Clothing Waste in the Fashion Industry: History, Background, and a Way Forward

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Abstract

The fast-paced trend and the subsequent surge in clothing production in the fashion industry have contributed to rising greenhouse gas emissions. As global concerns over pollution and climate change intensify, the need for a sustainable approach in the fashion industry becomes imperative. Fortunately, over the ages, consumers gained knowledge about the materials and the production process of the clothes they wear every day. This education caused an increasing demand for a sustainable approach to the fashion industry and helped consumers to make informed decisions. However, despite the increasing demand for "sustainable fashion," several limitations hinder the fashion industry and consumers from being more ethical and sustainable. This article discusses the different approaches to sustainable fashion, its impact on the environment, and the obstacles of textile recycling. The article examines ways in which government policies can promote sustainable practices in the fashion industry.

1. Introduction

Different industries have undergone several new alterations and transformations because of the twenty-first century. The effect of human actions on the environment has become more obvious as the world's concern over climate change grows. Experts and decision-makers are searching for sustainable approaches that can promote economic growth without harming the environment to address this. Fashion is one such sector that must deal with these issues.

A sizable portion of the world's population is served by the huge production of clothing and textiles. Because of its significant influence, industry leaders are now seeking

environmentally sustainable alternatives. A key tactic for reducing the negative environmental effects of the textile and apparel industries is waste management. This entails reducing industrial waste by promoting recycling and product reuse of materials and goods. Despite the significance of this issue, different contexts may call for varying degrees of commitment to sustainability and waste management. Fashion sector clothing waste is a complex problem with wide-ranging effects on the economy, society, and the environment.

The necessity for sustainable behaviors is becoming more important as the problem becomes more widely recognized. A comprehensive strategy that takes production, use, disposal, and global trade dynamics into account is needed to address the problem of clothing waste. Understanding the reasons behind garment waste allows us to develop creative solutions that support a more responsible and sustainable fashion sector. Along with the consumption sectors of food, housing, and transportation, the textile industry has a significant negative impact on the environment. Some of these environmental effects might be mitigated through recycling and reusing. Governmental entities, businesses, and individuals as customers can all engage in recycling activities that are in line with ecological responsibility, morality, and economic feasibility, thanks to the technical options that are already available.

The current societal advantages of textile recycling and reuse are frequently connected to philanthropic endeavors. For instance, in the UK, charitable groups collect used clothing and sell it through their stores. Any extra stock is sold to recycling businesses. Recycling companies directly purchase the contents of charitable clothes banks and pay the associated charity based on the weight of the items collected. The ensuing profits are tightly linked to both internal and external initiatives, assisting people and communities who need support and help. With assistance from the local governments, recyclable garbage pickers in Brazil, most of whom live in squalor, are incorporated into cooperatives or groups.

They actively support the beautification of areas, the removal of waste, the promotion of resource recovery practices, and the creation of chances for greater local cohesion. Every stage of the textile waste recycling life cycle–including collecting, sorting, transporting, and recycling–creates jobs and opens doors for small or family businesses. Often, textile recycling is seen as a means of creating a circular economy or closed-loop production system rather than just as an end. It might provide a solution for businesses looking to switch to sustainable business practices. Textile recycling uses recyclable materials as a cost-effective, efficient replacement with little negative environmental impact to drive product manufacturing toward lower production costs. For instance, recycling used clothing has the potential to reduce water eutrophication by 95%, pollutants associated

with chemical processing by 45%, and greenhouse gas emissions by 53%.

2. Obstacles to Achieving Optimal Textile Recycling:

Financial Feasibility:

Many recovered textile materials are currently unsuitable for recurrent use because downcycling and the manufacturing of inferior products are frequently done with recycled textile resources. The economic viability of such materials' many uses is undermined, which discourages investments in textile recycling. It becomes more profitable to promote the repeated use of textile fibers, which encourages a wider range of stakeholders to participate in recycling. The lower market pricing of virgin or non-recycled textile materials also limits the demand for recycled textiles. Certain recycled textile fibers have comparable high costs because of the costly recycling processes, including transportation, which deters potential investors.

Textile Product Composition:

Numerous textile goods are ineligible for successful recycling due to their makeup. Notably, the presence of metals and polymers in these products is a substantial challenge. Due to difficulties in sorting mixed materials made up of many polymer kinds with distinct mechanical and technical properties, recycling is frequently impractical. The increasing tensile strength of textile fibers also makes it difficult to shred them. Although shredding is necessary to turn old textile materials into raw materials, the finished product's quality is affected. Additionally, a lot of textile products contain chemicals and dyes, which undermine recycling efforts by lowering the quality of the recycled product. Some textile dyes are also dangerous and can cause cancer.

Technological Constraints:

The lack of sufficient technologies for the separation of textile waste in preparation for recycling is a significant factor in the paucity of recyclable materials. Many technologies in use today have trouble properly separating impurities and dyes from the original fibers. The use of automated sorting devices would increase the number of recyclable textiles and improve production efficiency. Additionally, there are constraints that prevent the development of chemical and mechanical textile recycling technologies, demanding a significant investment in research to get through these obstacles and create more effective methods. Recycling is severely hampered by outdated ideas, particularly in poorer nations where there is insufficient recycling infrastructure and disorganized marketing strategies.

Inadequate Coordination, Weak Policies, and Standards:

We must emphasize that ineffective waste collection is a barrier to efficient recycling. The absence of measures to improve the overall

effectiveness of the textile recycling ecosystem, as well as an integrated and well-coordinated framework, has a detrimental effect on the sector.

3. Environmental impact of the textile clothing industry:

According to many studies, the average number of times an item of clothing is worn might be doubled, which would result in a 44% reduction in greenhouse gas emissions. Several tactics have been developed to advance this strategy.

Slow Fashion:

Slow fashion, in contrast to fast fashion, encourages customers to buy fewer, higher-quality items and to keep them for longer. This idea places a focus on reliable supply networks, modest manufacturing, traditional workmanship, the use of natural materials, and the production of garments that can be worn throughout the year. It is not intended to fully stop people from buying clothes; rather, it tries to change the economic paradigm such that fewer products are sold.

Improved Collection and Recycling:

Circular fashion attempts to reduce waste and increase the use of materials throughout their life cycle, which is one of the main tenets of the circular economy. When clothing is no longer required, it should either be recycled or sold as used apparel. To achieve this goal, items must be made to have several life cycles and use recyclable materials that are suitable for the usage they are intended for. Essential are timeless looks and modular designs that make disassembly simple. To simplify the recycling process, firms and researchers are looking into ways to cut down on fabric waste during cutting and eliminate the need for a lot of seams.

4. Policy Implications for Addressing Clothing Waste in the Fashion Industry:

Clothing waste in the fashion sector calls for immediate attention and impactful policy changes. To promote sustainable behaviors and lessen the negative effects of clothing waste, policymakers must play a crucial role as the environmental, economic, and social effects of clothing waste continue to worsen. The main policy ramifications that can help reduce clothing waste and advance a more ethical and sustainable fashion business are outlined in this section.

Extended Producer Responsibility (EPR) Regulations:

Fashion designers and producers would have to be accountable for the entire lifecycle of their items, including disposal, if EPR legislation were to be implemented. By holding manufacturers accountable for the waste their products generate, EPR can promote the development of more durable and recyclable clothing.

Mandatory Labeling and Transparency:

Making obligatory labeling that mentions a

product's durability and environmental impact can help buyers make more informed decisions. Consumers can be led to make more environmentally friendly purchases by being provided with transparent information about materials, manufacturing techniques, and estimated lifespans.

Promotion of Circular Economy Practices:

Policymakers can promote a transition to a circular economy model in which goods are made to last a long time and are simple to repair, reuse, and recycle. This transformation can be sped up by government and industry partnerships and incentives for enterprises to embrace circular business practices.

Tax Incentives and Subsidies for Sustainable Practices:

Giving tax benefits and subsidies to fashion companies that embrace sustainable practices, such as cutting waste, utilizing eco-friendly materials, and putting in place effective supply chain management, can encourage reform across the industry.

Support for Research and Innovation:

The development of new technologies, materials, and methods to lessen garment waste is the subject of research and innovation that policymakers can fund. Supporting programs that investigate cutting-edge recycling techniques and eco-friendly apparel design can promote progress.

Promotion of Secondhand Markets and Repair Services:

Extending the life of clothing and keeping it out of landfills can both be accomplished by fostering the expansion of secondhand marketplaces and repair services. Reducing garment waste can be achieved in part by providing incentives to companies that engage in resale and repair.

Consumer Education and Awareness Campaigns:

Demand for environmentally friendly items can be increased, and a culture of responsible purchasing can be fostered by launching educational programs to inform consumers about the effects of garment waste and the advantages of sustainable options.

Regulation of International Trade and Donations:

To ensure that the export of old clothing does not affect regional textile businesses in developing nations, policymakers should set laws. Cooperation among nations can result in fair trade policies that reduce adverse effects.

Collaboration and Partnerships:

Government collaboration with business associations, NGOs, and international organizations can facilitate the creation and implementation of successful policies. Collaboration can result in a thorough strategy for addressing clothing waste.

5. Conclusion:

A comprehensive and varied approach is necessary to address clothing waste in the fashion business. By implementing rules, rewards, and awareness campaigns that support sustainable practices, policymakers may significantly influence the direction of the fashion sector. Governments can encourage industry participants, customers, and other stakeholders to adopt responsible behaviors that support a more sustainable and circular fashion ecosystem by putting these policy implications into practice. A thorough transformation at the system level is required to develop a new circular economy for the textile sector, which calls for an unmatched level of commitment, collaboration, and innovation. A coordinated global strategy in line with the significant potential at hand must be added to the present programs focused on sustainability or specific aspects of the circular economy. To ensure inclusivity, this strategy should include garment manufacturers and suppliers from both developed and poor countries.

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