

Green Tourism as a Disaster Mitigation Strategy: Policy Challenges and Solutions

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Abstract

The abuse of tea-plantation permits and the conversion of protected areas in Bogor have reduced water infiltration and heightened flood risk in this urban buffer zone, while the implementation of green tourism as a mitigation strategy remains obstructed. This study aims to identify the structural barriers to realizing sustainable green tourism in Bogor and to formulate policy solutions based on multi-actor collaboration. It employs normative legal research analysed qualitatively and descriptively, combining statute, conceptual, and case approaches, with library research and document analysis as data-collection techniques and thematic content analysis as the analytical method. The findings reveal four interrelated challenges: weak legal enforcement and a governance gap between norms and institutional practice; high initial costs and short-term profit orientation among businesses; limited community awareness and participation; and the absence of clear sustainability indicators and inter-agency coordination. The study concludes that green tourism can function as an ecosystem-based disaster-mitigation strategy only when it is integrated into formal spatial planning and supported by stronger local regulation, participatory community-based monitoring, fiscal incentives, and horizontal-vertical collaboration among government, the private sector, and local communities. Its contribution lies in integrating spatial-planning, community-participation, and green-tourism perspectives into a single analytical framework grounded in local policy challenges.

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Introduction

Bogor is known as a region endowed with extraordinary natural wealth, featuring expanses of plantations, green mountains, and high rainfall that make it an important water catchment area within the Greater Jakarta (*Jabodetabek*) region.¹ Bogor's natural beauty and biodiversity make it both a potential tourism destination and a strategic ecological zone.² However, alongside the growth of the industrial and tourism sectors, this region has begun to face serious environmental threats, such as flooding, landslides, and ecosystem degradation caused by environmentally unfriendly human activities.³

One of the primary factors causing flooding in the Bogor area is the misuse of land-use permits, particularly in the tea plantation sector that is widely spread across the hilly areas.⁴ The conversion of plantation land into villas, cafés, and tourism facilities without proper spatial planning has disrupted the soil's absorptive capacity and increased the potential for rainwater runoff.⁵ These activities are exacerbated by weak oversight and unsustainable

¹ Nyoman Sukamara et al., "Dinamika Tata Ruang dan Keberlanjutan Lingkungan Binaan" (Unhi Press, 2021).

² Muhammad Aditya, "Pertanggungjawaban Pidana Penyalahgunaan Iup (Izin Usaha Pertambangan) yang Berimplikasi Terhadap Kerusakan Hutan," *Jurnal Studi Multidisipliner* 8, no. 7 (2024).

³ Muhammad Rizky Akbar, "Kajian Dampak Dari Operasionalisasi PT Bina Insan Sukses Mandiri dalam Eksploitasi Lahan Tambang Batu Bara di Kabupate Kutai Barat Provinsi Kalimantan Timur," *Habitus: Jurnal Pendidikan, Sosiologi, & Antropologi* 6, no. 2 (2022): 96–110.

⁴ Hairil Anwar et al., "Analisis Kesesuaian Lahan Ekowisata Mangrove Tanjung Batu, Desa Sekotong Tengah," *Journal of Forest Science Avicennia* 6, no. 1 (2023): 65–77.

⁵ Dody Feryanto Kurniawan, Cahyo Sasmito, and Cakti Indra Gunawan, "Implementasi Kebijakan Rencana Detil Tata Ruang (RDTR) di Kecamatan Balongbendo Kabupaten Sidoarjo (Studi Pelanggaran Ijin Pemanfaatan Ruang)," *JPASDEV: Journal of Public Administration and Sociology of Development* 2, no. 2 (2021): 252–76.

natural resource management practices, which ultimately cause environmental damage and socio-economic losses downstream, especially when floods strike.⁶

Amid these challenges, the concept of green tourism has emerged as a promising approach to address the need for environmental preservation while simultaneously promoting economic development.⁷ Green tourism emphasizes the principles of sustainability, nature conservation, and the empowerment of local communities.⁸ Through this approach, tourism activities are directed not only toward reaping economic profit but also toward delivering positive impacts on the environment and on the social and cultural life of surrounding communities.⁹

The role of environmental law becomes highly crucial in this context.¹⁰ Regulations governing land-use permits, the protection of forest and plantation areas, and the management of tourism should serve as effective control instruments.¹¹ In practice, there are legal loopholes that are frequently exploited to permit development in conservation areas.¹² Weak law enforcement, compounded by overlapping policies, further aggravates

⁶ Jhon Mulia Sinaga, "Rekonstruksi Regulasi Penegakan Hukum Lingkungan Berbasis Nilai Keadilan Ekologis" (Universitas Islam Sultan Agung Semarang, 2024).

⁷ A Andriansyah, E Sulastri, and E Satispi, "Economic Administration and Institutional Management in a Decentralized Regime Mode: New Insights from Environmental Resources," *International Journal of Economics and Business Administration* 7, no. 4 (2019): 424–32, <https://doi.org/10.35808/ijeba/355>.

⁸ A B W Aji and S Pramono, "Mainstreaming Social Justice in Environmental Law Enforcement in Indonesia: Theories and Practices," *Indonesian Journal of Environmental Law and Sustainable Development* 2, no. 1 (2023): 1–32, <https://doi.org/10.15294/ijel.v2i1.66106>.

⁹ A Putrijanti, "Judicial Activism in Judge's Verdict to Law Enforcement of Environment," in *E3S Web of Conferences*, ed. Warsito B., Sudarno null, and Putranto Triadi T., vol. 202 (Faculty of Law, Diponegoro University, Semarang, Indonesia: EDP Sciences, 2020), <https://doi.org/10.1051/e3sconf/202020203018>.

¹⁰ N S R Naiborhu and D G Kasenda, "Environmental Law Enforcement Through State Administrative Legal Instruments In Environmental Cases In Indonesia," *Journal of Sustainability Science and Management* 19, no. 1 (2024): 138–53, <https://doi.org/10.46754/jssm.2024.01.012>.

¹¹ H Tegnan et al., "Mining Corruption and Environmental Degradation in Indonesia: Critical Legal Issues," *Bestuur* 9, no. 2 (2021): 90–100, <https://doi.org/10.20961/bestuur.v9i2.55219>.

¹² A Fatanen, "Eksistensi Kewenangan Daerah dalam Perlindungan dan Pengelolaan Lingkungan Hidup Pasca Diterbitkannya Undang-Undang Cipta Kerja," *Khazanah Hukum* 3, no. 1 (2021): 1–7, <https://doi.org/10.15575/kh.v3i1.10009>.

environmental damage.¹³ Therefore, evaluating the existing legal and policy instruments becomes an urgent necessity in order to support the optimal implementation of green tourism.¹⁴

The urgency of this research lies in the search for integrative solutions to prevent flood disasters caused by the misuse of land permits in Bogor, while at the same time developing an environmentally conscious tourism sector. By examining the concept of green tourism as an alternative approach, this research seeks to provide concrete input relevant to the issues of environmental conservation and the strengthening of the local economy in a sustainable manner.¹⁵ More than merely a technical solution, green tourism carries the spirit of a paradigm shift in regional development.¹⁶

A number of previous studies have examined green tourism and flood mitigation. However, they have generally been fragmented, such as tourism studies that highlight the economic aspects and promotion of green tourism without linking them to spatial planning legal instruments. Meanwhile, environmental law studies focus their attention on permit enforcement without connecting it to sustainable tourism schemes as a disaster adaptation strategy. Not many studies have specifically integrated the approaches of spatial planning,

¹³ F Moraci and C Fazio, "Ambiguous Effects of Regional Regulations on Zero Land Consumption and on Verticality in Architecture," *Techne* 17 (2019): 78–85, <https://doi.org/10.13128/Techne-23873>.

¹⁴ R S Pudar and J Plavšić, "Benefits of Green Infrastructure for Flood Mitigation in Small Rural Watersheds—Case Study of the Tamnava River in Serbia," in *Springer Water* (Pudar Mitigation Consulting, Inc., PO Box 680725, Marietta, 30068, GA, United States: Springer Nature, 2022), 591–604, https://doi.org/10.1007/978-981-19-1600-7_37.

¹⁵ K Unger et al., "Impact of Green, Gray, and Hybrid Infrastructure on Flood Risk in Partly Urbanized Catchment," in *Nature-Based Solutions in Supporting Sustainable Development Goals: Theory and Practice* (University of Ljubljana, Ljubljana, Slovenia: Elsevier, 2024), 25–51, <https://doi.org/10.1016/B978-0-443-21782-1.00004-X>.

¹⁶ G Y Jayasinghe et al., "A Systematic Literature Review on Integrating Disaster Risk Reduction (DRR) in Sustainable Tourism (SusT): Conceptual Framework for Enhancing Resilience and Minimizing Environmental Impacts," *International Journal of Disaster Risk Reduction* 111 (2024), <https://doi.org/10.1016/j.ijdrr.2024.104742>.

community participation, and green tourism practices within a single analytical framework for the context of tea plantation permit misuse in buffer zones such as Bogor.

This research aims to explore how green tourism can serve as a strategic instrument in addressing the flooding problems that stem from the misuse of tea plantation permits in Bogor.¹⁷ The hope is that this research can offer implementable policy recommendations for local governments, business actors, and communities to jointly realize a Bogor that is sustainable, safe from disaster, and remains excellent as a leading tourism destination.¹⁸

Method

This study is normative legal research (juridical-normative) examined through a qualitative-descriptive method. The object of study comprises the legal norms, policies, and doctrines related to land-use permits, the protection of protected areas, and the governance of sustainable tourism in the Bogor region. The approach employed is combinative, encompassing the statute approach to examine regulations in the fields of spatial planning, environmental management, and forestry; the conceptual approach to construct an analytical framework for green tourism, green governance, and nature-based solutions; and the case approach to concrete instances of permit misuse and tourism development in protected areas such as Puncak and Sentul.

The type of data used is secondary data, consisting of primary, secondary, and tertiary legal materials. Primary legal materials include laws and regulations in the fields of spatial planning, environmental protection and management, forestry, and tourism. Secondary legal materials comprise books, national and international scholarly journal articles, research reports, and relevant policy documents. Tertiary legal materials consist of legal dictionaries and encyclopedias serving as supporting references.

¹⁷ S H Hengky and Z Kikvidze, "Tourism Sustainability in the Bogor Botanical Gardens, Indonesia," *Urban Forestry and Urban Greening* 30 (2018): 8–11, <https://doi.org/10.1016/j.ufug.2018.01.007>.

¹⁸ Sutan Sorik and Anang Dwiatmoko, "Pengaturan Hak Asasi Manusia dan Pelindungan Hukum Masyarakat Adat di Sektor Usaha Pertambangan," *Mimbar Hukum* 35, no. 1 (2023): 158–91.

Data collection was carried out through library research and document analysis. Library research was used to gather concepts, theories, and the findings of previous studies, while document analysis focused on tracing regulations, spatial planning documents, and official reports and news coverage concerning cases of tea plantation permit misuse and tourism development in Bogor's protected areas.

The data were analysed qualitatively using content analysis and thematic analysis techniques. The legal materials and literature were classified into main themes, namely the challenges of law enforcement, governance gaps, opportunities for cross-sectoral collaboration, and the ecological and social impacts of permit misuse. These themes were then interpreted systematically to answer the research questions. Conclusions were drawn deductively, moving from the normative and conceptual framework toward its application to the specific context of Bogor.

Result and Discussion

Governance in the Application of Green Tourism as a Flood Solution

Green tourism holds tangible potential for addressing the threat of flooding in the Bogor region, particularly flooding caused by the misuse of tea plantation permits and the conversion of protected areas into production land or infrastructure.¹⁹ The practice of green tourism is not merely an economic and aesthetic tourism strategy, but also an integral part of an ecological approach to disaster mitigation. The use of green technology and nature-based solutions such as urban trees, rain gardens, and green roofs has been proven to significantly reduce water runoff and improve soil infiltration, as has been examined in the context of semi-urban areas.²⁰ This effectiveness is highly relevant for application in Bogor,

¹⁹ H Yang et al., "Indigenous Knowledge in the Sustainable Management of a Biodiversity-Based Millennium-Old Tea Forest in the Highlands of Yunnan Province, Southwestern China," *Biodiversity* 25, no. 2 (2024): 142–52, <https://doi.org/10.1080/14888386.2023.2290176>.

²⁰ S Kamalakkannan, A K Kulatunga, and N C Kassel, "Environmental and Social Sustainability of the Tea Industry in the Wake of Global Market Challenges: A Case Study in Sri Lanka," *International Journal of Sustainable Manufacturing* 4, no. 2–4 (2020): 379–95, <https://doi.org/10.1504/IJSM.2020.107129>.

which combines the characteristics of urban, hilly, and conservation zones with high rainfall.²¹

Furthermore, the restoration of wetlands and the establishment of riparian zones not only enhance ecotourism appeal but also serve as a technical solution to slow water flow, prevent erosion, and maintain the stability of aquatic ecosystems.²² It is here that green tourism becomes a manifestation of ecosystem-based adaptation, which not only addresses technical aspects but also builds a harmonious relationship between environmental conservation and the economic empowerment of local communities.²³

Nevertheless, the socio-political dimension cannot be ignored. Community participation and collective awareness have proven to be decisive factors in the successful development of green tourism that is adaptive to flood risk.²⁴ Public education, environmental awareness programs for tourists and residents, and the strengthening of local communities as the principal actors of conservation constitute important pillars of sustainability.²⁵ In this context, a governance framework that goes beyond a technocratic approach is required.²⁶

To this end, reinforcement is needed through theoretical approaches such as Green Governance, which emphasizes the importance of environmental governance based on

²¹ Zuyin Arwani, "Pemberdayaan Masyarakat Melalui Pengembangan Ekowisata Desa Karangsong, Indramayu, Jawa Barat," *Jurnal Kommunity Online* 2, no. 1 (2023): 47–54.

²² Fira Saputri Yanuari Yanuari and Daffa Prangsi, "Kajian Yuridis Efektivitas Penegakan Hukum Pidana dalam UU Nomor 26 Tahun 2007 Tentang Penataan Ruang," *Padjadjaran Law Review* 8, no. 2 (2020): 27–40.

²³ Dini Rengganing Suci Mochammad Yuriant Budiman and Djoko Said, "Manajemen Tata Kelola Maritim Kepulauan Seribu Sebagai Kawasan Strategis Nasional dalam Perspektif Keamanan Maritim," *Jurnal Maritim Indonesia (Indonesian Maritime Journal)* 9, no. 3 (2021): 281–98.

²⁴ Dimas Moch Risqi, "Penegakan Hukum Lingkungan," *JHP17 (Jurnal Hasil Penelitian)* 6, no. 2 (2022): 39–44.

²⁵ Isya Anung Wicaksono and Fatma Ulfatun Najicha, "Penerapan Asas Ultimum Remedium dalam Penegakan Hukum di Bidang Lingkungan Hidup," *Pagaruyuang Law Journal* 5, no. 1 (2021): 47–56.

²⁶ Etika Khairina, Eko Priyo Purnomo, and Ajree Ducol Malawani, "Sustainable Development Goals: Kebijakan Berwawasan Lingkungan Guna Menjaga Ketahanan Lingkungan di Kabupaten Bantul Daerah Istimewa Yogyakarta," *Jurnal Ketahanan Nasional* 26, no. 2 (2020): 155–81.

multi-actor participation, transparency, and accountability.²⁷ Green Governance holds that resolving ecological problems such as flooding is not sufficient through technical policy alone, but demands cross-sectoral collaboration among the government, civil society, the private sector, and tourism communities.²⁸ Green tourism, within this framework, functions as a strategic instrument of ecological development that connects conservation, the protection of living space, and the local economy.²⁹

Delving deeper, the Political Ecology of Spatial Planning approach reveals that the root of land conversion and plantation permit misuse is often tied to unequal power relations in decision-making. When spatial policy fails to account for environmental carrying capacity and accommodates only short-term economic interests, an ecological crisis such as flooding becomes inevitable.³⁰ Therefore, green tourism needs to be explicitly integrated into spatial planning documents and regional development policies, rather than merely positioned as a supplementary program detached from formal spatial governance.³¹

The strengthening of this argument is also consistent with the theory of Nature-Based Solutions (NbS), which promotes the use of natural processes and structures as a response to socio-ecological challenges.³² The implementation of NbS in the practice of green tourism

²⁷ Hendrik Fasco Siregar, Nurhayati Nurhayati, and Siti Nurwullan, "Analisis Perlindungan Hukum Terhadap Geopark Nasional Ciletuh Sebagai Kawasan Geowisata di Kabupaten Sukabumi Provinsi Jawa Barat," *Jurnal Surya Kencana Satu: Dinamika Masalah Hukum dan Keadilan* 10, no. 1 (2019): 15–32.

²⁸ Muhar Junef, "Penegakkan Hukum Dalam Rangka Penataan Ruang Guna Mewujudkan Pembangunan Berkelanjutan," *Jurnal Penelitian Hukum P-ISSN 1410* (2021): 5632.

²⁹ Zainudin Hasan and Maya Zulvi Astarida, "Penegakan Hukum Lingkungan Sebagai Upaya Pembangunan yang Berkelanjutan," *Jurnal Ilmiah Advokasi* 11, no. 1 (2023): 128–40.

³⁰ Suci Rahmadani and Misran Misran, "Rencana Tata Ruang Wilayah (RTRW) dalam Penegakkan Hukum Lingkungan," *Jurnal Justisia: Jurnal Ilmu Hukum, Perundang-Undangan dan Pranata Sosial* 3, no. 1 (2019): 140–63.

³¹ Nina Herlina and Rima Duana, "Penegakan Hukum Lingkungan Melalui Upaya Hukum Non Penal Menurut Undang-Undang Nomor 32 Tahun 2009 Tentang Perlindungan dan Pengelolaan Lingkungan Hidup," *Jurnal Ilmiah Galuh Justisi* 10, no. 2 (2022): 305–19.

³² M A B Saputra, E R Mahardika, and S A Kariim, "Political Direction of Environmental Management Law in Indonesia," *Indonesian Journal of Environmental Law and Sustainable Development* 2, no. 1 (2023): 33–68, <https://doi.org/10.15294/ijel.v2i1.66100>.

not only strengthens water absorption and reduces flood risk, but also creates sustainable added value for tourism.³³ It is here that the synergy among conservation, disaster mitigation, and local economic growth finds its ideal form.³⁴

Without strong public policy support, deliberate prioritization within regulations, and the courage to dismantle the legal loopholes that enable the exploitation of space, various technical and participatory approaches alike will remain stagnant.³⁵ A genuine integration among ecology-based spatial planning, green investment, and sustainability indicators is required as an absolute condition in tourism and urban development.³⁶ In this way, green tourism in Bogor will become not only a tourism-sector strategy but also a model of future ecological development that is just, adaptive, and visionary³⁷

Environmental Law in Supporting the Development of Green Tourism in Bogor

The role of environmental law in supporting the development of green tourism in Bogor is highly important for building sustainable tourism governance, particularly in confronting ecological pressures resulting from land-use conversion and the exploitation of natural space.³⁸ In general, environmental law regulations in Indonesia have provided a basic framework for protecting the environment, yet their implementation in the context of

³³ E S Kuchenin et al., "Environmental Law: International Trends and National Characteristics," *Journal of Environmental Management and Tourism* 10, no. 7 (2019): 1458–65, [https://doi.org/10.14505/jemt.v10.7\(39\).03](https://doi.org/10.14505/jemt.v10.7(39).03).

³⁴ Akbar, "Kajian Dampak Dari Operasionalisasi PT Bina Insan Sukses Mandiri dalam Eksploitasi Lahan Tambang Batu Bara di Kabupaten Kutai Barat Provinsi Kalimantan Timur."

³⁵ Kinanti Indah Safitri et al., "Formulasi Kebijakan Lingkungan dalam Kerangka Pembangunan Berkelanjutan: Studi Kasus Program Riau Hijau," *Jurnal Dinamika Pemerintahan* 8, no. 1 (2025).

³⁶ Aji and Pramono, "Mainstreaming Social Justice in Environmental Law Enforcement in Indonesia: Theories and Practices."

³⁷ Arwani, "Pemberdayaan Masyarakat Melalui Pengembangan Ekowisata Desa Karangsong, Indramayu, Jawa Barat."

³⁸ J Bousquin and K Hychka, "A Geospatial Assessment of Flood Vulnerability Reduction by Freshwater Wetlands - A Benefit Indicators Approach," *Frontiers in Environmental Science* 7, no. APR (2019), <https://doi.org/10.3389/fenvs.2019.00054>.

sustainable tourism still encounters various obstacles.³⁹ One of these is the minimal integration between existing regulations and the principles of conservation-based and participatory tourism management.⁴⁰ The study by Handayani and Lazuardi (2022) affirms that the involvement of cross-sectoral stakeholders, including the government, local communities, and tourism business actors, plays a crucial role in supporting environmentally friendly tourism management.⁴¹ In areas such as Bogor, however, legal governance practices have not yet fully succeeded in fostering discipline and effective coordination among the parties.⁴²

Furthermore, the weak adoption of international guidelines and standards such as the 1992 Convention on Biological Diversity into national policy further weakens the protection of ecologically vulnerable areas that serve as tourism destinations.⁴³ This indicates the need to strengthen local regulations and to integrate environmental law with tourism policy so that they align with the framework of sustainable development.⁴⁴ From the perspective of consumer protection, the law also functions as a tool to prevent greenwashing practices,

³⁹ Arwani, "Pemberdayaan Masyarakat Melalui Pengembangan Ekowisata Desa Karangsong, Indramayu, Jawa Barat."

⁴⁰ V Zolotukhin et al., "The Problems of Legal Regulation of the Environmental Policy of the Resource-Producing Region," in *E3S Web of Conferences*, ed. Kovacevic S. and Kamyshev K.V., vol. 376 (T.F. Gorbachev Kuzbass State Technical University, Department of History, Philosophy and Social Sciences, 28 Vesennya st., Kemerovo, 650000, Russian Federation: EDP Sciences, 2023), <https://doi.org/10.1051/e3sconf/202337605052>.

⁴¹ Deah Rama Anugrah et al., "Analisis Permasalahan Tata Ruang di Indonesia," *Jurnal Adijaya Multidisplin* 1, no. 05 (2023): 1045–51.

⁴² Yusmiati Yusmiati, Imamulhadi Imamulhadi, and Supraba Sekarwati, "Pembinaan Terhadap Pelanggar Hukum Lingkungan dalam Sistem Penegakan Hukum Lingkungan Berdasarkan Undang-Undang No. 32 Tahun 2009," *LITRA: Jurnal Hukum Lingkungan, Tata Ruang, Dan Agraria* 2, no. 2 (2023): 189–214.

⁴³ K Pamuji, S Rosyadi, and A A Nasihuddin, "The Legal Institutional Model of Community-Based Waste Management to Reinforce Multi-Stakeholder Collaboration in Indonesia," *Kasetsart Journal of Social Sciences* 44, no. 1 (2023): 73–82, <https://doi.org/10.34044/j.kjss.2023.44.1.08>.

⁴⁴ E Wolff, "The Promise of a 'People-Centred' Approach to Floods: Types of Participation in the Global Literature of Citizen Science and Community-Based Flood Risk Reduction in the Context of the Sendai Framework," *Progress in Disaster Science* 10 (2021), <https://doi.org/10.1016/j.pdisas.2021.100171>.

namely the marketing of tourism as environmentally friendly when it is not.⁴⁵ This is highly important in building public trust in green tourism destinations.⁴⁶

Strengthening environmental law can be pursued through several strategies. First, stronger law enforcement is needed given the still-weak institutional capacity to monitor and act against violations in the nature tourism sector.⁴⁷ Second, the development of green tourism infrastructure requires synergy between legal regulations and cross-sectoral development policies, such as the provision of environmentally friendly transportation, sustainable accommodation facilities, and the use of renewable energy.⁴⁸ Third, the establishment of local codes of ethics, along with the involvement of local authorities in tourism governance, becomes important in the context of community-based oversight.⁴⁹ Fourth, the provision of economic incentives through subsidies for green technology or tax incentives for environmentally friendly business actors has been proven capable of promoting green tourism practices more broadly.⁵⁰

In addition, the application of periodic environmental audit mechanisms can play a more effective role than relying solely on regulations that are static in nature.⁵¹ Such audits not only assess legal compliance but also encourage continuous improvement in the

⁴⁵ Y Issakov et al., "A Systematic Review of Programs and Mechanisms for Industry Engagement in Flood Water Management: Global Challenges and Perspectives," *Water (Switzerland)* 17, no. 8 (2025), <https://doi.org/10.3390/w17081155>.

⁴⁶ M F Tshella, "Constraints for Successful Implementation of Public Private Partnership (PPP) for Tourism Infrastructure Projects," *African Journal of Hospitality, Tourism and Leisure* 7, no. 4 (2018).

⁴⁷ Hasanul Mulkan and Serlika Aprita, "Sistem Penegakan Hukum Lingkungan Pidana di Indonesia," *Justicia Sains: Jurnal Ilmu Hukum* 7, no. 1 (2022): 97–112.

⁴⁸ Olivia Anggie Johar, "Realitas Permasalahan Penegakan Hukum Lingkungan di Indonesia," *Jurnal Ilmu Lingkungan* 15, no. 1 (2021): 54–65.

⁴⁹ Farah Nur Laily, "Penegakan Hukum Lingkungan Sebagai Upaya Mengatasi Permasalahan Lingkungan Hidup di Indonesia," *Wacana Paramarta: Jurnal Ilmu Hukum* 21, no. 2 (2022): 17–26.

⁵⁰ Hasan and Astarida, "Penegakan Hukum Lingkungan Sebagai Upaya Pembangunan Yang Berkelanjutan."

⁵¹ Ferina Ardhi Cahyani, "Upaya Peningkatan Daya Dukung Lingkungan Hidup Melalui Instrumen Pencegahan Kerusakan Lingkungan Hidup Berdasarkan Undang-Undang Nomor 32 Tahun 2009 Tentang Perlindungan dan Pengelolaan Lingkungan Hidup," *Nurani Hukum* 2, no. 1 (2020): 53–60.

environmental performance of tourism actors.⁵² Therefore, environmental law functions not only as a normative instrument but also as a facilitative tool that drives the transformation of tourism governance toward a greener and more sustainable direction.⁵³

Within the context of environmental governance theory, environmental law is understood not merely as a product of state regulation, but as a collaborative instrument that regulates the interaction among state actors, civil society, and the private sector in managing natural resources fairly and sustainably.⁵⁴ This theory emphasizes the importance of multi-level governance, in which decision-making and policy implementation rest not only with the central government but also involve regional governments and local communities as principal actors in environmentally conscious tourism management.⁵⁵

The study by Welford and Ytterhus (2004) shows that successful governance of tourism areas in Norway involves a legal framework that is flexible and open to local adaptation, including the involvement of communities in determining environmental carrying capacity limits and in creating tourism codes of ethics.⁵⁶ This model can be adopted in the Bogor region, particularly in strategic areas such as Puncak and Sentul, which are currently facing

⁵² Khairina, Purnomo, and Malawani, "Sustainable Development Goals: Kebijakan Berwawasan Lingkungan Guna Menjaga Ketahanan Lingkungan di Kabupaten Bantul Daerah Istimewa Yogyakarta."

⁵³ Diah Ayuretnani Handayani, Anwar Kurniadi, and Fauzi Bahar, "Strategi Pengurangan Risiko Bencana Berbasis Pemberdayaan Masyarakat Desa Penyangga Kawasan Konservasi Taman Nasional Gunung Merapi," *Jurnal Litbang Sukowati: Media Penelitian Dan Pengembangan* 6, no. 1 (2022): 84–97.

⁵⁴ Ghea Ken Joandani Joandani, Rudhi Pribadi, and Chrisna Adhi Suryono, "Kajian Potensi Pengembangan Ekowisata Sebagai Upaya Konservasi Mangrove di Desa Pasar Banggi, Kabupaten Rembang," *Journal of Marine Research* 8, no. 1 (2019): 117–26.

⁵⁵ Yanuari and Prangsi, "Kajian Yuridis Efektivitas Penegakan Hukum Pidana dalam UU Nomor 26 Tahun 2007 Tentang Penataan Ruang."

⁵⁶ R Welford and B Ytterhus, "Sustainable Development and Tourism Destination Management: A Case Study of the Lillehammer Region, Norway," *International Journal of Sustainable Development and World Ecology* 11, no. 4 (2004): 410–22, <https://doi.org/10.1080/13504500409469843>.

significant pressure from the development of villas and exclusive tourism destinations by private actors and regional state-owned enterprises (BUMD).⁵⁷

Cases such as the sealing of the Hibisc Fantasy area by the regional government and law enforcement officers serve as a concrete example of weak control over the use of space and land in protected areas. Although repressive actions such as sealing can constitute a form of law enforcement, the prior absence of preventive oversight and inter-agency coordination indicates a governance gap between legal norms and institutional reality on the ground. This is reinforced by the findings of Hengky and Kikvidze (2018), which show that even the sustainability of tourism at the Bogor Botanical Gardens is vulnerable to threats due to the ambiguity of zoning regulations and weak oversight of green-open-space-based tourism development.⁵⁸

To address this, there is a need to strengthen legal instruments in the form of regional regulations that specifically govern green tourism zones (green zones), along with community-based monitoring mechanisms. In addition, applying the principles of transparency and accountability in the management of tourism levies, permits, and environmental impact assessments will strengthen public trust in the law's alignment with long-term ecological interests.⁵⁹

The misuse of tea plantation permits in areas such as Puncak Bogor has an impact not only on legal and administrative aspects but also carries very serious environmental and social consequences. Ecologically, the conversion of forests into illegal tea plantations has triggered environmental damage such as deforestation, soil degradation, and surface water pollution due to the use of chemical fertilizers.⁶⁰ The decline in water absorption function in rainfall

⁵⁷ P Singh et al., "Case Study of Flood Risk and Vulnerability in the City of Atlanta – A Social, Economic, Technical, and Institutional Perspective," *Resilient Cities and Structures* 4, no. 2 (2025): 1–13, <https://doi.org/10.1016/j.rcns.2025.03.002>.

⁵⁸ Putrijanti, "Judicial Activism in Judge's Verdict to Law Enforcement of Environment."

⁵⁹ Safitri et al., "Formulasi Kebijakan Lingkungan dalam Kerangka Pembangunan Berkelanjutan: Studi Kasus Program Riau Hijau."

⁶⁰ Akbar, "Kajian Dampak dari Operasionalisasi PT Bina Insan Sukses Mandiri dalam Eksploitasi Lahan Tambang Batu Bara di Kabupaten Kutai Barat Provinsi Kalimantan Timur."

catchment areas in the mountainous regions causes increased surface runoff and worsens the risk of flooding in downstream areas.⁶¹ From the social side, local communities are directly affected by the declining quality of the environment, the loss of access to natural resources, and reduced income, particularly in the traditional agriculture and ecotourism sectors that have long sustained their economy.⁶²

In the context of green tourism initiatives, cross-sectoral collaboration becomes a key element in reversing these negative impacts.⁶³ The government plays a strategic role through the implementation of strict spatial planning policies, environmental audits, and law enforcement against permit violations. In addition, the active involvement of local communities in the planning and management of nature-based tourism destinations becomes a crucial element, given that local wisdom can enhance the sustainability of tourism and conservation.⁶⁴ The private sector likewise bears a social responsibility to contribute through the application of environmental certification standards, the funding of ecosystem restoration, and the development of conservation-based tourism.⁶⁵ Strengthening this synergy can be realized through community training, the promotion of environmentally friendly agricultural practices, and the formation of partnership networks among the government, NGOs, and tourism industry actors.⁶⁶

⁶¹ Arwani, "Pemberdayaan Masyarakat Melalui Pengembangan Ekowisata Desa Karangsong, Indramayu, Jawa Barat."

⁶² Tejoyuwono Notohadiprawiro et al., *Pertanian Setelah Revolusi Hijau: Teknologi Masukan Rendah (Low External Input For Sustainable Agriculture)* (Deepublish, 2022).

⁶³ Pudar and Plavšić, "Benefits of Green Infrastructure for Flood Mitigation in Small Rural Watersheds—Case Study of the Tamnava River in Serbia."

⁶⁴ G Widjaja, "Law Enforcement Role in the Management of Sustainable Natural Resources," *Journal of Ecohumanism* 3, no. 3 (2024): 388–98, <https://doi.org/10.62754/joe.v3i3.3348>.

⁶⁵ Naiborhu and Kasenda, "Environmental Law Enforcement Through State Administrative Legal Instruments In Environmental Cases In Indonesia."

⁶⁶ M Khater et al., "Legal Frameworks for Sustainable Tourism: Balancing Environmental Conservation and Economic Development," *Current Issues in Tourism*, 2024, <https://doi.org/10.1080/13683500.2024.2404181>.

The impact of permit misuse not only damages the physical ecosystem but also destroys the socio-economic structure of local communities.⁶⁷ Therefore, solutions cannot be merely technocratic in nature, but require a collaborative and transformative approach that integrates legal, ecological, and community empowerment aspects within the framework of green tourism as a strategy for disaster adaptation and long-term preservation.⁶⁸

Amid this complexity, cross-sectoral collaboration becomes a strategic path for driving the transformation from an exploitative system toward a sustainable development model through green tourism.⁶⁹ The government has an important role in enforcing the law and spatial planning regulations, conducting environmental audits, and ensuring that every plantation or tourism concession permit aligns with the carrying capacity of the ecosystem.⁷⁰ However, top-down efforts alone are not sufficient. The participation of local communities becomes a key component in ensuring the success of this strategy.⁷¹ Through the involvement of residents in the management of nature tourism destinations, ecotourism training, and the monitoring of land use, a form of social control will emerge that strengthens community resilience against land exploitation. A study in the tea-growing region of Yunnan, China, demonstrates that the integration of local knowledge and the active participation of residents is able to preserve forests while creating alternative economic value based on tourism.⁷²

⁶⁷ Wildan Siregar, Ida Nurlinda, and Maret Priyanta, “Kebijakan Penegakan Hukum Lingkungan Atas Pelanggaran Administrasi Tata Ruang dan Alih FUNGSI Lahan Sempadan Sungai dalam Rangka Terwujudnya Tata Ruang yang Berkelanjutan,” *Jurnal Poros Hukum Padjadjaran* 3, no. 1 (2021): 130–49.

⁶⁸ M Mallick et al., “Assessment of the Soil Erosion Susceptibility Zones in Tea Plantation Areas of Jalpaiguri District, India: An Integrated Approach of RUSLE and WLC Model,” *Journal of the Indian Society of Remote Sensing* 53, no. 6 (2025): 1855–74, <https://doi.org/10.1007/s12524-024-02078-8>.

⁶⁹ Pamuji, Rosyadi, and Nasihuddin, “The Legal Institutional Model of Community-Based Waste Management to Reinforce Multi-Stakeholder Collaboration in Indonesia.”

⁷⁰ B H N Razafindrabe et al., “Analyzing Flood Risk and Related Impacts to Urban Communities in Central Vietnam,” *Mitigation and Adaptation Strategies for Global Change* 19, no. 2 (2014): 177–98, <https://doi.org/10.1007/s11027-012-9433-z>.

⁷¹ Kamalakkannan, Kulatunga, and Kassel, “Environmental and Social Sustainability of the Tea Industry in the Wake of Global Market Challenges: A Case Study in Sri Lanka.”

⁷² Hasan and Astarida, “Penegakan Hukum Lingkungan Sebagai Upaya Pembangunan yang Berkelanjutan.”

In addition, the private sector needs to be directed to play a more responsible role, not merely seeking profit from "eco-friendly" branding, but also making genuine investments in conservation and community welfare.⁷³ This can be done through the application of environmental certification standards, the development of ecosystem-recovery-based CSR programs, and tripartite partnerships among the government, industry actors, and local communities.⁷⁴ Atupola and Gunarathne (2023), in their study in Sri Lanka, emphasize the importance of regulatory pressure that drives sustainable practices by tea industry actors within a co-management scheme.⁷⁵

In this way, permit misuse is not merely a legal violation but also a form of ecological and social injustice. The solutions offered must not stop at a purely technocratic or legalistic approach.⁷⁶ What is needed is a transformative strategy based on multi-actor collaboration that is integrated horizontally (across sectors) and vertically (central government, regional government, and community).⁷⁷ Green tourism, in this context, is not merely a slogan but becomes an adaptive strategy for confronting the climate crisis, reducing disaster risk, and restoring the role of communities as just and sovereign guardians of nature.⁷⁸

⁷³ I S Chaudhry, Z Yusop, and M S Habibullah, "Financial Inclusion-Environmental Degradation Nexus in OIC Countries: New Evidence from Environmental Kuznets Curve Using DCCE Approach," *Environmental Science and Pollution Research* 29, no. 4 (2022): 5360–77, <https://doi.org/10.1007/s11356-021-15941-9>.

⁷⁴ Stevanus Eko Pramuji and Viorizza Suciani Putri, "Meninjau Efektivitas Penegakan Hukum Penataan Ruang dalam Rangka Mewujudkan Tertib Tata Ruang," *Jurnal Pertanahan* 10, no. 1 (2020).

⁷⁵ Yusmiati, Imamulhadi, and Sekarwati, "Pembinaan Terhadap Pelanggar Hukum Lingkungan dalam Sistem Penegakan Hukum Lingkungan Berdasarkan Undang-Undang No. 32 Tahun 2009."

⁷⁶ A Asmah and S N Salam, "A Law-Abiding Behaviour of the Indigenous Peoples in Realizing Environmental Law Enforcement in South Sulawesi, Indonesia," *Caspian Journal of Environmental Sciences* 20, no. 2 (2022): 431–35, <https://doi.org/10.22124/CJES.2022.5592>.

⁷⁷ Unger et al., "Impact of Green, Gray, and Hybrid Infrastructure on Flood Risk in Partly Urbanized Catchment."

⁷⁸ Moraci and Fazia, "Ambiguous Effects of Regional Regulations on Zero Land Consumption and on Verticality in Architecture."

Analysis of Research Findings and Policy Recommendation Framework

The implementation of green tourism in Bogor still faces complex, multidimensional obstacles encompassing environmental, economic, social, and policy aspects. From the environmental side, the increase in energy and water consumption due to tourism activities, combined with waste management that is not yet integrated, worsens the degradation of protected areas such as Puncak and the Bogor Botanical Gardens.⁷⁹ In addition, pressure on biodiversity and ecological carrying capacity becomes evident when tourism takes place without control over the number of visitors and over activities that directly affect local flora and fauna.⁸⁰ Meanwhile, the economic aspect reveals resistance from business actors due to the high initial cost of adopting green technology and environmentally friendly practices, as well as the dominance of a short-term profit orientation in the conventional tourism model.⁸¹

In the social sphere, the minimal awareness among the public and industry actors regarding the principles of sustainability, together with the lack of active participation by local communities in tourism planning, hampers the development of an inclusive tourism system.⁸² From the institutional side, green tourism policy remains weak both structurally and in implementation, marked by a lack of performance indicators and weak coordination among stakeholders, at both the central and regional levels.⁸³

In response to these challenges, the researcher recommends restructuring the tourism permit and oversight system through the integration of the Environmental Impact Assessment (AMDAL) and Strategic Environmental Assessment (KLHS) documents into the entire permitting process, as well as the digitalization of the permit system so that it is transparent

⁷⁹ Asmah and Salam, "A Law-Abiding Behaviour of the Indigenous Peoples in Realizing Environmental Law Enforcement in South Sulawesi, Indonesia."

⁸⁰ J Xue et al., "Revisiting Natural Resources-Globalization-Environmental Quality Nexus: Fresh Insights from South Asian Countries," *Sustainability (Switzerland)* 13, no. 8 (2021), <https://doi.org/10.3390/su13084224>.

⁸¹ Chaudhry, Yusop, and Habibullah, "Financial Inclusion-Environmental Degradation Nexus in OIC Countries: New Evidence from Environmental Kuznets Curve Using DCCE Approach."

⁸² Mulkan and Aprita, "Sistem Penegakan Hukum Lingkungan Pidana di Indonesia."

⁸³ Nina Herlina, "Permasalahan Lingkungan Hidup dan Penegakan Hukum Lingkungan di Indonesia," *Jurnal Ilmiah Galuh Justisi* 3, no. 2 (2017): 162–76.

and integrated across agencies (the Ministry of Environment and Forestry/KLHK, the Ministry of Agrarian Affairs and Spatial Planning/National Land Agency/ATR/BPN, and regional governments). In addition, there is a need to establish permanent conservation zones in ecologically sensitive areas, along with the provision of fiscal incentives for tourism actors committed to sustainable and environmentally friendly agriculture. Social protection for tourism workers, especially vulnerable groups such as women, must also be realized through a human-rights-based approach (HRBA) to policy.⁸⁴

Furthermore, the empowerment of local communities becomes a key element, whether through the establishment of a Participatory Oversight Forum or the provision of open access to environmental data and business permit maps. Economic alternatives such as community-based ecotourism and agroforestry systems must also be developed in order to reduce dependence on the exploitative tourism model. Through a cross-sectoral and participation-based approach, Bogor has the opportunity to realize green tourism that is not only environmentally friendly but also socially just and economically sustainable.⁸⁵

Conclusion

The implementation of green tourism in Bogor still faces various structural and practical challenges that are multidimensional in nature. From the environmental side, uncontrolled tourism activities lead to increased energy consumption, biodiversity degradation, and disruption of the ecological carrying capacity of conservation areas. From the economic side, the high initial investment cost and the minimal incentives cause business actors to tend to choose conventional tourism practices that generate profit quickly despite their negative ecological impact. Social challenges also arise in the form of low public awareness and the still-limited involvement of local communities in the planning and management of tourism

⁸⁴ Laily, "Penegakan Hukum Lingkungan Sebagai Upaya Mengatasi Permasalahan Lingkungan Hidup di Indonesia."

⁸⁵ Cahyani, "Upaya Peningkatan Daya Dukung Lingkungan Hidup Melalui Instrumen Pencegahan Kerusakan Lingkungan Hidup Berdasarkan Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup."

destinations. Meanwhile, from the policy side, weak regulatory enforcement, unclear sustainability indicators, and a lack of coordination among institutions cause green tourism policy to tend toward stagnation and ineffectiveness.

Taking into account the complexity of these challenges, it can be concluded that the successful implementation of green tourism in Bogor depends heavily on cross-sectoral synergy, ranging from the government and the community to the private sector. Reform of the permitting policy, the empowerment of local communities, and the strengthening of institutional capacity constitute the primary prerequisites toward a tourism system that is sustainable, just, and resilient to environmental crises. Therefore, the transition toward green tourism is not merely a matter of mitigating negative impacts, but an effort at structural transformation that unites environmental conservation, sustainable economic development, and social justice as a single, integrated vision for regional development.

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