United Nations Environmental Programme

The environmental impact of the clothing industry

Research Report

Leiden Model United Nations 2023

"let us sing songs of freedom together"

Forum: United Nations Environmental Programme

Issue: The environmental impact of the clothing industry

Position: Chair

Introduction

The fashion industry is one of the most polluting industries in the world, with a significant impact on the environment. From the growing of raw materials to the production, packaging, and transportation of garments, the fashion industry consumes a vast amount of resources and generates a significant amount of pollution and waste. As it relies on natural resources, it also puts high demands human labor, thus affecting lives around the world.

With the growing population and growing need for clothes , the focus on the quality of clothes has been replaced by the quantity of them. This resulted in less than half of used clothes being collected for reuse or recycling when they are no longer needed, and only 1 % are recycled into new clothes, since technologies that would enable recycling clothes into virgin fibres are only starting to emerge.

The amount of clothes bought in the EU per person has increased by 40 % in just a few decades. It is estimated that people are buying 60 per cent more clothes and wearing them for half as long than they did twenty years ago. Not only that, but consumers use also has a large environmental footprint due to the water, energy and chemicals used in washing, tumble drying and ironing, as well as to microplastics shed into the environment.

The global fast fashion industry is generating a lot of greenhouse gases due to the energy used during its production, manufacturing, and transportation of the million garments purchased each year. The development of fast fashion, which depends on mass production and low pricing, has made the industry's negative environmental effects even worse. Consumers increasingly view inexpensive clothing as perishable goods that are "nearly disposable" as a result of the large number of clothing collections that these garment firms issue each year. People have a tendency to buy garments often and discard them after only a few uses.

Though many actions have been done to lessen the damage it causes on the environment, the fashion and clothing industry is growing in such a rapid rate, that any move meaning to improve its ways of producing needs long years to be able to feel their effect.

Definition of Key Terms

Fast-Fashion:

Fast-fashion refers to the shift in the fashion industry that has resulted in faster production with lower costs, guaranteeing for the consumer a lower price. This industry often comes with unfair working practices, but also many environmental consequences such as being the second-biggest consumer of water and responsible for over 10% of global carbon emissions. It means a bigger consumption than both international flights and maritime shipping. Delegates should bear in mind that the fashion industry is the sixth-most polluting industry too.

Overconsumption (of natural resources):
Consuming resources that we cannot replenish or that cannot sustain themselves at the rate we are consuming them,

Biodegrade
To be decomposed by bacteria, or any other living organism (which could take from one month to forever),

Environmental footprint:
The effect that a person, company, activity, etc. has on the environment,

Greenhouse gases:
Gases in Earth's atmosphere that trap sunlight, therefore causing climate change,

Microplastics:
Microplastics are plastic particles less than 5mm in size, and are a huge problem for animals living in any kind of ocean, sea, lake or river,

Carbon emissions:
Substances released into the air, mostly carbon as it is shown in its name,

Lead time:
The time it takes for a product to go through the supply chain (from design to purchase),

Second-hand clothing stores:
A shop that sells used, secondhand goods at reduced prices,

Fibres:
Raw materials from which yarns are made, which in turn are spun or twisted to make fabrics used to make clothes.

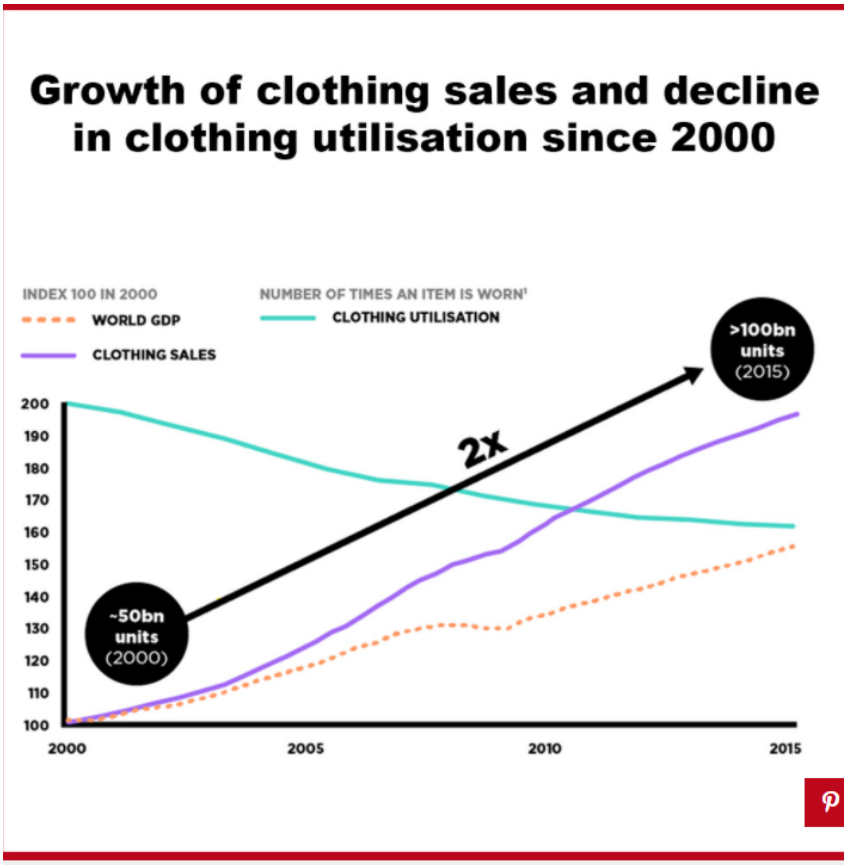
General Overview

The different negative impacts on the environment continue to be a big concern when it comes to the many problems with fast fashion and how its industry has been able to thrive. To bypass the high minimum wages imposed by many industrialised governments, the fast fashion sector exports its production business overseas for cheap labour. Even while the average North American consumer may be able to purchase cheaper clothing, fast fashion has a price that comes with a number of negative effects. Therefore, it is up to us, as consumers, to look into alternatives to address the ignored environmental effects of such consumerism. This impact of the fashion industry comprises the depletion of non-renewable sources, emission of greenhouse gases and the use of massive amounts of water and energy. Recent studies have showed, that they account for about 8-10% of global carbon emissions and nearly 20% of wastewater. Clothing retailers make cheap and fashionable clothing to satisfy the needs of young consumers, desperately trying to reduce the lead time to make as many as possible.

Waste generation

The clothing and textile industry is depleting non-renewable resources, emitting huge quantities of greenhouse gases, and using massive quantities of energy, chemicals, and water. The synthetic fibres often favoured by fast fashion brands, such as polyester, nylon, and acrylic, are a kind of plastic made

from petroleum, which means they could take up to a thousand years to biodegrade. According to the documentary released in 2015, the world consumes around 80 billion new pieces of clothing every year, 400% more than the consumption twenty years ago. The average American now generates 82 pounds of textile waste each year, which not only results in a huge environmental footprint, but also a significant amount of non-renewable materials. The fast fashion model, which is focused on producing low-cost garments quickly, leads to a constant turnover of designs and styles, resulting in clothing that is worn only a few times before being discarded. This results in an overproduction of garments, contributing to the overconsumption of resources and the generation of waste.



Source: Ellen MacArthur Foundation

Water usage

The production of cotton, the most widely used fibre in the fashion industry, consumes large amounts of water. In addition, dyeing and finishing of textiles also consumes a significant amount of water, and the discharge of untreated textile effluent is a major source of water pollution., since the water used to apply chemicals and dye fabrics is often then dumped back into rivers and other waterways. Not only that, but synthetic fabric production (which requires 70 million barrels of oil per year), cotton farming (which requires large amounts of water for irrigation and treatment), and microfibres also contribute in pollutiong our watersources. These microfibres are released not only during the production process, but also after purchasing, when clothes are worn and washed. Microfibre pollution from synthetic materials can take hundreds of years to decompose and can disrupt underwater ecosystems. As water scarcity becomes more extreme, cotton-growing nations and the fashion industry may face the dilemma of choosing between cotton production and securing clean drinking water.

The Global Fashion Agenda (GFA) and the Boston Consultanting Group (BCG) anticipate that water use will increase by 50 percent by 2030. This is critical, because some of the main cotton-producing countries such as China and India are located in areas that are already suffering from high or medium

to high levels of water stress. Those levels are projected to become even more severe, as the shortfall between demand and supply of water is projected to reach 40 percent by 2030.

Energy usage

Energy is one of the most important ingredients in anyindustrial activity. However, its availability is not infinite. It is estimated that the fast fashion industry accounts for more than two percent of the world's energy consumption. Fibre production, spinning, weaving, dyeing and finishing fabrics, as well as clothing manufacture, all consume high levels of energy. Fuels are used in machinery for ploughing and harvesting, while electricity is the most common power source for factory machinery, cooling and temperature control systems, lighting and office equipment. Oil is used to fuel boilers to generate steam, as well as liquefied petroleum gas, coal and city gas. Global energy crisis, as well as high cost of fuels resulted in more activities to conserve energy to maximum extent. The textile industry retains a record of the lowest efficiency in energy utilization and is one of the major energy consuming industries. About 34% of energy is consumed in spinning, 23% in weaving, 38% in chemical processing and another 5% for miscellaneous purposes. Power dominates consumption patterns in spinning/weaving, while thermal energy is major for chemical processing. It is known that thermal energy in textile mills is largely consumed in two operations, in heating of water and drying of water. Fuel consumption in textile mills is almost directly proportional to the amount of water consumed. Hence, if consumption of water can be reduced, it will also save energy.

Carbon emissions

The fashion industry produces about 10 percent of annual global carbon emissions, which is more than all maritime shipping and international flights combined. If the fashion industry were a country, it would be the sixth-largest emitter of greenhouse gases in the world, behind China, the USA, the European Union, India and Russia. The fast fashion industry is estimated to emit more than 1.2 billion tons of carbon dioxide. This is equivalent to the emissions from more than 250 million cars.
When factoring in the entire lifecycle of a garment, from manufacturing to transportation to, ultimately, ending up in landfill, in total, 1.2 billion tonnes of carbon emissions are released by the fashion industry every year. The perception that wearing an item only a handful of times, is okay, has resulted in an increase of discarded items, fuelling overconsumption and overproduction. This perception needs to be eliminated in order to reduce the industry's carbon footprint.

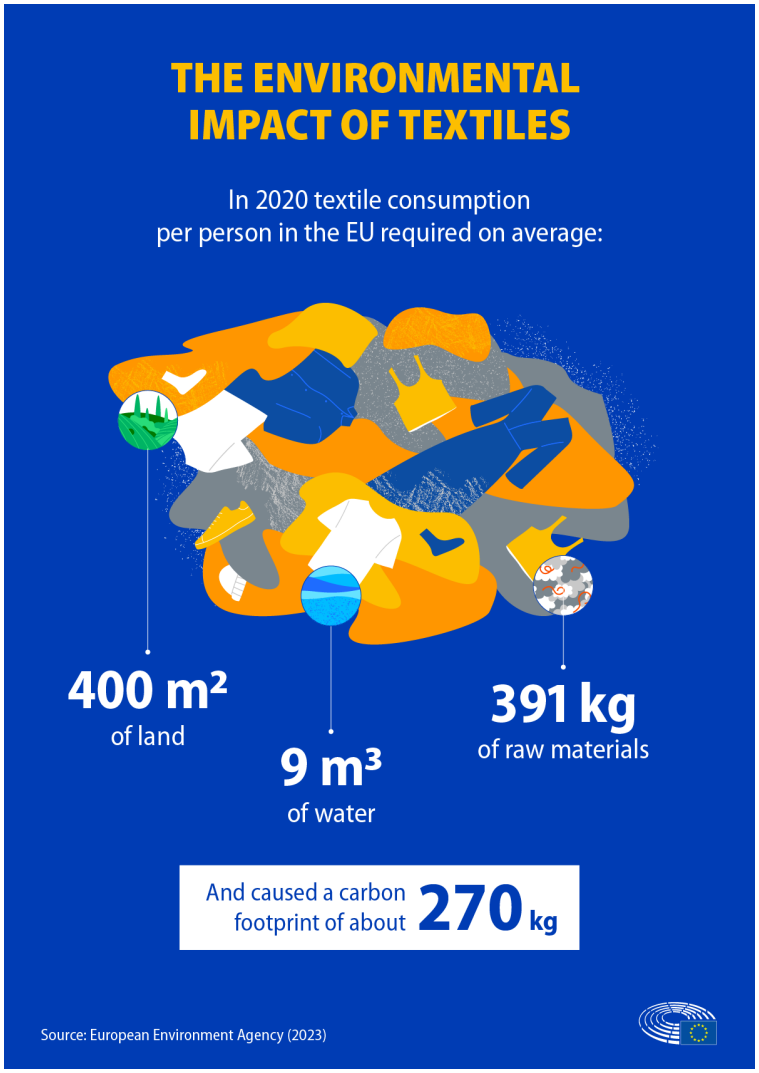
Deforestation

It may surprise people, that right beside the climate footprint is the deforestation footprint caused by this industry. Fashion's impact on forests comes mainly from the production of textiles. There are many fabrics are derived from plant pulps or from plants themselves. These can be found in our shirts and pants, right down to the rubber in our shoes. Common ones include viscose, rayon, modal and lyocell. According to non-profit Canopy, more than 200 million trees are logged each year to be transformed into cellulosic fabrics like the ones mentioned above. Research shows that, still in 2020, 48% of fashion's supply chain is linked with deforestation, and it is estimate to double in the next 30 years.

Loss of soil fertility

We need a thriving soil for our food but also to absorb CO2. The solid degrades when chemicals are used for growing cotton, when forests are cut down for wood-based materials, or when pastures are overgrazed during wool production. If soil isn't full of micro-organisms and bacteria, then plants can't put carbon back into the soil. This is the problem that much of the earth's soil is facing; it lacks essential microorganisms and bacteria that have been eradicated in large part due to modern agricultural practices. Industrial agricultural techniques like monocropping, fertilizing, and tilling are

responsible for much of the world's declining soil health and desertification. Furthermore, the chemicals used in fast fashion production can leach into the soil, where they can pollute water supplies and damage plant life. Soil pollution can also lead to biodiversity loss, killing off plants and animals that rely on healthy soil to survive.



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Major Parties Involved

China

With more than 100,000 manufacturers, China's garment industry is huge and employs over 10 million people. It accounts for more than half of the global textile and clothing production, as well as more than 30 percent of worldwide apparel exports. With almost 255 billion US dollars in exports in 2012, China is the undisputed textile and garment export champion of the world. According to the China Chamber of Commerce for Import and Export of Textile and Apparel (CCCT), the lion's share

of 44.8 per cent goes to the Asian countries, followed by Europe with 23.3 percent and North America with 16.8 per cent.

India

India has a share of 5% of the global trade in textiles and apparel. The organized textile industry in India is characterized by the use of capital-intensive technology for the mass production of textile products and includes spinning, weaving, processing, and apparel manufacturing.

Bangladesh

After China, Bangladesh exports the second-highest volume of readymade clothing (RMG). The garment industry of Bangladesh has been the key export division and a main source of foreign exchange for the last 25 years. At present, the country generates about $5 billion worth of products each year by exporting garment. The industry provides employment to about 3 million workers of whom 90% are women.

Vietnam

In 2007, Vietnam joined WTO a watershed moment for the country as it marked the beginning of the growth of the country's textile and garment exports. Vietnam has emerged as one of the leading textiles exporting countries worldwide in recent years. Garment and textile products were among its major commodities based on export turnover in 2022. As Vietnam reduced its reliance on agriculture, the manufacturing sector became an important pillar in its modern economy.

United Kingdom

Clothing has always been big business for the UK. The wool trade once accounted for 80% of exports from the British Isles. The fashion and textile industry in England, Wales and Scotland employs 500,000 people. Now the UK's Fashion industry is worth £26 billion & 800,000 jobs to the economy , making it the UK's largest creative industry.

Germany

The German fashion market is one of the leading features of consumer life in Europe's largest economy. One of the notable things about Germany's clothing industry is that they have transformed their production from cheap, mass-produced clothing to high-quality products. This transformation is attributed to the demand for high-quality clothing by Germans and other EU countries.

Timeline of Events

[1990] [the term "fast fashion" was first used in New York]

[2018] [the EU adopted a circular economy package that will, at the insistence of the European Parliament, for the first time ensure that textiles are collected separately in all Member States, by 2025 at the latest]

[2018]

[the UN Sustainable Development Goals (SDGs), international cooperation is important to foster sustainable fashion]

[the Fashion Industry Charter for Climate Change serves as a roadmap to achieve net-zero emissions by 2050 within the textile, clothing and fashion industries.]

[2021]

Possible Solutions

Even though accomplishing the disappearance of all negative effects of the clothing industry would take decades, or could never be reached, reducing them would be our next best move. With little changes in the industry, or even at home big differences can be reached.

Sustainable materials and manufacturing processes

Fashion brands are increasingly exploring sustainable alternatives, such as organic cotton, hemp, and recycled fabrics. Furthermore, innovative manufacturing processes are being developed to reduce water consumption, energy usage, and chemical pollution.
The World Wildlife Fund has started the Better Cotton Initiative, which seeks to promote sustainable cotton farming that minimises its impact on the environment. The enterprise assists farmers in sustainable water management, reducing agrochemical use and promoting decent work environments. Shopping from retailers that source their cotton from certified organic cotton vendors can help promote sustainable farming and reduce their own impact on the environment.

Ethical and transparent supply chain

Consumers are demanding transparency regarding the working conditions and social impacts of the fashion industry. Brands are embracing ethical practices, ensuring fair wages, safe working conditions, and the prohibition of child labor throughout their supply chains.

As well as changes to production and distribution systems, consumer awareness and behaviour change are also key. Fortunately, in the recent years people realised the problem and how quick it is crowing on us, and have tried their best to make up for it.

Reduced consumption and production

As more consumers become aware of the dramatic environmental costs associated with textile fashion, they have begun taking steps towards more sustainable options. Second-hand clothing shops have opened all around the world, where people could sell their no longer needed clother, as well as others could buy them for much cheaper, and will last longer than their disposable counterparts.

The European Parliament has for years advocated promoting the use of ecological and sustainable raw materials and the re-use and recycling of clothing. UNEP is also producing a roadmap towards sustainability and circularity in the textile value chain and working on shifting the narrative of the sector, looking at the role of consumption with a guideline to sustainable fashion communication.

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