PERANTARA
Peradaban Hukum Nusantara
https://perantara.traksdigi.or.id/index.php/phn/index
E-ISSN: 3089-588X (online)
Volume 1, No. 1, June 2024.

Legal Analysis and Social Impact of Environmental Policy in the Modern Era Relating to Plastic Waste

Analisis Hukum Dan Dampak Sosial Terhadap Kebijakan Lingkungan di Era Modern Berkaitan Dengan Sampah Plastik

Camiliya Fakhriyah Garnita[1], Hesti Dwi Astuti[1], dan Aji Mulyana[1]

Received:	*Reviewed:*	*Accepted:*	*Published:*
21-03-2024	05-08-2024	05-08-2024	05-08-2024

How to cite (in Chicago Manual of Style 17 Ed.):
Camiliya Fakhriyah Garnita, Hesti Dwi Astuti, dan Aji Mulyana "Legal Analysis and Social Impact of Environmental Policy in the Modern Era Relating to Plastic Waste." *Peradaban Hukum Nusantara* volume 1 no. 1 (05, Agustus, 2024): 75-95, https://doi.org/10.62193/x3t6k281

Abstrak

Penelitian ini bertujuan untuk melakukan analisis hukum dan mengevaluasi dampak sosial dari kebijakan lingkungan terkait sampah plastik di era modern. Analisis hukum mencakup pemeriksaan regulasi dan undang-undang yang berkaitan dengan manajemen sampah plastik, penggunaan plastik sekali pakai, dan perlindungan lingkungan. Dalam konteks ini, penelitian juga menilai efektivitas penegakan hukum dan sanksi terhadap pelanggaran kebijakan lingkungan terkait plastik. Dampak sosial dari kebijakan lingkungan ini dianalisis melalui lensa keterlibatan masyarakat, perubahan perilaku konsumen, dan tanggapan industri terhadap peraturan lingkungan. Faktor-faktor seperti kesadaran masyarakat, partisipasi dalam program daur ulang, dan implementasi praktik ramah lingkungan menjadi fokus dalam mengevaluasi dampak sosial. Hasil penelitian ini menyoroti kompleksitas permasalahan lingkungan plastik di era modern, Temuan penelitian ini diharapkan dapat memberikan wawasan mendalam tentang tantangan hukum dan dampak sosial.

Kata kunci: *Hukum; Sampah Plastik; Kebijakan Lingkungan*

Abstract

This research aims to conduct a legal analysis and evaluate the social impact of environmental policies related to plastic waste in the modern era. The legal analysis includes an examination of regulations and laws relating to plastic waste management, single-use plastic use, and environmental protection. In this context, the research also assesses the effectiveness of law enforcement and sanctions against violations of plastic-related environmental policies. The social impact of these environmental policies is analyzed through the lens of community engagement, changes in consumer behavior,

[1] Faculty of Law, Suryakancana University, Indonesia, Email: cafagaamey@gmail.com

and industry responses to environmental regulations. Factors such as community awareness, participation in recycling programs, and implementation of environmentally friendly practices are the focus in evaluating social impact. The results of this study highlight the complexity of plastic environmental issues in the modern era, The findings of this study are expected to provide in-depth insights into legal challenges *and social impacts.*

Keywords: *Law; Plastic waste; Environmental Policy*

Introduction

Plastic waste has emerged as a pressing environmental issue in the modern era, posing significant challenges to ecosystems, public health, and sustainable development. The exponential increase in the production and consumption of plastics has led to widespread pollution, with plastic waste contaminating land, waterways, and marine environments. Given the far-reaching consequences of plastic pollution, there is a critical need to examine the legal framework and social implications surrounding environmental policies aimed at reducing plastic waste. This is done by various governments, in collaboration with international organizations, to establish legal regulations through laws, decrees, regulations, and other legal instruments to ensure compliance with the elements of nature.[2] As a system, environmental management involves decisions, norms, regulations, and guidelines implemented by governments, organizations, or local bodies. Law number 32 of 2009 specifies "environmental management as an essential activity."[3] For example, in Europe, the European Union has adopted a sustainable plastics strategy and banned the use of certain single-use plastics from 2021.[4] Another example is Kenya, which enacted a plastic bag ban in 2017, and managed to drastically reduce the use of plastic bags.[5]

A review of existing literature shows a growing number of studies exploring various aspects of plastic waste management and environmental policy. Previous research has investigated the environmental impacts of plastic pollution, assessed the effectiveness of regulatory measures, and explored innovative solutions to reduce plastic

---

[2] Hartuti Purnaweni, "Implementasi Kebijakan Lingkungan di Indonesia: Hambatandan Tuntutan."," *"Dialogue" JIAKP* 1, no. 3 (2004): 503.

[3] Ni Putu Yunika Sulistyawati dan Sang Ayu Made Ary Kusumawardhani, "Perlindungan Hukum Terhadap Pencemaran Lingkungan Dikawasan Hutan Mangrove Badung Bali Terkait Undang-Undang Nomor 32 Tahun 2009 Tentang Perlindungan Dan Pengelolaan Lingkungan Hidup," *Jurnal Komunikasi Hukum (JKH)* 9, no. 1 (31 Januari 2023): 895, https://doi.org/10.23887/jkh.v9i1.58042.

[4] European Commission, "Annual Activity Reports 2018 - European Commission," 25 Juni 2019, https://commission.europa.eu/publications/annual-activity-reports-2018_en.

[5] Nema, "National Environment Management Authority (NEMA) - Home," 2017, https://www.nema.go.ke/.

consumption and waste generation. However, there are still gaps in understanding, especially regarding the legal analysis and social consequences of environmental policies targeting plastic waste in the contemporary context. What distinguishes Marsatana Tartila Trisity's research entitled The Effectiveness of Plastic Waste Reduction policies for Environmental Sustainability in the Era of Globalization, the difference with this paper is that it is more about legal analysis and social impact.[6]

This study is significant for its potential to inform policy-making, legal reform efforts and public discourse around plastic waste management. The worsening environmental crisis caused by plastic pollution requires a comprehensive and multifaceted response at the local, national and global levels. By examining the legal intricacies and social dynamics inherent in environmental policies related to plastic waste, this research contributes to the advancement of sustainable development goals and the protection of natural resources for future generations. In the contemporary world, international cooperation in terms of environmental conventions or climate change is an important part of making and implementing environmental laws.[7]

At the core of this research are several key legal questions relating to the formulation, implementation and enforcement of environmental policies that deal with plastic waste, including how is the legal analysis of plastic waste in the modern era? What is the impact of plastic waste in the modern era? And how are efforts to respond to plastic waste in the modern era?

This article aims to analyze the legal and social consequences of modern-day environmental policies related to the issue of plastic waste. In this context, it discusses how legal analysis of the rapidly growing plastic waste problem can assist in effective environmental management as well as addressing the interplay between environmental and developmental interests. In addition, the article highlights the negative impact that the use of plastic materials has on the environment, including the disruption of the food chain when small organisms such as plankton are contaminated by plastic waste.

---

[6] Marsatana Tartila Tristy dan Aminah, "Efektifitas Kebijakan Pengurangan Sampah Plastik Bagi Kelestarian Lingkungan Hidup di Era Globalisasi," 13 November 2020, 43, https://doi.org/10.5281/ZENODO.4271239.

[7] Ana Suheri, "Perlindungan Hukum Bagi Nasabah Perusahaan Pegadaian," *MORALITY : Jurnal Ilmu Hukum* 6, no. 2 (31 Desember 2020): 162, https://doi.org/10.52947/morality.v6i2.173.

Method

The legal research conducted in the context of preparing this journal was carried out using a normative juridical approach method. This method is carried out through a literature study that critically examines (mainly) primary data related to plastic waste analysis and focuses more on analyzing literature and legal sources to understand, refine, or evaluate existing laws.[8] Then the results of the literature study are analyzed with prescriptive analytics.

Result and Discussion

A. Legal Analysis of the Environment

Criminal law policy in environmental law enforcement efforts based on development principles needs to organize environmental protection and management in the context of environmentally sustainable development, must pay attention to the level of public awareness and environmental developments nationally and globally as well as legal instruments related to the environment. The problem in this study is how the law enforcement efforts in the Policy.

Criminal law in environmental law enforcement efforts based on the principle of sustainable development that national environmental law, and international environmental law have not been able to run optimally in law enforcement efforts because there is no good synergy and it can be seen from the misalignment of policy makers in formulating Law Number 32 of 2009 concerning Environmental Protection and Management. The obstacle factors in carrying out criminal law enforcement efforts are divided into 4 (four) factors that have not been able to synergize properly in efforts to enforce criminal law in the environmental field.[9]

Legal analysis of environmental policy is the process of evaluating and understanding the legal aspects related to environmental protection and management The main objective of legal analysis is to ensure compliance with environmental laws and policies and encourage appropriate actions to maintain environmental sustainability. The process of legal analysis of environmental policies involves several steps,

---

[8] Irwansyah Irwansyah, "Penelitian Hukum: Pilihan Metode & Praktik Penulisan Artikel," *Yogyakarta: Mirra Buana Media* 8 (2020): 8.

[9] Tarya Sonjaya dkk., "Kebijakan Hukum Pidana dalam Upaya Penegakan Hukum Lingkungan berdasarkan Prinsip Pembangunan," *Lambung Mangkurat Law Journal* 5, no. 2 (30 Oktober 2020): 207, https://doi.org/10.32801/lamlaj.v5i2.162.

Determination of Relevant Laws and Regulations: The first step in legal analysis is to identify and understand the laws and regulations pertaining to the environmental policy under study. These include environmental laws, government regulations, international policies, and other legal instruments applicable in the relevant region. Legal Interpretation Once the relevant laws and regulations have been identified, the next step is to interpret the laws. This involves understanding the intent, purpose, and scope of each legal provision related to the environmental policy.

At this stage, further analysis and research may be required to understand the deeper implications of the law. This involves identifying existing policies, company practices, or individual actions that may violate or be inconsistent with the provisions of environmental law. This evaluation may involve examining documents, gathering evidence, or interviewing relevant parties.

Environmental impact assessment one important aspect of legal analysis in the environmental field is environmental impact assessment, this involves assessing the effects of a proposed policy or action on the natural environment, natural resources, and human health. In this analysis, considerations of ethics, science, and social issues are also often taken into account.[10]

Policy recommendations and implementation based on the results of the analysis, the final step in legal analysis is to provide recommendations for policy improvements or necessary actions. These recommendations can be in the form of suggestions to amend or strengthen existing laws and policies, or provide guidelines for concrete actions for environmental protection and management.

In the legal analysis of environmental policies, it is also important to consider the social, economic and political aspects that may affect the implementation and effectiveness of the policy. It also often involves working with stakeholders and civil society to obtain diverse inputs and perspectives through comprehensive legal analysis, it is hoped that environmental policies can be based on a strong footing and ensure sustainable and equitable environmental protection.

[10] Laurensius Arliman S, "Eksistensi Hukum Lingkungan Dalam Membangun Lingkungan Sehat Di Indonesia," *Lex Librum: Jurnal Ilmu Hukum* 5, no. 1 (6 Desember 2018): 766, https://doi.org/10.5281/zenodo.1683714.

Legal impacts related to environmental policies greatly affect how people and companies interact with the environment and compliance with environmental legal regulations requires certain parties, be they individuals, companies, or governments, to comply with regulations established to protect the environment. These impacts can include restrictions on certain activities, emission standards, and other requirements, and companies or large projects are often required to obtain environmental permits before starting their activities.

This process may involve an Environmental Impact Assessment (EIA) (Agence internationale de l'énergie) to assess the potential environmental impact of an activity. If an activity causes damage to the environment, the law may require the responsible party to restore it or pay compensation. This creates an incentive to prevent environmental damage. Violations of environmental regulations can lead to criminal or civil sanctions.

These sanctions include large fines, imprisonment, or a combination of both, depending on the severity of the offense Some legal systems give the public the right to access environment-related information and participate in decision-making processes. This increases transparency and allows the public to involve themselves in environmental issues Companies are often required to adopt sustainable practices and take into account environmental impacts in their business decisions.

They may also be required to report on their environmental initiatives. Environmental laws can encourage innovation of greener technologies by providing incentives or setting requirements for using clean technologies. Authorities, including government agencies and environmental regulatory bodies, can conduct inspections to ensure that companies and individuals comply with regulations. Violations can result in legal action Along with global environmental issues, international law also has an impact on environmental policy. International agreements can provide global guidance and standards for environmental protection.

Given these impacts, environmental policy is an important foundation for achieving the goal of conserving natural resources and maintaining ecosystem

sustainability for future generations. Law acts as a powerful instrument to achieve these goals and provide consequences for violations that harm the environment.[11]

The legal impact of environmental policies refers to the legal consequences or implications that occur due to the implementation of environmental policies. These legal impacts can apply to both the government that issues the policy, the company that implements it, and the individuals affected by the policy. For example, the following are some of the legal impacts that may arise legal compliance Environmental policies issued by the government must comply with applicable laws.[12]

If such policies violate existing laws or regulations, the government may face lawsuits and lawsuits sanctions and fines failure to comply with established environmental policies may result in sanctions and fines imposed by the government. For example, companies that violate environmental regulations may be punished with significant fines, license revocation, or criminal charges of legal liability. Environmental policies can affect a company's or individual's legal liability for environmental damage or pollution. When damage occurs as a result of activities that contravene environmental policies, the responsible party may be legally prosecuted and required to compensate the affected party.[13]

Litigation Environmental policies can trigger legal disputes between governments, companies, or individuals and parties who disagree or feel aggrieved by the policy. Litigation can arise in the form of lawsuits, dispute settlements, or other lawsuits Regulations and Licenses. Environmental policies can also affect regulatory and permit requirements that must be met by companies or individuals in carrying out activities that have an impact on the environment. Changes in environmental policies may affect the licensing requirements granted by the government and require adjustments in order to meet new criteria Restrictions and Guidance. Environmental policies can limit or regulate activities that can be carried out in order to protect the environment.[14]

---

[11] Sonjaya dkk., "Kebijakan Hukum Pidana dalam Upaya Penegakan Hukum Lingkungan berdasarkan Prinsip Pembangunan," 208.

[12] Purnaweni, "Implementasi Kebijakan Lingkungan Di Indonesia," 506.

[13] Nina Herlina, "Permasalahan Lingkungan Hidup Dan Penegakan Hukum Lingkungan Di Indonesia," *Jurnal Ilmiah Galuh Justisi* 3, no. 2 (16 Mei 2017): 166, https://doi.org/10.25157/jigj.v3i2.93.

[14] Adam Febriyanto Nugraha dkk., "Enhancing the Compatibility of Low-Value Multilayer Plastic Waste in Bitumen Mixtures Using Atmospheric Cold Plasma and Thermal Oxidation," *Advanced*

It can affect specific industries, agricultural activities, mining, or construction. In addition, environmental policies can also provide regulation and guidance for companies and individuals to implement environmentally friendly practices. The legal impact of environmental policies is important to consider in the implementation and monitoring of these policies.[15]

Ensuring compliance with the law and understanding the associated legal implications can help manage legal risks and improve successful implementation. Environmental policies may set requirements for stakeholder engagement, such as consultation with local communities or other stakeholders before making decisions that may impact the environment. In some cases, environmental policies may also include innovative new legal approaches, such as legal rights for ecosystems or legal recognition of environmental rights in general.[16]

This legal impact reflects the evolution in the understanding and protection of the environment in a legal context. Environmental impact analysis based on Government Regulation No. 22 of 2021 concerning the Implementation of Environmental Management and Protection is an assessment of important impacts on the environment through critical examination of planning supervision and enforcement of Environmental law is carried out to ensure that the provisions stipulated in the planning stage of a Business and/or Activity are carried out in accordance with planning and will have consequences if there is a deviation in the implementation of the Business and/or Activity from the obligations in the Environmental Approval in Business Licensing or Government Approval. The application of law enforcement is carried out with the ultimum remedium principle and through the stages of applying Administrative Sanctions.[17]

B. The Impact of Plastic Waste in the Modern Era

The impact of plastic waste in the modern era is an unfavorable impact, because there can be environmental pollution, damage to ecosystems, threats to

---

Manufacturing: Polymer & Composites Science 10, no. 1 (31 Desember 2024): 2375929, https://doi.org/10.1080/20550340.2024.2375929.

15 Esra Aleisa dan Rawa Al-Jarallah, "Characterization of Municipal Solid Waste in Kuwait: Sector-Specific Composition Analysis and Implications," *Journal of the Air & Waste Management Association*, 31 Juli 2024, 12, https://doi.org/10.1080/10962247.2024.2378102.

16 Herlina, "Permasalahan Lingkungan Hidup Dan Penegakan Hukum Lingkungan Di Indonesia", 168.

17 Ahmad M. Abu Abdo, S. J. Jung, dan Hany El Naggar, "The Impact of Utilizing Waste Tires and Plastic on Concrete Pavement Performance and Environmental Benefits," *Journal of Asian Architecture and Building Engineering*, 14 Juli 2024, 11, https://doi.org/10.1080/13467581.2024.2379494.

human health, loss of resources, and adverse economic impacts. The government's main goal in dealing with plastic waste in the modern era is to minimize the use of plastic waste, recycle and manage plastic waste in a more sustainable and environmentally friendly way. Then the legal impact of environmental policy refers to the consequences or legal implications that occur due to the implementation of environmental policies.[18]

Environmental policies can affect the legal liability of companies or individuals regarding environmental damage or pollution. When damage occurs due to activities that conflict with environmental policies, the responsible party can be legally prosecuted and required to provide compensation to the affected party Litigation. Regarding Environmental Impact based on Government Regulation Number 22 of 2021.

Regarding the Implementation of Environmental Management and Protection is an assessment of important impacts on the environment through critical examination of planning, supervision and enforcement of Environmental Law is carried out to ensure that the provisions that have been determined in the planning stage of a business and / or activity are carried out in accordance with the planning and will have consequences if there are deviations in the implementation of the business or activity against the obligations on environmental approval in business licensing or government approval. The application of law enforcement is carried out with the ultimum remedium principle and through the stages of applying Administrative Sanctions.

Although plastic waste has a negative impact, on the other hand plastic also has a positive impact if managed properly. As for efforts to prevent environmental pollution caused by plastic waste, recycling plastic waste goods that are no longer economically valuable are reprocessed through the sorting stage to processing to produce goods that can be used or traded again, called recycling.[19]

---

[18] K. B. Megha dkk., "Environmental Impact of Microplastics and Potential Health Hazards," *Critical Reviews in Biotechnology*, 24 Juni 2024, 16, https://doi.org/10.1080/07388551.2024.2344572.

[19] Muhammad Ilyas, Hizbullah Khan, dan Waqas Ahmad, "Conversion of Waste Plastics into Carbonaceous Adsorbents and Their Application for Wastewater Treatment," *International Journal of Environmental Analytical Chemistry* 104, no. 10 (8 Agustus 2024): 2432, https://doi.org/10.1080/03067319.2022.2062571.

The purpose of plastic recycling is to handle and reduce environmental pollution caused by plastic waste disposal by processing and using used plastic to be processed into useful and valuable goods.

C. Countermeasures Regarding Plastic Waste

In this modern era, people need efforts to deal with existing plastic waste. Recycling is an effort to reduce waste through complex waste management, which includes the process of sorting organic and inorganic waste, then to the process of collecting, processing, distributing, and processing products from used materials. Recycling is also an important part of modern waste management.

With recycling, plastic waste that has no economic value can be reprocessed through the waste sorting stage with processing to produce goods that can be used or resold. The purpose of recycling plastic waste is to handle and reduce environmental pollution caused by the disposal of plastic waste by processing and using used plastic to be processed into useful goods and have a selling value.

According to a report from the World Bank (2018), every year, the world generates around 2.01 billion tons of solid waste, with at least 33% not being managed in an environmentally safe manner. Of this amount, plastic accounts for about 12%, or about 242 million tons. In Indonesia alone, data from the Ministry of Environment and Forestry (KLHK) shows that Indonesia produces around 3.2 million tons of plastic waste every year, with 1.29 million tons of it ending up in the ocean.[20]

Table 1 plastic waste production data globally and in Indonesia

Kategori	Global	Indonesia
Total Solid Waste	2.01 billion tons/year	-
Plastic Waste	242 million tons/year (12% of total)	3.2 million tons/year
Plastic Waste in the Sea	-	1.29 million tons/year
Safe Waste Management	33%	-

Source: *World Bank (2018); MoEF (2020), Author's Processing*

And waste recycling can be done in various ways, such as manually or through factories. Recycled plastic waste that is processed manually is usually a product that is produced through inventions and creative concepts. Whereas waste that is

[20] Kementerian Lingkungan Hidup dan Kehutanan, "Beranda | Kementerian Lingkungan Hidup Dan Kehutanan," Beranda | Kementerian Lingkungan Hidup Dan Kehutanan, 2020, https://www.menlhk.go.id/.

processed through factories is usually the same product as the previous item. To be processed by the industry, plastic waste must meet 4 (four) conditions, namely, the required waste is in the form of seeds, powders, fractions, homogeneous, not contaminated, and not oxidized. There are 4 (four) ways to recycle plastic, among others:

1) Primary is the process of reprocessing plastic waste into goods that have almost the same quality as the first time it was made This method is carried out on plastic waste that is clean, not contaminated with other materials, and consists of only one type of plastic.
2) Secondary is a way of reprocessing waste that forms goods with lower quality than the original product.
3) Tertiary is the reprocessing of plastic waste to obtain chemicals or fuel.
4) Quarterly is the process of extracting energy from plastic waste The application of plastic waste in reprocessing or recycling of plastic goods has increased rapidly. Almost 80% of plastic waste is reprocessed, but it also needs to be mixed with new base materials to improve its quality. The increasing use of plastic is another reason that makes plastic recycling very important. Plastic waste can also generate resale value as a result of recycling methods.

Waste Bank Implementation Waste bank implementation is basically a form of social engineering that aims to invite the community to participate in implementing the 3R method (Reuse, Reduce, Recycle). This is an effort to manage waste generation, especially plastic waste. Until now, waste management has often failed due to low community participation. Since waste management is done by the community, it is very important. Their decisions are related to their own lives. If it is tailored to their local needs, priorities, and capabilities, it will be more effective.

Communities need a platform to help them work together and achieve their goals. It is possible that the emergence of waste banks is the result of local communities' efforts to participate in combating the waste problem. Waste management efforts with the community-based 3R (Reuse,reduce,recyle) method can change the way people see waste as something that has no economic value Waste banks are an implementation of article 18 of Perda (Regional Regulation) No.19/2010 on waste management which is about the role of the community.

Bank Sampah collects waste from customers to be processed directly into various useful products. It also helps to adopt law No. 18/2008 on Waste Management and government regulation No.81/2012 on the Management of Household Waste and Waste Similar to Household Waste, which stipulates that waste management should change from a collection then transport then dispose model to a more efficient model. One solution to the waste problem, especially plastic waste, is this innovation in waste management. The social engineering activity known as "Bank Sampah" teaches the community to sort waste wisely and raises their awareness on how to manage waste properly, which will lower the amount of waste transported to the landfill.

This waste bank has the same waste management mechanism as other waste banks. This includes waste sorting, depositing, weighing, recording the weight of the waste, price calculation, and using the waste to make innovative products. In Bank Sampah, the principle of waste management is the 3Rs (Reuse, Reduce, Recycle). That is reducing, reusing, and recycling.

The focus is to reduce the amount of waste in various ways, such as controlling the use of items that can only be used once, using items that are still considered usable, and reprocessing items that may have a selling value or texture that can be recycled. Bank Sampah has four production divisions in which local residents participate, managed by Mr. Agus Basuki. The production division of kitchen appliance products uses plastics of various types:

1) Group II (High Density Polyethylene/HDPE) for bags and crackers
2) Group IV (Low Density Polyethylene/LDPE) for crackle and shopping bags; and c Group V (Polypropylene). This division generates more than 50% of the entire division's performance. Waste processing equipment includes shredders, molders, and lathes.
3) Group VII (OTHER), such as water buckets, sinks, and buckets. In addition to the division that produces kitchen products, there is also a division that produces bags and a division that produces flowers and vases. The bag division uses Polyethylene Terephthalate (PET) as its base material,
4) One of the production divisions of Bank Sampah is the bag or handicraft production division. This division uses a simple production mechanism, without the use of a grinder or printer (extruder), using only home tools

such as scissors, glue, and others. This ensures that the quality of the raw materials does not degrade due to the primary processing process, also known as melting. Basically, a waste bank is a recycling program that applies the 3R method (Reuse, Reduce, Recycle) to process waste in the community with economic incentives. Participating in a waste bank program demonstrates recycling behavior

In 2016, through a circular letter on plastic waste reduction through the implementation of non-free disposable plastic shopping bags. This policy was piloted for modern retailers/shops to reduce by not freeing single-use plastic bags. However, this policy was not without obstacles, the Association that oversees retailers objected to reporting periodically related to the results of plastic sales funds, in addition, because this policy is still a circular letter, it is considered not a strong legal umbrella. Later came the Presidential Regulation of the Republic of Indonesia Number 97 of 2017[21] on the National Policy and Strategy for the Management of Household Waste and Household-Type Waste.

With the birth of this Prepress, the direction of the waste reduction and handling policy is targeted with a 30% reduction target and 70% handling until 2025. The target of waste reduction and handling above is certainly not an easy thing to realize. This is closely related to the population growth rate that increases every year and of course in line with the increase in consumption and waste generation. Therefore, waste reduction strategies should also be implemented upstream, or in this case producers. Based on the mandate of Law Number 18 of 2008 in article 15, it states that producers are obliged to manage packaging and/or goods produced that cannot or are difficult to decompose by natural processes. Referring to the explanation of the article, producers are required to manage packaging in the form of recalling packaging for recycling and/or reuse. This means that for every product released or produced, such as plastic bottles, producers are obliged to recall the bottles for recycling. Zero Waste Awareness[22] Various rules and regulations made

[21] Febrianti Novitasari dan Wahyu Nurharjadmo, "Implementasi Strategi Dinas Lingkungan Hidup dalam Pengelolaan Sampah di Kabupaten Sukoharjo pada Masa Pandemi Covid-19," *Jurnal Mahasiswa Wacana Publik* 3, no. 1 (3 Juli 2023): 109, https://doi.org/10.20961/wp.v3i1.75896.

[22] Yelfira Sari, Nurkhairo Hidayati, dan Sumandar Sumandar, "Zero Waste Lifestyle Guna Mencapai Lingkungan Bebas Sampah dengan Menerapkan Prinsip 3R (Reduce, Reuse, Recycle)," *Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM)* 6, no. 5 (9 Mei 2023): 1744, https://doi.org/10.33024/jkpm.v6i5.9118.

will not be effective if they are not accompanied by citizens' awareness to reduce waste.

In an increasingly advanced and practical era, the lifestyle of reducing waste is not an easy challenge. Lauren Singer, a woman from the United States, could be an exception. Through her "Trash is For Tossers" video channel, Lauren shares her inspiration for implementing a Zero Waste lifestyle in everyday life. According to Wikipedia, it is a philosophy that encourages the redesign of resource recycling, from a linear system to a closed cycle, so that all products are reused. No waste is sent to landfills and incinerators or other thermal technologies (gasification, pyrolysis). Simply put, this lifestyle strives to produce as little waste as possible.

It is well known that many cities are currently experiencing problems, especially in waste management at the Final Waste Management Site (TPAS). With a limited area, but on the other hand, the amount of waste disposed of in the TPAS (Final Waste Management Site) increases every year, and if it is not taken seriously, it will cause severe problems. For this reason, the Zero Waste approach needs to be presented to unravel the waste problem. There are at least a few steps that can be taken to start a zero waste lifestyle, among others:[23]

1) Use environmentally friendly utensils. This starts with bringing your own utensils such as: spoons, forks, tumblers and straws to minimize plastic waste.
2) Bringing cloth bags to replace the use of plastic bags. The use of cloth/recyclable bags will significantly reduce the consumption of single-use plastic bags, so it is important to make this a habit.
3) Conduct waste segregation. Waste will have value if it is segregated. Even if there is still inorganic waste at home, it is better to sort it according to its type. The waste can be sold to the nearest waste bank or to collectors or recycled to become other products that certainly make money, compared to if it is still mixed with organic waste.

[23] Na'is Natmisatur Rohma dkk., "Upaya Pemerintah Mengurangi Sampah Plastik Di Tulungagung," *Bureaucracy Journal : Indonesia Journal of Law and Social-Political Governance* 3, no. 3 (25 Juni 2023): 2385, https://doi.org/10.53363/bureau.v3i3.327.

4) Turn organic waste into compost. Organic waste from food scraps will be better if it does not end up in landfills. On a household scale, there is a simple technology to turn organic waste into compost.

In the end, the Zero Waste lifestyle approach is important to be echoed and socialized continuously in the community to unravel the complexity of the plastic waste problem systemically. The effort to make Zero Waste a part of daily behavior is certainly not easy, but it is not hard if it starts from now.[24]

As done by Pandawara Group, a team created to care for the environment by cleaning dirty or clogged rivers and sewers and then publicizing it on social media to help mobilize people in this modern era to care more about the environment, especially in plastic waste. Pandawara Group's action only started in mid-2022 but so far they have collected as much as 27,066[25] kilograms of garbage and all the garbage was collected from 78 large and small rivers and collected in 4,511 garbage bags from the report made by Pandawara Group, it can be seen that a lot of garbage is carelessly thrown by the community into the river. The river cleaning action carried out by Pandawara Group was posted on TikTok but what Pandawara Group did was not for the sake of content but an invitation to be able to reduce waste in the river.

D. Successful Case Studies in Plastic Waste Management

Plastic waste management has become an important focus for many countries around the world, with some showing significant success through policies and practices implemented. The European Union, for example, has been a pioneer in adopting a sustainable plastics strategy. In 2018, the European Commission announced the "Plastics Strategy for a Circular Economy" which aims to drastically reduce plastic waste. The policy includes a ban on certain single-use plastics that comes into effect in 2021. This includes banning items such as plastic straws, stirrers, and single-use plastic cutlery. The policy has successfully reduced the use of single-use plastics in many member states, demonstrating the EU's collective commitment to better and sustainable plastic waste management. This success is reinforced by

[24] Danning Lu, "Performing Zero Waste: Lifestyle Movement, Consumer Culture, and Promotion Strategies of Social Media Influencers," *Environmental Sociology* 10, no. 1 (2 Januari 2024): 12, https://doi.org/10.1080/23251042.2023.2267829.

[25] Aulia Shabrina, Kharisma Nuraini, dan Athallah Naufal, "Strategi Kampanye Kebersihan Lingkungan Oleh Pandawara Group Melalui Media Tiktok," *Prosiding Seminar Nasional Ilmu Ilmu Sosial (SNIIS)* 2 (7 November 2023): 1549.

increased public awareness and active community participation in plastic recycling efforts.[26]

On the African continent, Kenya has shown significant success with a different but equally effective approach to managing plastic waste. In 2017, Kenya enacted one of the strictest plastic bag bans in the world. The ban covers the production, sale, and use of single-use plastic bags, with violators facing hefty fines of up to $40,000 or a maximum four-year prison sentence. The policy aims to curb the production and consumption of plastic bags, which has long been a major problem in the country.[27]

This policy resulted in a significant decrease in the use of plastic bags and improved environmental conditions across the country. According to a report from the National Environment Management Authority (NEMA), since the implementation of the ban, the number of plastic bags found in public environments has drastically reduced. One of the most visible positive impacts is the improvement of waterways and roads in major cities such as Nairobi and Mombasa that were previously clogged with plastic waste.[28] This has also had a positive impact on the tourism sector, with many tourists appreciating the improved environmental cleanliness.

The ban has also encouraged people to switch to more eco-friendly alternatives, such as cloth bags and traditional woven baskets. Many local entrepreneurs started producing and selling reusable shopping bags, which is not only environmentally friendly but also creates new jobs. A study conducted by Karani showed that public awareness about the negative impact of single-use plastic bags increased significantly after the implementation of this policy. The study also found that the majority of Kenyans support the ban and prefer to use eco-friendly alternatives even if they are more expensive.[29]

In addition, the Kenyan government is working with various environmental organizations to raise public awareness on the importance of plastic waste reduction

---

[26] European Commission, "Annual Activity Reports 2018 - European Commission."

[27] Pritish Behuria, "Ban the (Plastic) Bag? Explaining Variation in the Implementation of Plastic Bag Bans in Rwanda, Kenya and Uganda," *Environment and Planning C: Politics and Space* 39, no. 8 (Desember 2021): 1791, https://doi.org/10.1177/2399654421994836.

[28] Nema, "National Environment Management Authority (NEMA) - Home."

[29] Shelby Browning, Betsy Beymer-Farris, dan Jeffrey R Seay, "Addressing the Challenges Associated with Plastic Waste Disposal and Management in Developing Countries," *Current Opinion in Chemical Engineering* 32 (Juni 2021): 1000682, https://doi.org/10.1016/j.coche.2021.100682.

and effective recycling methods. Education and training campaigns in schools and local communities have been held to teach how to recycle and manage plastic waste. These programs have helped change people's attitudes and behaviors towards plastic use and waste management.

Furthermore, Kenya has also been working with international organizations such as the United Nations Environment Programme (UNEP) for technical and financial support in implementing broader environmental policies. UNEP has praised Kenya as a successful example that other countries facing similar challenges can follow. According to a 2018 UNEP report, Kenya's success in reducing the use of plastic bags has had a positive impact not only on the environment, but also on public health, with a decrease in the number of plastic waste-related diseases such as dengue fever caused by stagnant water in used plastic bags.

In Asia, Japan has long been recognized as a country with a highly efficient and effective waste management system. The country has a comprehensive approach that involves various aspects, from waste segregation to advanced technology in recycling. The recycling program in Japan involves a strict waste sorting system, where people are required to separate waste based on different categories, such as organic waste, plastic, paper, and metal. This system is supported by strict government regulations and is implemented across cities and regions.

Extensive public awareness campaigns and environmental education programs implemented in schools have helped increase community participation in recycling programs. These education programs include curricula that teach children about the importance of recycling and waste management from an early age. This creates a generation that is more environmentally conscious and committed to green practices.

Japan's waste recycling rate is very high, with more than 80% of plastic waste being reprocessed. According to data from the Ministry of the Environment, Japan manages to recycle around 85% of all plastic waste collected, making it one of the countries with the highest recycling rates in the world. This success is largely due to the strong cooperation between the government, industry, and society. Industry

plays an important role in ensuring that their products can be recycled easily and developing new technologies to improve the efficiency of the recycling process.[30]

In addition, Japan is also developing advanced technologies for plastic waste processing, including pyrolysis technology that converts plastic into liquid fuel. Pyrolysis technology is a thermochemical process that breaks down plastics into oil products using heat in the absence of oxygen. This not only helps reduce the volume of plastic waste that ends up in landfills, but also provides an alternative energy source. According to research published in the *Journal of Material Cycles and Waste Management*, this technology has great potential to be applied in other countries facing similar problems with plastic waste.[31]

Japan's success in plastic waste management not only reduces the amount of waste that ends up in landfills, but also reduces carbon emissions and helps create a more sustainable circular economy. A circular economy is an economic model that emphasizes the reuse of resources in the production and consumption cycle, reducing waste and environmental impact. Japan has become an example of how the circular economy can be implemented on a national scale, with various initiatives supporting the recycling and reutilization of used materials.

Japan also continues to develop and implement new technologies for waste management. For example, they have developed a more efficient waste collection system using sensors and IoT (Internet of Things) technology to monitor and optimize waste collection routes. This not only improves the efficiency of waste collection, but also reduces carbon emissions associated with waste transportation.[32]

Furthermore, the Japanese government actively encourages innovation in waste management by providing research funding and incentives for companies that develop environmentally friendly technologies. These programs have encouraged many companies to invest in research and development of new technologies that can help reduce the environmental impact of plastic waste.

---

[30] Satoshi Honma dan Jin-Li Hu, "Cost Efficiency of Recycling and Waste Disposal in Japan," *Journal of Cleaner Production* 284 (Februari 2021): 125274, https://doi.org/10.1016/j.jclepro.2020.125274.

[31] Takashi Nakamura, "E-Scrap Recycling System and Technologies in Japan," *Geosystem Engineering* 17, no. 2 (4 Maret 2014): 104, https://doi.org/10.1080/12269328.2014.929053.

[32] Takuya Kiyokawa, Jun Takamatsu, dan Shigeki Koyanaka, "Challenges for Future Robotic Sorters of Mixed Industrial Waste: A Survey," *IEEE Transactions on Automation Science and Engineering* 21, no. 1 (Januari 2024): 1023, https://doi.org/10.1109/TASE.2022.3221969.

The success of these countries in managing plastic waste through various policies and practices shows that solutions to the plastic waste problem are possible and can be implemented effectively. By learning from these examples, other countries can develop strategies that suit their local contexts to reduce the negative impacts of plastic waste on the environment and society. Collaborative efforts between government, industry and communities are essential to achieve this goal, and investments in education and waste management technologies will play a key role in creating a cleaner and more sustainable future.

Conclusion

Environmental regulation is required because this legal analysis involves examining applicable environmental regulations and laws. This includes regulations related to natural resource management, biodiversity protection, and pollution control, and it also requires that the application of the law to environmental violations be an important part of the analysis. As it is also emphasized in law number 32 of 2009 "On Environmental Protection and Management" it is important to look at the role of the judicial system in handling environmental cases. How the courts decide cases involving environmental violations.

The impact of plastic waste in the modern era has many negative impacts of waste is done by explaining that the presence of waste piles can cause various diseases starting, the number of flies and mosquitoes, and waste is the main impact on flooding. In addition, the impact of plastic waste will cause extensive environmental pollution, especially in oceans and waters.

Countermeasures regarding plastic waste can be taken through several programs, namely 1) Public education, 2) Limiting the use of single-use plastics, 3) Material and design innovation, 4) Improved recycling system 5) Industrial cooperation, 6) Ocean cleaning technology, 7) International cooperation, 8) Producer responsibility, and 9) Strict policies and laws.

Bibliography

Abu Abdo, Ahmad M., S. J. Jung, dan Hany El Naggar. “The Impact of Utilizing Waste Tires and Plastic on Concrete Pavement Performance and Environmental Benefits.” *Journal of Asian Architecture and Building Engineering*, 14 Juli 2024, 1–10. https://doi.org/10.1080/13467581.2024.2379494.

Aleisa, Esra, dan Rawa Al-Jarallah. “Characterization of Municipal Solid Waste in Kuwait: Sector-Specific Composition Analysis and Implications.” *Journal of the*

Air & Waste Management Association, 31 Juli 2024, 1–16. https://doi.org/10.1080/10962247.2024.2378102.

Arliman S, Laurensius. "Eksistensi Hukum Lingkungan Dalam Membangun Lingkungan Sehat Di Indonesia." *Lex Librum: Jurnal Ilmu Hukum* 5, no. 1 (6 Desember 2018): 761–70. https://doi.org/10.5281/zenodo.1683714.

Behuria, Pritish. "Ban the (Plastic) Bag? Explaining Variation in the Implementation of Plastic Bag Bans in Rwanda, Kenya and Uganda." *Environment and Planning C: Politics and Space* 39, no. 8 (Desember 2021): 1791–1808. https://doi.org/10.1177/2399654421994836.

Browning, Shelby, Betsy Beymer-Farris, dan Jeffrey R Seay. "Addressing the Challenges Associated with Plastic Waste Disposal and Management in Developing Countries." *Current Opinion in Chemical Engineering* 32 (Juni 2021): 100682. https://doi.org/10.1016/j.coche.2021.100682.

European Commission. "Annual Activity Reports 2018 - European Commission," 25 Juni 2019. https://commission.europa.eu/publications/annual-activity-reports-2018_en.

Herlina, Nina. "Permasalahan Lingkungan Hidup Dan Penegakan Hukum Lingkungan Di Indonesia." *Jurnal Ilmiah Galuh Justisi* 3, no. 2 (16 Mei 2017): 162–76. https://doi.org/10.25157/jigj.v3i2.93.

Honma, Satoshi, dan Jin-Li Hu. "Cost Efficiency of Recycling and Waste Disposal in Japan." *Journal of Cleaner Production* 284 (Februari 2021): 125274. https://doi.org/10.1016/j.jclepro.2020.125274.

Ilyas, Muhammad, Hizbullah Khan, dan Waqas Ahmad. "Conversion of Waste Plastics into Carbonaceous Adsorbents and Their Application for Wastewater Treatment." *International Journal of Environmental Analytical Chemistry* 104, no. 10 (8 Agustus 2024): 2432–50. https://doi.org/10.1080/03067319.2022.2062571.

Irwansyah, Irwansyah. "Penelitian Hukum: Pilihan Metode & Praktik Penulisan Artikel." *Yogyakarta: Mirra Buana Media* 8 (2020).

Kehutanan, Kementerian Lingkungan Hidup dan. "Beranda | Kementerian Lingkungan Hidup Dan Kehutanan." Beranda | Kementerian Lingkungan Hidup Dan Kehutanan, 2020. https://www.menlhk.go.id/.

Kiyokawa, Takuya, Jun Takamatsu, dan Shigeki Koyanaka. "Challenges for Future Robotic Sorters of Mixed Industrial Waste: A Survey." *IEEE Transactions on Automation Science and Engineering* 21, no. 1 (Januari 2024): 1023–40. https://doi.org/10.1109/TASE.2022.3221969.

Lu, Danning. "Performing Zero Waste: Lifestyle Movement, Consumer Culture, and Promotion Strategies of Social Media Influencers." *Environmental Sociology* 10, no. 1 (2 Januari 2024): 12–29. https://doi.org/10.1080/23251042.2023.2267829.

Marsatana Tartila Tristy, dan Aminah. "Efektifitas Kebijakan Pengurangan Sampah Plastik Bagi Kelestarian Lingkungan Hidup di Era Globalisasi," 13 November 2020. https://doi.org/10.5281/ZENODO.4271239.

Megha, K. B., D. Anvitha, S. Parvathi, A. Neeraj, J. Sonia, dan P. V. Mohanan. "Environmental Impact of Microplastics and Potential Health Hazards." *Critical*

Reviews in Biotechnology, 24 Juni 2024, 1–31. https://doi.org/10.1080/07388551.2024.2344572.

Nakamura, Takashi. "E-Scrap Recycling System and Technologies in Japan." *Geosystem Engineering* 17, no. 2 (4 Maret 2014): 104–12. https://doi.org/10.1080/12269328.2014.929053.

Nema. "National Environment Management Authority (NEMA) - Home," 2017. https://www.nema.go.ke/.

Ni Putu Yunika Sulistyawati dan Sang Ayu Made Ary Kusumawardhani. "Perlindungan Hukum Terhadap Pencemaran Lingkungan Dikawasan Hutan Mangrove Badung Bali Terkait Undang-Undang Nomor 32 Tahun 2009 Tentang Perlindungan Dan Pengelolaan Lingkungan Hidup." *Jurnal Komunikasi Hukum (JKH)* 9, no. 1 (31 Januari 2023): 890–900. https://doi.org/10.23887/jkh.v9i1.58042.

Novitasari, Febrianti, dan Wahyu Nurharjadmo. "Implementasi Strategi Dinas Lingkungan Hidup dalam Pengelolaan Sampah di Kabupaten Sukoharjo pada Masa Pandemi Covid-19." *Jurnal Mahasiswa Wacana Publik* 3, no. 1 (3 Juli 2023): 104–18. https://doi.org/10.20961/wp.v3i1.75896.

Nugraha, Adam Febriyanto, Calvin Simon Andreas Lumban Gaol, Mochamad Chalid, Gusaimas Matahachiro Hanggoro Himawan Akbar, dan Havid Aqoma. "Enhancing the Compatibility of Low-Value Multilayer Plastic Waste in Bitumen Mixtures Using Atmospheric Cold Plasma and Thermal Oxidation." *Advanced Manufacturing: Polymer & Composites Science* 10, no. 1 (31 Desember 2024): 2375929. https://doi.org/10.1080/20550340.2024.2375929.

Purnaweni, Hartuti. "Implementasi Kebijakan Lingkungan di Indonesia: Hambatandan Tuntutan."." *"Dialogue" JIAKP* 1, no. 3 (2004): 500–512.

Rohma, Na'is Natmisatur, Nurdiana Octavia Sari, Okta Wibi Ditia, dan Khodrat Srinalendra Shakthi. "Upaya Pemerintah Mengurangi Sampah Plastik Di Tulungagung." *Bureaucracy Journal : Indonesia Journal of Law and Social-Political Governance* 3, no. 3 (25 Juni 2023): 2379–89. https://doi.org/10.53363/bureau.v3i3.327.

Sari, Yelfira, Nurkhairo Hidayati, dan Sumandar Sumandar. "Zero Waste Lifestyle Guna Mencapai Lingkungan Bebas Sampah dengan Menerapkan Prinsip 3R (Reduce, Reuse, Recycle)." *Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM)* 6, no. 5 (9 Mei 2023): 1740–49. https://doi.org/10.33024/jkpm.v6i5.9118.

Shabrina, Aulia, Kharisma Nuraini, dan Athallah Naufal. "Strategi Kampanye Kebersihan Lingkungan Oleh Pandawara Group Melalui Media Tiktok." *Prosiding Seminar Nasional Ilmu Ilmu Sosial (SNIIS)* 2 (7 November 2023): 1544–56.

Sonjaya, Tarya, Budi Heryanto, Aji Mulyana, dan M. Rendi Aridhayandi. "Kebijakan Hukum Pidana dalam Upaya Penegakan Hukum Lingkungan berdasarkan Prinsip Pembangunan." *Lambung Mangkurat Law Journal* 5, no. 2 (30 Oktober 2020): 203–14. https://doi.org/10.32801/lamlaj.v5i2.162.

Suheri, Ana. "Perlindungan Hukum Bagi Nasabah Perusahaan Pegadaian." *MORALITY : Jurnal Ilmu Hukum* 6, no. 2 (31 Desember 2020): 154–70. https://doi.org/10.52947/morality.v6i2.173.