

INTEGRATED ENVIRONMENTAL LAW POLICIES AND SPATIAL CONTROL FOR FLOOD MITIGATION

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ABSTRACT

Flooding in Bandar Lampung City stems not only from natural factors but also from environmental crime and weak spatial utilization control. This study contributes originally by situating environmental crime policy and spatial control within a constitutional and administrative law framework, an angle not yet developed in existing flood-mitigation literature on the city. It analyzes environmental crime control and spatial utilization policies in flood mitigation and normatively examines their enforcement effectiveness, focusing on how penal and non-penal measures address environmental crime, spatial violations, and administrative violations, and how enforcement functions in spatial control. This normative legal research applies statutory and conceptual approaches, analyzing primary, secondary, and tertiary legal materials qualitatively. Results show penal measures apply criminal provisions in environmental and spatial planning law while adhering to the ultimum remedium principle under Article 613 of Law Number 1 of 2023 on the Criminal Code, treating criminal sanctions as a last resort applied only after administrative instruments prove ineffective, consistent with the state's constitutional duty under Article 28H(1) of the 1945 Constitution to guarantee every person's right to a good and healthy environment. Non-penal measures involve strengthening spatial planning policy, licensing supervision, conservation-area protection, environmental rehabilitation, and community participation. Applying Soerjono Soekanto's theory of law enforcement effectiveness, normative-documentary analysis finds enforcement of environmental crime and spatial control in Bandar Lampung City has not been optimal, with the law enforcement factor as the most problematic dimension,

particularly due to persistent obstacles in monitoring and in consistently imposing sanctions against environmental and spatial utilization violations.

Keywords : environmental policy; spatial control; flood mitigation; bandar lampung city.

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I. INTRODUCTION

Uncontrolled urban development has led to various environmental challenges, including an increased risk of flooding in urban areas.¹ This phenomenon is not solely influenced by natural factors but is also driven by human activities that constitute environmental crimes, such as land-use conversion, development in water catchment areas, illegal logging, and spatial utilization that is inconsistent with regional spatial planning regulations.² This condition indicates that environmental degradation is closely associated with weak policies governing spatial utilization control and inadequate supervision of development activities.³ In the context of modern development, the exploitation of natural resources driven by economic growth objectives often overlooks environmental sustainability considerations, thereby contributing to ecological crises that directly affect human well-being and community livelihoods.⁴

Various environmental problems are fundamentally the consequences of an exploitative development paradigm that pays insufficient attention to environmental carrying capacity. Development policies that focus primarily on economic growth have contributed to environmental pollution and degradation, including the increasing occurrence of floods and landslides in various regions.⁵ This condition indicates that the environment has not yet been positioned as an integral component of the development process. In fact, sustainable development requires a balance among economic, social, and environmental dimensions to ensure that the needs of the present generation are met without compromising the ability of future generations to meet their own needs.⁶

Bandar Lampung City, as one of the urban areas experiencing rapid development growth, also faces serious flooding problems. The conversion of green areas into residential and commercial developments, weak supervision of spatial utilization, and the suboptimal implementation of regional spatial

¹Kodoatie, R. J. *Rekayasa dan manajemen banjir kota*. Penerbit Andi, 2021.

²Muhaiyaadden, F. A., Gunawan, F., Aulia, N. J., Syahid, M. I., & Ahmad, A. M. Analisis Hukum terhadap Pembiaran Penebangan Hutan dan Alih Fungsi Lahan Menjadi Perkebunan Sawit yang Memicu Banjir Bandang di Sumatera. *Adagium: Jurnal Ilmiah Hukum*, 4, No. 1 (2026): 66-88.

³Jazuli, A. "Dinamika hukum lingkungan hidup dan sumber daya alam dalam rangka pembangunan berkelanjutan." *Jurnal Rechts Vinding: Media Pembinaan Hukum Nasional* 4, no. 2 (2015): 181-197.

⁴Wulandari, F., and D. S. Salsabila. "Paradigma Antroposentrisme di Kalangan Masyarakat Indonesia." *Journal of Law and Social Change Review* 1, no. 01 (2026).

⁵Burhanuddin, S. H. "Integrasi ekonomi dan lingkungan hidup dalam pembangunan yang berkelanjutan." *EduTech: Jurnal Ilmu Pendidikan dan Ilmu Sosial* 2, no. 1 (2016).

⁶Wahanisa, R., and S. E. Adiyatma. "Konsepsi asas kelestarian dan keberlanjutan dalam perlindungan dan pengelolaan lingkungan hidup dalam nilai pancasila." *Bina Hukum Lingkungan* 6, no. 1 (2021): 93-118.

planning have become factors that exacerbate environmental conditions in urban areas. Green Open Spaces (GOS) that are intended to function as water catchment areas and ecological control zones have diminished due to increasing development pressures.⁷ In fact, the existence of Green Open Spaces (GOS) plays a crucial role in maintaining the ecological balance of urban areas and mitigating flood risks. Furthermore, Law Number 26 of 2007 on Spatial Planning emphasizes the importance of controlling spatial utilization through spatial planning instruments, licensing mechanisms, supervision, and the enforcement of regulations against spatial planning violations.

Normatively, environmental protection and management in Indonesia are regulated through various legal instruments, including Law Number 32 of 2009 on Environmental Protection and Management and Law Number 26 of 2007 on Spatial Planning. Both regulations emphasize that all forms of spatial utilization must take into account the environmental carrying capacity and assimilative capacity in order to prevent environmental degradation and ecological disasters. In practice, however, violations of spatial planning regulations remain prevalent, including development activities within river buffer zones, water catchment areas, and disaster-prone regions that should be protected. Such violations not only contribute to environmental degradation but also increase the risk of urban flooding, which has become increasingly frequent in Bandar Lampung City.

In recent years, Bandar Lampung City has experienced several major flood events. Extreme rainfall occurring in January 2025 resulted in flooding at no fewer than 19 locations across the city.⁸ According to the Mesuji-Sekampung River Basin Authority (Balai Besar Wilayah Sungai Mesuji Sekampung), six flood events had occurred in the region since the beginning of 2025. In addition to high rainfall intensity, these floods were also triggered by a decline in environmental carrying capacity resulting from land-use conversion, the narrowing of drainage channels, and development activities within water catchment areas. In February 2025, flooding once again inundated 23 locations across Bandar Lampung City, prompting the local government to declare an emergency response status due to extreme rainfall conditions, which resulted in three fatalities.⁹ These conditions indicate that the capacity of environmental management and urban spatial planning has not yet functioned optimally in anticipating hydrometeorological disaster risks.

Flooding recurred in April 2025, causing more extensive impacts on the community. The floods that affected several areas of Bandar Lampung City inundated thousands of houses, with water levels ranging from 50 to 150 centimeters, and affected more than 2,300 households. These events

⁷Lamba, N., K. Aksa, and E. Amri. "Strategi Penguatan Fungsi Dan Distribusi Ruang Terbuka Hijau Berbasis Spasial Dalam Perencanaan Tata Ruang Perkotaan Nabire." *Urban and Regional Studies Journal* 8, no. 1 (2025): 123-135.

⁸Wedanti, I. G. A. J. M., and G. A. J. Manik. "Kajian Lingkungan Hidup Strategis Sebagai Bentuk Integrasi Prinsip Pembangunan Berkelanjutan Dalam Perencanaan Tata Ruang Wilayah." *Jurnal Hukum* 5, no. 3 (2016): 526-542.

⁹<https://lampungprov.go.id/detail-post/curah-hujan-ekstrem-sebabkan-banjir-di-lampung-pemprov-tingkatkan-status-tanggap-darurat>

demonstrate that flooding in Bandar Lampung City can no longer be regarded as an incidental occurrence but has instead become a persistent and recurring problem. This situation has been exacerbated by the reduction of Green Open Spaces (GOS), violations of spatial utilization regulations, and ongoing development activities that are inconsistent with the Regional Spatial Plan (RTRW).¹⁰ Therefore, flooding in Bandar Lampung City should not be viewed merely as a natural disaster, but also as a consequence of development policies and weak control over environmental crimes that contribute to the degradation of urban ecosystems.

From the perspective of sustainable development, the control of spatial utilization occupies a strategic position in maintaining a balance between development interests and environmental sustainability. The concept of sustainable development, as formulated in the report of the World Commission on Environment and Development (WCED), emphasizes that development should be capable of meeting the needs of the present generation without compromising the ability of future generations to meet their own needs.¹¹ Therefore, local government policies concerning spatial planning control and environmental protection constitute important instruments for flood disaster mitigation efforts while simultaneously promoting sustainable urban development.

Within the framework of criminal law policy, the control of environmental crime is directed toward the formulation of legal policies capable of providing environmental protection through both penal and non-penal measures.¹² The penal approach is implemented through the imposition of criminal sanctions on perpetrators of environmental degradation, whereas the non-penal approach is carried out through preventive policies, such as the supervision of spatial utilization, licensing control, the management of water catchment areas, and the strengthening of spatial planning regulations.

The flooding problem in Bandar Lampung City indicates that environmental crime control policies have not been implemented optimally.¹³ The enforcement of regulations concerning spatial planning violations and environmental permits continues to face various challenges, including limitations in supervision, inter-agency coordination, and compliance among communities and business actors. At the same time, flood disaster mitigation requires integrated policies that combine environmental protection with spatial utilization control to ensure that urban development remains aligned with the principles of sustainable development. Therefore, spatial utilization control should not be viewed merely as an administrative instrument but also

¹⁰Anggraeni, P. A., L. Uzaimah, and R. K. Rajib. "Implementasi hukum lingkungan dalam pengelolaan sampah pasca banjir untuk pemulihan lingkungan yang berkelanjutan." *Jurnal Ilmiah Wahana Pendidikan* 10, no. 24 (2024): 386-395.

¹¹Husnita, N., and F. F. Ghaniyyu. "Implementasi Konsep Pembangunan Berkelanjutan Terhadap Penguatan Konsep Dasar Hukum Penataan Ruang Berdasarkan Fungsi Lingkungan Hidup." *Padjadjaran Law Review* 8, no. 1 (2020): 20-39.

¹²Ariyanti, V. "Kebijakan penegakan hukum dalam sistem peradilan pidana Indonesia." *Jurnal Yuridis* 6, no. 2 (2019): 33-54.

¹³Falah, R. A., S. Sulastuti, and A. B. Prastyo. "Optimalisasi fungsi BPBD untuk mitigasi bencana banjir di Bandar Lampung." *Journal of Law and Social Change Review* 4, no. 01 (2025): 01-15.

as a preventive mechanism for avoiding environmental degradation that may lead to ecological disasters.

Analytically, it is important to distinguish flooding caused by natural or hydrometeorological conditions from harm arising out of administrative violations of spatial utilization regulations, and from conduct that satisfies the statutory elements of an environmental crime. A mere regulatory violation should not automatically be labelled a “crime” without first identifying the specific legal elements required by the applicable environmental and spatial planning statutes; conflating these categories risks overstating the scope of criminal liability while obscuring the distinct administrative remedies that are in fact available.

Given the constitutional and state-administration orientation relevant to this study, the control of spatial utilization for flood mitigation cannot be separated from the state’s constitutional obligations. Article 28H paragraph (1) of the 1945 Constitution of the Republic of Indonesia guarantees every person’s right to a good and healthy environment, placing upon the state, including local government, a positive obligation to protect that right. The authority of the Bandar Lampung City Government over spatial planning is exercised within the framework of regional government law, and its exercise is subject to mechanisms of administrative accountability, including licensing supervision, administrative sanctions, and oversight by higher levels of government.¹⁴ This constitutional and administrative dimension provides an additional analytical lens through which environmental crime control and spatial utilization policy in Bandar Lampung City are examined in this study.

Although prior studies have examined environmental crime, spatial planning violations, and flood disaster mitigation in Bandar Lampung City separately, the existing literature has not yet integrated these three dimensions within an explicit constitutional and administrative law framework. This study addresses that gap by analyzing environmental crime control and spatial utilization policy for flood mitigation through the lens of constitutional environmental rights and administrative accountability, an original contribution that distinguishes it from prior, largely descriptive-normative accounts.¹⁵

Based on the foregoing discussion, this study is important to examine how environmental crime control policies and spatial utilization control are implemented in flood mitigation efforts in Bandar Lampung City, as well as to analyze the effectiveness of their legal enforcement.

¹⁴Dwiani, U., W. P. Oktapiani, S. U. Awaliyah, and J. Az-Zahra. "Hak atas lingkungan hidup yang baik dan sehat sebagai hak asasi manusia: Tantangan konstitusional dan implementasinya di Indonesia." *Journal of Legal, Political, and Humanistic Inquiry* 1, no. 2 (2025): 248-257.

¹⁵Putra, R. K., D. Karisma, L. Ikawati, A. A. Pratama, and S. Nugraha. "Hak Atas Lingkungan Hidup Yang Baik Dan Sehat Sebagai Hak Konstitusional: Implikasi Pertanggungjawaban Perdata Pada Kasus Pencemaran Lingkungan." *Fiat Iustitia: Jurnal Hukum* 2 (2026): 189-207.

II. RESEARCH METHOD

This study employs a normative legal research method using both a statutory approach and a conceptual approach.¹⁶ Normative legal research is a method of legal inquiry that examines legal norms, principles, theories, and statutory regulations related to environmental crime control, spatial utilization management, and flood disaster mitigation in Bandar Lampung City. The statutory approach is conducted by reviewing various regulations concerning environmental protection and management, spatial planning, and local government policies on disaster mitigation, while the conceptual approach is employed to analyze the concepts of environmental policy, sustainable development, criminal law policy, and spatial utilization control.¹⁷

The legal materials used in this study consist of primary, secondary, and tertiary legal materials. The primary legal materials include the 1945 Constitution of the Republic of Indonesia, Law No. 32 of 2009 on Environmental Protection and Management, Law No. 26 of 2007 on Spatial Planning, Law No. 6 of 2023 concerning the Enactment of Government Regulation in Lieu of Law No. 2 of 2022 on Job Creation into Law, and Bandar Lampung City Regional Regulation No. 4 of 2021 concerning the Regional Spatial Plan of Bandar Lampung City for the period 2021–2041. In addition, this study examines the Strategic Environmental Assessment (SEA) document of the Bandar Lampung City Spatial Plan (RTRW) for the period 2020–2040 as an analytical source for assessing spatial utilization conditions and sustainable development in Bandar Lampung City.

Secondary legal materials were obtained through library research, including books, scientific journals, research reports, scholarly articles, as well as documents and news reports related to flooding, environmental crime, spatial planning control, and disaster mitigation policies in Bandar Lampung City.¹⁸ Tertiary legal materials consist of legal dictionaries, encyclopedias, and other supporting sources relevant to the research.

The legal materials were collected through document study and library research by means of inventorying, identifying, and examining various regulations and literature relevant to the subject matter of the study.¹⁹ Subsequently, the collected legal materials were analyzed qualitatively using a descriptive-analytical method, which involves describing and interpreting various legal provisions and policies related to environmental crime control and spatial utilization management in the context of flood mitigation in Bandar Lampung City. The analysis was conducted systematically to gain a comprehensive understanding of the effectiveness of existing policies and to formulate an ideal policy framework that supports sustainable development and environmental protection.

¹⁶Nurhayati, Y., I. Ifrani, and M. Y. Said. "Metodologi normatif dan empiris dalam perspektif ilmu hukum." *Jurnal Penegakan Hukum Indonesia* 2, no. 1 (2021): 1-20.

¹⁷Suhaimi, S. "Problem hukum dan pendekatan dalam penelitian hukum normatif." *Jurnal Yustitia* 19, no. 2 (2018).

¹⁸Ahmad, A., M. Fachrurrazy, M. Amalia, E. Fauzi, S. L. Gaol, D. N. Siliwadi, and T. Takdir. *Buku Ajar Metode Penelitian & Penulisan Hukum*. PT. Sonpedia Publishing Indonesia, 2024.

¹⁹Benuf, K., and M. Azhar. "Metodologi penelitian hukum sebagai instrumen mengukur permasalahan hukum kontemporer." *Gema Keadilan* 7, no. 1 (2020): 20-33.

III. ANALYSIS AND DISCUSSION

A. Environmental Crime Control and Spatial Utilization Management for Flood Mitigation in Bandar Lampung City

Crime control is essentially an integral part of social policy and criminal policy, aimed at providing protection to society against various forms of criminal activity.²⁰ In modern criminal law, crime prevention and control are not carried out solely through penal measures but also through non-penal approaches. Both approaches must be implemented in an integrated manner to ensure the optimal achievement of societal protection and social welfare objectives.

According to Barda Nawawi Arief, crime prevention and control policy constitutes a rational effort undertaken by society to address crime through both penal and non-penal measures.²¹ Penal policy is implemented through the application of criminal law, with an emphasis on repressive measures taken after the commission of a criminal offense, whereas non-penal policy places greater emphasis on preventive measures aimed at preventing crime from occurring. Accordingly, crime prevention and control policy is not solely oriented toward punishing offenders but also toward eliminating the underlying factors that contribute to criminal behavior. From the perspective of criminal law policy, the use of penal and non-penal measures must be carried out in an integrated and continuous manner.²² The penal approach is necessary, for example, in prosecuting perpetrators of environmental crimes that have caused environmental damage and losses to society, whereas the non-penal approach is directed toward prevention through spatial planning policies, environmental monitoring, and sustainable development measures.

1) Penal Measures

Penal measures constitute a component of crime control policy that employs criminal law as the primary instrument for addressing conduct classified as criminal offenses. In the context of environmental crime, the penal approach is directed toward protecting the environment through the criminalization of acts of pollution, environmental destruction, spatial planning violations, and development activities that generate ecological harm and disasters affecting society. The penal approach in environmental law is inherently repressive in nature, focusing on the prosecution of offenders after environmental damage has occurred. Nevertheless, within the development of modern legal systems, the use of criminal sanctions is not intended solely to create a deterrent effect but also serves as an instrument for ecological protection and the safeguarding of the public's right to a good and healthy environment.²³

²⁰Ariyanti, V. "Kebijakan penegakan hukum dalam sistem peradilan pidana Indonesia." *Jurnal Yuridis* 6, no. 2 (2019): 33-54.

²¹Ahmad, R. "Upaya Penanggulangan Kejahatan Dengan Hukum Pidana Dalam Rangka Pembangunan Hukum Nasional." *Bulletin of Law Research* 1, no. 2 (2024): 48-54.

²²Silaen, F., and S. A. Siregar. "Hubungan Kebijakan Kriminal Dengan Kebijakan Hukum Pidana." *Jurnal Darma Agung* 28, no. 1 (2020): 8-16.

²³Suryana, Y., E. Sutikno, R. Umar, and S. Nanti. "Mengintegrasikan Peran Ekosistem Dengan Hak Atas Lingkungan Yang Sehat." *Muhammadiyah Law Review* 10, no. 2 (2026): 384-401.

From the perspective of criminal law policy, environmental crime is regarded as a serious form of crime because its impacts extend beyond economic losses to the state and include threats to human safety, damage to ecosystems, and the occurrence of ecological disasters such as floods, landslides, and environmental crises in urban areas.²⁴ Therefore, through the framework of criminal law, the state grants legitimacy to law enforcement authorities to take action against any activities that cause environmental degradation. This penal policy is reflected in Law No. 32 of 2009 on Environmental Protection and Management, which establishes various criminal provisions for perpetrators of environmental pollution and destruction, including imprisonment, fines, confiscation of illicit gains, and environmental restoration measures.

In the context of flood mitigation in Bandar Lampung City, the penal approach constitutes a crucial component given the high level of uncontrolled development activities and various forms of environmental crime that have contributed to the decline of ecological carrying capacity in urban areas. Activities such as hill excavation, illegal mining, development within water catchment areas, the construction of buildings over drainage channels and river buffer zones, and the conversion of green open spaces represent violations that directly contribute to the increasing flood risk in Bandar Lampung City. These conditions indicate that flooding problems are not solely caused by natural factors but are also influenced by weak enforcement of environmental and spatial planning regulations.²⁵

One example of a penal measure in Bandar Lampung City can be seen in the enforcement actions taken against illegal mining activities and hill excavation operations, which are suspected of being among the contributing factors to flooding in several areas of the city. The Special Criminal Investigation Directorate (Ditreskrimsus) of the Lampung Regional Police, in collaboration with the Environmental Agency, conducted investigations into six illegal mining sites located in Sukabumi District. These sites were allegedly involved in hill excavation activities under the pretext of developing residential areas and parking facilities for heavy equipment. Such activities were considered to have caused environmental degradation and reduced the function of water catchment areas, thereby increasing the risk of flooding in the downstream areas of Bandar Lampung City.²⁶

In addition to enforcement actions against illegal mining activities, penal policies are also reflected in measures taken against buildings constructed on waterways and river corridors. The Bandar Lampung City Government, through its Building Control Task Force, has carried out the demolition of several structures that narrowed water channels and obstructed the urban drainage system. These enforcement measures represent a form of legal action

²⁴Siregar, M. V. M. N., F. B. Tamza, and A. I. Fardiansyah. "Kejahatan Ekonomi dalam Perspektif Hukum Lingkungan: Analisis Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup." *Audi Et AP: Jurnal Penelitian Hukum* 5, no. 01 (2026): 115-124.

²⁵Rachman, R. M., F. Mas'ud, A. Sasmita, F. Balany, L. O. M. I. Sjachrawy, N. H. Aswad, and A. S. Sukri. *Sistem Pengelolaan Lingkungan Terpadu di Wilayah Perkotaan*. Arsy Media, 2025.

²⁶<https://rri.co.id/bandar-lampung/regional/1511476/polda-lampung-selidiki-tambang-ilegal-penyebab-banjir>

against violations of spatial utilization regulations, which have long been recognized as one of the primary causes of urban flooding. Buildings erected over waterways not only violate spatial planning and river setback regulations but also disrupt the ecological function of drainage systems in conveying water runoff during periods of heavy rainfall.

The effectiveness of environmental criminal law enforcement in Bandar Lampung City continues to face various challenges. One of the key issues is the lack of consistency in enforcing the law against perpetrators of environmental crimes. Several cases, including the two cases discussed above, indicate that legal proceedings against individuals responsible for environmental degradation are often carried out without clear follow-up actions, thereby undermining legal certainty. Such conditions create the perception of a weak deterrent effect and increase the likelihood of similar violations recurring in the future.

On the other hand, the weak implementation of the Regional Spatial Plan (RTRW) in Bandar Lampung has also become a factor contributing to the suboptimal effectiveness of penal measures in flood mitigation. Studies on the implementation of the Bandar Lampung Regional Spatial Plan indicate that increasing demands for development space have led to widespread land use that is inconsistent with designated spatial allocations, thereby contributing to environmental degradation in urban areas.²⁷ This situation is further aggravated by the high level of deviations in spatial utilization and the suboptimal supervision of protected areas, green open spaces, and water catchment zones. In fact, the Strategic Environmental Assessment (SEA) of the Bandar Lampung Regional Spatial Plan (RTRW) 2020–2040 emphasizes the importance of integrating sustainable development principles into spatial planning policies in order to reduce the adverse environmental impacts of development. However, these principles have not yet been fully and effectively implemented.

These conditions should serve as a basis for law enforcement authorities to undertake criminal law enforcement against perpetrators of spatial planning violations and environmental degradation. Law No. 32 of 2009 concerning Environmental Protection and Management provides the legal foundation for taking action against any individual who engages in environmental pollution or degradation. Furthermore, Law No. 26 of 2007 concerning Spatial Planning also stipulates criminal sanctions for any person who utilizes space in a manner inconsistent with the spatial plan, resulting in harm to society and the environment. Therefore, development activities conducted within protected areas, river buffer zones, and water catchment areas that contribute to flooding may, in principle, be classified as environmental crimes as well as spatial planning offenses.

The enforcement of criminal law against environmental and spatial planning violations must continue to observe the principle of *ultimum remedium*, as affirmed in Article 613 paragraph (3) of Law No. 1 of 2023 concerning the Criminal Code juncto Law No. 1 of 2026 concerning Criminal Law Adjustments: criminal law is a measure of last resort, applied only after

²⁷Jayanti, E. J. "Penguatan integrasi tata ruang dan infrastruktur drainase dalam pengurangan risiko banjir di Kota Bandar Lampung: Infrastruktur Drainase." *Inovasi Pembangunan: Jurnal Kelitbangan* 14, no. 02 (2026).

administrative instruments have proven ineffective. In relation to spatial utilization violations and environmental degradation that may cause flooding in Bandar Lampung City, the initial response should prioritize the firm and consistent application of administrative sanctions—written warnings, temporary suspension of development activities, revocation of spatial utilization permits, demolition of non-compliant structures, restoration of environmental functions, and closure of business operations that have damaged protected areas and water catchment zones. This sequencing reflects not merely a doctrine internal to criminal law but a constitutional and administrative-law logic: because Article 28H paragraph (1) of the 1945 Constitution obliges the state to guarantee the right to a good and healthy environment, local government bears a constitutional and administrative responsibility to exhaust supervisory and administrative instruments before criminal law is invoked. Criminal law enforcement in Bandar Lampung City should therefore be read as the final layer of a broader system of administrative accountability for spatial and environmental governance, carried out consistently, professionally, and fairly to create a deterrent effect and promote compliance.

Doctrinally, classifying the conduct described above as an environmental crime requires more than a showing that it contributed to flooding; it requires demonstrating that the statutory elements of the relevant offense have been fulfilled. Under Law No. 32 of 2009 on Environmental Protection and Management, criminal liability for pollution or environmental destruction requires proof of unlawful conduct causing environmental damage, together with the specific fault element (intent or negligence) attached to each provision, while Law No. 26 of 2007 on Spatial Planning separately criminalizes spatial utilization that departs from the applicable spatial plan and results in harm. These two regimes carry distinct elements and sanctions—ranging from administrative sanctions to imprisonment, fines, confiscation of illicit gains, and orders of environmental restoration—and should not be treated interchangeably. Accordingly, before an activity such as hill excavation or construction over a drainage channel in Bandar Lampung City is characterized as a criminal offense, it must first be tested against these statutory elements rather than inferred solely from its causal contribution to flood risk.

2) Non Penal Measures

In addition to the penal approach, environmental crime control is fundamentally prioritized through preventive non-penal measures. The non-penal approach refers to crime prevention and control policies implemented outside the framework of criminal law, aimed at eliminating the underlying factors that contribute to criminal behavior through social, economic, administrative, spatial planning, environmental, and sustainable development policies.²⁸ In the environmental context, the non-penal approach occupies a highly strategic position because environmental degradation and flood disasters are not solely caused by legal violations, but are also

²⁸Ariyanti, V., *Loc. Cit.*

influenced by weak governance, unsustainable development policies, low levels of public awareness, and inadequate supervision of spatial utilization.²⁹

From the perspective of criminal policy, the non-penal approach aims to prevent environmental crime before it causes broader ecological damage. Therefore, non-penal policies in flood mitigation in Bandar Lampung City should be directed toward strengthening spatial planning policies, protecting water catchment areas, managing green open spaces (GOS), controlling urban development, normalizing rivers and drainage systems, and enhancing public participation in environmental protection. This approach is essential considering that flooding in Bandar Lampung City is no longer viewed merely as a natural phenomenon, but rather as a consequence of uncontrolled urban development and weak spatial utilization control.

One of the main forms of non-penal measures in Bandar Lampung City is the strengthening of spatial utilization control policies through Regional Regulation of Bandar Lampung City No. 4 of 2021 concerning the Regional Spatial Plan (RTRW) of Bandar Lampung City 2021–2041. This regulation stipulates that spatial utilization control is carried out through zoning regulations, permitting mechanisms, spatial supervision, the provision of incentives and disincentives, and the management of protected areas and disaster-prone zones. This policy essentially serves as a preventive instrument to avoid development activities that may damage the ecological functions of urban areas, particularly in water catchment areas, river buffer zones, and hilly regions. However, in practice, the implementation of the RTRW still faces various challenges due to high urban development pressure and weak monitoring of land-use conversion. Various residential developments and commercial activities are still found in areas that ecologically function as protected and water catchment zones. This condition has resulted in reduced soil water absorption capacity, thereby increasing surface runoff, which ultimately triggers flooding³⁰ in several areas of Bandar Lampung City. The Indonesian Forum for the Environment (WALHI) Lampung has even assessed that flooding in Bandar Lampung City is an accumulation of poor environmental governance, the loss of water catchment areas, limited green open spaces, and an inadequate drainage system.³¹

In flood mitigation, the management of Green Open Spaces (GOS) constitutes one of the important non-penal instruments. Ecologically, GOS functions as water catchment areas, microclimate regulators, air pollution absorbers, and a balance for urban ecosystems. Law No. 26 of 2007 concerning Spatial Planning mandates that the proportion of green open space in urban areas shall be at least 30% of the total city area, consisting of 10% private green open space and 20% public green open space. However, the condition of green open space in Bandar Lampung City remains far from

²⁹Agustinus, A., and R. Arifin. "Corporations and Environmental Crimes: A Legal Analysis of Criminal Liability in Indonesia." *Semarang State University Undergraduate Law and Society Review* 5, no. 2 (2025): 1405-1433.

³⁰Juwono, P. T., and A. Subagiyo. *Ruang Air dan Tata Ruang: Pendekatan teknis keairan dan pembangunan berkelanjutan dalam penanganan banjir perkotaan*. Universitas Brawijaya Press, 2017.

³¹Prihaningtyas, A. P. "Perlindungan hukum terhadap lingkungan akibat bencana banjir rob di Kota Semarang: Legal Protection for the Environment Due to Flood Disasters in Semarang City." *Journal Presumption of Law* 7, no. 2 (2025): 174-183.

meeting these requirements. Research on the management of Green Open Space (GOS) in Bandar Lampung City indicates that the low availability of GOS is influenced by rapid urbanization, limited land availability, and weak development control. Moreover, various studies suggest that the lack of green open space is one of the factors that increases Bandar Lampung City's vulnerability to flooding and urban inundation.³²

In addition to strengthening green open spaces (GOS), non-penal measures are also implemented through green infrastructure development policies as part of environmentally based flood mitigation. Various academic studies indicate that the development of green infrastructure in urban areas can enhance water infiltration capacity, reduce surface runoff, and strengthen the city's ecological system.³³ Research on green infrastructure planning for road landscapes in Rajabasa District, Bandar Lampung City, shows that the green infrastructure approach can serve as a flood mitigation solution through increased vegetation, the development of environmentally friendly drainage systems, and the strengthening of water catchment areas.³⁴ Urban development policies should not be oriented solely toward physical development but must also integrate the principles of ecological sustainability into every stage of development planning.

In addition, the Bandar Lampung City Government has implemented various technical measures as part of non-penal policies in flood mitigation, one of which is river and urban drainage normalization. The Bandar Lampung City Government, through the Public Works Agency, carried out river normalization at 31 locations as an effort to reduce flood risks caused by sedimentation and the narrowing of river channels.³⁵ To river normalization, the government has also carried out the construction of gabions and the repair of embankments damaged by flooding. These measures are intended to mitigate flood risks; however, their implementation has not yet been optimal and therefore must be carried out in a precise, equitable, and transparent manner..

Community participation can also be strengthened through the development of the concept of community-based disaster management in flood mitigation. This concept positions the community as the primary actor in disaster prevention and management through activities such as collective action, environmental monitoring, mapping of flood-prone areas, and community-based environmental management.³⁶ With community

³²Luthfiah, N., M. Ramadhani, M. Sulistianti, K. Ismail, R. Ditia, M. S. Ridho, et al. "Integrasi Prinsip Climate Resilience Dalam Hukum Tata Ruang Sebagai Mitigasi Risiko Iklim Dan Bencana Alam Di Indonesia." *Menulis: Jurnal Penelitian Nusantara* 2, no. 1 (2026): 460-467.

³³Angraini, A. K., I. Basuki, and N. P. Pramesti. "Penerapan nature-based solutions dalam pengelolaan air hujan untuk infrastruktur transportasi berkelanjutan." *Konferensi Nasional Teknik Sipil* 3, no. 4 (2025): 767-772.

³⁴Sinatra, F., D. Azhari, A. M. Asbi, and M. I. Affandi. "Prinsip pengembangan ruang terbuka hijau kota sebagai infrastruktur hijau di Kota Bandar Lampung." *Jurnal Planologi* 19, no. 1 (2022): 19-36.

³⁵<https://rmollampung.id/pemkot-bandar-lampung-normalisasi-sungai-di-31-titik-sepanjang-2025>

³⁶Nurcahyo, M., A. Setyawan, and T. Ansori. "Manajemen Pengurangan Resiko Bencana Berbasis Komunitas: Community Based Disaster Risk Reduction Management." *Journal of Community Development and Disaster Management* 4, no. 2 (2022): 91-104.

involvement, monitoring of spatial planning violations and environmental degradation can be carried out more effectively, as communities play a direct role in safeguarding the environmental sustainability of their living areas.

Non-penal policies should also be directed toward strengthening an ecological disaster mitigation system. So far, flood management in Bandar Lampung City has tended to be reactive and technical in nature, such as drainage dredging and river normalization after flooding occurs. In contrast, effective flood mitigation should be carried out through a preventive approach by maintaining the ecological balance of urban areas.³⁷

Beyond social and environmental policies, the non-penal approach is also closely related to economic development policy. Urban development in Bandar Lampung City has so far tended to prioritize economic growth and physical expansion without adequate environmental protection. As a result, various protected areas and green open spaces have been converted into residential and commercial zones. Within the framework of sustainable development, regional economic policy should be directed toward development that takes into account environmental carrying capacity and ecological sustainability. Therefore, local governments need to implement green economy policies by restricting development in protected areas, providing incentives for environmentally friendly development, and strengthening investment based on environmental sustainability principles.³⁸

The Strategic Environmental Assessment (SEA) of the Bandar Lampung City Spatial Plan (RTRW) 2020–2040 emphasizes the importance of integrating sustainable development principles into spatial planning and regional development policies. The SEA indicates that significant deviations in spatial utilization and development pressures on protected areas—reflected in the marked expansion of built-up areas at the expense of protected zones, green open spaces, and water catchment areas—have led to a decline in environmental quality in Bandar Lampung City. Therefore, non-penal policies should be directed toward strengthening spatial planning supervision, controlling licensing processes, protecting water catchment areas, and improving environmental quality through disaster mitigation-based approaches.

In addition to strengthening spatial planning policies, environmental permitting control also constitutes an important component of the non-penal approach to flood mitigation. Environmental permits are essentially preventive instruments intended to ensure that development activities do not cause adverse environmental impacts. In practice, various development projects in Bandar Lampung City are suspected of not fully taking environmental considerations and ecological carrying capacity into account. Development activities in hilly areas and water catchment zones indicate that supervision of environmental permits and spatial utilization permits remains suboptimal. Therefore, local governments need to strengthen the mechanisms for environmental permit evaluation, environmental impact assessment (AMDAL), and the regular and consistent monitoring of development permit implementation.

³⁷Falah, R. A., Sulastuti, S., & Prastyo, A. B. (2025). *Loc.Cit.*

³⁸Judijanto, L., M. Masri, F. P. Sari, N. Lestari, V. Islami, E. Siskawati, and A. P. B. Eka. *Green Economy*. PT. Green Pustaka Indonesia, 2025.

The current condition of river basins in Bandar Lampung City indicates significant development pressure. River narrowing due to residential development, sedimentation, and domestic waste disposal has reduced the river's capacity to accommodate rainfall runoff.³⁹ As a result, heavy rainfall leads to water overflow, causing flooding in various residential areas. In this context, non-penal policies through river basin rehabilitation constitute an important measure to restore the ecological function of rivers as natural flood control systems.

Flood mitigation cannot be separated from the concept of sustainable development, which emphasizes the balance between economic, social, and environmental interests. Non-penal policies in Bandar Lampung City should accordingly embed the principles of sustainable development, as reflected in the SEA, into every stage of regional development planning.

The implementation of non-penal policies should not be understood merely as an administrative effort, but also as a form of regional development policy. Local governments have the responsibility to formulate spatial planning policies based on disaster mitigation and environmental protection. Therefore, development policies in Bandar Lampung City should no longer be oriented toward large-scale spatial exploitation, but rather directed toward development that is adaptive to ecological risks. Such an approach can be realized through restrictions on development in disaster-prone areas, control of land-use conversion, protection of water catchment areas, and strengthening of urban protected zones.

The strengthening of non-penal policies is also closely related to the implementation of the Sustainable Development Goals (SDGs), particularly Goal 11 on sustainable cities and communities and Goal 13 on climate action.⁴⁰ In this context, flood mitigation in Bandar Lampung City should be directed toward developing a disaster-resilient city with strong environmental carrying capacity and the ability to maintain the sustainability of urban ecosystems. Therefore, spatial utilization control and environmental protection are not only legal obligations of local governments but also part of global commitments to achieving sustainable development.

Accordingly, non-penal measures in addressing environmental crime for flood mitigation in Bandar Lampung City must be carried out comprehensively and in an integrated manner through the strengthening of spatial planning policies, environmental permitting supervision, rehabilitation of water catchment areas, development of green open spaces, green infrastructure development, enhancement of community participation, and the implementation of sustainable development concepts based on ecological protection. The non-penal approach is highly important because flood mitigation cannot be resolved solely through criminal law enforcement,

³⁹Purwoningsih, I., L. R. Apriliyani, N. Sabila, S. M. M. Alpa, A. Halim, and B. Pitoewas. "Analisis Komprehensif Faktor-Faktor Pemicu Banjir dan Dampaknya terhadap Ketahanan Sosial Ekonomi Masyarakat di Wilayah Lampung." *Jurnal Kajian Hukum Dan Kebijakan Publik* 2, no. 2 (2025): 1303-1308.

⁴⁰Agustin, Y. S., F. A. Zaky, M. A. Al-Dzahabi, M. H. A. Taqwim, and N. U. Fil'ardiani. "Penerapan SDGs dalam Program Hibah MBKM untuk Mewujudkan Pembangunan Berkelanjutan di Kelurahan Sumber." *Ekosains* 16, no. 1.

but rather requires reforms in development governance and environmental policies oriented toward sustainability and public safety.

From an administrative law perspective, the non-penal instruments discussed above—zoning regulation, licensing, environmental impact assessment (AMDAL), and spatial supervision—are exercises of the regional government's constitutionally and statutorily delegated authority over spatial planning. Their proper functioning is thus a matter of administrative accountability: where licensing supervision fails or permits are issued without adequate environmental review, responsibility extends beyond the individual developer to the government agency responsible for approval and oversight. Strengthening inter-agency coordination between the Environmental Agency, the Public Works Agency, the Housing and Settlement Agency, and the Civil Service Police Unit is therefore not only a technical governance matter but also a constitutional obligation flowing from the state's duty under Article 28H paragraph (1) of the 1945 Constitution to protect the public's right to a good and healthy environment.⁴¹

B. The Effectiveness of Law Enforcement against Environmental Crimes and Spatial Utilization Control in Flood Mitigation in Bandar Lampung City

Discussion on the effectiveness of law enforcement cannot be separated from the theory proposed by Soerjono Soekanto, which states that the effectiveness of law enforcement is influenced by five factors, namely the legal factor (legal substance), law enforcement factor, facilities or infrastructure factor, societal factor, and cultural factor. These five factors are interrelated and determine whether a legal regulation succeeds in achieving its intended objectives. According to Soerjono Soekanto, a law can be considered effective when the established legal norms are properly implemented, complied with, and able to achieve the objectives intended to be realized in society.

The theory of law enforcement effectiveness can be used to analyze the extent to which environmental crime control policies and spatial utilization management are able to support flood mitigation in Bandar Lampung City. Although normatively Indonesia has established various regulations governing environmental protection and spatial planning, the increasing frequency and impacts of flooding in Bandar Lampung City indicate that there are still problems in the implementation and enforcement of these laws in practice.

The first factor determining the effectiveness of law enforcement is the legal factor itself, namely the quality of the legal substance regulating a particular field. From a regulatory perspective, Bandar Lampung City actually possesses a relatively adequate legal foundation for environmental management and spatial utilization control. Several key regulations include Law No. 32 of 2009 concerning Environmental Protection and Management, Law No. 26 of 2007 concerning Spatial Planning, Law No. 24 of 2007 concerning Disaster Management, and Regional Regulation of Bandar

⁴¹ Ananda, A. I., F. Nur, I. Ndun, and S. K. Janggur. "Green Constitution: A Normative Basis for Protecting the Right to a Healthy Environment in Indonesia: Green Constitution: Landasan Normatif untuk Melindungi Hak atas Lingkungan Hidup yang Sehat di Indonesia." *Jurnal Kajian Konstitusi* 5, no. 2 (2025): 244-262.

Lampung City No. 4 of 2021 concerning the Bandar Lampung City Spatial Plan (RTRW) 2021–2041.

The Bandar Lampung City Government has also prepared a Strategic Environmental Assessment (SEA) as an instrument to ensure that the principles of sustainable development are integrated into spatial planning policies. However, the effectiveness of this legal substance still faces various challenges. One of them is the persistent inconsistency between the norms regulated in the RTRW and actual spatial utilization practices on the ground. Various development activities are still found in hilly areas, river buffer zones, and water catchment areas that, in principle, should be afforded special protection.

Thus, the main issue does not lie in the absence of regulations, but rather in the weak implementation and inconsistency in the enforcement of existing legal norms. This indicates that, from the perspective of legal substance, the existing regulations are relatively adequate, but have not been fully effective in controlling spatial utilization and preventing environmental degradation that contributes to flooding.

The second factor is law enforcement officials who implement these regulations. In controlling environmental crimes and spatial planning violations in Bandar Lampung City, law enforcement officials are not limited to the police, the prosecutor's office, and the courts, but also include local government agencies, the Environmental Agency, the Public Works Agency, the Housing and Settlement Agency, the Civil Service Police Unit (Satpol PP), and other institutions responsible for monitoring spatial utilization.

Based on various cases, the effectiveness of law enforcement still faces issues of inconsistency in monitoring and sanctioning environmental violations. Activities such as hill excavation, development in water catchment areas, and the utilization of river buffer zones continue to occur despite their potential to increase flood risks. In some cases, enforcement actions are only taken after disasters occur or following public pressure.

This condition indicates that the supervisory function has not been carried out optimally. In the context of the *ultimum remedium* principle, the effectiveness of law enforcement also heavily depends on the effectiveness of administrative instruments prior to the use of criminal law. If supervision and administrative sanctions are enforced firmly from the outset, various forms of environmental degradation could be prevented before causing broader impacts.

In this regard, the law enforcement factor is one of the most dominant determinants affecting the effectiveness of flood mitigation in Bandar Lampung City. Weak inter-agency coordination, low consistency in supervision, and suboptimal enforcement of administrative sanctions indicate that the law enforcement aspect still requires strengthening. This characterization is drawn from a normative-documentary analysis of the regulations, policy documents, and reported enforcement cases examined in this study, rather than from empirical field data; it should therefore be read as identifying the law enforcement factor as the most problematic dimension within the sources reviewed, not as an empirically verified finding of causal dominance.

The third factor influencing the effectiveness of law enforcement is the availability of supporting facilities and infrastructure. In the context of flood mitigation, such facilities include drainage systems, flood control infrastructure, flood-prone area mapping technology, spatial information systems, geospatial data, environmental supervisory human resources, and budgetary policy.

Bandar Lampung City continues to face various limitations in environmental infrastructure. Many drainage channels have experienced narrowing, sedimentation, and are no longer capable of accommodating water discharge during periods of heavy rainfall. In addition, rapid urban development is often not accompanied by improvements in flood control infrastructure capacity.

From the perspective of spatial planning supervision, limited numbers of monitoring personnel and the vast area that must be supervised have resulted in suboptimal spatial utilization control. As a consequence, various spatial planning violations are often detected too late, leading to serious environmental impacts. This indicates that the effectiveness of environmental law enforcement does not depend solely on regulations and law enforcement agencies, but also requires adequate facilities and infrastructure support.

The fourth factor is society, which plays an important role in determining the effectiveness of law enforcement. Public legal awareness regarding the importance of environmental protection significantly influences the success of flood mitigation efforts.

Empirically, community behaviors that contribute to increased flood risk are still found, such as dumping waste into rivers and drainage channels, constructing buildings along river buffer zones, and a lack of participation in maintaining water catchment areas. On the other hand, communities are also often the victims of development policies that do not consider environmental aspects.

Therefore, increasing legal awareness and ecological awareness among the public is an essential component of flood control strategies. Non-penal approaches such as environmental education, spatial planning outreach, and community involvement in environmental monitoring must be strengthened so that society is not merely the object of policy, but also an active subject in environmental protection.

The final factor is cultural factors, namely the values, mindsets, and habits that exist within society. From an environmental perspective, a legal culture that supports environmental protection will strengthen the effectiveness of law enforcement.

The problems occurring in Bandar Lampung City indicate that a development paradigm still exists in which economic growth is prioritized over environmental protection.⁴² As a result, hilly areas, green open spaces, and water catchment zones are often perceived as economic assets that can be converted into residential or commercial areas.

However, within the sustainable development paradigm, environmental protection must be an integral part of the development process. Therefore, a

⁴²Akib, M. "Pergeseran paradigma penegakan hukum lingkungan: dari mekanistik-reduksionis ke holistik-ekologi." *Masalah-Masalah Hukum* 43, no. 1 (2014): 125-131.

shift in legal culture is required, one that is not solely oriented toward spatial utilization for short-term economic interests, but also takes into account ecological sustainability for future generations.

IV. CONCLUSION

The flooding in Bandar Lampung City is not simply a matter of natural causes and heavy rainfall it is also a consequence of environmental crime and weak control over spatial utilization, both of which have eroded the city's environmental carrying capacity. The study frames these findings through the constitutional right to a good and healthy environment (Article 28H paragraph 1 of the 1945 Constitution) and the administrative accountability that governs regional spatial authority, a perspective that hasn't been fully developed in comparable research so far.

On the penal side, criminal law instruments already exist under Law No. 32/2009 and Law No. 26/2007, but their application still has to follow the principle of *ultimum remedium* under Article 613 of Law No. 1/2023 on the Criminal Code. In practice, that means administrative sanctions warnings, suspension of activities, permit revocation, demolition, environmental restoration need to come first and be enforced consistently before criminal law is invoked.

On the non-penal side, effective flood mitigation calls for stronger spatial planning policy, tighter environmental permitting oversight, protection of conservation areas and water catchment zones, river basin rehabilitation, expansion of green open space and green infrastructure, and genuine community participation. The logic is straightforward: preventing environmental damage is cheaper and more sustainable than punishing violations after the fact.

Using Soerjono Soekanto's theory of legal effectiveness, the study finds the legal substance itself reasonably adequate on paper there's no shortage of statutes, plus Regional Regulation No. 4/2021 on the RTRW. The real problem lies in implementation: weak oversight, inconsistent enforcement of sanctions, limited flood-control infrastructure, low public legal awareness, and a development paradigm still tilted toward economic growth. Of the five factors, law enforcement stands out as the most problematic though the study is careful to note that this conclusion comes from normative-documentary analysis, not empirical measurement.

The recommendations: the Bandar Lampung City Government should strengthen oversight of spatial utilization and environmental permitting, improve inter-agency coordination, and make fuller use of the SEA and RTRW as development control tools, while enforcing administrative and criminal sanctions firmly. The study's limitation is its normative method it analyzes legislation and documents rather than field implementation so future research is encouraged to take an empirical or socio-legal approach to more thoroughly test how well the RTRW and SEA actually work in practice

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It is hoped that this research will contribute to the development of legal studies and environmental crime control policies in supporting sustainable development and disaster mitigation in Indonesia.

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