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## Fashion's Carbon Footing: Legal Approaches to Address Fast Fashion and Climate Change

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*Clothing is one of the basic needs of a human, apart from food, water, and shelter. Clothes not only serve the purpose of giving us protection against the environment but also give us a sense of identity of who we are. Seldom times we reach for a particular kind of apparel to express our culture, profession, background, or mood in general, thus making it an invariable part of our life. However, before picking up a clothing piece, do we ever give a thought to what certainly could be wrong with it? It is important to question at what cost this fashion apparel is being made available to us by the manufacturers at such affordable prices. This paper examines the various factors that work behind the shopping windows and what are its implications on our environment. Lastly, the paper explores certain ways in which the damaging effects of the clothing industry can be curbed.*

**Keywords:** *fast fashion, slow fashion, impact, environment, sustainability, recycle, reuse, zero-wastage.*

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### INTRODUCTION

Fast fashion can be understood as an approach towards the designing, creation and marketing of clothing apparel, whereby the emphasis is on making it available to consumers in a shorter

period of time and at a cheap price.<sup>1</sup> It is a term that is used to describe readily available inexpensive apparel, with the fashion trends changing at a rapid speed. The fast fashion industry emphasizes quantity over quality and quick replacement of clothes within a short span of time. The term 'fast' herein signifies the rapid pace at which the vogue changes and the speed of the supply chain to meet the market demands for new designs.<sup>2</sup> Such a business model is growing at an unprecedented rate. Estimates show that at present the fashion industry globally has grown to be worth \$3 billion while employing around 40 million people all around the globe.<sup>3</sup>

The trend of fast fashion has two facets - the first being superficial i.e. the availability of ever-changing fashion trends at cheap prices. This serves for the benefit of consumers who can avail of the latest fashion designs at remarkably affordable prices. Clothes have never been so readily available as today. However, the other aspect of fast fashion creates a concern not only for the manufacturers who are producing such goods but for the entire environment at large.<sup>4</sup> The fashion industry has become synonymous with environmental hazards, such as enormous consumption of water, usage of toxic chemicals, discharge of hazardous untreated waste into large water bodies causing contamination of marine life, and air pollution. The textile industry is resource-extensive and resource-depleting.<sup>5</sup> This assertion can be extrapolated by the fact that a significant amount of natural resources are consumed in the process of textile manufacturing, such as an estimated 98 million tons of oil, fertilizers, and chemicals are utilized for the production of 80-100 billion pieces of apparels per year.<sup>6</sup> The enormous amount of clothes being manufactured by the industries is a source of pollution for the

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<sup>1</sup> Emma Williams, 'Appalling or Advantageous? Exploring the Impacts of Fast Fashion From Environmental, Social, and Economic Perspectives' (2022) 13(1) JGBC <<https://doi.org/10.56020/001c.36873>> accessed 03 July 2023

<sup>2</sup> Rachel Bick et al., 'The global environmental injustice of fast fashion' (2018) 17(92) Environmental Health <<https://doi.org/10.1186/s12940-018-0433-7>> accessed 03 July 2023

<sup>3</sup> Piera Centobelli et al., 'Slowing the fast fashion industry- An all round perspective' (2022) 38 Current Opinion in Green and Sustainable Chemistry <<https://doi.org/10.1016/j.cogsc.2022.100684>> accessed 03 July 2023

<sup>4</sup> Williams (n 1)

<sup>5</sup> Walter Leal Filho et al., 'An overview of the contribution of the textiles sector to climate change' (2022) 10 Frontiers Environment Science <[doi: 10.3389/fenvs.2022.973102](https://doi.org/10.3389/fenvs.2022.973102)> accessed 03 July 2023

<sup>6</sup> Shalini Rukhaya et al., 'Sustainable Approach to Counter the Environmental Impact of Fast Fashion' (2021) 10(8) The Pharma Innovation Journal <<https://www.thepharmajournal.com/special-issue?year=2021&vol=10&issue=8S&ArticleId=7336>> accessed 03 July 2023

environment as per year around 92 million tons of waste is produced by the fashion industry, out of which nearly 87% of waste ends up in landfills or goes for incineration.<sup>7</sup>

In the past few decades, a significant change has been noticed concerning the supply chain, as it has become more complex with the insurgence in globalization. Manufacturers have started out-sourcing the production of goods in different countries, primarily in developing countries due to their comparatively weaker environmental legislations and abundance of workforce at a cheap rate.<sup>8</sup> After a short period, the used clothes, that do not end in incineration or landfills, are shipped back to the developing countries to be sold as second-hand clothes that are ultimately disposed of in nature. While lying in landfills for decades, these textiles release toxic chemicals into the environment, thus aggravating environmental pollution.<sup>9</sup>

The main objective of this paper is to highlight the environmental cost at which the fast fashion concept is operating. It examines the evolution of the textile industry and the emergence of the business model of fast fashion, followed by a discussion on the impact of the fast fashion industry on various aspects of the environment, including water, air and soil. Lastly, the paper is concluded with certain recommendations for the applicability of the sustainability model in the fashion industry, to curb its detrimental impact on the environment.

## HISTORY OF THE TEXTILE INDUSTRY

The evolution of the fashion industry into the fast fashion industry traces its roots to the introduction of ready-made garments.<sup>10</sup> An important aspect of the fast fashion industry is the production of stylish clothes by the industries through outsourcing the manufacturing work

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<sup>7</sup> Elizabeth Napier and Francesca Sanguineti, 'Fashion Merchandiser's Slash and Burn Dilemma: A Consequence of Over Production and Excessive Waste?' (2018) 3(2) Rutgers Business Review  
<<https://rbr.business.rutgers.edu/article/fashion-merchandisers-slash-and-burn-dilemma-consequence-over-production-and-excessive>> accessed 04 July 2023

<sup>8</sup> Kirsi Niinimäki et al., 'The Environmental Price of Fast Fashion' (2020) 1(4) Nature Reviews Earth & Environment  
<[https://www.researchgate.net/publication/340635670\\_The\\_environmental\\_price\\_of\\_fast\\_fashion](https://www.researchgate.net/publication/340635670_The_environmental_price_of_fast_fashion)> accessed 04 July 2023

<sup>9</sup> Williams (n 1)

<sup>10</sup> Annie Radner Linden, 'An Analysis of the Fast Fashion Industry' (2016) 30 Bard Undergraduate Senior Projects  
<[https://digitalcommons.bard.edu/cgi/viewcontent.cgi?article=1033&context=senproj\\_f2016](https://digitalcommons.bard.edu/cgi/viewcontent.cgi?article=1033&context=senproj_f2016)> accessed 04 July 2023

into developing countries and the final goods being consumed in the markets of developed countries. Such textile industries emerged for the first time in Britain during the late seventeenth century, with the boom of industrialization. The long working hours of industries did not allow its workers such spare time to make their own clothes. Thus, they started turning to slop shop stores that offered factory-produced ready-made clothes at cheap prices. These shops were located in urban centers, where there was a high concentration of the working class population, making them target customers. They provided an affordable alternative for hand-made clothes, creating an ever-lasting place for ready-made garments in the market.<sup>11</sup>

As the demand for ready-made garments increased in British markets, several emerging technologies accelerated the production of textiles, such as the invention of sewing machines in the mid-1800s for mass production of clothes. Certain other inventions played a significant role in the advancement of British cotton textile industries such as the spinning jenny, water frame, spinning mule, power loom, and the sewing machine.<sup>12</sup> These changes and inventions allowed the price of manufactured goods to be reduced while hiking up their production rate. During the industrialization period, several mills were set up to produce quick and efficient machine-made garments. This textile industry had a massive impact on British economic development, as the cotton textile industry, during that era, accounted for a little more than twenty-two percent of its economy.<sup>13</sup>

The history of garments took another significant turn during the 1880s, when several department stores, mail-order catalogues and chain stores started emerging in America. The manufacturers and contractors focused on the quick and flexible production of garments to ensure supply to mass retailers. Subsequently, the retailers sold the finished goods in such stores only during two or four seasons, meaning that new styles of clothes were put on display windows for a maximum of four times a year. Rather than being concerned about consumers'

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<sup>11</sup> Natasa Pejak, 'Impact of Fast Fashion Industry on the Environment' (MSc Thesis, Central European University 2022)

<sup>12</sup> Naiper (n 7)

<sup>13</sup> *Ibid*

demands, the retailers' priority was to place their orders to the manufacturers on time, so that the production cost could be reduced. However, this business model came to a halt during World War II, when product variety was reduced considerably.<sup>14</sup>

During WWII, a new technique, called the progressive bundle system (PBS) was introduced. It aimed at manufacturing bundles of pieces at one time to ensure cost reduction.<sup>15</sup> PBS brought a shift towards large manufacturers due to their capacity to produce bulk clothes at a cheaper price than other independent manufacturers. However, this set-up did not last long as by the mid-1970s, large retailers started establishing their in-house brands to outplay the manufacturers.<sup>16</sup> They began outsourcing the labor and production to developing countries to manufacture the garments at a price cheaper than independent manufacturers. The liberalization of markets enhanced the opportunities for large retailers to expand their reach and grow in size, while the retailers who chose to work with domestic manufacturers suffered losses in their business. This era saw a large-scale shutting down of manufacturing industries in America as the production work was increasingly being outsourced to developing countries, having lenient environmental regulations and offering cheap labor. It led to the growth of several garment industries in countries like India, Bangladesh, Vietnam, and Korea, thus contributing to their economy.<sup>17</sup>

## EMERGENCE OF FAST FASHION INDUSTRY

During the last few decades, there has been a rise in globalization. It has enabled the fashion industry to exploit the best resources in its favor throughout the world. Thus, setting up industries in developing countries with low entry barriers, low-skilled and low-cost laborers and vast tax breaks along with lenient laws and regulations have all contributed towards

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<sup>14</sup> Md. Sohnur Rahman Sobuj, 'Progressive Bundle System' (*Textile Study Centre*, 01 April 2018) <<https://textilestudycenter.com/progressive-bundle-system/>> accessed 05 July 2023

<sup>15</sup> *Ibid*

<sup>16</sup> Xuandong Chen et al., 'Circular Economy and Sustainability of the Clothing and Textile Industry' (2021) 3 *Materials Circular Economy* <<https://link.springer.com/article/10.1007/s42824-021-00026-2#citeas>> accessed 05 July 2023

<sup>17</sup> Pejak (n 11)

making the fashion industry one of the largest, if not the largest, industries in the world.<sup>18</sup> Estimates show that presently one out of every six people is employed either directly or indirectly in the global fashion industry, thus making it the most labor-intensive industry.<sup>19</sup> The industry has recently seen massive growth because it caters to the needs of consumers for stylish and fashionable clothes at a very cheap price. Fashion industries moving overseas allowed the cost of apparel to fall significantly. The prime reason for such a shift was the race to cater to the needs of primarily young women for their rapidly changing preferences in fashion but at an affordable cost.

Earlier, larger quantities of goods were produced by manufacturers so that they could last for an entire season's demand. This acted as an impediment for the industry to understand consumer demands and often led to price drops in the form of end-of-season sales. However, a new business model was soon introduced whose emphasis was to meet the need for stylish clothes as per the not-so-long-lasting trends.<sup>20</sup>

Social media has just compounded the problem as instead of traditional ways of marketing, brands are now making active use of social media platforms as a part of their marketing strategy. Spending millions of dollars in an advertisement for the brand on various social media platforms such as Facebook, Instagram or YouTube, collaborating with social media influencers to promote their products and regular sales on e-commerce websites are all marketing strategies of fashion brands. Certain other techniques such as price drops, product availability for a limited period, or creating a 'fear of missing out' (FOMO) mindset among the buyers compel them to shop even if they do not need a certain product. While it works great for the fashion industries, such techniques are meant to work on the sub-conscious level of consumers to affect shopping behaviour, to their detriment.

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<sup>18</sup> Najmul Kadir Kaikobad et al., 'FAST FASHION: MARKETING, RECYCLING AND ENVIRONMENTAL ISSUES' (2015) 4(7) International Journal of Humanities and Social Science Invention <[https://www.ijhssi.org/papers/v4\(7\)/Version-2/E0472028033.pdf](https://www.ijhssi.org/papers/v4(7)/Version-2/E0472028033.pdf)> accessed 05 July 2023

<sup>19</sup> Zeynep Ozdamar-Ertekin, 'The True Cost: The Bitter Truth Behind Fast Fashion' (2017) 2(3) ISMD <<https://doi.org/10.23860/MGDR-2017-02-03-07>> accessed 05 July 2023

<sup>20</sup> Naiper (n 7)

## FAST FASHION INDUSTRIES' IMPACT ON THE ENVIRONMENT

When we look at the cost at which textile industries are functioning, one can say that they are arguably one of the leading sectors in causing environmental pollution. Factors such as heavy massive consumption of resources, production of textile waste, and environmental pollution caused by the shredding of garments during laundering leave a detrimental footprint on our ecology.<sup>21</sup> With an estimate of 1.2 billion tons of greenhouse emissions, the carbon footprint generated by the textile industry due to its long supply chains and high energy-consuming production mechanisms exceeds the combined carbon emission of aviation and shipping industries.<sup>22</sup> In addition to that, estimates show that around 20% of water pollution is caused by textile industrial waste produced in the process of dyeing.<sup>23</sup> Reports show that by 2050, the textiles industry will exploit 25% of the global carbon budget.<sup>24</sup>

Although several industries, such as automotive fit-out, hygienic textiles and, agri-textiles, are the end users of textiles however, a large portion of the textile produced, i.e. 60%, is solely consumed by the global fashion industry for clothes manufacturing.<sup>25</sup> Many of the major textile-producing countries, such as India, China and, Bangladesh, still rely on coal for energy production. The carbon emissions caused by the energy-intensive processes involved in garment manufacturing, including the production and distribution of goods, along with the release of toxic chemicals in the environment through textiles that end up in landfills or incineration are posing a hazardous threat to the environment.<sup>26</sup> The rapid spread of the fast fashion trend among consumers has only exacerbated the problem as, unlike in prior times, today the prime focus of textile industries is to bring new designs to the market as rapidly as possible. Now it takes only a few days for a particular style to be presented at a fashion show before it hits the market at a very cheap price. Since these garments are meant to be purchased

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<sup>21</sup> Niinimaki (n 8)

<sup>22</sup> 'Climate Change in the European Union-Latest State of Play' (*European Parliament*)

<[https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698844/EPRS\\_BRI\(2021\)698844\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698844/EPRS_BRI(2021)698844_EN.pdf)>

accessed 05 July 2023

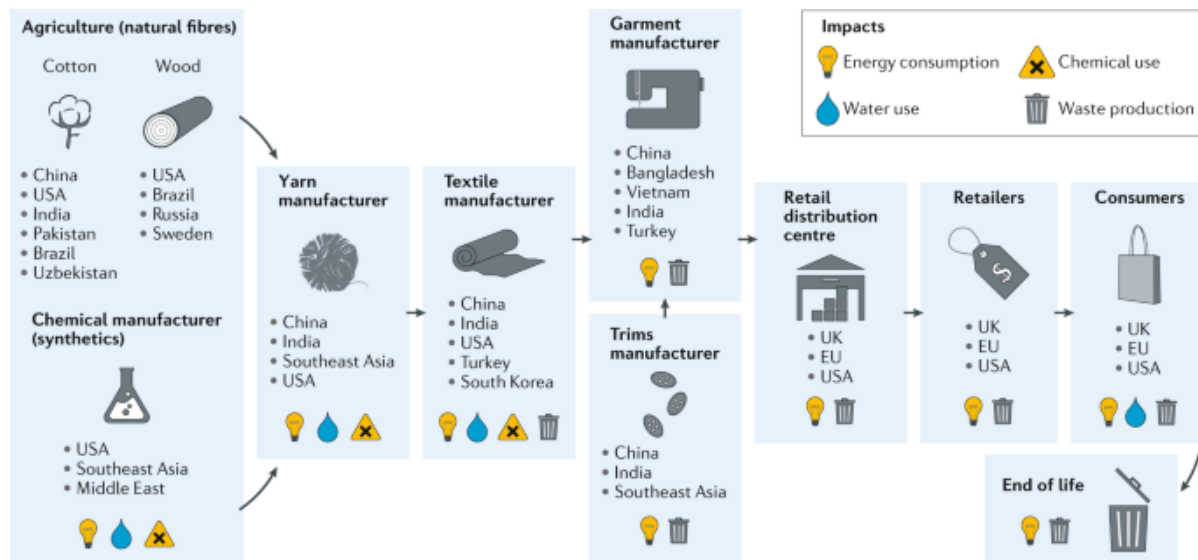
<sup>23</sup> Filho (n 5)

<sup>24</sup> Chen (n 16)

<sup>25</sup> Niinimaki (n 8)

<sup>26</sup> Filho (n 5)

quickly and last only a few washes, cheap quality materials used in their manufacturing are an environmental threat.<sup>27</sup> However, it does not take too long before a particular fashion style gets replaced by another trend in the upcoming season. Internet and e-commerce websites have given an additional push to this business model which avail the latest fashion pieces at one click only. The massive advertisement campaign and price-drop sales allow the brands to extend their reach to more and more customers. One of the major reasons for customers showing interest in such offers is the cheap price, as clothing has never been so pocket-friendly. This never-ending cycle of demand and supply takes a massive toll on the ecology as brands give the least thought to the environmental impact being created by their business tactics.<sup>28</sup>



The above image depicts the key stages involved in a fashion supply chain along with the geographic location of each stage.

<sup>27</sup> Daniel Isaac and Emmen Quirós, 'The impact of fast fashion on the environment: Perspectives from Consumers and Retailers in Ireland' (M.Sc. in International Business, National College of Ireland 2019)

<sup>28</sup> Niinimaki (n 8)



## IMPACT OF TEXTILE INDUSTRIES ON WATER BODIES AND AQUATIC LIFE

Water resources are among the most vulnerable resources to the pollution caused by harmful textile waste. The fast fashion industry consumes an enormous quantity of water at various stages of production such as fiber production, clothes manufacturing, and later at the stage of clothes maintenance i.e. laundry. Textile industries contribute to 20% of the industrial waste pollution.<sup>29</sup> The global fashion industry consumes around 93 billion cubic tons of water annually, which is equivalent to 4% of the global groundwater utilization.<sup>30</sup> Textile industries utilize water for various purposes such as in the form of a medium at the wet processing stage, for dissolving chemicals, as a washing-off agent, and for the process of steam generated to heat the process bath. Although the amount of water required by the industries depends upon the substance being processed, the technology being used etc. textile industries also indulge in unnecessary wastage of water in several instances such as the use of fresh water for every process, using inefficient washing technology, use of excessive water for washing and unnecessarily long washing cycles. Encouraging the reuse and conservation of water can be a viable option not only for the environment but for the industries also as it will considerably lower the production cost by reducing the requirement to purchase water.<sup>31</sup>

In addition to this, the textile and fashion industries are believed to be one of the largest chemical-intensive industries that utilize around 15,000 chemicals in their manufacturing process. Reports suggest that textile industries use around 42 million and 1 million tons of chemicals and dyes, respectively per year. The use of such large quantities of chemicals and dyes means the discharge of an equivalent quantity of industrial wastewater. Hence, textile industries are proclaimed to be the largest resource for aquatic pollution. Every year, around 53 billion gallons of textile industry effluents are discharged into water bodies. These effluents contain huge amounts of heavy metals such as Chromium (Cr), Antimony (Sb), Nickel (Ni), Cadmium (Cd), Titanium (Ti), Cobalt (Co), Mercury (Hg), Arsenic (As), Zinc (Zn), Lead (Pb),

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<sup>29</sup> Rita Kant, 'Textile Dyeing Industry An Environmental Hazard' (2012) 4(1) Natural Science <<http://dx.doi.org/10.4236/ns.2012.41004>> accessed 07 July 2023

<sup>30</sup> 'A New Textiles Economy: Redesigning Fashion's Future' (Ellen MacArthur Foundation, 2017) <<https://ellenmacarthurfoundation.org/a-new-textiles-economy>> accessed 07 July 2023

<sup>31</sup> *Ibid*

Copper (Cu) and Silver (Ag) making them extremely hazardous for an aquatic environment. Such toxic effluents need to be given intensive treatment before they can be safely discharged into water bodies.<sup>32</sup> However, a major portion of the global textile industries have been set up in developing countries, often operating in small-scale units. They lack the financial resources to install treatment plants for waste management, thus discharging untreated textile waste into water bodies such as lakes, ponds or rivers. The discharge of such untreated effluents can seriously impact the quality of the aquatic environment, thereby endangering its flora and fauna. On the other hand, even when the wastewater gets treated, its high temperature can be dangerous for aquatic life as it tends to reduce the level of dissolved oxygen in water bodies.

Another major problem relating to textile industries is the increasing microplastic pollution of aquatic resources. Microfibers are released at several stages such as manufacturing, utilization and finally at the disposal of clothes. Estimates show that a single person could discharge around 300 million microfibrils per year during laundry. Estimates show that one wash cycle of around 6 kg of clothes can release up to 700,000 fibers. Most of these released microfibrils end up in the ocean while being carried by rivers. It is estimated that ten rivers, out of which eight are in Asia only such as the Indus, Ganges, Yangtze, Amur, Mekong, Yellow, Hai He, Pearl, Niger and Nile River carry more than half of the global plastic waste.<sup>33</sup>

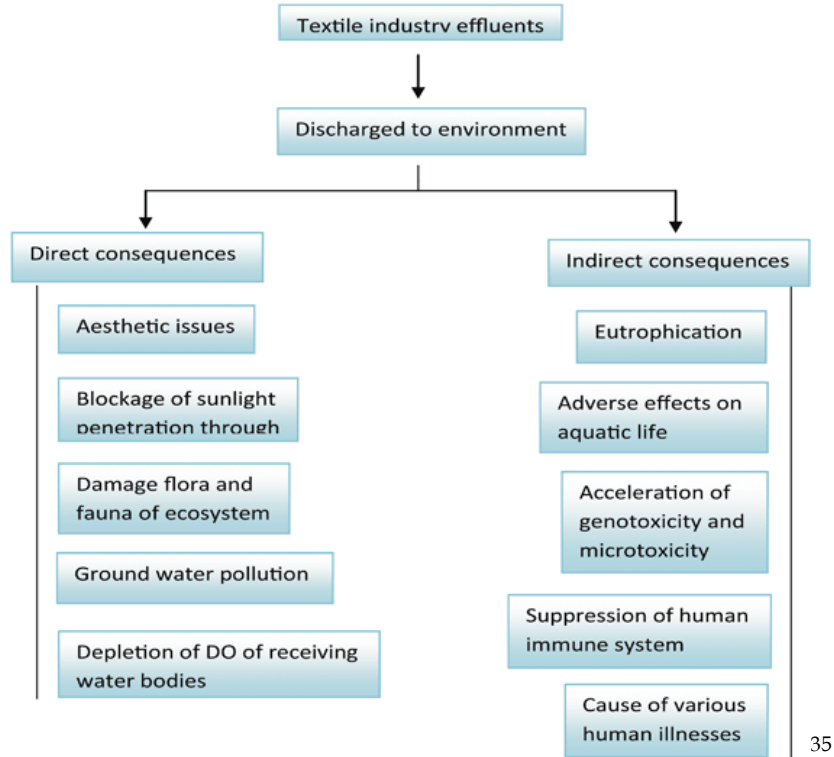
In addition to causing water pollution, the larger pieces of plastics can pose other problems as well, such as ingestion, entanglement, injury, or suffocation of aquatic fauna. When microplastics are ingested by fishes or other aquatic living organisms, they make their way to the food chain, reaching humans in the form of seafood. Thus, the fibers released into water bodies through human activities ultimately find their way back to them.<sup>34</sup>

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<sup>32</sup> *Ibid*

<sup>33</sup> Isaac (n 27)

<sup>34</sup> Pejak (n 11)



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## IMPACT OF THE FASHION INDUSTRY ON SOIL

Akin to water pollution, textile and fashion industries are also the prime sources of land pollution and its degradation. Several activities related to textile manufacturing result in the deterioration of soil quality such as cotton farming, sheep breeding for wool, discharge of textile waste into land resources and the use of untreated wastewater for irrigation of land. Environmentalists have started raising concerns regarding cotton cultivation as it is a major cause of land pollution due to the extensive use of pesticides and fertilizers and its water-intensive irrigation. The large-scale use of fertilizers has diverse negative impacts on soil. Cotton cultivation consumes 6% of the global pesticide production.<sup>36</sup> Their relentless use for cotton production can lead to reduced soil quality and biodiversity, along with negatively affecting plants, insects, and microorganisms. In addition to that, sheep breeding for the production of wool can also pose a threat to the environment, as large-scale grazing by sheep

<sup>35</sup> *Ibid*

<sup>36</sup> Kaikobad (n 18)

can cause soil erosion, thereby threatening the biodiversity and food supply. Soil erosion can also cause deforestation and land sliding, in some cases.<sup>37</sup>

Another potential threat to soil health arises from the use of polluted freshwater or untreated industrial wastewater for irrigation of land. The problem is more glaring in developing countries that have limited water resources. It compels the farmers to use polluted water for growing crops. As discussed above, the textile discharge water has a high temperature, along with being packed with heavy metals and dyes. Irrigating agricultural land with such harmful water causes pollution as well as damages soil nutrients. If allowed to run through the fields, such wastewater can block the soil pores, causing a reduction or loss of soil productivity.<sup>38</sup> Also, the seepage of such effluents through the soil can pollute groundwater.

Irrigation of land with textile wastewater can be extremely dangerous for the environment. Such wastewater contains several pollutants such as heavy metals, traces of yarns and fibers, dyes, and other toxic chemicals. Some of the major concerns that can arise from land pollution are loss of soil productivity, groundwater pollution due to the leaching of metals, and accumulation of chemicals in the food chain. Heavy metals are non-biodegradable in nature. Their accumulation in the land through irrigation can severely impact soil functions.<sup>39</sup> They can also alter the biochemical soil processes, such as transformation and restoration of soil nutrients. Also, heavy metals can kill the microorganisms present in soil, reducing its richness.

## IMPACT OF TEXTILE INDUSTRIES ON AIR QUALITY

Textile industries are characterized by the emission of harmful gasses at almost all stages of manufacturing. On the basis of source or origin, gaseous emission can fall into either of the two categories:

### **1. Point Sources** - for instance storage tanks, boilers, and ovens

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<sup>37</sup> Linden (n 10)

<sup>38</sup> Pejak (n 11)

<sup>39</sup> Deepika Grewal et al., 'Explores the role of fast fashion in sustainability: stylish killer for the environment' (2022) 8(3) *Journal of Textile Engineering & Fashion Technology* <<https://medcraveonline.com/JTEFT/JTEFT-08-00302.pdf>> accessed 09 July 2023

**2. Diffusive Sources** - includes medium-based air emissions, textile wastewater treatment etc.<sup>40</sup>

During the production of textiles, not only the initial processes such as spinning or weaving but later operations such as dyeing, finishing or waste treatment also play an important role in causing air pollution. The use of chlorine-based chemicals for bleaching or dry-cleaning clothes causes the emission of chlorinated organic gases. Similarly, other gases such as sulfur dioxide or nitrogen are released from boilers, and used for heating fresh water. Solvent vapors including toxic chemicals, such as chlorofluorohydrocarbons, mineral turpentine oil, and kerosene are emitted at the dyeing and printing stages. Further, solvents having high pressure such as butyl acetate can make their way into the atmosphere, if not managed properly.

Presently, the fast fashion and textile industries are one of the largest sources of GHG emissions. Every year, around 10% of the global carbon production is released from the fashion industry. Estimates show that annually, textile industries generate around 2.1 billion tons of carbon dioxide. In fact, the stages of raw material production and clothes preparation release 70% of the total industry's emissions, while 30% of emission is caused in the process of packaging, transport, or retail operations. The use of fertilizers and pesticides also contributes to the emission of greenhouse gases. In addition to that, most of the manufacturing industries are established in developing countries where the major source of energy is non-renewable resources; an enormous carbon footprint is left behind.<sup>41</sup>

The fast fashion business model has accelerated the pace of environmental pollution, and if it continues at this rate then the climate footprint is estimated to double by the year 2030.<sup>42</sup> As a result, climate change has become a reality. To reduce its carbon footprint, fashion industries need to bring down their production and reduce the use of non-renewable resources.

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<sup>40</sup> Piera Centobelli et al., 'Slowing the Fast Fashion Industry: An All Round Perspective' (2022) 38 Current Opinion in Green and Sustainable Chemistry

<<https://www.sciencedirect.com/science/article/pii/S2452223622000967>> accessed 06 July 2023

<sup>41</sup> Pejak (n 11)

<sup>42</sup> Filho (n 5)

Replacing synthetic fibers with plant-based fibers can help in the reduction of industrial carbon footprint, as the former tends to have a higher carbon footprint.

## LEGAL APPROACHES TO ADDRESS FASHION INDUSTRY AND CLIMATE CHANGE

### I. Initiatives by Garment and Fashion Industries to Address Environmental Impacts:<sup>43</sup>

**1. Partnership for Cleaner Textile (PaCT):** Holistic program to support the textile chain for garment industries to adopt cleaner production practices. It includes activities such as promoting sustainable consumer practices and expediting investments in the latest technologies.

**2. Better Cotton Standard System:** Licensing standard for the production of sustainable cotton, using minimal chemicals, fertilizers, and pesticides. It encompasses all three pillars of sustainability, i.e. social, environmental and economic.

**3. Ecomark India:** A certification mark issued by the Bureau of Indian Standards (BIS) to products, including textiles that conform to standards prescribed by BIS. The certification is awarded in 16 categories including textiles, cosmetics, leather, cleaning products etc.

**4. OEKO-TEX® Standards:** Label to certify that each element of the product, ranging from thread to fabric, has qualified standards for environment protection, occupational and health safety, and quality management.

**5. China Environmental Labelling Program (CELP):** Launched by China Environmental United Certification Centre, CELP is a third-party certification to promote green purchases and thereby, green manufacturing in China. It covers about 50 industries, including the textile industry.<sup>44</sup>

**6. Global Organic Textile Standard (GOTS):** Set of standards to define the requirements for ensuring organic production of textiles.

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<sup>43</sup> International Labour Organization, *X Greener clothes? Environmental initiatives and tools in the garment sector in Asia* (ILO, 2021)

<sup>44</sup> 'China Environmental Labelling Program' (CERTRIP) <<https://certrip.org/celp/>> accessed 06 July 2023

## II. Solutions to Environmental Impacts of the Fashion Industry

Following are certain efforts that can be made by various stakeholders to find a viable solution to the hazards posed by environmental issues due to the fashion industries-

**1. Self-regulation by the industries:** In the competitive field of fashion, industries have started adopting various marketing strategies and eco-buzzwords to create an image of an environmentally friendly brand.<sup>45</sup> Several terms, such as recycled, upcycled, organic, ethical etc. are being used by fashion brands to convey that sustainable use of resources is one of their prime concerns in business and that the products they provide are ecologically sound.<sup>46</sup> However, the mere use of such terms does not guarantee ethical and environmentally safe practices. If industries start adhering to the claims they make in their marketing, their detrimental impact on the environment can be minimized to a great extent.

**2. Establishing Standards by Certification Boards:** There is no single international body to regulate the fashion industry. However, there are several trade unions or associations that have been constituted with the intent to monitor and encourage adherence to ethical practices.<sup>47</sup> This approach requires that certification boards are established to lay down standards to accomplish environmental targets and award certifications to the entities that comply with the standards. Several certifications have already been established, but mostly they are concerned with only one or a few aspects of the production process.<sup>48</sup> Resultantly, when consumers see that a brand has been awarded a particular certification they may assume that the brand's entire business practices are ethical and in compliance with environmental

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<sup>45</sup> Iris Mohr et al., 'A Triple-Trickle Theory for Sustainable Fashion Adoption: The Rise of a Luxury Trend' (2021) 26(4) Journal of Fashion Marketing and Management <<http://dx.doi.org/10.1108/JFMM-03-2021-0060>> accessed 06 July 2023

<sup>46</sup> *Ibid*

<sup>47</sup> *Ibid*

<sup>48</sup> Whitney Bauck, 'Fashionista's Complete Beginner's Guide to Ethical Fashion Certifications' (*FASHIONISTA*, 25 April 2019) <<https://fashionista.com/2019/04/ethical-fashion-certification-list>> accessed 06 July 2023

standards, while in actuality there may be only a certain aspect of the brand's practices that is environmentally friendly.<sup>49</sup>

**3. International Agreements:** A significant effort has been taken to address the environmental issues in the form of international agreements between non-governmental organizations and private fashion brands, viz. The Fashion Charter for Climate Action 2018. In December 2018, the 24<sup>th</sup> Conference of Parties (COP) was organized in Katowice, Poland.<sup>50</sup> The Conference witnesses the collaboration of myriad fashion stakeholders, such as retailers, suppliers, manufacturers, and others. The aim was to determine a holistic approach for the fashion industry to adopt sustainable practices.<sup>51</sup> The Charter professes to identify and tackle the environmental impacts of the fashion industry at every stage of the supply chain.<sup>52</sup>

### III. International Instruments Dealing with Climate Change

#### 1. The Fashion Charter for Climate Change -

**i. Members of the Charter:** The Fashion Charter has 43 signatories, including fashion organizations, fashion companies, and several NGOs. However, no state has been listed as a signatory to the Charter. It says that the Charter is open to any “*company or organization professionally engaged in the fashion sector, and which is committing to the principles of the [Fashion Charter]*”.<sup>53</sup>

**ii. The Goals of the Charter:** The Fashion Charter has borrowed the substantive goals laid down in the Paris Agreement and is also in consonance with several United National Sustainable Development Goals, such as climate action; cheap and clean energy; infrastructure,

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<sup>49</sup> Kaleigh Moore, ‘Sustainable Fashion Brands Look to Certification as a Competitive Differentiator’ (*Forbes*, 11 September 2019) <<https://www.forbes.com/sites/kaleighmoore/2019/09/11/sustainable-fashion-brands-look-to-certification-as-a-competitive-differentiator/?sh=23a06b6346a7>> accessed 08 July 2023

<sup>50</sup> ‘What is COP24 all about?’ (*UN Development Program*, 21 November 2018) <<https://undp.medium.com/what-is-the-cop24-all-about-ddc39cd6b3c2>> accessed 08 July 2023

<sup>51</sup> ‘Milestone Fashion Industry Charter for Climate Action Launched’ (*United Nations Climate Change*, 10 December 2018) <<https://unfccc.int/news/milestone-fashion-industry-charter-for-climate-action-launched>> accessed 08 July 2023

<sup>52</sup> *Ibid*

<sup>53</sup> ‘Fashion Industry Charter for Climate Action’ (*United Nations Climate Change*, 05 December 2018) <<https://unfccc.int/sites/default/files/resource/Industry%20Charter%20%20Fashion%20and%20Climate%20Action%20-%202022102018.pdf>> accessed 08 July 2023



industry, and innovation; partnership to achieve the goals, just to name a few. The Charter also prioritizes the use of sustainable materials, spreading awareness among consumers, and partnerships with financial institutions.

## 2. The United Nations Framework Convention on Climate Change

**i. United Nations Climate Change:** The U.N. Climate Change is an outcome of the United Nations Framework Convention on Climate Change of 1992.<sup>54</sup> It is a convention to support and facilitate the implementation of the Fashion Charter by making provisions for presenting the work of signatory countries; maintaining communication among them, etc. The convention plays a significant role in supporting the architecture of bodies that advance the enforcement of the U.N. Framework Convention on Climate Change, the Paris Agreement and the Kyoto Protocol.<sup>55</sup>

**ii. United Nations Climate Change Actors:** The convention has been ratified by 197 countries.<sup>56</sup> Such signatories are termed 'Parties to the Convention'. However, no non-state actor is a party to the U.N. convention.<sup>57</sup>

**iii. United Nations Climate Change Goals:** The primary aim of the convention is to prevent unnecessary human intervention in the climatic system.<sup>58</sup> To achieve this, certain goals have been laid down by the U.N. Climate Change such as the developed countries have the onus to lead the way to sustainable development; contributing funds for developing countries to adopt environmentally friendly technologies; keeping updates on the environmental problems and the steps being taken to resolve them etc.<sup>59</sup>

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<sup>54</sup> 'About the Secretariat' (*United Nations Climate Change*) <<https://unfccc.int/about-us/about-the-secretariat>> accessed 08 July 2023

<sup>55</sup> *Ibid*

<sup>56</sup> 'What is the United Nations Framework Convention on Climate Change?' (*United Nations Climate Change*) <<https://unfccc.int/process-and-meetings/what-is-the-united-nations-framework-convention-on-climate-change>> accessed 08 July 2023

<sup>57</sup> 'Parties to the United Nations Framework Convention on Climate Change' (*United Nations Climate Change*) <<https://unfccc.int/process/parties-non-party-stakeholders/parties-convention-and-observer-states>> accessed 08 July 2023

<sup>58</sup> What is the United Nations Framework Convention on Climate Change? (n 56)

<sup>59</sup> *Ibid*

## CIRCULAR SLOW FASHION - A FEASIBLE ALTERNATIVE?

A feasible alternative to the fast fashion trend is being seen in what is called 'Slow Fashion'. The idea of a slow fashion business model is based on the assertion that the current fashion movement cannot continue to operate without causing a threat to the world's precious resources. Therefore, there is a need to encourage a slow fashion business model that relies on recycling, reusing, repairing and redistributing the materials. Also known as the circular fashion mode, it aims at reducing the waste produced by enhancing the quality of materials used in the manufacturing of products so that they can last several wash cycles without shredding their fiber or releasing toxic chemicals in the environment. The business model also encourages reverse logistics i.e. ensuring the return of goods to their manufacturers, rather than dumping them in landfills or incinerators, so that they can be recycled or reused for further use.<sup>60</sup> Collection centers can be set up by clothing firms where people can deposit their discarded garments in lieu of modest compensation for each piece returned, so that it may be either reused (such as being sold as a second-hand item) or donated to charity. To promote the slow-fashion culture, fashion brands need to adopt healthy manufacturing practices, such as instead of prioritizing new designs every season, the focus should be on the production of quality pieces that can last a long time. Also, the promotion of reusing clothes can play a significant role in curbing the unnecessary shopping spree among customers. An example could be the setting up of clothes rental shops for functions such as parties and weddings so that instead of purchasing a brand new dress for every other occasion, people can simply rent a dress for the event.<sup>61</sup> This idea can prove to be cost-effective as well as environment-friendly. Notably, the slow fashion business model is largely in favor of reducing the resource consumption by the textile industry such as water, and energy and promotes the production of quality and durable pieces, in contrast to the fast-fashion trend which focuses on the quick replacement of designs through cheap quality products. Enhancing the products' life span is one of the key strategies of the slow fashion business model as it can significantly impact the

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<sup>60</sup> 'Environmental Impact of the Textile and Clothing Industry :What Consumers Need to Know' (*European Parliament*, 17 January 2019)

<[https://www.europarl.europa.eu/thinktank/en/document/EPRS\\_BRI\(2019\)633143](https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2019)633143)> accessed 06 July 2023

<sup>61</sup> Isaac (n 27)

carbon footprint of textiles on the environment. This can be done by enhancing colorfastness, quality of zippers, seams, rip strength etc.<sup>62</sup> The improved durability and quality of clothes will not only encourage the customers to use the products for longer periods and make less frequent purchases of new clothes but will also encourage the circular fashion business model.

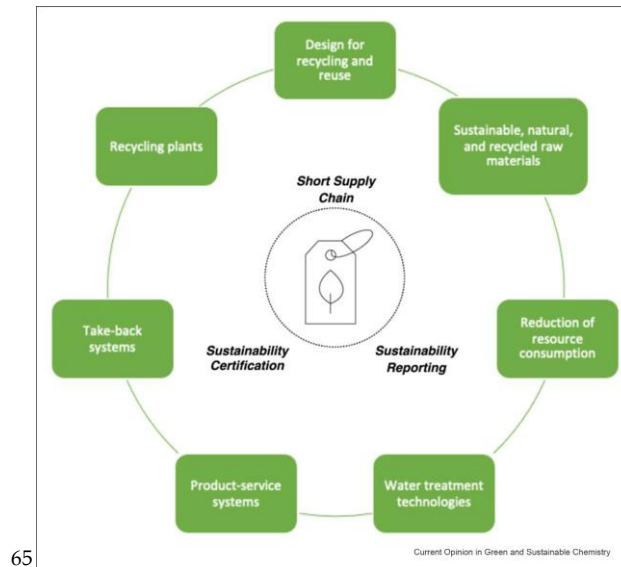
Furthermore, the slow fashion business model includes the usage of natural, sustainable and recycled raw materials that have a lower environmental impact than synthetic materials. For example, using organic cotton, instead of conventional cotton, can be more environmentally friendly as it needs limited water and is less pollution-causing. In addition to that, the fashion industry is experimenting with innovative ideas to reduce its detrimental impact on the environment. For instance, the use of CO<sub>2</sub> instead of water for dyeing and installing water treatment plants to treat the industrial waste before its discharge into water bodies, as textile waste contributes to an estimated 15-20% of water pollution, releasing a plethora of toxic chemicals in the water bodies including soaps, nitrates, sulfur, as well as heavy chemicals such as cadmium, lead, arsenic, mercury, cobalt, and nickel. The use of the air gap membrane distillation (AGMD) method can help in improving the textile wastewater treatment process.<sup>63</sup> Furthermore, fashion industries are also taking steps to certify their commitment towards corporate social responsibility (CSR) such as obtaining GOTS certification to attest to the use of natural fibers in organic textiles that are less water-consuming and are non-toxic, or obtaining accreditation for Fair-Trade certification to attest the compliance with workplace safety standards and abundance of hygiene standards for agricultural laborers. This creates a sense of making a responsible choice among the consumers. Additionally, there has been a surge in experimentation with biobased polyesters (or biosynthetic) such as Lyocell, Bemberg, and Piatex. Such biobased polyesters are made from renewable resources and can reduce the amount of precious resources consumed by the textile industry. Lastly, sustainability reporting activities by fashion companies can help in periodical communication of not only the financial and accounting aspects of their business but also their social and environmental impacts. This will foster a double set of benefits for the companies, viz. internal benefits in the form of

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<sup>62</sup> Pejak (n 11)

<sup>63</sup> Niinimaki (n 8)

organization and process management within the company, and external benefits in the form of enhanced reliability for stakeholders. The following figure summarizes the above-discussed slow fashion business model that can help in addressing the issues posed by the fast fashion trend.<sup>64</sup>



One of the most effective ways to manifest slow fashion is to turn down the fashion rules that cherish the notion of disposability. Fashion rules are the perceived acceptable and unacceptable fashion trends by society. The fast fashion trend has taken the idea of wearing clothes once or just a few times before disposing of them to another level because of the incredibly cheap prices. Another significant factor that contributes to this consumer behavior is the low quality of the clothes. To lower the prices, brands produce poor quality clothes that can last only a few washes, good enough to suffice till new trends are introduced. This creates a sense among the consumers that they are paying the *price for fashion*, therefore, they do not give a second thought before discarding the products as soon as new designs hit the market floor.<sup>66</sup>

Since companies are the ones who create demand for a particular product among consumers, they need to become the harbinger of this cultural change. Manufacturing and promoting

<sup>64</sup> Williams (n 1)

<sup>65</sup> Centobelli (n 40)

<sup>66</sup> Williams (n 1)

good quality products by the brands will help the consumers navigate their route to slow fashion. Today, social media platforms such as YouTube, Facebook and Instagram are arguably the most powerful tools to influence society. Using such vast platforms for promoting slow fashion can help in communicating the message to a large audience at once. Similarly, fashion brands can collaborate with social media influencers as a part of their strategic marketing campaigns.<sup>67</sup> Since such influencers have a large audience who idealize them, watching them opt for slow fashion can bring an impactful change in the consumers' choices. Bringing a shift in consumers' mindset towards fashion trends is the key to redefining the fashion industry's business models. Unless active steps are taken in such directions, it is difficult to imagine a change.

## CONCLUSION

In the past few decades, big fashion brands have become the face of fast fashion. Competition among the brands is so high, that it seems difficult to expect a change in the fashion business in the coming few years. However, considering the impact of the fast fashion business model on the environment, there is a dire need for change. The problem of climate change, which was once merely a matter of discussion in round table conferences, has become a stark reality today. There has been more than sufficient research to provide evidence for the gravity of the situation. It is high time that both the demand and supply elements of the fashion supply chain take responsibility for the harm they are causing to the environment, right from the over-exploitation of resources for fiber production to the discharge of untreated wastewater into aquatic bodies. A drastic change cannot be expected overnight. However, initiatives from each stakeholder can create a huge impact. One of the simplest efforts that can be made to make a positive change for our environment is through changing people's mindset towards a 'disposability' attitude. Large-scale promotion of slow and sustainable fashion can help in spreading awareness in society. Industries need to address the five barriers to transcending fast fashion, viz. high price, low availability, lack of awareness, distrust and negative

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<sup>67</sup> Isabel Agatha Millward-Peña, 'From Fast Fashion to Sustainable Slow Fashion' (Theses of Master of Arts in English and Writing Studies, California State University, San Bernardino 2022)

perception.<sup>68</sup> Unfortunately, fashion industries are unrelenting to bring any change in their business model. Therefore, it becomes the consumers' responsibility to discharge their duty of being wise shoppers instead of waiting for others to take a step.

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<sup>68</sup> Annamma Joy et al., 'Fast Fashion, sustainability and the ethical appeal of luxury brands' (2012) 16(3) Fashion Theory  
<[https://www.researchgate.net/publication/261737125\\_Fast\\_Fashion\\_sustainability\\_and\\_the\\_ethical\\_appeal\\_of\\_luxury\\_brands](https://www.researchgate.net/publication/261737125_Fast_Fashion_sustainability_and_the_ethical_appeal_of_luxury_brands)> accessed 13 July 2023