DOI: 10.46924/jihk.v7i1.299

Legal Gaps in Waste Management Regulation of Indonesia's Fashion Industry

Achmad Ghufroni[1*], Femmy Silaswaty[2], & Dika Yudanto[3]

[1,2,3]Universitas Islam Batik Surakarta, Indonesia

Correspondence

Achmad Ghufroni, Universitas Islam Batik Surakarta, Indonesia, Jl. Agus Salim No.10, Sondakan, Kec. Laweyan, Kota Surakarta, Jawa Tengah 57147, e-mail: achmadghufroni999@gmail.com

How to cite

Ghufroni, Achmad., Silaswaty, Femmy., & Yudanto, Dika. 2025. Legal Gaps in Waste Management Regulation of Indonesia's Fashion Industry. *Jurnal Ilmu Hukum Kyadiren* 7(1), 325-340. https://doi.org/10.46924/jihk.v7i1.299

Original Article

Abstract

The fashion industry is among the sectors with significant potential to cause environmental pollution, particularly through liquid waste discharge, carbon emissions, and microplastic contamination. Despite these risks, Indonesia's existing legal framework remains general in nature and lacks specific provisions addressing the environmental impacts of the fashion sector. This study aims to analyze both national and international legal frameworks concerning the environmental health implications of the fashion industry, identify normative and implemented weaknesses in current regulations, and assess the potential for harmonization with international legal principles and sustainability approaches, such as Extended Producer Responsibility (EPR). Employing normative juridical methods and a comparative legal approach, the study finds that Indonesia's national regulations have yet to effectively address the distinct characteristics and environmental risks associated with the fashion industry. The study concludes by underscoring the urgent need for the development of responsive sector-specific regulations, the reinforcement of supervisory and enforcement mechanisms, and the integration of international principles to promote an environmentally sustainable fashion industry.

Keywords: *Fashion Industry, Environmental Law, Extended Producer Responsibility, Sustainable Regulation*

Abstrak

Industri fashion merupakan salah satu sektor yang potensial terhadap pencemaran lingkungan, khususnya melalui limbah cair, emisi karbon, dan residu mikroplastik. Namun, pengaturan hukum di Indonesia masih bersifat umum dan belum secara spesifik mengatur dampak lingkungan dari industri ini. Penelitian ini bertujuan untuk menganalisis pengaturan hukum nasional dan internasional terkait dampak industri fashion terhadap kesehatan lingkungan, mengidentifikasi kelemahan normatif dan implementatif dalam regulasi yang ada, serta mengkaji potensi harmonisasi dengan prinsip hukum internasional dan pendekatan seperti Extended Producer Responsibility (EPR). Dengan menggunakan metode yuridis normatif dan pendekatan komparatif, penelitian ini menemukan bahwa regulasi nasional belum efektif mengakomodasi karakteristik dan risiko industri fashion. Kesimpulan penelitian menekankan pentingnya pembentukan regulasi sektoral yang responsif, penguatan mekanisme pengawasan, serta integrasi prinsip secara simultan untuk mewujudkan industri fashion yang ramah lingkungan.

Kata kunci: *Industri Fashion, Hukum Lingkungan, Extended Producer Responsibility*

1. INTRODUCTION

The global fashion industry has evolved into one of the largest and fastest-growing economic sectors worldwide. By 2023, its market value is projected to surpass USD 1.7 trillion, driven largely by the proliferation of fast fashion, which promotes mass production, instant consumption, and rapidly shifting lifestyle trends. However, behind this impressive economic growth lies a vast and complex ecological footprint. According to the United Nations Environment Programme (UNEP), the fashion industry accounts for approximately 10% of global carbon emissions and nearly 20% of global wastewater pollution—surpassing the combined emissions of the international aviation and maritime sectors. The production of a single pair of jeans consumes around 7,500 liters of water[1], highlighting the industry's highly inefficient use of natural resources.

The environmental impact of the fashion industry extends beyond ecological degradation and increasingly threatens public health. Water pollution from textile dyeing, synthetic chemical use, and microplastic emissions has been linked to rising rates of respiratory diseases, skin conditions, and hormonal disruptions among communities near textile manufacturing zones.[2] The World Health Organization (WHO) has reported a significant rise in environmentally induced diseases in textile industrial regions across South Asia.[3] These findings underscore the multidimensional nature of the industry's impact—encompassing environmental, social, and public health concerns—and necessitate urgent policy intervention.

Despite this, the current legal framework remains inadequate to fully address these challenges. In Indonesia, while environmental regulations such as Law No. 32 of 2009 and Government Regulation No. 101 of 2014 exist, there are no specific provisions targeting the fashion industry as a strategic sector obligated to comply with sustainable production standards. This regulatory shortfall is further compounded by weak enforcement mechanisms, limited legal incentives, and the insufficient incorporation of precautionary and extended producer responsibility (EPR) principles into fashion industry governance.

In the context of Indonesia's commitment to the Sustainable Development Goals (SDGs), particularly SDG 12 (Responsible Consumption and Production) and SDG 13

---

1 The United Nations, "UNEP and UN Climate Change Provide Fashion Communicators with Practical Guide to Contribute to Sustainable Change," The United Nations Environment Programme, 2023, https://www.unep.org/news-and-stories/press-release/unep-and-un-climate-change-provide-fashion-communicators-practical.

2 Ishaq Abdul Hannan, Shabrina Eka Witrie, and Nugroho Prasetya Adi, "Dampak Pencemaran Air Akibat Limbah Industri Batik Printing Di Kecamatan Pekalongan Utara Terhadap Kualitas Air Sungai," *Gudang Jurnal Multidisiplin Ilmu* 2, no. 8 (2024): 34–42, https://doi.org/10.59435/gjmi.v2i8.774.

3 United Nations Children's Fund, "Megatrends in South Asia: A Report by The Economist Intelligence Unit for UNICEF ROSA 28 February 2020" (New York, 2016), https://www.unicef.org/rosa/media/9546/file/MEGATRENDS IN SOUTH ASIA: A report by The Economist Intelligence Unit for UNICEF ROSA.pdf.

(Climate Action), legal reform is urgently needed. The country must proactively respond to both global and domestic demands by transforming its fashion sector to be greener, more ethical, and socially equitable through progressive, measurable, and contextually grounded regulations. This study thus serves as a critical effort to bridge existing regulatory gaps and offer evidence-based policy recommendations to strengthen Indonesia's legal resilience against the environmental challenges posed by the fashion industry.

A growing body of literature has documented the adverse environmental consequences of the fast fashion industry, particularly regarding water, air, and soil pollution stemming from the use of hazardous chemicals and exploitative mass production practices. Albab et al. and Juliyanto & Firmansyah argue that fashion industry waste has resulted in widespread environmental degradation, calling for a comprehensive national waste management policy.[4] Bailey et al. observed a significant increase in academic publications addressing the effects of fast fashion on water quality and carbon emissions over the past five years, reinforcing the urgency of adopting circular economy principles and advancing corporate social and environmental responsibility.[5]

At the global level, Aponte et al. mapped the scientific discourse surrounding the fashion industry's ecological impact and established a conceptual framework incorporating circular economy and extended producer responsibility.[6] In Indonesia, Krulinasari & Yusnandi highlighted regulatory limitations related to fabric waste management[7], while Widiatmoko et al. proposed a Zero Waste policy model rooted in sustainability.[8] Meanwhile, Ripaldi & Fatah explored the integration of Islamic ethical values to foster responsible consumer behavior in.[9]

Although numerous studies have explored the environmental impacts of the fast fashion industry and emphasized the urgency of policy reform, there remains a notable

---

4 Wildan Ulul Albab et al., "Pengaruh Industri Fast Fashion Terhadap Pencemaran Lingkungan Dan Penurunan Keadilan Antar Generasi," *Indonesian Journal of Criminal Law and Criminology* 5, no. 3 (2024): 94–103, https://doi.org/10.18196/ijclc.v5i3.22830; Dwi Juliyanto and Amrie Firmansyah, "Menuju Sustainable Fashion: Rencana Aksi Untuk Mengatasi Dampak Negatif Fast Fashion," *Journal of Law, Administration, and Social Science* 4, no. 3 (2024): 352–62, https://doi.org/10.54957/jolas.v4i3.669.

5 Kerrice Bailey, Aman Basu, and Sapna Sharma, "The Environmental Impacts of Fast Fashion on Water Quality: A Systematic Review," *Water* 14 (2022): 1–11, https://doi.org/10.3390/w14071073.

6 Nadia Olivar Aponte et al., "Fast Fashion Consumption and Its Environmental Impact: A Literature Review," *Sustainability: Science, Practice and Policy* 20, no. 1 (2024): 1–24, https://doi.org/10.1080/15487733.2024.2381871.

7 Widya Krulinasari and Yudi Yusnandi, "Tinjauan Limbah Kain Sisa Produksi Menurut Hukum Internasional Dan Hukum Nasional," in *Prosiding Seminar Nasional Penelitian Dan Pengabdian Kepada Masyarakat*, vol. 2, 2021, 57–64, https://doi.org/10.24967/psn.v2i1.1481.

8 Satria Ariayudha Widiatmoko, Adinda Thalia Zahra, and Khalisha Nasywa Permana, "Penerapan Konsep Zero Waste Dalam Perspektif Hukum Lingkungan: Tantangan Dan Prospek Masa Depan Di Indonesia," *Hukum Inovatif: Jurnal Ilmu Hukum Sosial Dan Humaniora* 1, no. 3 (2024): 307–20, https://doi.org/10.62383/humif.v1i3.390.

9 Rizky Ripaldi and Abdul Fatah, "Fenomena Fast Fashion Dan Dampaknya Terhadap Lingkungan: Kajian Dengan Pendekatan TafsirInterdisipliner," *Ta'wiluna: Jurnal Ilmu Al-Qur'an,Tafsirdan Pemikiran Islam* 5, no. 3 (2024): 483–95, https://doi.org/10.58401/takwiluna.v5i3.1712.

gap in research specifically addressing the legal dimensions of environmental health as a direct consequence of fashion industry activities, particularly within the Indonesian context. Prior research has yet to comprehensively examine how the current national legal framework inadequately responds to the dual challenges of ecological degradation and public health threats posed by the industry. Moreover, scholarly investigations into the potential harmonization between environmental law, industrial regulation, and international standards—such as the OECD Guidelines and the Extended Producer Responsibility (EPR) principle—are still scarce in Indonesia.

The originality of this study lies in its interdisciplinary approach, which integrates perspectives from environmental law, public health, and industrial policy to analyze regulatory frameworks governing the fashion industry. This research also contributes by proposing actionable policy recommendations grounded in the precautionary principle and the concept of sustainable development, aiming to support the transformation of Indonesia's fashion sector toward a more ethical and environmentally responsible model. Accordingly, the objectives of this study are to:

1) Critically analyze national and international legal frameworks governing the environmental health impacts of the fashion industry;
2) Identify normative and implementation gaps in existing regulations, particularly in the enforcement and oversight of environmental standards in the fashion sector; and
3) Evaluate the prospects for harmonizing the national legal framework with international legal principles and sustainability-oriented approaches, including the Extended Producer Responsibility (EPR) model, in the regulation of Indonesia's fashion industry.

2. RESEARCH METHODOLOGY

This study employs a normative legal research approach, which is grounded in the examination of positive legal norms and principles relevant to the regulation of the environmental impacts of the fashion industry. This methodology is selected due to the nature of the issues under investigation, which primarily involve the analysis of codified legal norms, existing regulatory gaps, and the pressing need for more progressive and comprehensive legal frameworks to address the ecological challenges posed by fashion industry activities, particularly within the fast fashion segment.

The research relies exclusively on secondary data, comprising primary, secondary, and tertiary legal materials. Primary legal sources include domestic legislation such as Law No. 32 of 2009 on Environmental Protection and Management, Government Regulation No. 101 of 2014 on the Management of Hazardous and Toxic Waste, as well as international legal instruments, including the Paris Agreement and the 1989 Basel Convention. Secondary legal materials encompass legal literature, peer-reviewed

journal articles, institutional reports from organizations such as UNEP, WHO, and OECD, along with prior research on legal and environmental dimensions of the fashion industry. Tertiary legal materials, such as legal dictionaries and environmental law encyclopedias, are utilized as supporting references.

The data analysis is conducted through a descriptive-analytical and evaluative approach, which involves outlining existing legal provisions, identifying normative weaknesses or regulatory gaps, and assessing their alignment with key contemporary environmental legal principles, including the precautionary principle, intergenerational equity, and the principle of extended producer responsibility. Additionally, this study adopts a comparative legal perspective by examining regulatory frameworks in jurisdictions that have instituted environmental standards specific to the fashion industry—such as the European Union, Japan, and South Korea—to derive normative insights that may be adopted or adapted within the Indonesian legal context.

3. RESEARCH RESULT AND DISCUSSION

3.1. National and International Legal Regulations Governing the Impact of the Fashion Industry on Environmental Health

This study critically analyzes national and international legal frameworks addressing the environmental health impacts of the fashion industry, with particular attention to regulatory gaps, implementation weaknesses, and the potential for harmonization between domestic policies and international standards to support the development of a more sustainable fashion industry in Indonesia.

The fashion industry—especially the fast fashion segment—has emerged as a major contributor to the global environmental crisis. According to data from the Ellen MacArthur Foundation, this sector is responsible for approximately 10% of global carbon emissions, consumes 79 billion cubic meters of water annually, and generates 92 million tons of textile waste each year.[10] In Indonesia, while the fashion industry contributed approximately USD 25 billion to the national economy and employed 2.5 million workers in 2023, only 18% of textile manufacturers have adopted water and energy efficiency measures. The majority (82%) continue to rely on outdated technologies that produce significant waste and negatively impact environmental health.[11]

Normatively, Indonesia's environmental legal framework is primarily governed by Law No. 32 of 2009 on Environmental Protection and Management (UU PPLH), which

[10] Ellen MacArthur Fondation, "A New Textiles Economy: Redesigning Fashion's Future," Ellen MacArthur Fondation, 2017, https://www.ellenmacarthurfoundation.org/a-new-textiles-economy.

[11] Badan Pusat Statistik Republik Indonesia, "Ekspor Pakaian Jadi (Konveksi) Dari Tekstil Menurut Negara Tujuan Utama, 2012-2023" (Jakarta, 2024), https://www.bps.go.id/id/statistics-table/1/MjAyNiMx/ekspor-pakaian-jadi-konveksi-dari-tekstil-menurut-negara-tujuan-utama-2012-2023.html.

incorporates key principles such as prevention, the polluter pays principle, and public participation. However, these provisions do not specifically address the unique characteristics of textile waste or the evolving dynamics of the fashion industry. Technical regulations, including Government Regulation No. 101 of 2014 on the Management of Hazardous and Toxic Waste and Ministry of Environment and Forestry Regulation No. P.61/2015 on Industrial Wastewater Quality Standards, are broadly applicable and do not specifically target fashion-related activities. Circulars and technical guidelines issued by the Ministry of Environment and Forestry and the Ministry of Industry remain non-binding and largely voluntary.

In contrast, international regulatory frameworks have adopted more progressive and sector-specific approaches. The European Union's Strategy for Sustainable and Circular Textiles includes targets for textile recycling by 2030, mandates Extended Producer Responsibility (EPR), and promotes standardized eco-design requirements. Japan mandates that 70% of textile wastewater in Kyoto be recycled and provides fiscal incentives for clean dyeing technologies. South Korea has implemented an EPR system and introduced carbon footprint labeling since 2025.[12] Furthermore, the Basel Convention regulates the transboundary movement of textile waste, and the Paris Agreement underscores the global commitment to reducing industrial emissions.

The analysis reveals that Indonesia's environmental legal system lacks adequate regulatory instruments to comprehensively address the fashion industry's impact on environmental health. The absence of specific provisions on eco-labeling, life cycle assessment (LCA), and producer responsibility weakens the effectiveness of legal oversight and industry compliance. Implementation of existing regulations is further hampered by limited institutional capacity, high costs associated with green technologies, and insufficient inter-agency coordination.

These findings align with those of the United Nations Environment Programme, which observed that developing countries such as Indonesia lack robust sector-specific legal tools to manage the environmental consequences of the fashion industry.[13] Similarly, Hansa highlighted that Indonesia's environmental legislation remains overly general and fails to keep pace with technological advancements in the textile sector. This study contributes a novel perspective by not only identifying regulatory gaps but also examining implementation barriers, the limited capacity of micro, small, and medium enterprises (MSMEs), and the absence of governmental incentives for the adoption of sustainable technologies.[14]

---

[12] Sustainable Brand Platform, "The EU Strategy for Sustainable and Circular Textiles," Sustainable Brand Platform, 2022, https://www.sustainablebrandplatform.com/articles/the-eu-strategy-for-sustainable-textiles.

[13] United Nations Environment Programme, "Sustainable Fashion: Communication Strategy 2021-2024" (Nairobi, 2022), https://www.unep.org/resources/publication/sustainable-fashion-communication-strategy-2021-2024.

[14] Raudina Adzani Hansa, "Manfaat Dan Peluang Perjanjian IA-CEPA (Indonesia-Australia Comprehensive Economic Partnership Agreement) Dan Dampaknya Terhadap Ekspor Impor Indonesia-Australia," *Jurnal Ilmiah Wahana Pendidikan* 10, no. 22 (2024): 1114–28, https://jurnal.peneliti.net/index.php/JIWP/article/view/8692.

The study underscores the urgent need to establish a sector-specific and progressive regulatory framework aligned with international best practices. The EPR models adopted by the European Union and South Korea offer promising blueprints for gradual integration into Indonesia's legal system—starting with mandatory product labeling, carbon footprint disclosures, and producer responsibility for textile waste recycling. Technical regulations should be revised to classify textile waste as a distinct category of special waste requiring targeted management. Additionally, fiscal policy reforms are needed to incentivize MSMEs in the fashion industry to invest in environmentally sound technologies.

Improving the institutional capacity of environmental oversight bodies, particularly at the regional level, must be prioritized. This includes training environmental inspectors, enhancing the capacity of waste testing laboratories, and providing technical assistance to industry stakeholders. Furthermore, coordination among the Ministry of Environment and Forestry, the Ministry of Industry, and local governments should be integrated into a digital, real-time monitoring system to enhance regulatory effectiveness and accountability.

This study affirms that Indonesia's national regulatory framework remains overly general and has yet to adequately address the specific environmental challenges associated with the fashion industry. A key structural barrier to achieving sustainable development is the lack of integration between environmental and industrial policy domains. In contrast to jurisdictions such as the European Union, Japan, and South Korea—which have adopted regulatory systems grounded in product life cycle management—Indonesia continues to rely on an administrative, rather than a normative-substantive, regulatory approach.

Accordingly, there is an urgent need to develop sector-specific regulations mandating carbon footprint disclosure, the adoption of clean dyeing technologies, and the implementation of life cycle assessment (LCA) as prerequisites for environmental permitting. Furthermore, the government must design subsidy schemes and foster technology partnerships to support micro, small, and medium-sized enterprises (MSMEs) in the fashion sector in transitioning toward sustainable production models. These findings underscore the importance of reforming Indonesia's environmental legal framework through a more adaptive and forward-looking approach that reflects the complexity and ecological impact of the contemporary fashion industry.

3.2. Normative and Implemented Weaknesses in the Supervision and Enforcement of Environmental Law in the Fashion Industry

This study seeks to identify and critically assess both normative and implemented weaknesses in Indonesia's environmental legal framework, particularly regarding the supervision and enforcement of regulations in the fashion industry. Despite growing

concerns over the sector's environmental footprint, there remains a significant absence of specific, binding, sectoral regulations. Employing a qualitative approach grounded in normative legal analysis, this study evaluates existing regulatory provisions, their implementation practices, and comparative models from other jurisdictions to generate evidence-based policy recommendations.

1) General, Non-Sectoral Legal Provisions
   Indonesia's environmental governance relies on cross-sectoral laws such as Law No. 32 of 2009 on Environmental Protection and Management. However, the absence of industry-specific regulations addressing the environmental impacts of the fashion sector has resulted in a critical normative gap. There is no legal obligation for industry actors to conduct Life Cycle Assessments (LCA), apply eco-labeling, or meet recycling benchmarks, thereby weakening preventive legal mechanisms.
2) Weak Compliance and Law Enforcement
   Empirical data reveal that only 27% of textile factories operate wastewater treatment plants (WWTPs) that meet applicable standards, and merely 12% of MSMEs possess environmental permits. Law enforcement remains primarily administrative, with a focus on document audits rather than technical field inspections. This has led to lenient sanctions and minimal deterrent effects. Moreover, Environmental Civil Servant Investigators (PPNS) are both limited in number and often lack the technical capacity to investigate complex environmental violations effectively.
3) Capacity Constraints and Limited Incentives
   MSMEs in the fashion sector face significant financial and technological barriers in adopting sustainable practices, including the installation of WWTPs or transitioning to environmentally safe dyeing processes. Fiscal instruments such as tax incentives and subsidized credit have not been specifically designed to support this sector, impeding its shift toward sustainable production models.
4) Complexity of International Regulatory Standards
   Fashion exporters frequently encounter challenges due to inconsistencies between Indonesia's environmental regulations and those of importing countries. Standards related to hazardous chemical content—such as azo dyes and B3 waste—vary widely across jurisdictions. The absence of bilateral or multilateral harmonization mechanisms has resulted in regulatory uncertainty and elevated compliance costs for Indonesian exporters.
5) Lack of Public Participation and Transparency
   The environmental reporting infrastructure in Indonesia lacks participatory design. Public access to real-time environmental data—such as water quality, emissions levels, and sector-specific violations—is limited. There is no integrated national

platform providing open data on the environmental performance of fashion enterprises, hindering both accountability and community engagement in environmental oversight.

6) Environmental and Public Health Impacts
Field and laboratory studies have detected hazardous pollutants—such as azo dyes, cadmium, and lead—exceeding permissible thresholds in over 60% of river samples adjacent to textile industrial zones.[15] Chronic exposure to these substances is strongly correlated with serious health conditions, including liver cancer, renal failure, and neurodevelopmental disorders in children.[16] Furthermore, a 20% increase in irritant contact dermatitis cases has been reported due to exposure to contaminated wastewater.[17]

Based on these findings, it is evident that the weaknesses in Indonesia's environmental regulatory framework for the fashion industry are both systemic and multidimensional. The lack of sector-specific legislation, weak enforcement mechanisms, insufficient incentives, and poor transparency have contributed to a legal vacuum that impedes effective pollution control. These results underscore the urgent need to design more responsive and sectorally tailored legal instruments that address the unique environmental challenges posed by the fashion industry.

These findings reinforce previous conclusions reported by the United Nations Conference on Trade and Development (UNCTAD), which stated that the majority of developing countries still lack effective, sector-specific regulatory frameworks for the fashion industry.[18] Similarly, a study by Mu'adib and Subagyo revealed that inadequate oversight of the textile sector significantly contributes to the degradation of river water quality. This study expands the existing literature by incorporating an international perspective and highlighting the importance of regulatory coordination across jurisdictions, while also emphasizing the vulnerability of micro, small, and medium-sized enterprises (MSMEs) to regulatory burdens and technological transitions.[19]

The results indicate that general environmental regulations are insufficient to address the complex technical operations and extended supply chains characteristic of

---

[15] Rieza Ayu Marwah, Supriharyono Supriharyono, and Haeruddin Haeruddin, "Analisis Konsentrasi Kadmium (Cd) Dan Timbal (Pb) Pada Air Dan Ikan Dari Perairan Sungai Wakak Kendal," *Diponegoro Journal of Maquares* 4, no. 3 (2015): 37–41, https://doi.org/10.14710/marj.v4i3.9207.

[16] Surajit Das et al., "Heavy Metals and Hydrocarbons: Adverse Effects and Mechanism of Toxicity," in *Microbial Biodegradation and Bioremediation*, ed. Surajit Das (Amsterdam: Elsevier Inc., 2014), 23–54, https://doi.org/10.1016/B978-0-12-800021-2.00002-9.

[17] Zahtamal Zahtamal et al., "Analisis Hubungan Sanitasi Lingkungan Terhadap Keluhan Penyakit Kulit," *Jurnal Kesehatan Lingkungan Indonesia* 21, no. 1 (2022): 9–17, https://doi.org/10.14710/jkli.21.1.9-17.

[18] The Secretariat of the United Nations Conference on Trade and Development, "Trade and Development Report 2021: From Recovery to Resilience: The Development Dimension" (New York, 2021), https://unctad.org/system/files/official-document/tdr2021_en.pdf.

[19] Solikul Mu'adib and Ichwal Subagyo, "Tinjauan Hukum Terhadap Pencemaran Sungai Akibat Limbah Rumah Tangga Di Desa Ngunjung Kecamatan Malo Kabupaten Bojonegoro," *Justitiable: Jurnal Hukum* 6, no. 2 (2024): 30–53, https://doi.org/10.56071/justitiable.v6i2.814.

the fashion industry. Weak enforcement mechanisms are further exacerbated by the lack of synergy among the Ministry of Environment and Forestry, local governments, and trade-related institutions. The limited involvement of the public also renders the regulatory oversight system unresponsive to the rapid and market-driven dynamics of the fashion sector.

A case study of the Community-Based Monitoring Program in Cimahi illustrates how the active involvement of communities, non-governmental organizations (NGOs), and academic institutions can produce tangible improvements. Through technical training for local residents, data transparency via the EnviroWatch mobile application, and the establishment of quarterly multi-stakeholder dialogue forums, the Biological Oxygen Demand (BOD) levels in river water decreased from 150 mg/L to 128 mg/L within a year.[20] This example demonstrates that participatory, technology-driven, and collaborative monitoring models can effectively complement the shortcomings of formal state supervision.

This study underscores the urgent need for structural reforms in legal and institutional governance to effectively address the environmental challenges posed by the fashion industry. The main findings are as follows:

a) The absence of sector-specific regulations has resulted in a regulatory vacuum regarding fashion-related waste management.
b) Environmental law enforcement remains weak, primarily administrative, and lacks deterrent effect.
c) MSMEs face significant barriers in accessing green technology and related incentives.
d) Inconsistencies in international environmental standards place additional burdens on export-oriented businesses.
e) Environmental reporting systems are not participatory, transparent, or publicly accessible.

Accordingly, this study proposes the following policy recommendations:

a) Fashion-Specific Regulation: A Presidential Regulation mandating Life Cycle Assessment (LCA), eco-labeling, and recycling targets for fashion producers.
b) Conditional Incentives: Tax relief or subsidies for industry players that meet verified energy and water efficiency benchmarks.
c) Cross-Sectoral Enforcement: The creation of a Provincial Fashion Industry Supervisory Task Force equipped with real-time digital monitoring technologies.

[20] Aditya Ilham Gunawan and Renata Anisa, "Kegiatan Media Monitoring Humas Pemerintah Kota Cimahi," *Ekspresi Dan Persepsi: Jurnal Ilmu Komunikasi* 3, no. 2 (2020): 122–31, https://doi.org/10.33822/jep.v3i2.1758.

d) MSME Capacity-Building: Targeted training, mentoring programs, and grants for eco-friendly equipment to empower MSMEs.
e) Public Transparency: Development of a centralized environmental data portal and a mobile application-based public complaint system for the fashion sector.

3.3. The Potential for Harmonizing National Law and International Principles in Regulating a Sustainable Fashion Industry in Indonesia

This study investigates the potential for harmonizing Indonesia's national legal framework with international legal principles and sustainability approaches, such as Extended Producer Responsibility (EPR), in the regulation of the fashion industry. The focus is on identifying regulatory, institutional, and policy gaps at the national level that hinder the integration of sustainability within the fashion sector. It also explores the development of normative strategies based on international best practices that are adaptable to Indonesia's local context.

Globally, the fashion industry is one of the most environmentally damaging sectors, contributing approximately 10% of total carbon emissions, consuming 79 billion cubic meters of water annually, and generating over 92 million tons of textile waste. In Indonesia, this sector recorded a production value of USD 25 billion and employed more than 2.5 million workers as of 2023. Nevertheless, only 18% of the textile industry has adopted water- and energy-efficient technologies, with the majority still relying on outdated systems that produce high levels of waste.

Nationally, the current legal framework is primarily based on Law No. 32 of 2009 on Environmental Protection and Management, Government Regulation No. 101 of 2014 on Hazardous Waste Management, and Ministerial Regulation No. P.61/2015 on Industrial Wastewater Standards. While these regulations incorporate the principles of polluter pays, prevention, and public participation, they lack specific provisions tailored to the fashion industry, such as mandatory eco-labeling, Life Cycle Assessment (LCA), or EPR schemes. Data from the Ministry of Environment and Forestry (2022) indicates that only 27% of textile factories have wastewater treatment systems that meet quality standards. A 2022 APINDO survey also revealed that only 12% of fashion-related MSMEs possess required environmental documentation (UKL-UPL or AMDAL). Environmental law enforcement at the regional level remains weak, with only 8% of inspections resulting in sanctions. Key barriers include limited technical capacity, high investment costs for green technology, and inadequate inter-agency coordination.

In contrast, the European Union has implemented the EU Strategy for Sustainable and Circular Textiles, which mandates recycling targets, EPR obligations, and sustainable product design. Japan has introduced fiscal incentives for clean dyeing technology and mandates wastewater recycling in select prefectures. South Korea adopted an EPR system in 2025 that includes carbon footprint labeling requirements.

The findings of this study underscore both the urgency and the opportunity to harmonize Indonesia's environmental legal framework with international sustainability standards for the fashion sector.[21] The absence of specific sectoral regulation has led to normative gaps that undermine effective oversight, regulatory compliance, and incentives for sustainable practices. Integrating EPR principles and the LCA approach could catalyze the transformation of Indonesia's fashion industry toward a circular economy model.

This research supports previous conclusions from the United Nations Conference on Trade and Development, which emphasized the need for regulatory frameworks that promote circularity in the fashion industry, particularly in developing countries.[22] Similarly, Tolentino-Zondervan and DiVito highlighted that the success of sustainability initiatives in the textile sector depends on inter-agency coordination and strong sectoral regulations. This study contributes a new perspective by emphasizing the significance of cross-border legal harmonization and the development of institutional strategies that are responsive to Indonesia's unique local conditions.[23]

These findings suggest that the core issue extends beyond legal substance to include the broader institutional ecosystem and the incentive structures that underpin the implementation of sustainability principles. The absence of mandatory instruments such as eco-labeling and Life Cycle Assessment (LCA) has created a regulatory void, leaving Indonesia's fashion sector without a clear and measurable roadmap for green transition. Moreover, the lack of Extended Producer Responsibility (EPR) enforcement has shifted the burden of textile waste management disproportionately onto the state and the public, rather than the producers. In this context, integrating EPR principles into national legislation would foster a more equitable accountability framework while incentivizing innovation and resource efficiency among industry actors.

This study affirms that the successful transition toward a sustainable fashion industry is critically dependent on the establishment of sector-specific regulations that incorporate international standards such as EPR, LCA, and supply chain transparency. Without comprehensive legal reform, it will be difficult to systematically achieve national targets for waste and emissions reduction. Such reform must also address the provision of conditional fiscal incentives, enhancement of MSME capacities, and the development of robust mechanisms for public participation and environmental data transparency.

A case study of the Community-Based Monitoring initiative in Cimahi illustrates that local engagement and transparent data-sharing significantly reduced biochemical

---

21 Sustainable Brand Platform, "The EU Strategy for Sustainable and Circular Textiles."

22 The Secretariat of the United Nations Conference on Trade and Development, "Trade and Development Report 2021: From Recovery to Resilience: The Development Dimension."

23 Frazen Tolentino-Zondervan and Lori DiVito, "Sustainability Performance of Dutch Firms and the Role of Digitalization: The Case of Textile and Apparel Industry," *Journal of Cleaner Production* 459 (2024): 142573, https://doi.org/10.1016/j.jclepro.2024.142573.

oxygen demand (BOD) levels in wastewater. This strengthens the argument that participatory, evidence-based environmental governance models are likely to be more effective than top-down, exclusive regulatory approaches. Based on the study's findings, several policy recommendations are proposed:

a) Drafting a sectoral legal framework for the fashion industry—such as a Presidential Regulation or a Sustainable Fashion Bill—that regulates the full supply chain;
b) National implementation of EPR, starting with textile product categories with high environmental impact;
c) Provision of conditional fiscal incentives for industry actors who achieve at least 30% improvements in water and energy efficiency;
d) Establishment of cross-sectoral task forces at the provincial and industrial-city levels;
e) Creation of a national environmental data portal for the fashion sector, featuring community-based violation reporting tools; and
f) Development of training and grant programs for MSMEs focused on clean dyeing technologies and sustainable product certifications.

4. CONCLUSION

This study aims to critically examine national and international legal frameworks governing the environmental health impacts of the fashion industry, identify normative and implemented deficiencies in existing regulations, and explore the potential for harmonizing Indonesia's domestic legal system with international legal principles and sustainability mechanisms—such as Extended Producer Responsibility (EPR)—in regulating the fashion sector. The findings reveal that, although Indonesia has enacted environmental legislation such as Law No. 32 of 2009 and Government Regulation No. 101 of 2014, these legal instruments do not specifically address the operations and environmental health impacts of the fashion industry.

Normative gaps are evident in the absence of explicit legal provisions targeting fashion-related waste, particularly hazardous liquid effluents and microplastics generated during textile production. Meanwhile, implementation weaknesses include inadequate monitoring systems, limited transparency within the supply chain, and weak enforcement against environmentally harmful practices by industry actors. The study confirms that the lack of regulatory frameworks tailored to the specific characteristics of the fashion industry undermines efforts to achieve sustainable development goals and safeguard public health.

From a normative perspective, this research contributes to the foundational discourse for strengthening fashion-sector regulations grounded in the principles of precaution, accountability, and sustainability. However, the study's limitations include

the lack of comprehensive quantitative empirical analysis of domestic fashion industry practices. Accordingly, policy recommendations include the urgent need to develop sector-specific regulations for the fashion industry that incorporate EPR principles, provide green fiscal incentives, and mandate environmental footprint reporting. Future research should adopt an interdisciplinary approach that integrates legal, economic, and environmental health dimensions at both national and comparative levels.

REFERENCES

Journals

Albab, Wildan Ulul, Adinda Rabiki Mardiah, Gita Ranjani, Gladys Donna Karina, and Masna Nuros Safitri. "Pengaruh Industri Fast Fashion Terhadap Pencemaran Lingkungan Dan Penurunan Keadilan Antar Generasi." *Indonesian Journal of Criminal Law and Criminology* 5, no. 3 (2024): 94–103. https://doi.org/10.18196/ijclc.v5i3.22830.

Aponte, Nadia Olivar, Jesús Hernández Gómez, Vianey Torres Argüelles, and Eric D. Smith. "Fast Fashion Consumption and Its Environmental Impact: A Literature Review." *Sustainability: Science, Practice and Policy* 20, no. 1 (2024): 1–24. https://doi.org/10.1080/15487733.2024.2381871.

Bailey, Kerrice, Aman Basu, and Sapna Sharma. "The Environmental Impacts of Fast Fashion on Water Quality: A Systematic Review." *Water* 14 (2022): 1–11. https://doi.org/10.3390/w14071073.

Gunawan, Aditya Ilham, and Renata Anisa. "Kegiatan Media Monitoring Humas Pemerintah Kota Cimahi." *Ekspresi Dan Persepsi: Jurnal Ilmu Komunikasi* 3, no. 2 (2020): 122–31. https://doi.org/10.33822/jep.v3i2.1758.

Hannan, Ishaq Abdul, Shabrina Eka Witrie, and Nugroho Prasetya Adi. "Dampak Pencemaran Air Akibat Limbah Industri Batik Printing Di Kecamatan Pekalongan Utara Terhadap Kualitas Air Sungai." *Gudang Jurnal Multidisiplin Ilmu* 2, no. 8 (2024): 34–42. https://doi.org/10.59435/gjmi.v2i8.774.

Hansa, Raudina Adzani. "Manfaat Dan Peluang Perjanjian IA-CEPA (Indonesia-Australia Comprehensive Economic Partnership Agreement) Dan Dampaknya Terhadap Ekspor Impor Indonesia-Australia." *Jurnal Ilmiah Wahana Pendidikan* 10, no. 22 (2024): 1114–28. https://jurnal.peneliti.net/index.php/JIWP/article/view/8692.

Juliyanto, Dwi, and Amrie Firmansyah. "Menuju Sustainable Fashion: Rencana Aksi Untuk Mengatasi Dampak Negatif Fast Fashion." *Journal of Law, Administration, and Social Science* 4, no. 3 (2024): 352–62. https://doi.org/10.54957/jolas.v4i3.669.

Marwah, Rieza Ayu, Supriharyono Supriharyono, and Haeruddin Haeruddin. "Analisis Konsentrasi Kadmium (Cd) Dan Timbal (Pb) Pada Air Dan Ikan

Dari Perairan Sungai Wakak Kendal." *Diponegoro Journal of Maquares* 4, no. 3 (2015): 37–41. https://doi.org/10.14710/marj.v4i3.9207.

Mu'adib, Solikul, and Ichwal Subagyo. "Tinjauan Hukum Terhadap Pencemaran Sungai Akibat Limbah Rumah Tangga Di Desa Ngunjung Kecamatan Malo Kabupaten Bojonegoro." *Justitiable: Jurnal Hukum* 6, no. 2 (2024): 30–53. https://doi.org/10.56071/justitiable.v6i2.814.

Ripaldi, Rizky, and Abdul Fatah. "Fenomena Fast Fashion Dan Dampaknya Terhadap Lingkungan: Kajian Dengan Pendekatan TafsirInterdisipliner." *Ta'wiluna: Jurnal Ilmu Al-Qur'an,Tafsirdan Pemikiran Islam* 5, no. 3 (2024): 483–95. https://doi.org/10.58401/takwiluna.v5i3.1712.

Tolentino-Zondervan, Frazen, and Lori DiVito. "Sustainability Performance of Dutch Firms and the Role of Digitalization: The Case of Textile and Apparel Industry." *Journal of Cleaner Production* 459 (2024): 142573. https://doi.org/10.1016/j.jclepro.2024.142573.

Widiatmoko, Satria Ariayudha, Adinda Thalia Zahra, and Khalisha Nasywa Permana. "Penerapan Konsep Zero Waste Dalam Perspektif Hukum Lingkungan: Tantangan Dan Prospek Masa Depan Di Indonesia." *Hukum Inovatif: Jurnal Ilmu Hukum Sosial Dan Humaniora* 1, no. 3 (2024): 307–20. https://doi.org/10.62383/humif.v1i3.390.

Zahtamal, Zahtamal, Ridha Restila, Tuti Restuastuti, Yuni Eka Anggraini, and Yusdiana Yusdiana. "Analisis Hubungan Sanitasi Lingkungan Terhadap Keluhan Penyakit Kulit." *Jurnal Kesehatan Lingkungan Indonesia* 21, no. 1 (2022): 9–17. https://doi.org/10.14710/jkli.21.1.9-17.

Proceedings

Krulinasari, Widya, and Yudi Yusnandi. "Tinjauan Limbah Kain Sisa Produksi Menurut Hukum Internasional Dan Hukum Nasional." In *Prosiding Seminar Nasional Penelitian Dan Pengabdian Kepada Masyarakat*, 2:57–64, 2021. https://doi.org/10.24967/psn.v2i1.1481.

Books

Das, Surajit, Ritu Raj, Neelam Mangwani, Hirak R. Dash, and Jaya Chakraborty. "Heavy Metals and Hydrocarbons: Adverse Effects and Mechanism of Toxicity." In *Microbial Biodegradation and Bioremediation*, edited by Surajit Das, 23–54. Amsterdam: Elsevier Inc., 2014. https://doi.org/10.1016/B978-0-12-800021-2.00002-9.

Reports

Badan Pusat Statistik Republik Indonesia. "Ekspor Pakaian Jadi (Konveksi) Dari Tekstil Menurut Negara Tujuan Utama, 2012-2023." Jakarta, 2024.

https://www.bps.go.id/id/statistics-table/1/MjAyNiMx/ekspor-pakaian-jadi-konveksi-dari-tekstil-menurut-negara-tujuan-utama-2012-2023.html.

Ellen MacArthur Fondation. "A New Textiles Economy: Redesigning Fashion's Future." Ellen MacArthur Fondation, 2017. https://www.ellenmacarthurfoundation.org/a-new-textiles-economy.

Sustainable Brand Platform. "The EU Strategy for Sustainable and Circular Textiles." Sustainable Brand Platform, 2022. https://www.sustainablebrandplatform.com/articles/the-eu-strategy-for-sustainable-textiles.

The Secretariat of the United Nations Conference on Trade and Development. "Trade and Development Report 2021: From Recovery to Resilience: The Development Dimension." New York, 2021. https://unctad.org/system/files/official-document/tdr2021_en.pdf.

The United Nations. "UNEP and UN Climate Change Provide Fashion Communicators with Practical Guide to Contribute to Sustainable Change." The United Nations Environment Programme, 2023. https://www.unep.org/news-and-stories/press-release/unep-and-un-climate-change-provide-fashion-communicators-practical.

United Nations Children's Fund. "Megatrends in South Asia: A Report by The Economist Intelligence Unit for UNICEF ROSA 28 February 2020." New York, 2016. https://www.unicef.org/rosa/media/9546/file/MEGATRENDS IN SOUTH ASIA: A report by The Economist Intelligence Unit for UNICEF ROSA.pdf.

United Nations Environment Programme. "Sustainable Fashion: Communication Strategy 2021-2024." Nairobi, 2022. https://www.unep.org/resources/publication/sustainable-fashion-communication-strategy-2021-2024.