

# Trends in the Fashion Industry on Sustainability



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## Abstract

The fashion industry runs on two halves; the halve with desire, status, identity and the halve with more practical concepts of production and natural resources. Both these halves of the industry cannot exist without each other. The practical side of the industry often gets over shadowed by the other halve which has led to the creation of "fast fashion". Fashion collections (often runway knockoffs) released every 2 weeks or so in impractical numbers made from cheap materials at sweat shops to shorten the shelf life of the products in order to promote more purchase. These clothes are made sacrificing labor rights, human rights, environmental standards and a lot more. Sustainable fashion is the only way out of this mess we have collectively created. A change from linear (cradle to grave) to circular (cradle to cradle) economy is the answer to the climate change, loss of biodiversity and global warming faced today. In the paper, steps to improve sustainability and elements of sustainable business model have been discussed. A case study of Everlane, a sustainable brand and its scope of improvement has also been highlighted in this review paper.

## Introduction

Sustainability can be described as the fulfilling of the needs of the present generation by maintaining an ecological balance and not compromising on the ability of the future generations to meet their needs. That is, it is development without disturbing nature or other social being. Apparel production and processing have become the reason for natural resources depletion, pollution, sweatshop like working conditions (for garment workers) and accumulating landfill waste from the past few decades. If it continues its conventional ways of production and manufacturing soon the planet will be left with no water to drink and no clean air to breathe. Figure 1 given below shows the negative impacts of the Apparel Industry [1].

There cannot be garments that are made 100% sustainable but the small steps taken can make a big difference and reduce pollution and environmental impact levels [2]. Sustainable conscious customers are on the rise from a few decades. This rise is seeing a peak like never before and it will continue the same in the next few years to come as the pandemic has given us all the time reflect upon our life choices. Fashion and textile are not only the industries that are trying hard to go green, other prominent sectors such as food, automobile and medicine are also on the run. The materials used to make our products can be changed and altered to bring about more responsibility

towards the environment. Fabrics such as organic cotton, hemp, bamboo, soya and pina are sustainable and well known to reduce environmental impact [3]. Sustainable fashion has been more of consumer led movement where the brands and designers are forced to act upon the demands and desires to survive in the industry. The use of innovative materials can be hence an environmental as well as social responsibility fulfilment [4]. When we say sustainable fabrics, it does not mean that only new innovation can count. The used fabrics can be collected from the consumers and instead of landing up in a landfill these can be used as the raw material for the next collection. This is what circular economies aim for. A completely zero-waste brand or company can be achieved only in the long run with significant efforts. The new raw materials can be sorted according to quality, grade, colour etc. and processed to make yarns and then fabrics [5]. 3D bio-printing uses bio-compatible inks and materials that creates textile materials without causing pollution and does not compromise on quality [6]. Bio-fabrication can solve a major issue faced by luxury fashion especially, that is leather. Leather tanning can be highly polluting and health risk to the workers as well. Lab grown leather is a great alternative to conventional animal leather. Replicating mammalian cells and regenerating cellulosic cells can be not only used for organ generation but also to make leather in labs [7,8]. Bio-fabrication involves cell and developmental biology,

material science and mechanical engineering. This can be field that provides employment opportunities to many in the upcoming future [9]. Advanced Denim is a new innovation that uses up to 92% less water and 32% less energy. These numbers can make great environmental impact difference [10]. Everlane is company that promises the cleanest denim in the world with its partnership with Saitex [11]. Consumers demand for the labels to have more

information regarding the sustainability of denim they purchase and are also willing to pay extra to get sustainable denim [12].

### Sustainable trends

These are the few steps that can improve the sustainability index of individuals as well as companies given by Design and Alter in their blog [13]. Figure 2.

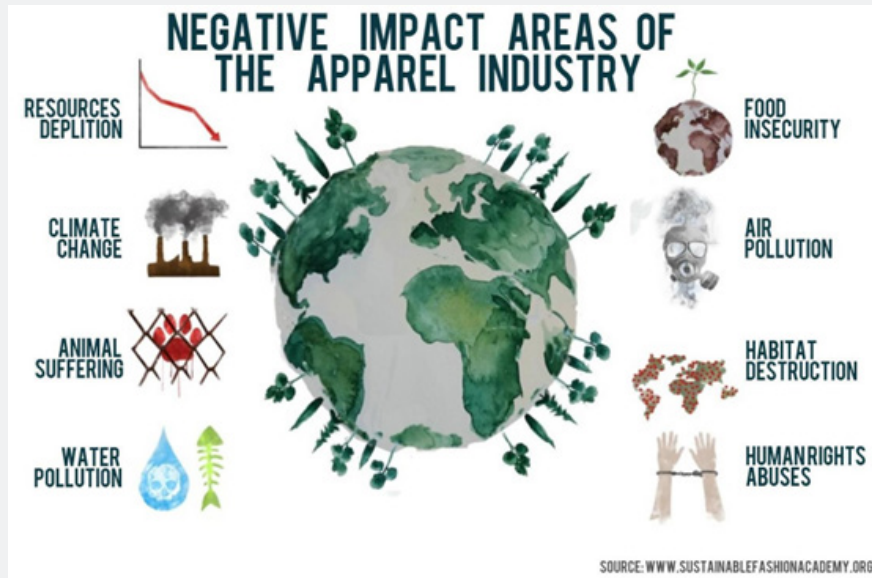


Figure 1: Negative impacts of the Apparel Industry.

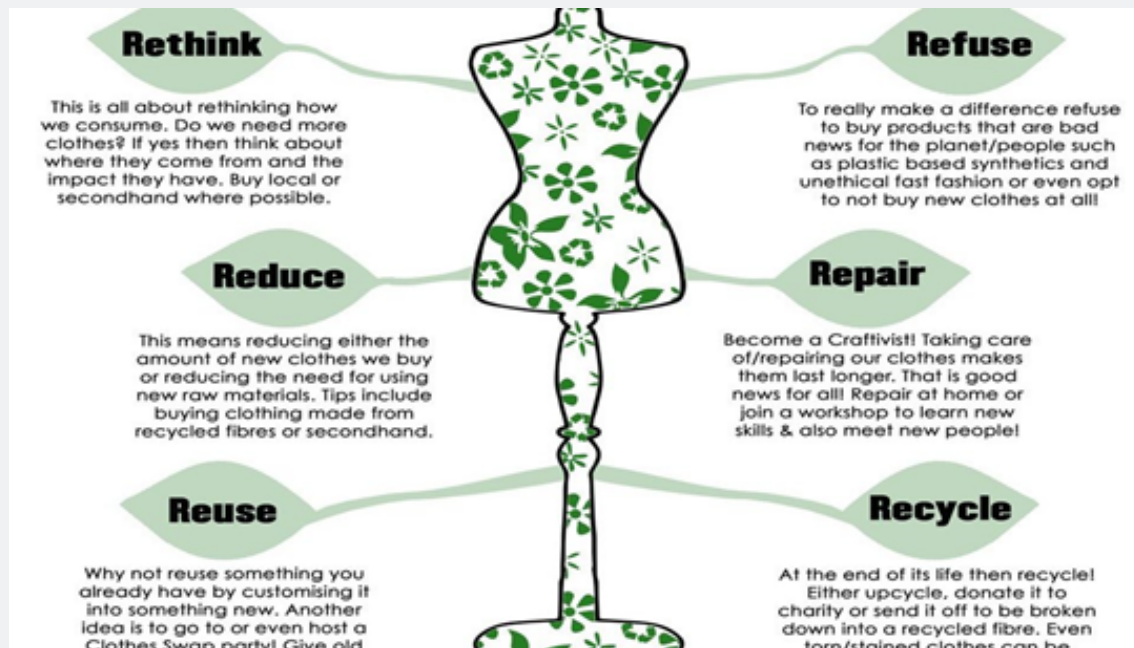


Figure 2: Steps to achieve sustainable fashion.

**Organic fabric:** Fabrics grown without the use of harsh fertilizers, pesticides etc. are being utilized. Cotton is known as the dirtiest crop because of the amount of water used for its production along with all the chemicals. The organic counterpart of it is said to be sustainable and less polluting. Fabrics like bamboo, hemp, wild silk, and wool are also considered sustainable provided other factors such as workers health and hygiene, wages etc. are also taken care of well. There is an increasing trend in the use of ethically made fabrics in the fashion industry especially by the luxury and premium sectors.

**3D Garments:** When it comes to 3D garments many intermediate processes of traditional garment manufacturing are eliminated leaving a short supply and production chain. A reduction in the supply or production chain length means lesser energy and resources used. A 3D garment is printed right from the yarn forgoing fabric manufacturing, fabric checking, testing, cutting, processing and stitching. Hence 3D garments have less carbon emission and is less polluting to the environment.

**Bio-Fabrication:** Bio-leather is bio-fabricated leather made from artificially developed collagen and cultured fibroblasts. This fabric is biodegradable and does not involve the killing of livestock for their skin. Leather being made from the by-product industry of the food industry does not make it any sustainable because of the tanning and dyeing process that it has to undergo before finished products [9]. *In vitro* synthesis of collagen and cultured fibroblasts allow the production of artificial leather that is both bio-degradable and cruelty free. Bio-fabricated leather can significantly reduce the use of energy, land, and greenhouse gas emissions [7]. It can reduce the production of livestock that accounts for 30% of global land surface and 15-24% of global greenhouse emissions [6].

**Sustainable denim:** Denim is the most used and stylized fabric among youngsters as well as older ages. Denim processing is very polluting, consumes tons of water and energy. Eco-savvy consumers are now demanding more information about the sustainability of their pair of jeans in the labels. Denim is one of the fabrics that must undergo sustainable improvements in the near future as we cannot do without and do with the current levels of pollution it creates [12]. Zero water technologies in denim washing, ozone wash and laser wash should be employed on a larger scale to reduce the impact of denim processing on the environment. These are also chemical and energy saving, reduced waste production, improved tensile/tear strength of finished goods [14]. For denim to be truly sustainable there are other social issues that need to be resolved such as child labor, farming practices for the raw material-cotton, chemical and insecticide use and lung diseases caused by processing of cotton. These issues can bring down the sustainability rating of even the world's cleanest denim in terms of processing [10].

**Recycled plastic in apparel:** Fast fashion clothes made from cheap plastic materials (polyester, rayon, acrylic, polypropylene etc.) are filling the landfills while plastic bottles, fishing nets etc.

are polluting oceans. We cannot wait for these to be decomposed so the best way to improve our planet is to collect these reprocess them into raw materials and incorporate these into new clothes, shoes, bags etc. Well-known brands in mass market as well as luxury are doing this. It is shown that up to 95% of textile waste ending up in a landfill can be recycled. Integrating circular economy into manufacturing practices can bring about the change in the environmental impacts of the 21<sup>st</sup> century production and manufacture [4]. Adidas introduced its 3D printed soles and world's first sneakers produced from 95% recycled ocean plastic [4]. Levi Strauss have used at least 8 plastic bottles (recycled) in producing it's a pair of jeans [15]. However just recycling existing plastic and not creating new is not just enough. There should be technology to produce synthetic fabrics and others that do not shed micro-plastics. Micro-plastics have entered everywhere from oceans, lakes to even human lungs. This can lead to adverse health and environmental effects [16].

**Zero waste designing:** A company does not need solar panels, water recycling plants etc. to be labeled as a sustainable business. There are others ways they can achieve sustainability. At the design stage the company can make use of environment friendly fabrics and trims. Zero waste design where only minimal waste is left after the product is manufactured is on the rise now. The same applied to all the packaging material such as tags, polybags, cartons, threads etc. can help decrease the carbon emission of the company itself [17].

**Manufacturing tools:** Lean Manufacturing Methods such as Value Stream Mapping (VSM), Standardization, 5S, just in Time (JIT), Statistical Process Control (SPC) can be applied into the manufacturing processing to save money, energy and resources. This in turn will also reduce the company's emission of greenhouse gases and carbon footprint [17].

**Supply chain management:** A long supply chain can complicate things for the company as well as the environment. Air shipped goods have more carbon footprint than sea freight. Keeping in mind that transportation of the raw materials and that of finished goods itself cause a lot of pollution can help bring new ways to reduce these. Locally sourcing raw materials and packaging materials can help increase the sustainability index of the manufacturer [17].

### A Sustainable business model

A sustainable business model would have four pillars. Value Proposition, Business Infrastructure, Customer Interface and Financial model. What makes it different from the conventional business model is that a sustainable one will have socio-environmental values as its core goals. It also has nine building blocks that include Key Partnerships, Key Activities, Key Resources as part of the Business Infrastructure, Value Proposition, Customers, Customer Relationships and Channels parts of its core Value Proposition, Costs and Revenue as part its Financial Model. All these works together to make sure that the company

has financial profits that enable for growth and paying salaries, without compromising on the environmental and social values / commitments. Some of the companies that have integrated sustainability into their core business models are Puma, Mud Jeans and Dilling.

**Puma:** 10 for 20 strategies, aims to incorporate 10 of the sustainable development goals proposed by UN by 2020 into their core business model.

The figure below shows the different sustainable goals announced by UN [18] (Figure 3).

**Mud Jeans:** All their jeans are a combination of recycled fiber from previous jeans and organic cotton. Consumers are engaged as suppliers as well when they return their worn out jeans. It's a zero waste system.

**Dilling:** The Danish organic underwear brand controls production as well as organic dyeing of their products. The

chemicals that go into their products are controlled strictly. These are some of the brands whose efforts at sustainability have been noticeable.

**Toms shoes:** 1 for 1 strategy, for every pair of shoes that you buy a pair is given out to the needy free of cost. This Argentina brand embraces its people's love for football and is more of a social business. The shoes are produced in local markets and hand painted by craftsmen all over the world.

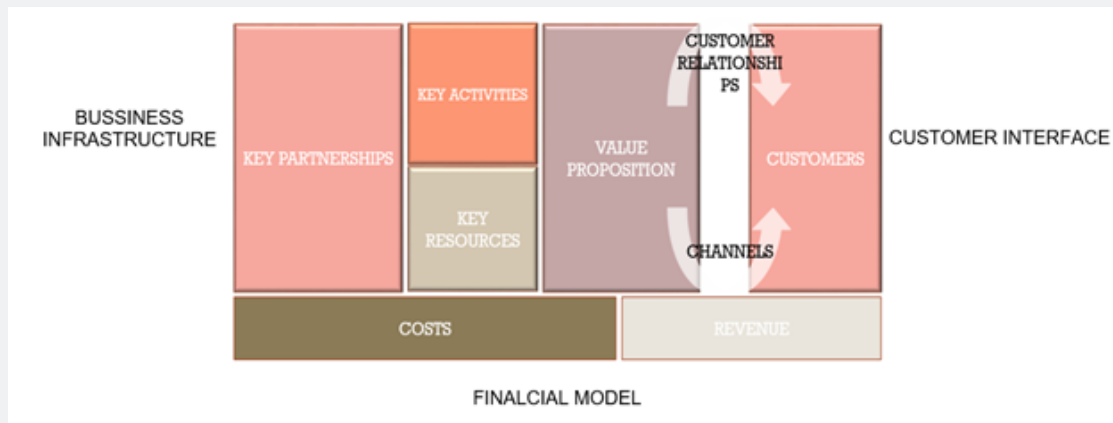
**Ecolf:** Broken fishing nets from small fisher men, bottles, coffee waste etc. and repurposed and made into high quality fabrics that finally gets converted into garments and bags.

**Vigga:** Maternity and kids wear that is organic and can be accessed on a monthly basis and are returned after use. The returned clothes are cleaning and shipped to other users again.

A representation of the sustainable business model has been shown below [19] Figure 4.



**Figure 3:** Sustainable Development Goals proposed by the United Nations.



**Figure 4:** Sustainable business model canvas

### Case Study of a Sustainable Brand and its Opportunities to Improve - A Sustainability Breakdown on Everlane

#### Introduction

Everlane is a San-Francisco based brand started with sustainability as its core issue by Michael Preysman and Jesse Farmer in 2010 [20,21]. The brand promises clothing and accessories made with exceptional quality, ethical factories and radical transparency. Everlane, as a sustainable brand has a wide market now worldwide owing to their affordable prices, clean and efficient website design and promotion through social platforms including sponsorship offerings. However, the brand has been in the lime light for certain other not so ethical issues recently after the pandemic outbreak.

#### Problem Statement

To critically analyse the sustainability aspects of the brand "Everlane", discuss on the short-comings and suggest improvements in the practice of ethical fashion.

#### Methods of data collection

The information indicating Everlane's sustainable practices has been taken from their official website where they have explained in detail about the factories, price and denim production. Other information is cited from blogs, YouTube (mostly from influencers who have been once been sponsored by the company) and a document from the former employees of the brand addressing the happenings inside the company circle. Comparative analysis of the brands sustainability practices to the ideal is done using the texts, models and extra reading materials from the "Sustainable Fashion Course" [22-25].

### Analysis of Sustainability

#### Everlane's sustainability practices

Everlane goes by the tagline- Exceptional quality, Ethical factories, Radical transparency. In an interview, Michael Preysman, Everlan's co- founder says that they invest very less on advertising on behalf of their brand and looks for the longevity of the brand rather than making short-term profits. They prefer their brand to be known to people by social media and word of mouth from customers who have purchased from them. The brand wants its consumers to be able to use their products for years to come and not just a few weeks. This is exactly how an ideal sustainable fashion start-up would come into picture. Their website takes you through everything you would want to know about the brand's functioning except a few but critical aspects (for claiming to be totally sustainable) which will be discussed later in this case study.

1. The brand uses recycled plastic bottles to make shoes, manufactures carbon neutral sneakers, GOTS certified cotton and has partnered with the LEED certified denim factory, Saitex to produce the cleanest jeans.

2. They pay visits to their factories across the globe to make sure ethical labor conditions and run factory audits to cross check the factory certifications. The factories they work with are ones that have some sort of reliable certification in place.

3. Every Black Friday, all their profits made on that particular day would go to a charitable organisation or for improving the lives of their workers.

4. The true costs of the garments are displayed on their website. They have cut traditional retail markups in their pricing.

5. They source only high-quality materials to make their products. (ex: Grade A- Cashmere sweaters, Italian shoes, Peruvian Pima tees etc.)

6. Their partnership with Saitex, an LEED certified facility to produce the world's cleanest jeans. The factory recycles 98% of its water through a 5 step filtration process that finally sends back the water to the system. The water that comes out of the filtration process is said to be drinkable. This factory utilizes only 0.4 liters of water after recycling whereas traditional denim processing would use up about 1500 liters in standard processing. The use of solar power has led to an 80% decrease in the factory's CO2 emissions. The jeans are 85% air dried after which recycled hot air from the factory machines are used to dry them. Japanese fabric is used to make these jeans which makes them last longer. The denim manufacturing creates a toxic byproduct called Sludge. This Sludge is extracted and shipped to the nearby brick factory where it gets mixed with concrete making it non-toxic to the environment. These bricks are then used to build affordable homes. The factory has contributed to the building of 10 homes so far. Below the unit in Saitex factory is shown [26] Figure 5.

7. The brand promises to eliminate the use of virgin plastic in their supply line of products by 2021.

Everlane has chosen Saitex to be its Technological Partner helping it make Jeans that are less polluting to the environment. The factories facilities have reduced the amount of water, energy and waste generated in the manufacturing and processing of denim. Everlane has sponsored social media influencers to endorse and review their products to world. The company releases new collection every month which is a balance between the Fast trap and Slow trap that companies with sustainability goals can fall into.

#### Areas with scope for improvement

1. From a circular economy perspective, Everlane does not keep track of what happens after their products reach the end users. They have no idea of the value retention or deterioration of their products after the bill is payed. No steps are taken to extend the use, reuse and recycle phase of products [27].

1. Majority of their clothes are still made of 100% conventional cotton which is the most polluting and dirtiest crop in the world. Conventional cotton uses up enormous amounts of water and energy leading to pollution and waste generation.

2. There is absolutely no sign of investment made by the brand in any new technology to reduce environmental impact or in innovative eco-friendly materials such as organic cotton, tencel, hemp etc.

3. There is no third-party verification for their product standards or quality. The claims given by the company website are not backed up by any evidence telling the consumers that they are sustainable or ethical.

4. The brand has failed to address raising issues against its claims and practices lately. This questions its very core objective of radical transparency. The brand has dismissed most of its customer experience workers right at the beginning of the Covid-19 Pandemic (April 2020) in spite of informing them that it was doing surprisingly well in online business. There are claims that this action of the brand was a reaction to the unionizing of these workers [28-30].

5. The workers who were dismissed have drafted a document indicating their personal experience from working with the brand. The topics included white-supremacy, pay discrepancies between white and other people of colour, discrimination of models who are not white etc. The company has responded to this by apologizing and hiring an outside counsel to lead an independent investigation of the organization.

6. The brand does not have a carbon footprint tracking in place to actually analyse its sustainability level and improvements. There are no evidences of the brand's textile waste managing systems or worker pay schemes.

7. The brand makes use of animal products such as leather, wool and exotic animal hair in their products without specifying the source.

### Concluding remarks

Everlane is one of the first brands that customers would think of buying from when they initially decide to shift from fast fashion or conventional shopping habits to more sustainable fashion. This is due to the brands reach through social media, its well-designed online store, sustainability claims and affordability. Although the brand has taken significant steps to bring sustainability in its products and practices there still is a lot of scope for improvement. Their minimalist designs and basics are well received by the customers. Improving the work atmosphere for the workers and taking in more racial groups into the company can improve its identity among people. Having a regular valid third party verification for their products is crucial in backing up their claims of being sustainable. Investing in new kinds of technological innovations to improve product quality, minimize environmental impact and creating a more holistic approach to branding will

encourage more customers into buying from Everlane.

### Conclusion

Sustainability being the most discussed aspect of every industry in the current world has brought about differences in the mindsets of consumers and manufacturing and production techniques of the industries. It is more of a consumer led movement to which brands are forced to react to by being more responsible towards the society and environment. Gone are the days where brands were done with their products after it reached the end consumer. The cradle to cradle approach is driving a more circular economy aiming for zero waste. Although we have a long way in reaching a zero waste economy small steps taken now will put us one steps ahead in the journey. Fabrics are the basic for the production of clothes, certain accessories, shoes, bags and even automobile parts. Sustainability in fabrics can be achieved through a number of ways such as shifting to organic farming processes, using recycled man-made fibers instead of producing virgin fibers, reducing water consumption and energy usage etc. the social cues of sustainability should also be kept in mind, no child labor should be used, labor hours, payment and health should be apriority as well. As consumers it is our right to demand sustainability in our clothing and as manufacturers it is our duty to produce sustainable goods as satisfying our responsibilities to the society, environment and planet as a whole.

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