International Seminar On
"Uncovering Eco-crimes: Global Challenges to Environmental Degradation, Illegal Exploitation and Green Justice.
e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424

Fast Fashion and Green Crime: A Legal Criminological Analysis of Environmental Harm by Global Apparel Brands

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***Abstract*—This study examines fast fashion as a contemporary site of environmental harm through a combined legal and green-criminological framework. It argues that the environmental consequences of rapid production, high-volume consumption, resource-intensive textile processing, global supply chains, chemical pollution, greenhouse-gas emissions, microfiber release, and textile waste cannot be understood solely through the narrow category of formally criminalized environmental offences. The study distinguishes environmental harm, illegality, and criminality and uses green criminology to examine corporate power, victimization, environmental justice, and the distribution of ecological costs. International environmental principles, corporate due diligence, extended producer responsibility, consumer-protection rules, and emerging regulation of green claims are considered alongside relevant Indian law. H&M and Zara/Inditex are examined as illustrative case studies, with particular attention to sustainability commitments, supply-chain governance, environmental claims, and documented regulatory scrutiny. The study concludes that fast fashion should not automatically be labelled a green crime; rather, its systemic environmental consequences expose important gaps between legal compliance, corporate responsibility, and ecological harm.**

***Index Terms*—fast fashion; green criminology; green crime; environmental harm; corporate accountability; greenwashing; H&M; Zara; sustainability; supply chains.**

I. INTRODUCTION

1.1 Rise of the Fast-Fashion Industry

The fashion industry has undergone a profound transformation from a predominantly seasonal model of production and consumption to a highly accelerated system characterized by rapid product turnover, inexpensive garments, frequent collection launches and shortened periods of garment use. This transformation is commonly described as fast fashion. Although there is no

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e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424

single universally accepted definition of the term, fast fashion generally refers to a business model that enables fashion trends to move rapidly from design and production to retail, allowing consumers to purchase inexpensive garments in response to continuously changing styles. The model has fundamentally altered the relationship between fashion production and consumption by making new clothing available at increasingly affordable prices and encouraging consumers to purchase garments more frequently. The emergence of fast fashion is closely associated with globalization, technological development and the restructuring of apparel supply chains. Contemporary clothing production is rarely confined to a single jurisdiction.[1]

1.2 Globalization of Apparel Production and Consumption

Globalization has been central to the development of the modern apparel industry. Fashion corporations increasingly operate through complex international value chains in which different stages of production are geographically dispersed. The cultivation of cotton and other natural fibres may take place in one region; synthetic fibres may be manufactured from petrochemical resources elsewhere; yarn and fabric production may occur in another country; garments may subsequently be assembled in a different jurisdiction before being transported to consumer markets around the world. This geographical fragmentation has important consequences for environmental accountability. Environmental impacts frequently occur in countries that are not the principal markets for the finished products. The European Environment Agency ("EEA"), for example, reports that a substantial proportion of the environmental impacts associated with European textile consumption occurs outside Europe because textile production is predominantly located elsewhere. The separation between consumption, corporate decision-making and environmental impact therefore complicates conventional approaches to responsibility.[2]

1.3 Environmental Consequences of Fast Fashion

The environmental consequences of fast fashion arise throughout the entire lifecycle of a garment. The relevant process may be represented as: Raw-material extraction → Fibre production → Textile manufacturing → Garment production → Transportation → Retail → Consumer use → Disposal Each stage generates distinct environmental pressures. The production of fibres requires land, water and other natural resources; textile processing requires energy and chemicals; transportation generates emissions; consumer use may release microfibers; and disposal contributes to waste accumulation. Water consumption is one of the most significant environmental concerns. Textile production requires substantial quantities of water, particularly in the cultivation of water-intensive fibres and in processes such as dyeing and finishing. The EEA estimates that, in 2020, textile consumption in the European Union generated the third-highest pressure on water and land use among major consumption categories. The industry also contributes to greenhouse-gas emissions. These figures should be interpreted

[1] Annamma Joy et al., "Fast Fashion, Sustainability, and the Ethical Appeal of Luxury Brands", 16 Fashion Theory 273, 274-75 (2012).
[2] Kirsi Niinimäki et al., "The Environmental Price of Fast Fashion", 1 Nature Reviews Earth & Environment 189, 189-96 (2020).

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424

carefully because estimates vary according to methodology, boundaries and the components of the fashion sector included.[3]

1.4 From Environmental Harm to Green Crime

The existence of environmental harm does not automatically establish the existence of a legally recognized environmental crime. Conventional criminal law generally depends upon the identification of prohibited conduct, a legally protected interest, causation and other elements prescribed by law. Environmental harm, however, may occur through conduct that is harmful but not formally criminalized, or through multiple activities whose cumulative consequences are difficult to attribute to a single actor. This distinction provides the basis for the concept of green crime. Green criminology expands the traditional criminological inquiry by examining environmental crime, environmental harm, victimization and the relationships between human activity, ecological systems and power. It therefore permits analysis of conduct that may fall outside conventional criminal categories but nevertheless produces significant ecological or social harm. Scholars associated with green criminology have particularly emphasized the importance of examining environmental harm rather than limiting inquiry to conduct that governments have formally labelled as criminal.[4]

1.5 Role of Global Apparel Corporations

Global apparel corporations occupy a particularly important position within this system because they influence product design, sourcing strategies, production volumes, supplier relationships, marketing, pricing and consumer demand. Although responsibility is distributed across the supply chain, major brands can exercise considerable economic and organizational influence over the conditions under which products are manufactured and marketed. Corporate environmental responsibility has consequently become an important component of contemporary sustainability debates. UNEP's global roadmap for a sustainable and circular textile value chain identifies action by brands, manufacturers, policymakers, consumers, financial institutions and other stakeholders as necessary for transforming the textile system. This reflects an important point: environmental responsibility cannot be assigned exclusively to individual consumers or individual factories when the underlying system is organized through complex corporate value chains. At the same time, corporate sustainability commitments must be examined critically. A company's publication of environmental targets, sustainability reports or circularity initiatives does not, by itself, establish that its environmental impacts have been eliminated.[5]

[3] Ibid.
[4] Avi Brisman & Nigel South, "Green Criminology and Environmental Crimes and Harms", 13 Sociology Compass 1, 1-3 (2019).
[5] United Nations Environment Programme, Sustainability and Circularity in the Textile Value Chain: A Global Roadmap, 2023.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
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1.6 H&M and Zara as Illustrative Case Studies

Against this background, H&M and Zara provide useful illustrative case studies for examining the relationship between fast fashion, corporate environmental responsibility and green crime. H&M operates through the H&M Group, while Zara forms part of the Inditex Group. Both are major international apparel businesses with extensive global operations and publicly reported sustainability strategies. Their own corporate reporting provides substantial material concerning environmental targets, materials, emissions, water use, circularity and supply-chain practices. The purpose of selecting H&M and Zara is not to prejudge either corporation as a "green criminal." Such a conclusion would require careful examination of applicable law, documented environmental conduct and evidence of responsibility. Instead, the two companies provide useful examples through which the study can examine a broader question: how should the environmental consequences and sustainability claims of powerful global apparel corporations be evaluated within legal and criminological frameworks?[6]

1.7 Central Proposition and Scope of the Study

This study argues that the environmental consequences of fast fashion should be examined not merely as a problem of unsustainable consumption but also as a legal and criminological problem of corporate environmental harm. The fast-fashion model demonstrates how environmental damage may emerge from complex combinations of production practices, resource consumption, supply-chain arrangements, marketing strategies, consumer demand and regulatory structures. The resulting harm may extend across jurisdictions and may not fit neatly within traditional definitions of environmental crime. The study consequently adopts a legal-criminological approach. It brings together the conceptual framework of green criminology with environmental law, corporate accountability and evidence concerning the textile industry's environmental impacts. The analysis focuses particularly on global apparel brands and uses H&M and Zara as illustrative case studies. It does not seek to establish that the two companies have committed criminal offences merely because they participate in the fast-fashion industry.[7]

II. GREEN CRIME: CONCEPTUAL AND CRIMINOLOGICAL FOUNDATIONS

2.1 Concept and Evolution of Green Crime

Traditional criminology has historically concentrated on conduct defined as criminal by the state and on harms inflicted upon human victims. Environmental degradation, however, presents a challenge to this conventional approach because significant ecological harm may occur through conduct that is not formally criminalized, or through activities that are legally permitted but produce substantial damage to ecosystems, animals, natural resources, or human communities. Green criminology emerged partly in response to this limitation, extending criminological inquiry toward environmental crime, environmental harm, victimization, justice, and the

[6] H&M Group, Annual and Sustainability Report 2025, 2026.
[7] Brisman & South, supra note 4.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424

relationships between human activity and the natural environment. The development of green criminology is generally associated with the expansion of criminological scholarship during the 1990s and its subsequent engagement with environmental offences and broader ecological harms.[8]

2.2 Green Criminology and Environmental Harm

One of the most important characteristics of green criminology is its willingness to move beyond a narrow focus on crime toward the broader concept of harm. The distinction matters because the legal definition of crime is contingent upon state recognition: conduct becomes criminal when the relevant legal system prohibits it and attaches a criminal sanction to its commission. Environmental harm, by contrast, can exist independently of such legal recognition. Brisman and South explain that green criminology encompasses research concerning both environmental crimes and environmental harms and examines the ecological, social, cultural and political dimensions of these harms. Similarly, Lynch and Long describe green criminology as involving an ecological perspective under which environmental harms may include activities that disrupt the normal functioning of the natural world, including pollution and other forms of ecological destruction.[9]

2.3 Environmental Crime Versus Environmental Harm

The distinction between environmental crime and environmental harm forms the conceptual foundation of this study. Environmental crime generally refers to conduct prohibited by environmental or criminal law, such as illegal pollution, unlawful waste disposal, prohibited wildlife trafficking or violations of environmental regulations. Environmental harm is broader and includes ecological or social damage that may occur regardless of whether the conduct causing it has been criminalized. This creates a significant legal boundary problem. Criminal law reflects decisions made by governments about which forms of conduct deserve criminal sanction. Environmental harm, however, is not necessarily limited by these legal boundaries. Activities may be lawful because of regulatory weaknesses, incomplete scientific knowledge, inadequate enforcement, political influence, or simply because the legal system has not yet recognized a particular form of harm. The green-criminological perspective therefore challenges what might be called the legalistic approach to environmental wrongdoing.[10]

2.4 Corporate Green Crime

The role of corporations is particularly significant within green criminology because modern environmental harms are frequently connected with economic production and commercial activity. Corporations possess substantial resources, organizational capacity and influence over production systems. Their decisions concerning sourcing, manufacturing, investment, waste

[8] Brisman & South, supra note 4.
[9] Brisman & South, supra note 4.
[10] Hanneke Mol, "Green Criminology and (Constructions of) Environmental Crime and Harm: A Review Essay", 24 Critical Criminology 145, 145-50 (2016).

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424

management and supply-chain organization can consequently affect environmental conditions on a scale that may exceed that of individual actors. Green criminology has increasingly examined corporate environmental crime and harm, including the relationship between capitalism, economic production and environmental destruction. The Routledge International Handbook of Green Criminology, for example, specifically identifies corporate criminality and environmental impacts as important areas within the field. Corporate environmental harm can occur through several mechanisms. First, corporations may directly engage in activities that pollute or degrade the environment. Second, environmental harm may occur through suppliers and contractors within corporate supply chains.[11]

2.6 Environmental Justice and Ecological Justice

Green criminology is also concerned with justice. Environmental harms are rarely distributed equally. The communities that experience pollution, resource depletion or environmental degradation may not be the same communities that receive the economic benefits associated with the activities generating those harms. Environmental justice therefore examines the distribution of environmental benefits and burdens and asks whether particular populations disproportionately experience environmental risks. Within green criminology, environmental justice provides a framework for examining questions of environmental victimization, inequality, power and access to environmental resources. The field has increasingly incorporated environmental justice, ecological justice and the rights of human and non-human entities into its analysis. This perspective has direct relevance to fast fashion because the industry's global supply chains can separate economic beneficiaries from environmental victims. Consumers in one part of the world may purchase inexpensive clothing while environmental impacts associated with fibre production, textile processing, dyeing, manufacturing and waste management occur elsewhere.[12]

2.7 Applying Green Criminology to the Fast-Fashion Industry

The theoretical perspectives discussed above provide a framework for analyzing fast fashion as a potential site of corporate green harm. First, the industry involves large-scale economic activity with significant environmental consequences. Second, production is organized through complex global supply chains, making responsibility difficult to identify. Third, many environmental consequences are cumulative rather than attributable to a single incident. Fourth, certain harmful practices may remain technically lawful or insufficiently regulated. Fifth, the distribution of environmental burdens may be unequal. Finally, corporate sustainability initiatives and environmental claims introduce additional questions concerning transparency, accountability and greenwashing. These characteristics correspond closely with the concerns of green criminology. The field provides a means of examining not merely isolated environmental offences but the

[11] Michael J. Lynch & Michael A. Long, "Green Criminology: Capitalism, Green Crime and Justice, and Environmental Destruction", 5 Annual Review of Criminology 255, 255-70 (2022).
[12] David N. Pellow, Garbage Wars: The Struggle for Environmental Justice in Chicago, MIT Press, 2002, pp. 8-12.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424

broader relationship between economic production, corporate power, environmental harm and justice. The application of green criminology to fast fashion therefore does not require an assumption that every fast-fashion practice is criminal.[13]

III. FAST FASHION AND THE PRODUCTION OF ENVIRONMENTAL HARM

3.1 Defining Fast Fashion

Fast fashion refers to a business and consumption model in which clothing is designed, produced, distributed and sold at a rapid pace in response to constantly changing consumer trends. Unlike the traditional fashion system, in which collections were generally seasonal and production cycles were comparatively long, fast fashion seeks to reduce the time between the identification of a trend and the availability of a garment in the market. The model is characterized by relatively low prices, rapid product turnover, frequent introduction of new styles and encouragement of repeated purchasing. From a business perspective, fast fashion combines rapid-response production with design strategies aimed at responding quickly to uncertain and changing consumer demand. The economic success of the model therefore depends not merely upon producing inexpensive garments but upon maintaining a continuous cycle of production and consumption. Consumers are encouraged to purchase new clothing frequently because garments are inexpensive, trends change quickly and the perceived value of individual garments is often relatively low.[14]

3.2 Business Model of Fast Fashion

The fast-fashion business model is based upon the rapid conversion of consumer trends into commercially available products. Large retailers monitor consumer preferences, fashion trends and purchasing behavior and seek to respond by introducing new designs at short intervals. The ability to produce and distribute garments quickly allows companies to reduce the commercial risk associated with changing fashion preferences while maintaining a high frequency of product launches. The model relies upon several interconnected characteristics. First, production is organized around speed and flexibility. Second, garments are frequently produced at relatively low prices. Third, retailers maintain extensive and geographically dispersed supply chains that enable them to source fibres, fabrics, components and finished garments from different jurisdictions. Fourth, marketing and retail strategies encourage frequent consumption. Fifth, the economic viability of the system depends upon maintaining substantial material flows through production, distribution, retail and disposal. Globalization has enabled this model to operate on a large scale. Consequently, the environmental effects of a garment cannot be attributed only to the location where the final garment is assembled.[15]

[13] Brisman & South, supra note 4.
[14] Joy et al., supra note 1.
[15] Niinimäki et al., supra note 2.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424

3.3 Environmental Harm Across the Fashion Lifecycle

Environmental harm associated with fast fashion occurs across virtually the entire lifecycle of textile products. The lifecycle begins with the extraction or cultivation of raw materials and continues through fibre production, textile manufacturing, dyeing, finishing, garment production, transportation, retail, consumer use and disposal. Each stage requires resources and may generate emissions, wastewater, waste or other forms of environmental pressure. At the raw-material stage, natural fibres such as cotton require agricultural land, water and other inputs, while synthetic fibres such as polyester are generally derived from fossil-fuel feedstocks. Fibre production is therefore associated with different but significant environmental pressures. During textile manufacturing, substantial quantities of water, energy and chemicals may be used. Dyeing, printing and finishing processes can generate contaminated wastewater when pollutants are inadequately controlled. The use phase also produces environmental impacts. Washing, drying and ironing garments consume water and energy and may release chemicals and microfibres into wastewater. Synthetic garments are particularly relevant to the problem of microplastic pollution because fibres can be released during washing and use.[16]

3.4 Water Consumption and Pollution

Water is one of the most significant environmental resources affected by textile production. Water is required at multiple stages, including fibre production, spinning, dyeing, washing, bleaching, printing and finishing. The scale of water use becomes particularly important when combined with the enormous volume of textiles produced and consumed globally. Niinimäki et al. estimated that the global fashion industry consumed approximately 79 trillion litres of water annually, while emphasizing that environmental impacts occur throughout the textile value chain. More recent European Environment Agency assessments similarly demonstrate that textile consumption places substantial pressure on water and land resources. Water pollution presents a different but closely related problem. Textile manufacturing processes may discharge wastewater containing dyes, salts, suspended solids, organic compounds, metals and other chemical substances. Where wastewater is inadequately treated before discharge, pollutants can enter rivers, lakes, groundwater and coastal environments. Dye-containing wastewater is particularly problematic because synthetic dyes and associated chemicals may affect aquatic ecosystems by altering water quality, reducing light penetration and interfering with ecological processes.[17]

3.5 Chemical Pollution

Chemical use is fundamental to many textile-production processes. Chemicals may be used in dyeing, bleaching, printing, washing, finishing, water and stain resistance, softening and other treatments. The environmental risk depends upon the chemical substance involved, its concentration, the production process, the effectiveness of treatment systems and the manner in

[16] Niinimäki et al., supra note 2.
[17] European Environment Agency, Textiles and the Environment: The Role of Design in Europe's Circular Economy, 2022.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424

which wastes are managed. Research on textile wastewater has identified dyes, pigments, salts, heavy metals and other chemical substances as potential pollutants. Some textile chemicals may persist in the environment or may be toxic to aquatic organisms. Certain substances may also present risks to workers and communities where occupational and environmental controls are inadequate. The problem is not simply the existence of chemicals within industrial production. Modern manufacturing necessarily uses many chemical substances. The legal and environmental issue arises when hazardous substances are used, discharged, transported or disposed of without adequate controls, or when regulatory systems fail to prevent unacceptable exposure. This distinction is important for green criminology. Chemical pollution may range from lawful industrial activity subject to environmental regulation to conduct that violates environmental standards.[18]

3.6 Carbon Emissions and Energy Consumption

The fashion industry is also associated with substantial energy consumption and greenhouse-gas emissions. Energy is required for fibre production, spinning, weaving, knitting, dyeing, finishing, garment manufacturing, warehousing, transportation, retail and consumer use. The carbon intensity of production depends partly upon the energy sources used in different manufacturing regions. Niinimäki et al. reported that fashion-related emissions have been estimated at approximately 8–10 percent of global carbon emissions, although such global estimates depend upon methodological assumptions and system boundaries. The important point for present purposes is not the precise percentage but the recognition that textile production and consumption form a significant component of resource and climate pressures. Synthetic fibres introduce an additional dimension because many are produced from fossil-fuel feedstocks. The European Environment Agency has noted that synthetic textiles are derived largely from fossil resources and that their production, use and waste management contribute to greenhouse-gas emissions and resource consumption. Transportation also contributes to the environmental footprint of global fashion. The global nature of supply chains therefore increases the number of stages at which energy is consumed.[19]

3.7 Textile Waste and Overproduction

One of the clearest environmental consequences of fast fashion is the generation of textile waste. Low prices, rapidly changing trends and shortened garment lifespans can encourage consumers to purchase more clothing and retain garments for shorter periods. At the same time, high levels of production create the possibility of unsold inventory, returned goods and garments that are discarded before reaching the end of their technically useful life. Niinimäki et al. estimated that the fashion industry generated more than 92 million tonnes of textile waste annually. Although estimates vary according to methodology and geographical coverage, the broader trend is clear: increasing textile production has been accompanied by increasing waste generation. Textile

[18] United Nations Environment Programme, supra note 5.
[19] Niinimäki et al., supra note 2.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424
waste creates environmental problems at several levels. Landfilling occupies land and can create risks of pollution as materials degrade. Incineration may generate emissions and results in the loss of material that might otherwise have been reused or recycled. Exporting used textiles may shift waste-management burdens to other jurisdictions, particularly where receiving countries lack adequate waste-management infrastructure.[20]

3.8 Microfibres and Microplastic Pollution

The environmental impact of synthetic textiles extends beyond conventional waste because garments made from synthetic fibres can release microfibres during production, use, washing and disposal. These fibres are a form of microplastic when they originate from plastic-based synthetic materials. The European Environment Agency identifies textile washing and wear as recognized sources of microplastic pollution. Estimates suggest that between 200,000 and 500,000 tonnes of textile-derived microplastics enter the global marine environment each year, although the precise quantity remains subject to scientific uncertainty. Microfibre pollution is particularly relevant to fast fashion because fast-fashion garments often contain synthetic fibres and may be used for relatively short periods. The EEA has therefore identified fast fashion as particularly relevant to microfibre releases because rapid turnover means a greater proportion of garments undergo their initial washing and use phases within shorter periods. Microfibres can enter aquatic environments through domestic wastewater, industrial wastewater, surface runoff and waste disposal. Wastewater treatment plants can capture a significant proportion of microplastics, but they do not necessarily eliminate all particles.[21]

3.9 Environmental Justice Implications

The environmental harms associated with fast fashion are not distributed equally. The benefits of inexpensive and frequently changing clothing are predominantly experienced by consumers and corporations located throughout global markets, whereas many environmental burdens occur in manufacturing regions. This separation creates an important environmental-justice dimension. Textile manufacturing is concentrated in countries that supply global consumer markets. Communities living near manufacturing facilities may be exposed to polluted water, industrial emissions and waste, while workers may face occupational exposure to hazardous substances. At the same time, the economic value generated by global apparel consumption may be distributed across corporate headquarters, brand owners, retailers and international markets. The environmental injustice of fast fashion therefore operates at several levels. First, there is a geographical inequality between consumers and production communities. Second, there may be an economic inequality between those who receive the benefits of inexpensive clothing and those

[20] Niinimäki et al., supra note 2.
[21] European Environment Agency, supra note 18.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424

who experience environmental costs. Third, there is an intergenerational dimension, because resource depletion, pollution and climate impacts can impose costs on future generations.[22]

IV. LEGAL FRAMEWORK GOVERNING ENVIRONMENTAL HARM BY GLOBAL APPAREL BRANDS

4.1 International Environmental Law

International environmental law provides the broader normative foundation for regulating environmental harm. Although most international environmental instruments do not specifically target fast fashion, their principles are relevant to textile production because the industry affects water resources, pollution, climate change, biodiversity, natural resources and waste management. The United Nations Framework Convention on Climate Change, the Paris Agreement, the Convention on Biological Diversity, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, and the Sustainable Development Goals collectively contribute to an international framework within which the environmental effects of production and consumption can be evaluated. The Sustainable Development Goals are particularly relevant. Sustainable Development Goal 12 promotes responsible consumption and production, while SDG 6 addresses water and sanitation, SDG 13 addresses climate action and SDG 14 and SDG 15 concern marine and terrestrial ecosystems respectively. The relevance of these objectives to textiles has also been recognized by the United Nations Environment Programme ("UNEP"), which identifies the fashion and textile sector as contributing to climate change, biodiversity loss, pollution and waste. International environmental law also provides important principles for evaluating corporate conduct.[23]

4.2 Sustainable Development and Environmental Principles

Sustainable Development The principle of sustainable development seeks to reconcile economic development with environmental protection and the needs of future generations. The concept was prominently articulated in the Brundtland Report, which defined sustainable development in terms of meeting present needs without compromising the ability of future generations to meet their own needs. The principle is particularly relevant to fast fashion because the industry involves a fundamental tension between economic growth, consumer demand and ecological limits. A model based upon continuous increases in production and consumption may generate economic benefits while simultaneously increasing resource extraction, pollution and waste. UNEP's Global Roadmap for Sustainability and Circularity in the Textile Value Chain recognizes that transformation of the textile sector requires changes in consumption patterns, production practices and supporting infrastructure. Sustainable development therefore cannot be reduced to making individual garments marginally more efficient. It requires consideration of the overall structure of production and consumption. Precautionary Principle The precautionary

[22] Rachel Bick, Erika Halsey & Christine C. Ekenga, "The Global Environmental Injustice of Fast Fashion", 17 Environmental Health 92 (2018).
[23] United Nations Framework Convention on Climate Change, 9 May 1992, 1771 U.N.T.S. 107.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424
principle is relevant where an activity presents a risk of serious environmental harm but scientific certainty concerning the precise consequences may be incomplete. Its basic logic is that uncertainty should not necessarily be used as a reason for postponing preventive environmental action.[24]

4.3 Corporate Environmental Responsibility

Corporate environmental responsibility refers to the responsibility of enterprises to identify and address the environmental consequences associated with their operations, products and business relationships. Traditionally, environmental regulation focused primarily upon the entity that physically discharged pollutants. This approach is comparatively straightforward where a factory directly releases untreated wastewater into a river. It becomes more complicated in globalized production systems where the brand owner, supplier, subcontractor, raw-material producer and logistics provider may all be different legal entities. Modern corporate responsibility frameworks increasingly recognize this complexity. The UN Guiding Principles establish that business enterprises have a responsibility to respect human rights and should undertake due diligence to identify and address adverse impacts. The OECD Guidelines and sectoral garment guidance similarly encourage risk-based due diligence throughout business relationships. Corporate environmental responsibility therefore involves more than publishing sustainability statements. It may include identifying environmental risks, assessing suppliers, establishing environmental standards, monitoring compliance, taking corrective action and providing or contributing to remediation where the corporation has caused or contributed to adverse impacts. This approach is particularly important in the fashion industry because a corporation may have considerable purchasing power over suppliers.[25]

4.4 Extended Producer Responsibility

Extended Producer Responsibility ("EPR") is a regulatory approach under which producers bear responsibility for products beyond the point of sale, particularly with respect to collection, recycling and disposal. The rationale behind EPR is that producers are often in the best position to influence product design and therefore should participate in managing the environmental consequences generated by products after consumption. In the textile sector, EPR can address problems such as textile waste, low recycling rates and the disposal of unwanted garments. The concept is particularly important for fast fashion because conventional waste-management systems may leave municipalities and consumers responsible for the costs associated with large volumes of discarded clothing. EPR seeks to shift at least part of this responsibility toward producers and brands. The European Union has increasingly incorporated circular-economy approaches into textile regulation. The EU's sustainable-products framework specifically recognises the environmental problems associated with excessive production and short use periods of textiles and gives particular attention to garments and footwear. EPR can therefore

[24] Convention on Biological Diversity, arts. 1 & 8, 5 June 1992, 1760 U.N.T.S. 79.
[25] G.A. Res. 70/1, Transforming Our World: The 2030 Agenda for Sustainable Development, 25 September 2015.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424

support several objectives: financing collection and recycling systems, encouraging durable and recyclable product design, improving information about materials, reducing waste and creating economic incentives against unnecessary production.[26]

4.5 Environmental Regulation of Global Supply Chains

Global supply chains create one of the most difficult regulatory challenges in the fashion industry. A brand may have contractual relationships with suppliers while the environmental harm occurs several tiers further down the supply chain. The OECD's Due Diligence Guidance for Responsible Supply Chains in the Garment and Footwear Sector specifically addresses this problem. It provides a framework through which enterprises can identify, prevent, mitigate and account for negative impacts within garment and footwear supply chains. The contemporary regulatory trend is increasingly toward mandatory due diligence rather than reliance solely upon voluntary corporate commitments. A significant example is the European Union's Corporate Sustainability Due Diligence Directive ("CSDDD"). The Directive establishes obligations concerning actual and potential human-rights and environmental adverse impacts associated with companies' own operations, subsidiaries and relevant business partners in their chains of activities. Importantly, the Directive adopts a risk-based approach. Companies are required to identify and assess adverse impacts, priorities significant risks, take measures to prevent or mitigate potential impacts, bring certain actual impacts to an end or minimize them, provide remediation in relevant circumstances, engage with stakeholders and monitor the effectiveness of due-diligence measures.[27]

4.6 Corporate Environmental Disclosure and Transparency

Transparency is an essential component of corporate environmental accountability. Without reliable information about production, emissions, water use, waste, chemical management and supply-chain practices, regulators, investors, consumers and civil society organizations cannot effectively assess corporate environmental performance. Corporate sustainability reporting has consequently become an important element of modern corporate regulation. Environmental disclosure can reveal information about emissions, resource consumption, environmental targets, supply-chain risks and progress toward sustainability objectives. However, disclosure creates a legal challenge of its own. If corporations publish selective or exaggerated environmental information, sustainability reporting may become a form of greenwashing rather than a mechanism of accountability. The UN Guiding Principles emphasize the importance of businesses communicating information concerning how they address their human-rights impacts. The OECD framework similarly places importance upon communication and transparency within responsible business conduct. The challenge is therefore to distinguish meaningful disclosure from strategic disclosure. Meaningful disclosure should provide sufficient information

[26] World Commission on Environment and Development, Our Common Future, Oxford University Press, 1987, p. 43.

[27] Rio Declaration on Environment and Development, Principles 15 & 16, 14 June 1992, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I).

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424

to enable stakeholders to understand the actual environmental performance of a company. Selective disclosure, by contrast, may highlight environmentally positive initiatives while concealing material negative impacts. For fast-fashion corporations, transparency is particularly important because environmental performance depends heavily upon supply-chain activities that consumers cannot directly observe.[28]

4.7 Consumer Protection and Environmental Claims

Environmental regulation increasingly intersects with consumer-protection law. As consumers become more environmentally conscious, corporations have greater commercial incentives to advertise products as sustainable, recycled, organic, carbon-neutral or environmentally friendly. Consumer-protection law becomes relevant when such claims are false, misleading, vague or inadequately substantiated. The European Union has strengthened this area through Directive (EU) 2024/825, which amends the Unfair Commercial Practices Directive and related consumer legislation. The Directive addresses misleading environmental claims and requires greater information concerning environmental and sustainability characteristics. It also addresses claims concerning future environmental performance and requires such claims to be supported by credible commitments and implementation measures. The importance of this development extends beyond traditional advertising law. An environmental claim can influence consumer behavior and may allow a company to benefit commercially from the perception that its product is environmentally superior. In the fast-fashion context, this can create a significant legal problem. A garment labelled "sustainable," "conscious," "eco-friendly" or "recycled" may communicate a broad environmental impression even where the underlying improvement relates only to one aspect of the product. Consumer-protection law therefore provides an additional route for regulating corporate environmental conduct.[29]

4.8 Legal Regulation of Greenwashing

Greenwashing refers broadly to misleading representations that create or reinforce the impression that a product, service or corporation is environmentally beneficial when the available evidence does not adequately support that impression. The legal treatment of greenwashing is increasingly developing through consumer-protection and advertising law rather than conventional environmental criminal law. The European Union's Directive 2024/825 is particularly important because it identifies a range of practices that can mislead consumers regarding environmental characteristics. It also strengthens rules concerning environmental claims, durability, reparability and other sustainability characteristics. The Directive addresses claims relating to future environmental performance as well. Claims concerning future environmental improvements may be misleading when they are not supported by clear, objective

[28] Office of the United Nations High Commissioner for Human Rights, Guiding Principles on Business and Human Rights, 2011.
[29] Directive (EU) 2024/1760 of the European Parliament and of the Council on Corporate Sustainability Due Diligence and Amending Directive (EU) 2019/1937 and Regulation (EU) 2023/2859, 13 June 2024, 2024 O.J. (L 1760) 1 (consolidated 18 March 2026).

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and verifiable commitments and realistic implementation plans. India has also taken an important regulatory step in this area. In 2024, the Central Consumer Protection Authority ("CCPA") issued the Guidelines for Prevention and Regulation of Greenwashing or Misleading Environmental Claims, 2024 under the Consumer Protection Act, 2019. The Guidelines define environmental claims and greenwashing and require environmental claims to be supported by credible evidence and appropriate disclosures. This development is particularly relevant to global fashion brands operating in the Indian market.[30]

V. CORPORATE ENVIRONMENTAL HARM THROUGH A GREEN-CRIMINOLOGICAL LENS

5.1 Corporations as Producers of Environmental Harm

Corporations occupy a central position in modern systems of production and consumption. Their decisions determine, directly or indirectly, what products are manufactured, how much is produced, where production takes place, which materials are used and how environmental risks are managed. In the fast-fashion sector, environmental harm may arise from decisions concerning fibre selection, production volumes, supplier selection, manufacturing processes, transportation, product design, pricing and disposal. Although the physical act producing pollution may be carried out by a supplier, the economic structure governing that production may be influenced substantially by the brand or retailer. Green criminology is therefore concerned with the relationship between corporate organization and environmental harm. The relevant question is not simply who physically discharged a pollutant, but how organizational decisions and economic relationships contributed to the conditions under which that harm occurred.[31]

5.2 Profit Maximization and Environmental Externalization

A central issue in the criminological analysis of corporate environmental harm is the relationship between profit maximization and environmental externalizations. Environmental externalizations occurs when the economic benefits of production are captured by particular actors while some of the environmental costs are transferred to other persons, communities or ecosystems. Pollution, resource depletion, waste-management costs and ecological degradation may consequently become costs borne by society rather than fully reflected in the price of products. The fast-fashion model provides a useful example. Low prices and rapid product turnover can encourage high levels of production and consumption. However, the market price of a garment does not necessarily incorporate all environmental costs associated with raw-material extraction, water use, chemical pollution, energy consumption, waste generation and end-of-life management. The concept of the treadmill of production is particularly relevant here.[32]

[30] Directive (EU) 2024/825 of the European Parliament and of the Council Amending Directives 2005/29/EC and 2011/83/EU as Regards Empowering Consumers for the Green Transition, 28 February 2024, 2024 O.J. (L 825).
[31] Lynch & Long, supra note 11.
[32] Rachel Bick, Erika Halsey & Christine C., supra note 23.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
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5.3 Corporate Power and Regulatory Structures

Corporate environmental harm cannot be separated from questions of power. Large multinational corporations may possess significant economic, political and informational resources. They can operate across jurisdictions, negotiate with suppliers and influence consumer behavior through branding and marketing. This creates an asymmetry between corporations and environmental victims. Communities affected by pollution may have considerably fewer resources to investigate environmental damage, obtain expert evidence, initiate legal proceedings or influence corporate decision-making. Green criminology consequently examines environmental harm within broader structures of power. Brisman and South emphasize that green criminology is concerned not only with conventional environmental offences but also with the social and political processes through which environmental harm is defined, recognized and addressed. Regulation itself is also shaped by political and economic structures. Environmental standards differ between jurisdictions, enforcement capacity varies, and corporations may organize production through multiple countries with different regulatory requirements.[33]

5.4 Legal Compliance Versus Actual Environmental Harm

One of the most important issues in green criminology is the distinction between legal compliance and environmental protection. Environmental law establishes minimum standards. Conduct that satisfies those standards may nevertheless produce environmental effects. Conversely, conduct that violates a legal standard may produce relatively limited harm in a particular instance. Legal classification and environmental impact therefore do not always correspond perfectly. Brisman identifies the relationship between environmental harm, crime and deviance as a central issue in green criminology. Environmental harm may be illegal, socially deviant, both, or neither. This creates a spectrum rather than a simple binary distinction between legal and criminal conduct. For fast fashion, the distinction is particularly significant. A corporation may comply with applicable environmental requirements at its directly controlled facilities while environmental impacts continue elsewhere in its supply chain.[34]

5.7 Accountability Gaps in Global Supply Chains

Global supply chains create substantial challenges for corporate environmental accountability. The modern fashion supply chain can include raw-material producers, fibre manufacturers, yarn suppliers, textile mills, dyeing and finishing facilities, garment factories, logistics companies, distributors and retailers. These entities may be located in different jurisdictions and may have different legal identities. This fragmentation creates what can be described as an accountability gap. A brand may claim that it does not own or directly control a manufacturing facility. A supplier may argue that it merely follows commercial orders. A subcontractor may be several stages removed from the brand. Meanwhile, the environmental harm may occur within a community that has no direct contractual relationship with the multinational corporation

[33] Lynch & Long, supra note 11.
[34] White, supra note 12.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424

benefiting from the finished product. The traditional model of corporate liability is therefore challenged by the structure of global production.[35]

5.8 The Green Criminological Character of Fast Fashion

The preceding analysis demonstrates why fast fashion provides a particularly useful case for green criminological inquiry. First, its environmental effects are cumulative. Water consumption, pollution, greenhouse-gas emissions, textile waste and microplastic pollution arise from millions of production and consumption decisions. Second, the harms are geographically dispersed. Raw materials may be produced in one region, textiles processed in another, garments manufactured elsewhere and products consumed globally. Third, environmental burdens are often unequally distributed. Communities located near production facilities may experience pollution and resource pressures while consumers in distant markets benefit from inexpensive products. Fourth, the industry is characterized by corporate and economic power. Large brands can influence suppliers, consumer behavior, product demand and production patterns. Fifth, some environmental harms may occur through activities that are formally lawful or inadequately regulated. This creates a gap between legal definitions of environmental crime and the broader reality of environmental harm.[36]

VI. H&M AND ZARA: COMPARATIVE CORPORATE CASE STUDY

6.1 Rationale for Selecting H&M and Zara

H&M and Zara provide useful comparative case studies because both are globally significant fashion retailers and both have historically been associated with the fast-fashion model. Their international operations also make them suitable for examining the relationship between corporate headquarters, global supply chains, environmental impacts and regulatory accountability. The two corporations nevertheless operate through somewhat different organizational and commercial structures. H&M Group operates a portfolio of brands and relies substantially upon an extensive network of independent suppliers. Inditex, the corporate group behind Zara and other brands, likewise operates through a geographically dispersed supply chain but has developed a particularly integrated model of design, distribution and retail.[37]

6.2 H&M

6.2.1 Business and Supply-Chain Model

H&M Group is a multinational fashion retailer headquartered in Sweden and operates a portfolio of fashion and lifestyle brands. Its business model depends upon global sourcing and a geographically dispersed supply chain involving suppliers and manufacturing facilities across multiple countries. The corporation does not manufacture all of its products directly.

[35] Organization for Economic Co-operation and Development, OECD Due Diligence Guidance for Responsible Supply Chains in the Garment and Footwear Sector, 2nd ed., 2018.
[36] Brisman & South, supra note 4.
[37] H&M Group, supra note 6.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
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Consequently, a substantial portion of the environmental footprint associated with H&M products occurs outside the company's directly controlled operations. This makes supply-chain management particularly important to its environmental strategy. H&M's current reporting recognizes this distinction. Its climate reporting addresses emissions across its value chain, including raw-material production, manufacturing, transportation and end-of-life treatment.[38]

6.2.2 Environmental Sustainability Commitments

H&M has developed a substantial corporate sustainability framework addressing climate change, materials, water, biodiversity, circularity and supply-chain practices. Its 2025 Annual and Sustainability Report states that 91% of materials used in its commercial products were recycled or sustainably sourced, including 32% recycled materials. The company also reported reductions in greenhouse-gas emissions and freshwater use and continued investment in decarbonization and material innovation. H&M reports science-based climate targets covering its own operations and value chain.[39]

6.2.3 Resource Use and Waste

H&M's environmental impact extends across material production, manufacturing, transportation, retail and the post-consumer stage. The company has sought to reduce resource use by increasing the proportion of recycled and sustainably sourced materials and by improving material efficiency. Its 2025 reporting also identifies water consumption within wet-processing facilities as a significant area of supply-chain environmental management. The corporation reported a 22.8% reduction in absolute freshwater use in wet-processing garment suppliers in Tiers 1 and 2 from its 2022 baseline, exceeding its stated 2025 target. These figures represent measurable improvements within the company's stated reporting boundaries.[40]

6.2.4 Recycling and Circular-Fashion Initiatives

H&M has been an important corporate participant in the development of circular-fashion initiatives. Its sustainability strategy includes increasing the use of recycled materials, extending product life and exploring systems for reuse and recycling. The company has also invested in material innovation and technologies intended to increase the availability of recycled textile materials. Its 2025 reporting identifies recycled and sustainably sourced materials as an important component of its environmental strategy. Circularity has considerable potential because it can reduce reliance on virgin resources and reduce the amount of textile material entering waste streams.[41]

[38] H&M Group, supra note 6.
[39] H&M Group, supra note 6.
[40] Inditex, Annual Report 2025, 2026.
[41] Ibid.

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6.2.5 Environmental Claims and Green Marketing

H&M's sustainability communications have attracted particular attention from consumer-protection regulators. In 2022, the Netherlands Authority for Consumers and Markets (ACM) made binding a commitment by H&M Hennes & Mauritz Netherlands B.V. concerning sustainability claims. H&M agreed to modify or discontinue certain sustainability claims and to provide consumers with clearer information. The company also agreed to contribute €500,000 to a sustainability initiative in the clothing sector. The ACM's action is particularly significant because it did not merely concern environmental performance in factories. It concerned the communication of environmental characteristics to consumers.[42]

6.2.6 Documented Environmental Concerns

H&M's environmental record must be evaluated alongside documented concerns concerning its sustainability communications and the broader environmental implications of fast fashion. One of the clearest regulatory findings is the 2022 Dutch ACM action concerning unclear and insufficiently substantiated sustainability claims. This provides a stronger evidentiary basis than simply relying upon media allegations of greenwashing. H&M has also faced criticism from environmental organizations concerning its fast-fashion business model, resource use, synthetic materials and sustainability claims. Such criticism should, however, be distinguished from formal regulatory findings. The company's environmental initiatives also provide evidence of a changing corporate response.[43]

6.2.7 Corporate Accountability

H&M's case demonstrates several dimensions of corporate environmental accountability. First, the corporation publishes extensive environmental information and establishes quantitative targets. This improves transparency. Second, it seeks to influence suppliers through environmental standards and monitoring. This recognizes that much of the environmental footprint exists within the value chain. Third, it has faced regulatory scrutiny over environmental marketing. This demonstrates that sustainability communication is itself subject to accountability. Fourth, H&M's experience illustrates the limits of voluntary corporate sustainability. Corporate targets may demonstrate ambition, but independent verification and legal enforcement remain necessary to ensure that environmental claims correspond with actual performance.[44]

6.3 Zara/Inditex

6.3.1 Business and Supply-Chain Model

Zara is the flagship brand of Inditex, one of the world's largest fashion retail groups. Inditex operates several brands and maintains a large global supply chain. Inditex's 2025 reporting

[42] Inditex, supra note 44.
[43] H&M Group, supra note 6.
[44] H&M Group, supra note 6.

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indicates that the Group worked with 6,684 factories in 49 markets during the year. It also reported thousands of traceability, social and environmental audits across its supply chain. The scale of the network demonstrates why supply-chain governance is central to the environmental analysis of Zara. Like H&M, Inditex does not depend solely upon directly owned manufacturing facilities. Environmental performance therefore depends substantially upon suppliers, manufacturing processes, raw materials and logistics.[45]

6.3.2 Environmental Sustainability Commitments

Inditex has developed an extensive sustainability strategy centred on climate transition, lower-impact fibres, water use, circularity and supply-chain transformation. Its 2025 Annual Report states that total emissions within the categories covered by its science-based targets were reduced by 11% compared with 2018, while Scope 1 and 2 emissions were reduced by 88% and relevant Scope 3 emissions by 7% against the same baseline. The company also reported that 88% of fibres used in its products came from materials it classified as having a lower environmental impact, including 47% recycled fibres and 30% originating from organic or regenerative farming methods.[46]

6.3.3 Resource Use and Waste

Inditex has identified materials, water, energy and waste as significant areas of environmental management. Its supply-chain strategy includes environmental assessments and audits, while its fibre strategy seeks to increase the use of recycled and other lower-impact materials. The company also reports investments in circularity and product-life extension. In 2025, Inditex reported that Zara Pre-Owned circularity services were operating in 17 markets. Such services are intended to support repair, resale and reuse and thereby extend the useful life of garments. These initiatives are significant because extending product life can reduce the environmental pressure associated with producing replacement garments.[47]

6.3.4 Circularity and Recycling Initiatives

Inditex has increasingly incorporated circularity into its environmental strategy. Zara pre-owned is one example. The service enables customers in participating markets to access repair, resale and donation-related services. These initiatives respond to the environmental problem of shortened garment lifetimes and seek to keep products in use for longer. Inditex has also invested in fibre innovation and recycled materials. Its 2025 reporting indicates that recycled fibres represented a substantial portion of its lower-impact fibre portfolio. The corporation has additionally reported substantial investments in supply-chain environmental transformation.

[45] H&M Group, supra note 6.
[46] H&M Group, supra note 6.
[47] H&M Group, supra note 6.

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These developments indicate that circularity has moved from a peripheral sustainability initiative toward a component of mainstream corporate strategy.[48]

6.3.5 Environmental Claims and Green Marketing

Zara's environmental marketing has received regulatory scrutiny. In January 2026, the President of Poland's Office of Competition and Consumer Protection (UOKiK) announced that it had brought allegations against Zara concerning greenwashing. The authority stated that it was examining whether Zara's environmental communications failed to provide sufficiently clear information concerning the scope, scale and limitations of sustainability claims. The regulator specifically referred to Zara's "Join Life" labels and communications concerning responsible management of natural resources, reduction of water consumption and biodiversity protection. It also questioned whether consumers could understand the extent to which particular environmental claims applied to Zara's broader activities.[49]

6.3.6 Documented Environmental Concerns

Zara and Inditex have faced environmental criticism for many years. One significant historical example concerns hazardous chemicals. In 2012, Greenpeace's Detox campaign reported findings concerning hazardous chemicals in clothing from major fashion brands and specifically identified Zara among the brands examined. Greenpeace reported that testing identified substances of concern in Zara products and linked the issue to chemical use in textile production. Following substantial public pressure, Zara and Inditex announced a commitment to eliminate hazardous chemical discharges from their supply chain and products by 2020 and to increase transparency concerning chemical releases.[50]

6.3.7 Corporate Accountability

Inditex has established extensive systems of supply-chain monitoring, environmental auditing and sustainability reporting. Its 2025 reporting states that the company carried out 1,875 environmental audits and 590 environmental corrective-action plans across its supply chain. It also reports extensive traceability audits and supplier assessments. These mechanisms demonstrate an institutional attempt to integrate environmental considerations into supply-chain governance. From a green-criminological perspective, however, auditing alone does not establish that environmental harm has been eliminated. The effectiveness of auditing depends upon the quality of standards, frequency of inspections, independence of assessment, disclosure of findings, corrective measures and consequences for non-compliance.

6.4 Comparative Analysis of H&M and Zara

The comparison between H&M and Zara reveals both important similarities and differences. 1. Business Structure Both corporations operate global fashion businesses with geographically

[48] H&M Group, supra note 6.
[49] H&M Group, supra note 6.
[50] H&M Group, supra note 6.

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dispersed supply chains. Environmental impacts therefore occur beyond their directly controlled operations. H&M explicitly reports on environmental performance across its value chain, including raw materials, manufacturing, transportation and end-of-life activities. Inditex similarly maintains extensive supplier-monitoring and environmental-audit systems. Both cases therefore demonstrate the limitations of a narrow facility-based model of environmental responsibility.

2. Climate and Resource Commitments Both companies have established measurable environmental targets.

Dimension	H&M	Zara/Inditex
Business model	Large-scale global apparel retailer operating through a complex supplier network and frequent product cycles.	Inditex group model combining design, distribution and retail with a geographically dispersed supplier network.
Environmental commitments	Public targets concerning climate, materials, circularity, water and sustainability reporting.	Public commitments concerning emissions, water, fibres, circularity and environmental performance.
Supply-chain accountability	Supplier standards, due diligence, reporting and monitoring; responsibility remains distributed across the value chain.	Supplier governance and disclosure, with environmental responsibility extending through the group's value chain.
Circularity	Recycling, preferred materials, garment collection and circularity initiatives.	Circularity, lower-impact fibres, reuse/recycling initiatives and product-life measures.
Environmental claims	Claims have attracted regulatory scrutiny, including the 2022 Dutch consumer-protection commitment decision.	Environmental claims and practices have attracted regulatory scrutiny, including allegations addressed by Polish authorities in 2026.
Legal-criminological assessment	The evidence supports analysis of environmental harm and accountability questions; it does not by itself establish a criminal finding.	Documented environmental pressures and regulatory scrutiny should not automatically be equated with criminal liability.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424

VII. GREENWASHING AND THE CRIMINALIZATION OF ENVIRONMENTAL MISREPRESENTATION

7.1 Concept and Forms of Greenwashing

Greenwashing generally refers to the practice of creating a misleading impression concerning the environmental benefits or sustainability characteristics of a product, service, organization or business practice. The concept does not necessarily require an outright false statement. A claim may be misleading because it is vague, incomplete, exaggerated, technically true but presented without relevant context, or based upon a characteristic that represents only a small part of the product's overall environmental impact. Greenwashing can therefore take several forms.

7.1.1 Vague Environmental Claims

Terms such as "green," "eco-friendly," "conscious," "clean," "responsible" or "sustainable" may create a broad environmental impression without explaining precisely what environmental benefit is being claimed. The problem is that such language can communicate a conclusion without providing the evidence necessary for consumers to evaluate that conclusion.

7.1.2 Selective Disclosure

A company may disclose a positive environmental characteristic while omitting information concerning significant negative environmental impacts. For example, a garment may contain recycled material while still involving substantial water consumption, chemical use, energy consumption or waste generation. Describing the product solely through its recycled content may therefore create an incomplete environmental impression.

7.1.3 Misleading Comparisons

Environmental claims may compare a product with another product, a previous version or an industry benchmark without clearly explaining the basis of comparison. A statement that a garment uses "less water" or produces "lower emissions" is meaningful only when consumers can understand what it is being compared with, what stage of the lifecycle is covered and what methodology was used.

7.1.4 Unsubstantiated Future Claims

Corporations may advertise future environmental ambitions, such as becoming carbon neutral, using only recycled materials or achieving a particular environmental target by a specified year. Such statements become problematic where there is no sufficiently credible plan, evidence or implementation mechanism supporting the promised outcome.

7.1.5 Misleading Environmental Labels and Imagery

Greenwashing may also occur through symbols, colours, images of nature or environmental labels that create an impression of sustainability without adequately explaining the underlying

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424
environmental characteristics. The Dutch Authority for Consumers and Markets ("ACM"), for example, advises businesses that sustainability claims should be clear, factually supported, specific and useful to consumers. It also warns against visual claims and labels that may confuse consumers. The Indian Guidelines for Prevention and Regulation of Greenwashing or Misleading Environmental Claims, 2024 similarly recognize that greenwashing can include misleading words, symbols or imagery and the selective emphasis of positive environmental characteristics while concealing harmful attributes.

7.2 Sustainability Claims in the Fashion Industry

Fashion is particularly vulnerable to greenwashing because environmental attributes have become increasingly important to consumer purchasing decisions. Fashion companies can make sustainability claims concerning: the materials used in a garment; recycled or organic fibres; water consumption; carbon emissions; chemical management; packaging; biodiversity; circularity; durability; repair and resale; sustainable sourcing; and future environmental targets. The difficulty is that a garment is the final product of a highly complex lifecycle. A claim concerning one stage may say very little about the environmental impact of the product as a whole. For example, a garment manufactured using a percentage of recycled polyester may legitimately contain recycled material.

7.3 Greenwashing and Consumer Deception

Greenwashing becomes legally significant when misleading environmental information affects consumer decision-making. Consumer protection law generally assumes that consumers should be able to make informed choices based upon accurate and non-misleading information. Environmental claims can therefore become a form of commercial representation subject to regulation. The problem is intensified by an information asymmetry between corporations and consumers. A corporation may possess detailed information about: the origin of raw materials; supplier practices; production emissions; chemical inputs; water consumption; waste generation; recycling processes; and environmental accounting methodologies. Consumers ordinarily do not possess equivalent information or technical capacity to verify those claims independently. This asymmetry gives corporations considerable communicative power.

7.6 Legal Responses to Misleading Environmental Claims

The legal response to greenwashing has historically developed primarily through consumer-protection and advertising law. Increasingly, however, environmental claims are becoming subject to more specific regulatory standards. European Union The European Union's Directive 2024/825 represents a significant development. It strengthens consumer protection against unfair practices associated with the green transition and introduces greater restrictions concerning environmental claims and sustainability labels. Among other matters, the Directive addresses misleading environmental characteristics and claims concerning future environmental performance. It seeks to ensure that consumers are not given a false impression concerning the

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
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environmental benefits of products. This development is particularly relevant to fashion because the industry relies heavily upon environmental marketing and product labels.

7.7 H&M and Zara: Environmental Claims and Accountability

H&M and Zara provide particularly useful illustrations of the legal and criminological significance of greenwashing. H&M H&M's environmental claims attracted formal regulatory attention in the Netherlands. In 2022, the Dutch ACM declared binding H&M's commitments concerning sustainability claims. H&M agreed to adjust or stop using certain sustainability claims and to provide consumers with clearer information. The company also agreed to contribute €500,000 to a sustainability initiative in the clothing industry. The ACM stated that H&M had used general terms such as "Conscious" without immediately making sufficiently clear what sustainability benefit was being claimed. The significance of this case lies in its evidentiary clarity.

7.8 Greenwashing and the Criminalization of Environmental Misrepresentation

The concept of greenwashing raises a broader question central to this study: when should environmental misrepresentation be treated as green crime? The answer cannot simply be that every misleading sustainability claim constitutes a crime. Criminal law requires clearly defined offences and legally established elements. Many forms of greenwashing are currently addressed through consumer-protection or administrative mechanisms rather than criminal prosecution. Nevertheless, greenwashing may possess characteristics that make it relevant to green criminology. First, it may involve corporate intent or knowledge, particularly where a company possesses information contradicting the environmental impression conveyed to consumers. Second, it may produce economic benefits for the corporation by encouraging environmentally motivated purchases.

VIII. CHALLENGES IN REGULATING CORPORATE GREEN CRIMES

8.1 Difficulty of Establishing Environmental Causation

One of the principal challenges in regulating corporate green crimes is establishing a sufficiently clear causal connection between corporate conduct and environmental harm. Traditional criminal and civil liability frameworks generally work more effectively where the harmful act, responsible actor, location, and consequence can be identified with reasonable precision. Environmental harms associated with fast fashion do not always fit this model. The production of textiles may involve multiple sources of water consumption, greenhouse-gas emissions, chemical discharge, waste generation, and microfibre pollution. These impacts may accumulate over time and may result from the combined activities of numerous manufacturers and purchasers.

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8.2 Attribution of Corporate Responsibility

A second difficulty concerns the attribution of responsibility within corporate structures. Global apparel corporations frequently operate through extensive networks of suppliers, manufacturers, contractors, subcontractors, logistics providers, and other business partners. The corporation whose brand appears on the finished garment may not directly own or operate the facility where environmental harm occurs. This creates a distinction between direct responsibility and responsibility arising from business relationships. A brand may not have directly discharged pollutants into a river or operated a textile-processing facility, but its purchasing practices, production requirements, pricing arrangements, delivery schedules, or sourcing decisions may influence the conduct of suppliers.

8.4 Jurisdictional Problems

The transnational character of fast fashion creates serious jurisdictional difficulties. Environmental regulation is predominantly implemented through domestic legal systems, while corporate supply chains frequently operate across several jurisdictions. A company headquartered in one country may source raw materials from another, manufacture garments in a third, use processing facilities in a fourth, and sell the products globally. If environmental harm occurs in the manufacturing country, questions may arise concerning which country's laws apply, which authority has investigative jurisdiction, and whether the parent or brand company can be held responsible for conduct occurring abroad. These problems are not unique to the fashion industry.

IX. MANDATORY ENVIRONMENTAL DUE DILIGENCE

9.1 A fundamental component of stronger corporate accountability should be the introduction and expansion of mandatory environmental due diligence. Due diligence should require corporations to identify actual and potential environmental risks, assess their significance, take preventive and mitigating measures, monitor the effectiveness of those measures, communicate relevant information, and provide or participate in remediation where appropriate. The importance of due diligence lies in its preventive character. Traditional environmental regulation frequently intervenes after pollution or other environmental damage has occurred. Due diligence, by contrast, requires corporations to examine environmental risks before they materialize and throughout their business relationships. For the fast-fashion industry, environmental due diligence should extend beyond a company's directly owned facilities.

9.2 Supply-Chain Accountability

Environmental accountability must also extend beyond the corporate entity's immediate operations. The structure of the fast-fashion industry makes a purely factory-based model of liability inadequate because environmental risks frequently arise within networks of suppliers

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
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and subcontractors. A stronger framework should require corporations to maintain sufficient information concerning significant suppliers and production facilities and to conduct risk-based assessments of those relationships. High-risk activities, such as wet processing, dyeing, finishing, chemical treatment, and waste management, should receive particular attention because of their potential environmental consequences. Supply-chain accountability should not, however, mean automatic liability for every environmental violation committed by an independent supplier.

9.3 Stronger Extended Producer Responsibility

Extended Producer Responsibility ("EPR") can provide another important mechanism for addressing the environmental consequences of fast fashion, particularly textile waste. The principle of EPR shifts part of the responsibility for a product's post-consumption environmental consequences towards the producer. In the textile sector, this can create incentives for corporations to consider durability, repairability, recyclability, material composition, and end-of-life management when designing products. The European Union's revised Waste Framework Directive has introduced specific provisions concerning producer responsibility organizations for textile, textile-related, and footwear products.

9.4 Mandatory Environmental Disclosure

Environmental disclosure should form another central pillar of corporate accountability. Consumers, regulators, investors, civil society organizations, and affected communities cannot effectively evaluate corporate environmental performance without reliable information. Disclosure requirements should extend beyond broad sustainability statements and require standardized information concerning matters such as greenhouse-gas emissions, water consumption, wastewater management, chemical use, textile waste, production volumes, material composition, recycling rates, and significant supply-chain environmental risks. The objective should be to make environmental information comparable, verifiable, specific, and decision-useful. The Indian regulatory framework provides an important example.

9.5 Regulation of Green Claims

The regulation of environmental claims is essential because misleading sustainability communications can undermine both consumer protection and environmental objectives. Corporations should be required to substantiate environmental claims through reliable and verifiable evidence. Claims such as "sustainable," "eco-friendly," "green," "conscious," "responsible," or "better for the planet" should not be used in a manner that creates a misleading overall impression. The European Union has strengthened consumer-protection rules relating to misleading environmental claims through Directive (EU) 2024/825, which addresses unfair commercial practices connected with the green transition. At the national level, India's Central Consumer Protection Authority has also adopted the Guidelines for Prevention and Regulation of Greenwashing or Misleading Environmental Claims, 2024.

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424

9.6 Stronger Corporate Environmental Liability

A stronger accountability framework must ultimately contain effective consequences for corporate environmental wrongdoing. Liability should be proportionate to the nature and seriousness of the conduct and should distinguish between accidental harm, negligence, regulatory non-compliance, reckless conduct, deliberate concealment, and intentional environmental misconduct. Corporate liability should not automatically depend upon proving that every environmental consequence was directly caused by the corporation. In appropriate regulatory contexts, failure to undertake legally required due diligence, failure to disclose material environmental risks, deliberate concealment, or repeated non-compliance may themselves constitute actionable violations. At the same time, criminal law should remain subject to principles of legality, culpability, causation, and proportionality.

X. CAN FAST FASHION BE CHARACTERIZED AS GREEN CRIME?

The answer requires a qualified approach. Fast fashion as an industry should not automatically be characterized as criminal. Nor should participation in fast fashion, by itself, establish corporate criminal liability. The appropriate approach is to distinguish different forms and degrees of corporate environmental conduct. At one end of the spectrum are ordinary commercial activities that are lawful and subject to environmental regulation. At another level are activities that generate significant environmental harm but remain lawful because legal standards do not prohibit them. A further category involves conduct that violates environmental regulations or other legally enforceable requirements.

The evidence examined throughout this study supports a middle position between two extremes. The first extreme would be to regard fast fashion as inherently criminal because its business model generates substantial environmental harm. That position is legally overbroad and fails to distinguish environmental harm from criminal liability. The second extreme would be to treat environmental harm as irrelevant unless a specific criminal offence has been established. That position is too narrow to explain the structural, cumulative, and transnational nature of contemporary environmental harm. A green-criminological approach occupies the space between these positions. It recognizes formal environmental offences but also examines lawful or insufficiently regulated practices that produce serious environmental harm.

XI. CONCLUSION

Fast fashion represents one of the clearest examples of how contemporary patterns of global production and consumption can generate significant environmental harm while making legal responsibility difficult to establish. The industry's dependence on rapid production, high consumption, resource-intensive manufacturing, chemical processing, extensive supply chains, and large volumes of textile waste creates environmental consequences that extend across

e-ISSN: 2839-5786, p-ISSN: 3139-8464 | JATIR
doi.org/10.64643/jatir.141424
jurisdictions and throughout the entire product lifecycle. This study has demonstrated that such harm cannot be understood exclusively through the traditional concept of environmental crime. While particular corporate activities may constitute violations of environmental or consumer-protection laws, other harmful practices may remain formally lawful or insufficiently regulated. Green criminology provides a broader analytical framework by examining environmental harm, corporate power, victimization, environmental justice, and the structural conditions through which environmental degradation is produced. The analysis of H&M and Zara illustrates the importance of maintaining this distinction. Both corporations have undertaken significant sustainability initiatives while also facing scrutiny concerning environmental impacts and sustainability claims. Their cases therefore demonstrate that corporate sustainability efforts and environmental accountability are not mutually exclusive. Sustainability commitments must be evaluated through reliable evidence, transparency, measurable outcomes, and effective regulatory oversight. Conclusion is that fast fashion should not automatically be characterized as green crime, but it should be regarded as a significant field of green-criminological inquiry. Existing legal frameworks capture certain forms of environmental wrongdoing but do not always adequately address cumulative, transnational, and structurally produced environmental harm. Stronger corporate accountability therefore requires a combination of mandatory environmental due diligence, supply-chain responsibility, extended producer responsibility, transparent environmental disclosure, regulation of green claims, effective remedies, and cross-border enforcement. Ultimately, the challenge is to move from a system that merely responds to identifiable environmental violations towards one that prevents, identifies, and remedies corporate environmental harm throughout the fashion lifecycle. Such an approach can narrow the gap between environmental harm and legal accountability while preserving the fundamental distinction between conduct that is environmentally harmful and conduct that is legally criminal. This gives the study a clear final position: the contribution is not to declare fast fashion itself a crime, but to show why its environmental harms require a broader green-criminological and stronger corporate-accountability approach.

The study therefore concludes that the appropriate legal response is not to collapse every form of environmental harm into criminality, but to strengthen the mechanisms that make corporate environmental performance measurable, enforceable, and reviewable across borders.