



Module 1

Introduction to Sustainable Fashion Design

Sustainable Fashion Design

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1.1 Overview of Sustainability in Fashion

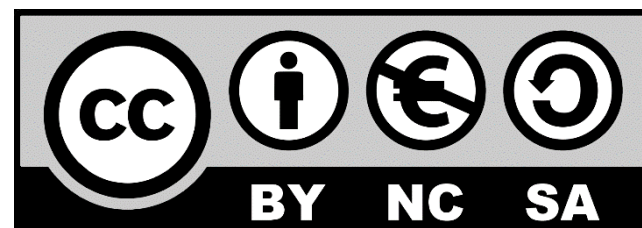
1.2 History and Evolution of Sustainable Fashion

1.3 Key Sustainability Challenges in the Fashion Industry

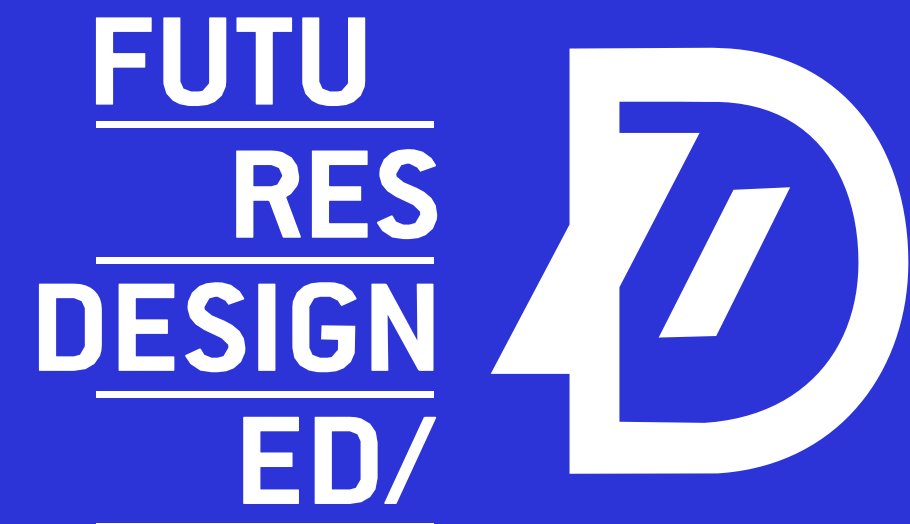
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1.1 Sustainability in Fashion

- Sustainability in fashion refers to the efforts made by the industry to minimize environmental, social, and economic impacts associated with clothing production, distribution, and consumption.
- The fashion industry is one of the most resource-intensive sectors globally. The industry is responsible for 10% of Greenhouse gas emissions, making sustainability an urgent priority.
- Sustainability is about reducing pollution and waste in order to protect our environment as well as the workers who produce these garments, providing fair pay and safe working conditions.

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5 MILLION TONNES

of clothing discarded each year in the EU
around 12kg per person

20 to 35 JOBS

created for each 1000 tonnes of
textiles collected for re-use

1%

of material in clothing is recycled
into new clothing

The Key aspects of Sustainability in Fashion:

1. Environmental Sustainability

2. Social Sustainability

3. Economic Sustainability

4. Waste Reduction

5. Sustainable Consumption

6. Innovation & Technology

7. Challenges in Sustainability

1. Environmental Sustainability

- Promotes the use of eco-friendly, organic, and renewable fibers, recycled and biodegradable textiles.
- Focuses on water-saving technologies and the reduction of chemical use, through eco-friendly dyes and processes.
- Encourages the use of renewable energy, low-impact production methods, and supports local production to reduce transportation emissions.

2. Social Sustainability

- Emphasizes fair wages, safe working conditions, and respect for workers' rights through transparent and ethical practices.
- Supports local artisans and traditional crafts, but also contributes to community development while preserving cultural heritage.

3. Economic Sustainability

- Promotes a circular economy where products are designed with **longevity**, **reparability**, and **recyclability** in mind.
- Encourages **slow fashion** and focuses on quality over quantity.

4. Waste Reduction

- Promotes **zero-waste fashion**. Aims at minimizing offcuts during production and reusing fabric scraps, in order to minimize waste produced.
- Designers are encouraged to **upcycle**, giving new life to old textiles, but at the same time to use materials that can be **recycled**.

5. Sustainable Consumption

- Encourages practices like **clothing swaps**, **second-hand shopping**, and **rental services** to help extend the life of garments. It encourages conscious buying decisions.
- Brands should be more transparent. They must provide such certifications as **Fair Trade**, **Global Organic Textile Standard (GOTS)**, and **Bluesign**.

6. Innovation and Technology

- Promotes the use of technologies such as 3D printing, AI-assisted design, and digital patterns, to help reduce material waste.
- Encourages eco-friendly alternatives such innovative materials like **bio-fabricated leather** and fabrics made from food waste or algae.

7. Challenges in Sustainability

- Brands are misleading consumers with false advertising about their eco friendliness. This is known as **Greenwashing**.
- Sustainable garments are less accessible to all consumers because of **high prices**. This is due to better quality material and the use of ethical production methods.
- A significant challenge for brands is when scaling up their production to maintain their minimal affect on the environment.

Examples of Sustainable Fashion Brands

- **Patagonia:** A leader in environmental advocacy, known for its recycled materials, repair programs, and commitment to reducing environmental impact.
- **Stella McCartney:** A luxury brand emphasizing vegan, cruelty-free, and sustainable materials.
- **Eileen Fisher:** Focused on slow fashion, ethical labor practices, and a circular design system.
- **Everlane:** Transparent pricing and supply chains, with an emphasis on eco-friendly practices and materials.
- **Zero Waste Daniel:** Uses upcycling methods and fabric scraps to design and produce unique street wear pieces.
- **Required Reading:** *10 Reasons Why Patagonia Is the World's Most Responsible Company.*

- Fashion Heritage Network Cyprus is a group of young Cypriot fashion designers who have been inspired by their Cypriot heritage.
- Their aim is to re-introduce traditional garments and techniques into their collections but in a modern and more innovative way.
- FHNC commits to creating designs that are environmentally friendly and zero-waste in order to have the **minimum impact** on the environment.
- Their projects implement several fashion sustainability practices, such as reusing fabric, using natural dyes, repairing old garments, and upcycling.
- www.fashionheritagecy.com

fh | fashion heritage
nc | network cyprus

1.2 History and Evolution of Sustainable Fashion

- Fashion is an important part of our culture and identity. As a result clothes have had a big impact on our lives and our environment, hence the introduction of Sustainable fashion.
- Sustainable fashion has become an increasingly important movement. A movement that looks at how garments are produced and in what working conditions, how they are consumed, and disposed of having minimal effect on the environment and society.
- It has evolved over time, particularly as awareness of environmental and social issues has increased.

Pre Industrial Era



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- Production processes were slower as clothing was typically handmade from locally sources. People wore garments for much longer periods.
- Small local production of natural fibers with little environmental impact.
- Due to high costs of producing garments, clothing was generally handed down to other family members. Clothing was often mended or repurposed.

Industrial Revolution

- Mechanization enabled mass production of textiles, and factories speed up production while clothing became more affordable.
- Due to large scale production, pollution from factories begins to effect the environment. Social issues such as the exploitation of workers in poor working conditions becomes very common practice.



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Post World War II

- Fashion trends began to change more rapidly. Clothing became more affordable as it was mass produced. This gave rise to the concept of “**fast fashion**”.
- The introduction of **Synthetic Fabrics** leads to new environmental challenges, as nylon and polyester were made from petrochemicals and were non-biodegradable.

Environmental and Ethical Fashion Movements from 1960 to 1980s

- Many designers of the 60s and 70s are inspired by the **environmental movements** that took place, and begin to consider the environmental impact of clothing production when designing.
- Due to environmental concerns, designers and consumers show an interest in **natural and organic fibers**. There was also an increased interest in artisanal and hand-made clothing.
- The rise of the **Fair Trade movement** in the 80's improves the working conditions of workers of developing countries. The fashion and textile industry begins to pay workers more fairly for their work.

1990s The Rise of Eco-Fashion

- Patagonia and Esprit began adopting sustainable fashion practices as part of their brand initiative.
- Labor right becomes a major issue, after media began exposing poor labor conditions in sweatshops which supplied garments for major fashion brands.
- 'Eco-Fashion' begins to take shape, as designers begin to use eco-friendly materials for their collection.

2000

The turning point of Sustainable Fashion

- Larger companies like H&M and Nike, adopt the **Corporate Social Responsibility (CSR)** strategies, promising to reduce their environmental impact and improve working conditions in their supply chains.
- Stella McCartney, the fashion activist launches her brand in 2001, promoting cruelty-free, vegan fashion and becomes an icon of sustainable luxury.
- Consumers begin to make informed choices about their purchases with the help of certifications like the **Global Organic Textile Standard (GOTS)** and **Fair Trade** labels.

2010 Sustainable Fashion a Global Movement

- 2013 **The Rana Plaza factory collapses** in Bangladesh killing over 1100 workers. Major brands like Zara and H&M are criticized for their fast fashion. **Greater transparency** and accountability was called for in the fashion and textile industry.
- The fashion industry begins to explore the concept of '**Circular Fashion**'.
- Sustainable Fashion weeks and conferences such as Copenhagen Fashion Summit were organized in order to raise awareness among industry leaders and consumers.
- **Innovative Materials**, such as recycled ocean plastics, lab-grown leather, and biodegradable fabrics are developed.

2020 Sustainable Fashion and the Future

- Consumers became more aware of the environmental toll of fast fashion. Hence **'slow fashion'** becomes popular among consumers.
- There is a focus on technological innovation which will make fashion more sustainable by reducing waste and minimizing resources.
- Consumers and activists are pushing for **Brand Accountability**. Companies to measure and report their environmental impact.
- A change in consumers buying behaviors with the introduction of clothing rental platforms (e.g., Rent the Runway) and secondhand fashion (e.g., ThredUp, Depop)

1.3 Key Sustainability Challenges in the Fashion Industry



The fashion industry is one of the most polluting industries of the world. With millions of tons of wasted garments ending up in our landfills creating a major problems for our environment. The key sustainability challenges that the industry must address to move towards a more ethical and eco-friendly future are further analyzed.

Required Viewing: [Exposing the secrets of Sustainable Fashion \(Marketplace\)](#)

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Overconsumption and Fast Fashion

- **Fast fashion** has led to overproduction and has developed a throwaway culture.
- Based on consumer demands, priority has been given to price, speed and fashion trends. Resulting in **increased waste** and **resource use**.



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Textile waste in Landfills

- Garments which are not recycled or upcycled at the end of their life, will end up in landfills or will be incinerated creating major environmental problems.
- Brands will often overproduce to meet consumer demand, leading to **unsold inventory** and **excess stock** that will be discarded leading to overflowing landfills.

Excess Water Usage and Pollution

- Many fibers including natural and synthetic require large amounts of water for cultivation of the fiber and the processing of the fabric.
- In the dyeing and treatment processes of fabrics, harmful chemicals are released into the rivers and oceans, contributing significantly to water pollution.

Carbon Emissions and Energy Consumption

- The use of fossil fuels for the production of synthetic textiles is contributing to increasing amount of greenhouse gas emissions.
- The transportation of raw materials, finished products, and garments across global supply chains increases the industry's carbon footprint.

Labor Exploitation

- **Low wages and poor working conditions** is very common for workers especially in poor developing countries, they often face unsafe working environments, long hours, and inadequate pay.
- Fast fashion promotes **cost-cutting**, often at the expense of workers' rights and welfare, leading to exploitation and abuse in supply chains.

Greenwashing

- Many brands **mislead consumers** by promoting themselves as sustainable without making significant changes to their practices
- Brands need to be more **transparent**, providing all necessary information about their supply chains or sustainability efforts, in order to verify their claims.

Innovation and Technological Gaps

- Sustainable alternatives like bio-based materials and eco-friendly technologies exist, but are often **not scalable or widely adopted** due to costs or technical challenges.
- Sustainable fashion technologies are often expensive, making it difficult for smaller brands to adopt them and for consumers to afford eco-friendly options.

Agricultural Impacts

- Conventional cotton farming, requires an enormous amount of water, **depleting freshwater resources** in already water-scarce regions.
- The use of pesticides and fertilizers in the farming of non-organic cotton can degrade soil quality and **harm ecosystems**.

Planned Obsolescence

- Fast fashion garments are often made with cheaper quality fabrics and have been **designed to be worn a few times** before being discarded, contributing to excessive waste.
- Many fast fashion garments are difficult to repair often due to **poor-quality materials**, encouraging disposal rather than reuse or repair.

Accessibility of Sustainable Fashion

- Sustainable fashion is often **more expensive** due to ethical production and the use of eco-friendly materials, making it **inaccessible** to many consumers.
- Consumers with lower incomes may not be able to prioritize sustainability due to the affordability and **convenience of fast fashion**.

There are many challenges in fashion sustainability as it involves environmental degradation, labor exploitation, and systemic inefficiencies. Addressing these issues will require coordinated efforts from all involved, including brands, consumers, and policymakers. It is only through significant cultural shifts, technological innovations, and enhanced regulation can the fashion industry transition toward a more sustainable and ethical future.

Required Reading: Environmental Sustainability in the Fashion Industry.

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