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Apparel disaster:
how the textile and clothing industries ruin the environment

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1 Introduction

"The average consumer buys 60 percent more pieces of clothing than 15 years ago," says the official press release[42] of the United Nations Environment Assembly (UNEA). UNEA, being "the world's highest-level decision-making body on the environment," was created to address the "critical environmental challenges facing the world today." [1] Clothing overconsumption is one of such challenges considering the amount of carbon emissions the textile industry is singlehandedly responsible for: "the industry produces up to 10% of global CO₂ emission (>1.7 billion tonnes annually)." [26] The time period during which people own a specific item of clothing has also reduced, "each time it is only kept for half as long [as 15 years ago]," [42] which leads to another problem of excessive textile dump. Increase in the production of clothing stems from the increase in consumers' demand. According to the German company Statista, specialized in providing statistics, three major apparel manufacturers and retailers combined made over 70 billion US dollars in 2021 (see Fig. 1) [34]. While the consumption and waste is increasing, another negative consequence is the violation of human rights following the poor working conditions of employees in the textile factories in China, Bangladesh, India as the largest exporters of clothing in 2021 (see Fig. 2) according to the World Trade Organization's Statistical review of 2022 [46]. While European Union is also a large exporter, there is a vast difference between the aforementioned Asian countries and the EU in the labor conditions and environmental protection laws implementation which will be discussed later in the paper.

The complexity of the textile industry and problems associated with it greatly affect the solving capacity of the world to resolve the issue. However, as a part of the sustainable development agenda, textile industry needs to change to aid the human development yet sustain the natural systems that provide us with the resources. Some of the goals this paper aims to fulfill are to:

- i. describe the fast fashion business model which is largely responsible for the rapid increase in clothing consumption and production;
- ii. identify the environmental implications of the most apparel companies' supply chains;
- iii. compare the environmental and labor laws in a few countries leading in the textile industry - Sweden, the home to a multinational clothing company H&M Group, and Bangladesh, one of the largest exporters of clothing;
- iv. pinpoint the necessary efforts needed to be undertaken to resolve the complexity of overconsumption.

2 Clothing industry and related issues

Although the terms 'textile industry' and 'clothing, or garment, industry' are used interchangeably in this paper, those two refer to distinct areas of production: while the textile industry is concerned with the production of different textiles (both consumer and technical textiles)[9], the clothing industry stems from the textile one, and it deals with the production of the final product, i.e. the clothes, and its distribution. Both industries have been historically considered time- and labor-consuming, but since the Industrial Revolution (18th to 19th centuries) things have changed: "The application of new technology to the textile industry was the source of the industry's rapid change." [23] Throughout the following centuries, the industry only continued to grow, implementing new technologies and expanding its geography. While the production became easier and less expensive, the unnecessary consumption increased significantly: "More than \$500 billion of value is lost every year due to clothing underutilisation and the lack of recycling." [7] Contemporary consumer indulges in consumerism without giving much thought to the outcome of this behavior¹, and the huge industries only play into this obsession using varying techniques (creating a brand a consumer feels a personal connection with) and strategies to keep the constant consumption going. The phenomenon of fast fashion, "a business model based on knocking off styles from high-end fashion shows and delivering them in a short time at cheap prices, typically using lower quality materials," [32] heavily relies on "recurring consumption and impulse buying." [26] In 2016, "brands were producing almost twice the number of clothing collections compared with pre-2000, when fast-fashion phenomena started." [29] During the COVID-19 pandemic, "the global apparel and footwear market size shrunk by -18.1%," [13] but according to Euromonitor International, it grew exactly 18% back after the restrictions were lifted (see Tab. 1).

2.1 Major environmental implications

Due to the volume of the production, the technologies to fasten the process, and many consumers' desire to buy more for less money, the planet is suffering from major drawbacks on almost every step of the supply chain.

Design One of the major drawback stems from the initial stage of the supply chain, although the impact is not as physically direct as for the other stages. The core idea of fast fashion - replication of recent catwalk trends and high-fashion designs - is hugely attributed to this stage as the "trims,

¹According to Common Objective, "on average a US consumer purchases one mid-priced item of clothing per week." [44]

fabrics, silhouettes, and finishes are established"[36] here. The execution of this step is what differentiates fast fashion from slow, sustainable fashion which "considers the material and all the impact on production till the consumer stage."[36]

Textile production The stage may include the cultivation or extraction of raw materials and fibre production. The majority of fast fashion clothes are made with cotton (43% of all fibers on the EU market in 2015[32]) or polyester (16% of all fibers on the EU market in 2015[32]) which are associated with serious health impacts: "Polyester, a synthetic textile, is derived from oil, while cotton requires large amounts of water and pesticides to grow."[5] Also, energy use and CO₂ emission are at their highest during this stage, "especially for synthetic fibres as they originate from fossil fuel."[26] Polyester is also harmful to the environment during its consumer usage phase: according to the European Commission initiative for Environment, "laundry of polyester clothes can discharge 700 000 microplastic fibres, which release toxins into the environment and can end up in human food chain."[32] Textile industry is also responsible for a large percentage of global carbon emissions - up to 10% of global greenhouse gas emissions.[41] "The fashion industry's high carbon footprint comes from high energy use which is associated with textile manufacturing and consumer use (namely, laundering)."[26]

Garment assembly Large amounts of water and chemicals are used during the stage when textiles become the finished product. According to the 2017 Pulse of the Fashion Industry report, "dyeing can require up to 150 litres of water per kilogram of fabric and, in developing countries, where most of the production takes place and where environmental legislation is not as strict as in the EU, the wastewater is often discharged unfiltered into waterways."[32]

Distribution & retail Largest exporters of clothing import less than they export (see Fig. 3). Thus, most final products are imported into the EU and the USA which implies longer delivery routes, however, "according to the Pulse of the Fashion Industry report, this stage accounts for only 2% of the climate-change impacts of the industry, as most large players have optimised the flow of goods."[32]

Consumer use Excessive water and energy usage applies to this stage as well as people wash, tumble dry, and iron their clothes. The end of life cycle of clothes is associated with increased amount of waste people are producing by throwing away their clothes. According to the National Institute of Standards and Technology of U.S. Department of Commerce, "Only about 15% of

used clothes and other textiles in the United States² get reused or recycled. The other 85% head straight to the landfill or incinerator. This wastes scarce resources, contributes to climate change and pollutes waterways." [48] Such treatment of unwanted clothing created a humanitarian problem in developing countries of Asia and Africa: according to a journalist investigation, "15 million used garments pour into Accra [capital of Ghana] every week from the UK, Europe, North America and Australia, flooding the city's sprawling clothing market," where 40% of clothes are discarded due to their poor quality and end up in a huge landfill. [4]

3 Ties between environmental issues and human rights violations

One of the consequences of the increase in production aside from the environmental impact is the human rights violations of the workers employed in the factories in developing countries. First of all, what needs to be addressed is that the largest exporters of the textile industry are China, EU, and Bangladesh (see Fig. 2). While EU is composed of many countries with stringent labor and environmental protections laws, Bangladesh and China provide low-cost work force. The focus of this paper will be on Bangladesh in particular since Bangladesh is much more affected by the environmental impact of the textile industry which boosts the economic growth of the country while also completely deteriorating the environment: "untreated effluents containing heavy metals are being released into rivers from nearby factories, affecting the health of people who live along the polluted rivers," [33] and putting the whole ecosystem at risk.

Environmental implications of the textile industry are closely interconnected with the violations of the human rights of those who involved in the production of clothes and also those who are not. The simplest examples to illustrate this are as follows: *a.* polluted water means no access to clean water for the people who live in the area; *b.* excessive clothing waste is being collected into piles of garbage which forces people to live in unsanitary conditions in the poorest countries; *c.* extraction and production of huge amounts of raw materials needed to make clothes constrains employees to work more for the same amount of money; etc. Apart from the issues interconnected with the environmental implications per se, there are issues surrounding the industry that emerge from the lack of labor regulations.

²One of the largest consumer of fast fashion

3.1 Developed vs. Developing

90% of the world's clothing is produced in low- and middle-income countries[5] where "occupational and safety standards are often not enforced due to poor political infrastructure and organizational management." This results in a number of health hazards concerning the respiratory hazards, endocrine system damage, accidental and overuse injuries which can lead to death. These occupational health hazards are the same causes that led to the creation of textile labor unions in the US and the UK in the beginning of the 20th century[5], and now millions of people are still being at constant risk since those hazards moved to the less politically protected countries. Being shaken by the Rana Plaza incident in 2013 (see 3.2), Bangladesh is aiming to improve the conditions of the workers, however, facing challenges. One of the main challenges is that the fast fashion model itself since "it will never be sustainable as it is based on producing huge volumes, incredibly quickly, very cheaply so that we can buy more clothes," said Livia Firth, founder and creative director of Eco Age. Right after the Rana Plaza collapse Bangladeshi government passed a new labor bill (2013) making election of Participation Committee, a structure that allows for open dialogue between the management and workers, a legal requirement [14] promoting the social dialogue³. The government has also ratified 33 ILO conventions in 2016 and started labor law reform to improve the working conditions.[14] However, in 2018 the Bangladeshi government ignored the workers' demand to raise the minimum monthly wage[47] leaving people on the edge of extreme poverty. During the COVID-19 pandemic, less than 15% of workers are estimated to have received full payment[40]. The trade unions which are essential for the situation to change for the better are harassed and the members are threatened[18], and a fraction of the union leaders are corrupted and promote the interests of the factory owners.[30] The road to improvement is blocked by varying reasons such as the corruption, lack of monitoring and enforcement, guidance and legal principles, pressure of the production deadlines set by fast fashion retailers.

Obviously painful, such workings conditions that the Bangladeshi workers have to endure will not be allowed or tolerated in most of the developed countries of EU, such as Spain, France, or Sweden. Bangladesh is the 2nd largest supplier (see Fig. 4) of one of the largest clothing company in the world H&M Group (see Fig. 1) which is based in Sweden. The country is world-famous for the Nordic social welfare systems which aims at enhancing individual autonomy and promoting social mobility. Labor market is "incorporated in fully elaborated corporatist institutions of collective bargaining and policy making." [15] Thus, the minimum wage is not set because it is the right of

³As defined by the International Labour Organization (ILO), social dialogue includes "all types of negotiation, consultation or simply exchange of information between, or among, representatives of governments, employers and workers, on issues of common interest relating to economic and social policy." [35]

the workers to negotiate wages collectively as an independent union. The average wage (per hour) of people working in textile factory in Sweden is 197 kr (\$19). The government of Sweden officially declares that "No one who works in Sweden should have a job that exploits them or wears them out. No one should have to risk death or serious injury at work." [28] Similar situation is expected to occur in the sphere of environmental protection. Sweden has been a part of the European Union (EU) since 1995. The EU Environmental Policy was initiated in 1973 ("Environmental Action Programme"), and has been enforcing a large volume of environmental initiatives regarding the textile and clothing industry:

- 2011 Textile regulation "lays down rules for labelling and marking of all textile products, including an obligation to state the full fibre composition of textile products at all stages of industrial processing and commercial distribution, and rules on textile fibre names", [32] thus, increasing the level of awareness among the consumers;
- 2013 European Parliament⁴ resolution on sustainability in the global cotton value chain "welcomed the Better Cotton Initiative (BTI), Cotton Made in Africa, the Global Organic Textile Standard (GOTS)," [32] setting a clear direction in which the industry must be going, it is to increase the sustainability of the cotton and to minimise environmental degradation;
- 2016 European Parliament resolution on implementation of the 2010 recommendations of Parliament on social and environmental standards, human rights and corporate responsibility advocated values which are enumerated in the name of the resolution, thus, promoting strong social significance of the environmental standards;
- 2017 European Parliament resolution on the EU flagship initiative on the garment sector focused primarily on environment and labor related issues in the textile industry in lower-income countries where the production is usually outsourced to. Parliament called on the Commission⁵ and the EU to "promote the use of ecological and sustainably managed raw materials and the re-use and recycling of garments and textiles within the EU," and "to increase funding for research and development, including in the field of clothes recycling." [32] While the Parliament had already called for the "establishment of a legal obligation of due diligence for EU companies outsourcing production to third countries," [32] in 2015, this resolution urged the Commission "to propose binding legislation on due diligence obligations for supply chains," [32] and to stress the consumers' right to be informed "on the sustainability, compliance with human rights and environmental credentials of garment industry products." [32]

⁴European Parliament is one of the legislative bodies of the European Union

⁵European Commission is the executive of the European Union

2018 Circular Economy Package is not the textile industry based and aimed at, but rather it is an all-encompassing legislative project aimed to set up better waste management. As a part of the package, "Parliament strongly advocated for textiles recycling ... insisting that setting up separate collection of textiles should be made mandatory for Member States by 2020,"[6] (which was put back to 2025).

Aside from these regulations and initiatives, the EU also stipulates European standards relating to textile and clothing which are concerned with setting the minimum textile quality requirements, ecolabeling⁶ for clothing and textiles. Recently, the Environmental Policy of the EU has been moving to the center stage in EU policy making. One of the latest initiatives approved by the European Commission is the European Green Deal which aims to make the EU climate neutral⁷ by 2050.

Bangladesh does not have plans to make itself climate neutral, firstly, the country aims to at least reduce the textile industry's deteriorating influence on the environment. The inception of environmental policy falls on the year of 1973 when the first environmental regulation, Water Pollution Control Ordinance, was enacted which was followed by more thorough Pollution Control Ordinance in 1977. In the 90s, more environmental guidelines were enlisted. In 2011, the 15th Amendment to the Bangladeshi Constitution established that "that the state shall endeavor to protect and improve the environment and to preserve and safeguard the natural resources, bio-diversity, wetlands, forests and wild life for the present and future citizens⁸)." [39] Some of the textile industry specific regulations and initiatives include:

1992 National Environmental Policy and Action Plan

The main objective of the policies is to "maintain ecological balance and overall development through protection and improvement of the environment, "[16] which includes preventing wastage of raw materials and undertaking Environmental Impact Assessment (EIA).

1995 1. National Environmental Management and Action Plan (NEMAP)

The main objective of the NEMAP was to "identify the key environmental issues and the actions required to halt or reduce the rate of environmental degradation, improve the

⁶The Ecolabel initiative establishes ecological criteria guaranteeing limited use of substances harmful to health and environment, reduction in water and air pollution, as well as criteria for extending the lifetime of clothes (resistance to shrinking during washing and drying and colour resistance to perspiration, washing, wet and dry rubbing and light exposure).[10]

⁷Climate Neutrality refers to the idea of achieving net zero greenhouse gas emissions.

⁸Here, the Constitution of Bangladesh acknowledges the Intergenerational Equity principle.

natural and manmade environment, conserve habitats and bio-diversity, promote sustainable development and improve quality indicators of human life." [24] Concerning the textile industry, NEMAP recognizes its importance to the economic development of Bangladesh while highlighting the environmental issues that follow the increase in industrialization, for example, pollution from plants that causes the degradation of the environment, and other issues such as the "low level of environmental awareness," [24] and lack of proper guidelines and their regulations, etc. The Plan also lays out the actions required to solve those issues, some of which include: *a.* installation of effluent/emission treatment plants (ETPs); *b.* preparation of guideline and its implementation; *c.* increase of Environmental Education awareness; etc.

2. Bangladesh Environment Conservation Act (ECA)

The act established the Department of Environment (DOE) and the regulations concerning the emergence of industrial projects: from 1995 every industrial project shall obtain the Environmental Clearance Certificate (ECC) from the Director General of DOE. [16]

1997 Bangladesh Environment Conservation Rules

The Rules define 4 categories of industries depending on their environmental impact and location. Depending on the category, some projects require more thorough inspection, while others are rejected altogether. The ECA and Rules are the base for EIA which aimed to "to ensure the protection and conservation of the environment and natural resources in the process of industrial and infrastructure development." [8]

2016 National Industrial Policy

The policy "aims to develop the country through rapid industrialization." [3] Chapter 14 is specifically connected to creating an environment friendly industrial management through a number of guidelines highlighting the importance of EIA in allocation of soil and water resources in the industry, the cooperation of the government and the industry, the encouragement of establishing the green industry, etc.

The aforementioned guidelines "exist for the environmental management in the textile sector of Bangladesh." [16] The guidelines are set to ensure better management practices to mitigate the climate change and the degradation of the environment. However, according to the South Asian Network for Development and Environmental Economics (SANDEE), "while there has been progress, implementation of environmental regulations in the textile sector is handicapped by four factors:

gaps in the regulatory framework, inadequate institutional capacity, lack of awareness about pollution management practices and the limited influence that communities can bring to bear on polluters." [22] Later research conducted in 2019 refers to the law that requires factories to install ETPs [33], and while the idea itself is the logical solution to solving the water contamination problem (which was first proposed in NEMAP), the installation of the ETPs face certain barriers and difficulties such as the "low willingness of companies to meet environmental compliance requirements and inadequate monitoring and enforcement by government authorities"; another obstacle is that usually the ETPs are not available in markets for local factory owners, and the import tax is too high. The effectiveness of the EIA system in Bangladesh has also been questioned. "EIA presumes that industries will install waste/pollutant treatment plants, conform to environmental standards, report incidents and have plans for remedial actions in place if these are required." [8] However, the analysis of the system has revealed that "the lack of monitoring mechanisms and provisions for their enforcement" [8] is a crucial weakness in environmental management which is one of the primary reasons for the significant environmental degradation that the country is suffering from.

3.2 SDGs

Textile industry improvements needed to be undertaken could, in broad sense, be subject to almost all of the 17 Sustainable Development Goals (SDGs) set up in 2015 by the UN General Assembly [38]. The list of the selected goals is as follows:

1 No poverty

This goal's interconnection with textile industry is reflected in numerous protests, for example, over Bangladesh's minimum wage for those employed in the garment industry. The Bangladeshi government set the minimum wage (per month) to be only Tk 8,000 (\$96) in 2018 [20]. In 2022, protest demonstrations are still ravaging the country since the wage has remained the same [47]. Poverty eradication is one of the leading goals in the development of Bangladesh and many other countries in the world.

3 Good health and well-being

Textile workers face numerous health hazards: "workers risk developing various respiratory and pulmonary diseases due to exposure to cotton dust and other organic dusts." [17] Other issues include "chemical exposure from the processing and dyeing of materials, musculoskeletal stresses, and noise exposure." [37]. Besides, the conditions of the workplace could be dangerous due to its constructive defects: more than a thousand textile workers died in a Rana

Plaza factory collapse in Bangladesh. The building hosted factories of many different apparel companies such as Benetton, Bonmarche, Prada, Gucci, Versace, Moncler, Mango, Primark, and Walmart.[49] Advancing this goal is of the utmost priority for sustainable development.

5 Gender equality

"With an estimated more than 75% of garment workers worldwide being women,"[12] working towards reaching gender equality is demanded for the textile industry. One of the injustice towards women include the allocation of the jobs in the industry: "While men control the directorial and management level works, women are discriminated against in the entrance to higher-paid management."[18] One may refer to the Better Work initiative paper which presents comprehensive analysis of the Gender Equality in the Global Garment Industry and argues for the vital role gender equality plays in sustainable development.[27]

6 Clean water and sanitation

Textile industry is the 2nd largest consumer of water and is responsible for 20% of global wastewater.[11] In Bangladesh alone, the water contamination by the textile and other industries is one of the most pressing issues. Bangladesh is a riverine, delta-based country. In the capital of Dhaka, the Government of Bangladesh has declared three rivers biologically "dead" due to the untreated effluent entering into them. Other rivers are classified as highly contaminated with no dissolved oxygen.[8] While being necessary for all stages of the textile supply chain, water is needed for something much more important - sustaining the lives of humans, animals, and other living organisms that compose the biosphere which makes this goal to be of high priority.

8 Decent work and economic growth

Millions of workers are involved in the textile industry. In Bangladesh, industry workers are being discriminated against, receive low salaries for large volume of work, and are at health risk due to the multiple health hazards at the workplace. However, those who are employed in the clothing industry are considered to be quite fortunate in Bangladesh since others receive even less. Thus, textile industry is seen by many as a "gateway out of poverty"⁹ even if their salary is considered to be extremely low by international standards. Thus, the road to ensuring sustainable development lies primarily in promoting safe and secure working conditions and reducing labor market inequalities.

⁹According to the Executive Direction of the World Bank Group in 2004-2007

12 Responsible consumption and production

One of the major goals persistent in the development of the textile industry. People are now purchasing more clothes than ever in the history of humankind, and the industry is only predicted to grow (see. Fig 5). Overconsumption is a global problem which only sharpens in the poor countries. Overcoming irresponsible consumer behavior is the key to sustainable development.

13 Climate Action

Global apparel industry accounts, according to differing sources, for up to 10% of the world's greenhouse gas emissions (see [26], [31], [32], [2], [8]) pushing the climate change to extremes. Bangladesh is one of the most vulnerable countries to the effects of climate change[19]: the country is exposed to multiple natural disasters due to a combination of geographical factors and the aftermath of the human activity (extraction of natural resources, river systems drainage, etc). The climate change is the most urgent issue Bangladesh is facing since it affects the environment which subsequently has a huge impact on the whole socio-economic system and the country's huge population.

4 Discussion

Global trends As some experts claim (see [21] and [45]), the world is almost at the point of no return. Even though major climate changes could only be seen by future generations, some of the effects can be felt today[25]. However, the Earth is not only susceptible to climate change, the environment suffers in a myriad of ways. Humans' activity greatly affects the deterioration of the planet's ecosystem also harming themselves in the process. However, the global trends of legislative and executive intention to implement the strategies of sustainable development which faces many challenges due to the complicated nature of all human endeavors: human reliability concerning the human behavior and existing rigid systems are the source of the complexity the planet's industries all over the world. While the developed countries, having had their share of the Earth's exploitation, aim to eradicate the consequences of their actions, while the developing countries, striving to improve their economies, only relatively begin to participate in the global economy based on the utilization of the planet's resources. Bangladesh, which used to be one of the poorest countries and considered one of the 'least developed' countries, now has the total (not per capita which is an important distinction) GDP that is larger than that of the Netherlands', Argentina's or UAE's. The country's economy is now the second-largest in South Asia (after India's), and textile industry is what brings the country the most revenue and the most ecological problems. The sustainable development implementation is essential for all of the countries in the world, but even more so, for such developing countries who urgently need to find the balance between the development of their economies and the impact said development is causing to the environment. Bangladesh does try to implement guidelines that reduce the harmful environmental impact of their most earning industry, but in the age of the climate emergency guidelines are just not enough. [43]

Ways to resolve the complexity What are the ways out of this complex situation created by the necessity for the industrial development hugely contributed to the textile and clothing industries in once 'least developed' countries and the need to preserve the remaining resources and natural capital people have left? First of all, it is important to always consider the complicated relationship between the developed and the developing countries. The developed countries are responsible for a huge portion of the environmental issues in the developing countries due to the nature of outsourcing their places of production. It is the decision of those who employ the factories what design collections to produce and how often they should be produced. Ways to lessen the environmental impact can be divided into three major groups: **I.** the ones that concern the supply chain, **II.** the ones that relate to the legislative initiatives, and **III.** the ones that concern the consumers' behavior.

- I. Extending the longevity of clothes is one of the main ways forward. Slow fashion urges people to buy less clothes, made from local materials, produced on a much smaller scale. Another concept which seeks to reduce clothing waste is the circular fashion which aims to "keep the materials within the consumption and production loop as long as possible." [32] Thrift shopping is one of the realizations of this concept. To push these concepts to their maximum it is a designer's responsibility to create clothes that are suitable and versatile to more than one season. The designer's considerate choice of the material that needs less washing and ironing also greatly reduces energy and water consumption when the item is used by the consumer.

Some changes applied to the processing and manufacturing phases (reducing the consumption of chemicals, replacing them with enzymes, using dye controllers and dyeing machinery that require less water, and water recycling) are also proved to reduce the environmental impact [32].

"Repair, maintenance, recycling or return consumer service program," [2] promotes the longevity of the clothes as well keeping them in the consumption loop.

- II. Some of the issues could only be solved through the governmental intervention. Unfortunately, industries in a lot of countries and especially in the poorer ones suffer from the lack of regulatory capacity of the governing bodies and factory management problems. [22] The government should be responsible, for instance, for "monitoring groundwater usage, imposing a usage fee on groundwater depletion, set guidelines on fines based on discharged waste." [22] However, several of the most important actions the government must implement include the active preservation of certain land (forested areas, wetlands, urban areas) where the textile production is rendered prohibited; investment in testing and lab technologies that assess the environmental impact of the used textile technologies; and assistance to industrial units in installing the ETPs.

Also, adopting specific policies that restrict certain chemical usage lessens the intake and exposure of the chemical by both the workers and consumers and prevents them [the chemicals] from entering the environment. Supplier policies should also be aimed at increasing transparency behind the supply chain to "increase ethical production" [2] and render the company more responsible.

- III. Since the consumer use phase is "estimated as having the largest environmental footprint in the lifecycle of clothes," [32] one of the most efficient ways to reduce the environmental impact of the clothing industry is "to persuade consumers to make small behavioural changes,

such as reducing washing temperature, washing at full load, avoiding tumble-drying, purchasing eco-friendly fibres and donating clothes that are no longer used." [32] This persuasion is possible through several tactics which include raising the consumer awareness through campaigns and by providing information on sustainability in stores or through tags on clothes, increasing the transparency by providing the consumers with information on the environmental footprint of their products, and providing better washing and drying instructions which could contain the information on how to reduce the impact. [32]

Other things consumers are able to do to lessen their consumption and wastage include up-cycling (which takes old clothing and converts them into new items), donation the clothes to local NGOs and charity funds, thrift shopping. [2]

4.1 Conclusion

The textile industry is one of the main drivers of the environmental degradation which is confirmed by various data highlighting its massive impact on the ecosystem of the planet. While it elevates the economies of the countries, it also puts them into a situation which might be referred to as the 'environmental (or climate change) crisis' (huge water and energy use, water contamination, river systems drainage, increase in greenhouse gas emissions, etc). The countries most susceptible to the climate change effects are usually the ones where most of the global apparel production takes place (Bangladesh, Vietnam, Indonesia, etc). To mitigate the impact of the textile industry a set of laws must be enacted to regulate how the production and distribution of clothing items are organized. The consumers are not exempt from the global pursuit of lessening the textile industry impact on the environment. Since the consumers are in part (since the demand is high) responsible for the market's huge supply, it's their responsibility to be more mindful when it comes to purchasing one's clothes, wearing them, taking care and disposing of them. The planet will never recover from the damage already caused but through the collective action more harm can be prevented, and it's absolutely in the hands of everyone who wears clothes.

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A Appendices

i Statistics

Figure 1: Sales of major apparel manufacturers and retailers worldwide in the fiscal year 2021 (in billion U.S. dollars)

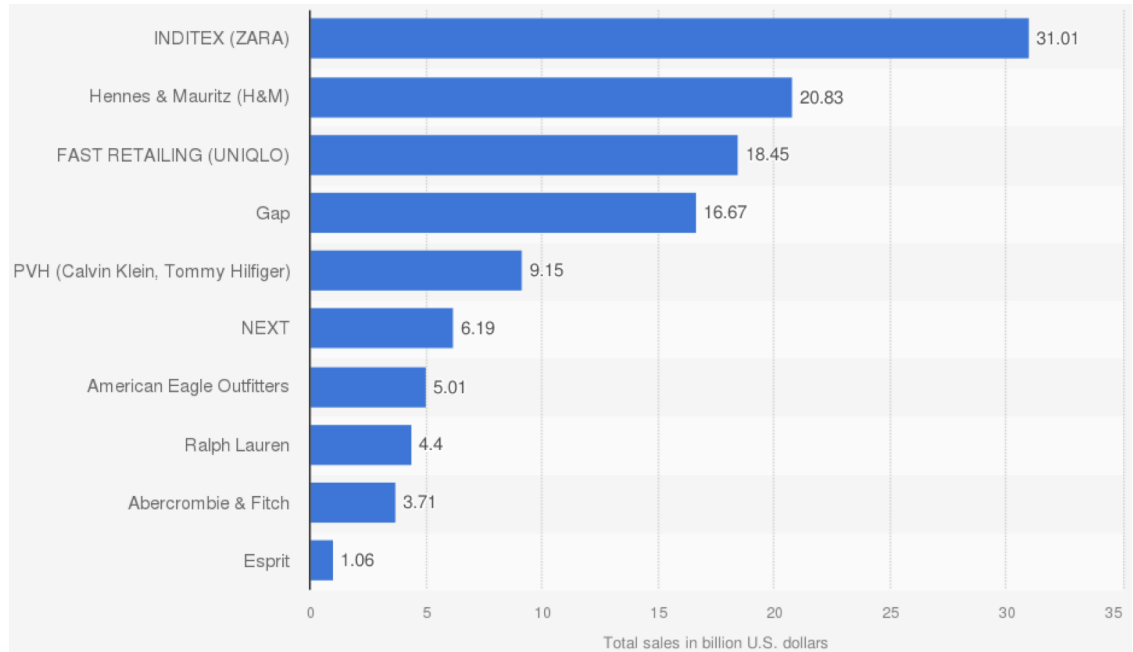


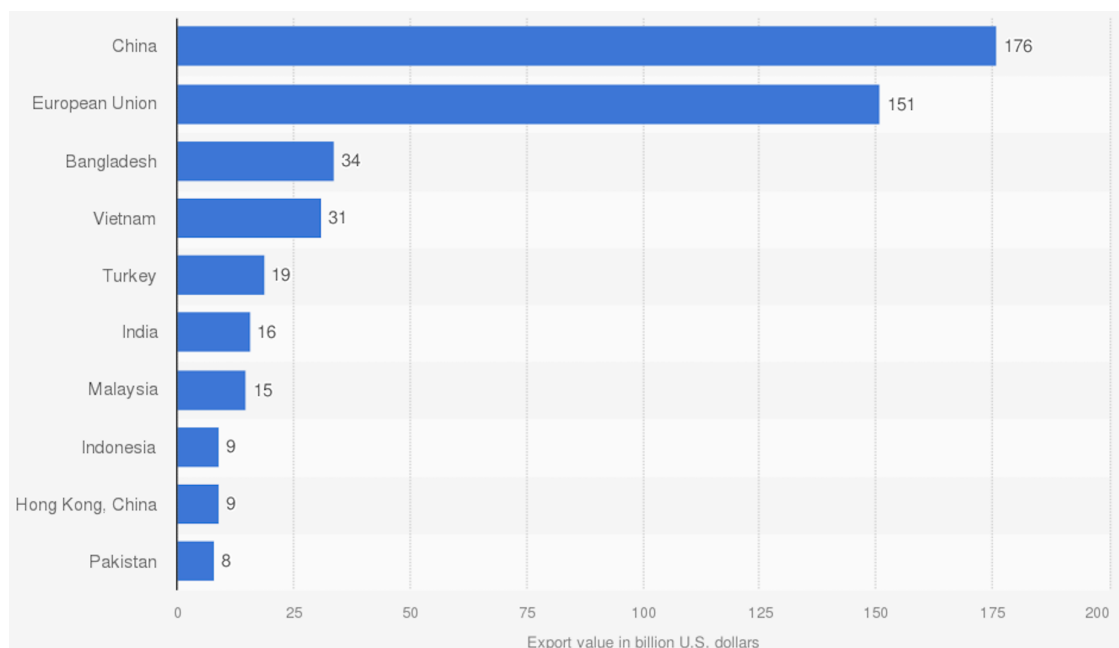
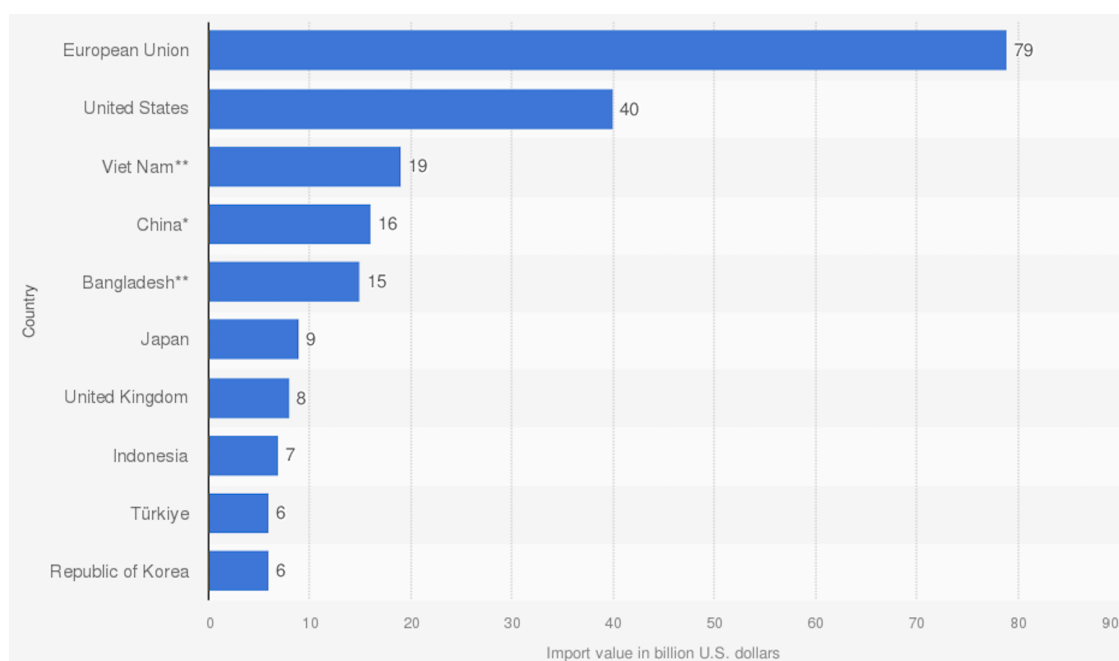
Figure 2: *Leading exporting countries of textile worldwide by value in 2021 (in billion U.S. dollars)***Figure 3:** *Value of the leading 10 textile importers worldwide in 2021 (in billion U.S. dollars)*

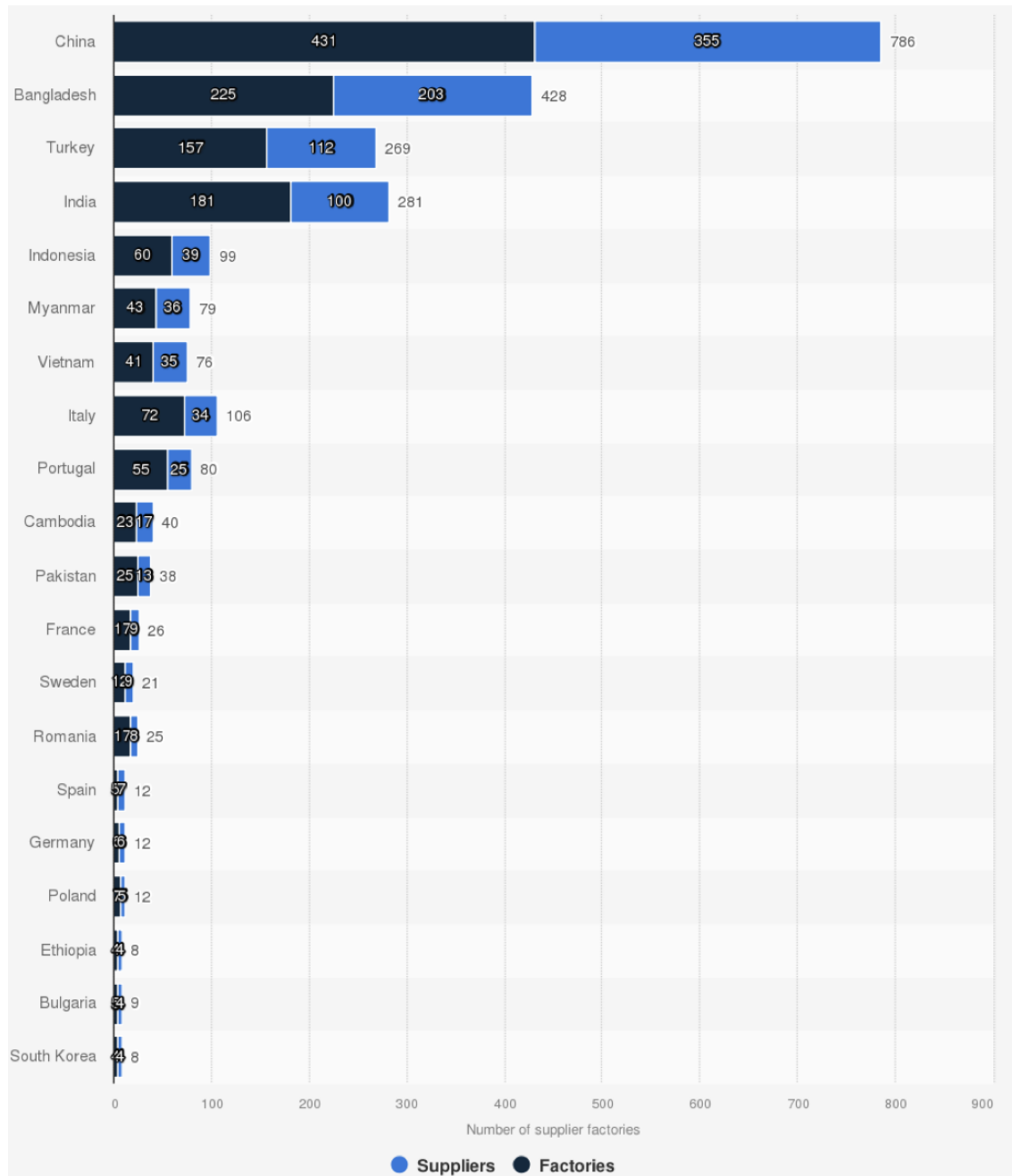
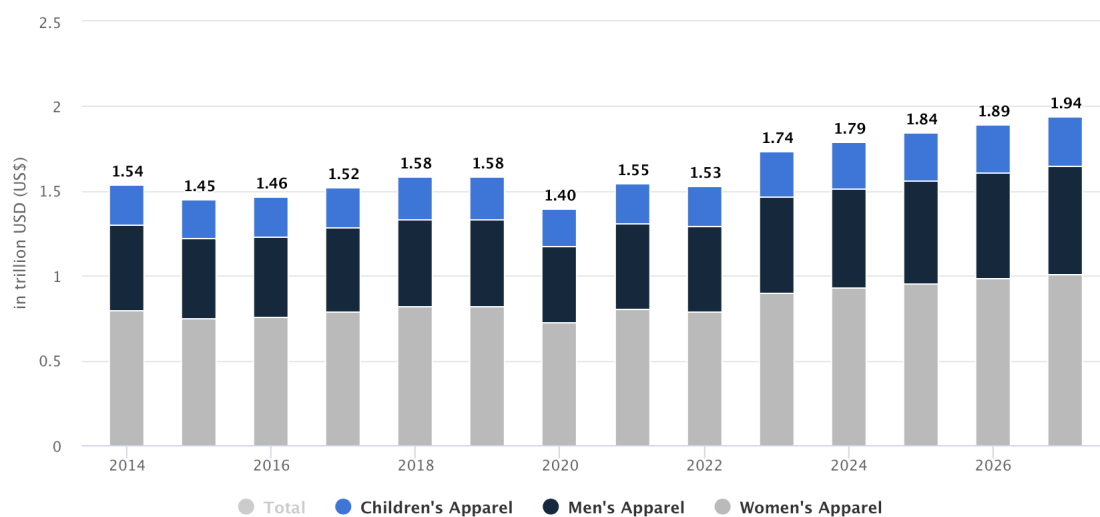
Figure 4: *Number of suppliers and factories of the H&M Group as of January 2022*

Figure 5: Revenue in the Apparel market worldwide in 2014-2027 (in trillion U.S. dollars)**Table 1:** Worldwide Apparel & Footwear Market Size (in million U.S. dollars)

2019	2020	2021	2022 forecast	2023 forecast
1,773,406.9	1,453,277.5	1,716,952.2	1,846,222	1,959,592.1