2026.
https://brill.com/view/journals/ario/26/1/article-p1_2.xml.
- Veronica, Dini Intan, dan Muhammad Iqbal Fasa. “Pemanfaatan Sumber Daya Alam Terhadap Pembangunan Berkelanjutan Dalam Persepektif Ekonomi Islam.” *Jurnal Dinamika Ekonomi Syariah* 9, no. 2 (2022): 200–210.

Wicaksono, Dian Agung, dan Bimo Fajar Hantoro. "Struggle for Eco-Constitutionalism: The Role of the Constitutional Court in Realising the Right to a Good and Healthy Environment in Indonesia." Dalam *Judicial Responses to Climate Change in the Global South: A Jurisdictional and Thematic Review*, disunting oleh Shuma Talukdar dan Valéria Emília de Aquino. Springer Nature Switzerland, 2023. https://doi.org/10.1007/978-3-031-46142-2_3.

Yuspin, Wardah, Anis Nur Fauziyyah, dan Arief Budiono. "The Impact of Deforestation on Sustainable Development Goals Regulations: An Empirical Studies on Tawangmangu." *International Journal of Sustainable Development & Planning* 18, no. 7 (2023): 2127.