

UNEP COMMITTEE



**REGULATING
FAST FASHION, *a*
its ENVIRONMENTAL
IMPACT**

STUDY GUIDE: UNEP - REGULATING FAST FASHION AND ITS ENVIRONMENTAL IMPACT

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Key Terms

- **Group of Governmental Experts (GGE) :** A UN-established group of specialists from member states that studies a specific issue and produces recommendations or reports. GGEs are often used for technical or emerging issues that require detailed expertise.
- **Intergovernmental Panel :** A body composed of representatives from multiple governments that provides scientific or policy assessments (e.g., climate panels). Helps guide global decision-making.
- **Multilateral Environmental Agreement (MEA) :** A legally binding treaty among multiple countries focused on environmental protection (e.g., agreements on pollution, climate change, and biodiversity).
- **Conference of the Parties (COP) :** The main decision-making meeting of countries that are part of an international treaty. They review progress and negotiate new commitments.
- **Public-Private Partnership (PPP) :** A collaboration between governments and private companies to fund or implement solutions (e.g., sustainable textile production).
- **Extended Producer Responsibility (EPR) :** A policy where companies are responsible for the entire lifecycle of their products, including waste collection, recycling, and disposal.
- **Environmental, Social, and Governance (ESG) Criteria :** Standards used to evaluate a company's ethical impact — environment, labour conditions, and transparency.
- **Due Diligence :** The obligation for companies to investigate and prevent harm in their supply chains (labour abuse, pollution, etc.).

1. Introduction to the Committee

1.1 Historical Background of the Committee

In 1972, the United Nations Conference on the Human Environment was convened in Stockholm. The conference addressed issues such as pollution, marine protection, natural resource management, and environmental change. It resulted in the Stockholm Declaration and led to the establishment of the United Nations Environment Programme (UNEP) through General Assembly Resolution 2997.

UNEP was headquartered in Nairobi, Kenya — a decision that marked the first time a major international organisation was based in the Global South. While developed countries favoured Geneva, developing nations supported Nairobi as a symbol of Southern representation. Initially funded through voluntary contributions from member states, UNEP began its work with a five-year fund exceeding \$100 million. Between 1974 and 1986, it produced over 200 technical environmental guidelines covering areas such as forest and water management, pollution monitoring, pest control, and industrial regulation.

In 2000, the World Conservation Monitoring Centre in Cambridge, previously sponsored by IUCN, became part of UNEP, further strengthening its scientific and monitoring capabilities.

1.2 General Information About the Committee

In 1972, the United Nations Environment Program (UNEP), also known as UN Environment, was established to coordinate and oversee environmental efforts across the UN. Originating from the Stockholm Conference on the Human Environment, this entity was formally established on December 15, when Resolution 2997 was passed. While its inaugural meeting was held at the Palais des Nations in Geneva, its official headquarters eventually shifted to Nairobi, Kenya, once the necessary infrastructure was in place. Initially composed of a team of 300, including 100 experts from diverse fields of study, the United States contributed \$40 million, while the remaining \$60 million was pledged by the other 57 member states. The mission of UNEP is to inspire, educate, and empower nations and their citizens to enhance their standard of living while preserving that of future generations.

1.3 UNEP's Mandate in Environmental Protection

UNEP's mandate is to provide leadership and encourage partnerships in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations. The organisation works to assess global environmental conditions, develop international environmental agreements, and promote the implementation of sustainable practices. UNEP also supports countries in developing environmental policies, strengthening environmental governance, and addressing urgent issues such as climate change mitigation, pollution reduction, and conservation of natural resources. By fostering international cooperation and providing scientific and technical expertise, UNEP plays a central role in advancing global environmental protection and sustainability.

2. Background Information

2.1 Understanding Fast Fashion

The fast fashion industry thrives on rapid production, low labour costs, and cheap materials to keep up with consumer demand. It churns out inexpensive clothing that mimics the latest designer trends and reaches the market quickly. But here's the catch: the industry prioritises profit margins, often neglecting workers' well-being and the long-term impact on the planet.

2.2 Environmental Impacts of Fast Fashion

The fast fashion industry causes significant, multifaceted environmental harm. Its production model is based on rapid manufacturing cycles, high-volume output, and low-cost materials, all of which require intensive resource consumption and generate substantial waste. One of the most critical concerns is resource depletion. Fast fashion relies heavily on non-renewable resources, including fossil fuels used to produce synthetic fibres such as polyester. Additionally, cotton cultivation requires substantial water and agricultural inputs. According to the Wildlife Fund, approximately 2,700 litres of water are required to produce a single cotton t-shirt, illustrating the water-intensive nature of textile production.

The industry is also a significant contributor to climate change. Emissions are generated throughout the supply chain — from raw material extraction and textile manufacturing to global transportation and distribution. Current estimates suggest that the textile sector accounts for approximately 5–10% of global greenhouse gas emissions. Energy-intensive production processes, particularly in countries reliant on coal-based energy systems, further exacerbate this impact. Chemical pollution represents another major environmental challenge. Textile dyeing and treatment processes involve hazardous chemicals that can contaminate rivers and groundwater if wastewater is not adequately treated. In regions with weak environmental regulations, untreated industrial discharge can severely damage local ecosystems and threaten public health.

During washing, garments made from polyester and other plastics release microscopic fibres into wastewater systems, many of which ultimately enter oceans. These microplastics accumulate in marine environments, disrupting ecosystems and entering the food chain. Biodiversity loss is an additional consequence of both agricultural expansion for natural fibres and textile production pollution. Land conversion for cotton farming and water contamination from industrial runoff can degrade habitats and reduce ecosystem resilience.

Finally, textile waste has emerged as a critical global issue. Fast fashion's business model encourages overproduction and overconsumption, resulting in large volumes of discarded garments. Limited recycling infrastructure and low reuse rates mean most textile waste ends up in landfills or is incinerated. As textiles decompose, they release greenhouse gases such as methane, further contributing to climate change. In the United States alone, approximately 11 million tons.

2.2.1 Water Consumption and Pollution in the Fashion Industry

The fashion industry is responsible for up to 10% of global carbon emissions and is among the largest consumers of freshwater worldwide. Rapid production cycles driven by fast fashion have significantly increased resource consumption, with consumers purchasing approximately 60% more clothing than they did 15 years ago. This growth has intensified water extraction, pollution, and textile waste.

Currently, the industry uses an estimated 93 billion cubic metres of water annually — approximately 4% of global freshwater extraction — a figure projected to double by 2030 if current trends continue. Cotton cultivation alone is highly water-intensive, requiring between 10,000 and 20,000 litres of water per kilogram of raw cotton. Producing a single cotton shirt requires approximately 2,500 litres of water. Around half of global cotton production depends on irrigation, placing additional stress on freshwater supplies in regions already experiencing water scarcity. The severe shrinkage of the Aral Sea in Central Asia is widely associated with irrigation for cotton farming, illustrating the long-term ecological consequences of unsustainable practices.

Beyond consumption, textile production is a major source of water pollution. Conventional dyeing and finishing processes account for approximately 20% of global industrial wastewater and discharge hazardous chemicals, including heavy metals, dyes, and toxic effluents, into rivers and groundwater systems. In some regions, untreated wastewater contaminates local drinking water and agricultural irrigation systems, posing risks to biodiversity and human health.

Synthetic fibre production further contributes to environmental degradation. The manufacturing of polyester and other synthetic materials relies on fossil fuels and releases harmful substances into water systems. Additionally, microfibres shed from synthetic garments during washing enter waterways and oceans, where they persist for decades and accumulate within marine ecosystems. These microplastics have been detected in seafood and coastal environments worldwide.

Although sustainable alternatives such as organic cotton and water-efficient dyeing technologies have demonstrated the potential to reduce water consumption and chemical pollution significantly, implementation remains inconsistent across the industry. Limited transparency and weak supply chain monitoring continue to hinder effective environmental accountability.

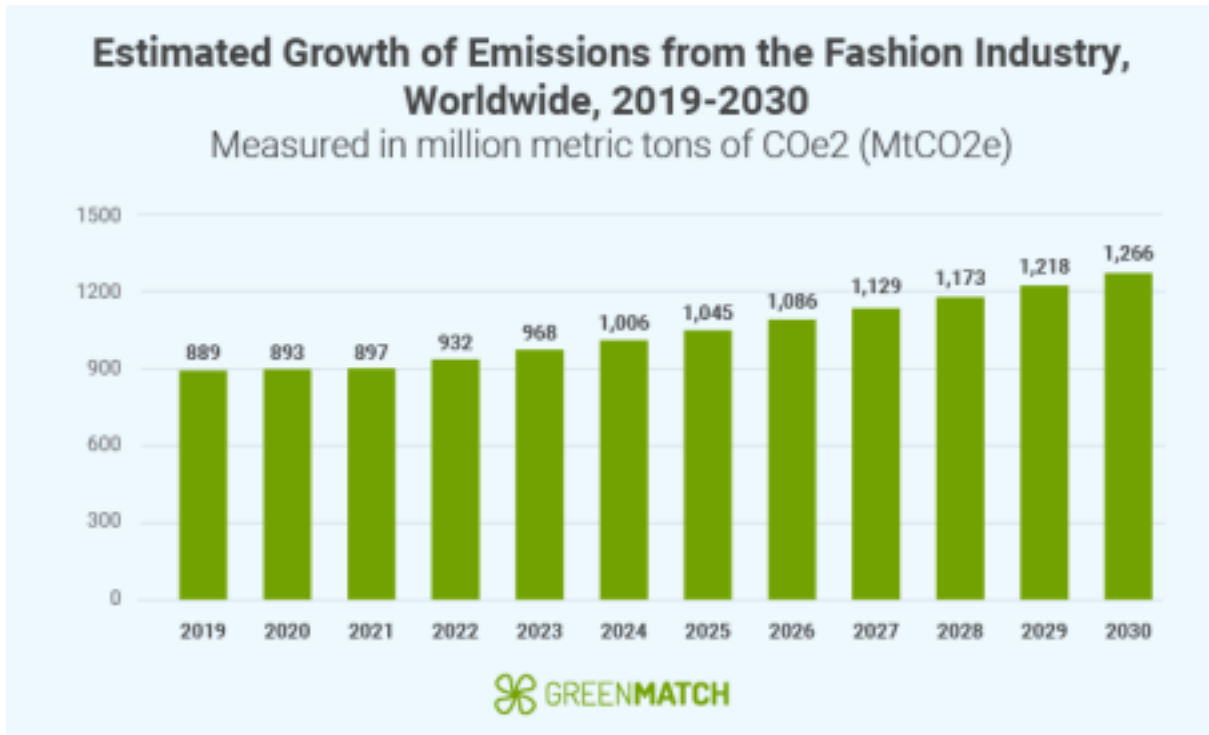
2.2.2 Carbon Emissions and Climate Change

The production and consumption of textiles also contribute to the climate crisis. According to a European Environment Agency report, textile purchases in the EU in 2022 generated about 355kg of CO₂ emissions per person, the equivalent of 1,800 km of travel by a standard petrol car. The fashion industry is among the largest industrial polluters globally, responsible for approximately 10% of annual carbon emissions — amounting to an estimated 1.2 billion tonnes of CO₂ each year. Emissions are generated throughout the entire lifecycle of garments, including raw material extraction, manufacturing, transportation, and disposal. Rapid production cycles and shifting consumer behaviour have significantly increased the industry's environmental footprint. Since 2000, clothing production has doubled, while many brands have expanded from releasing two seasonal collections per year to as many as 24. At the same time, garment utilisation has declined, with clothing worn less frequently before being discarded. The widespread perception of clothing as disposable has accelerated overproduction and waste generation.

Textile waste further intensifies the sector's carbon impact. Large volumes of discarded clothing are sent to landfills annually, where synthetic materials may take decades to decompose and release greenhouse gases. Additionally, globalised supply chains — in which garments may travel across multiple countries during production — increase transportation-related emissions. If current trends continue, projections suggest that the fashion industry could account for up to 26% of global carbon emissions by 2050, underscoring the urgent need for systemic reform. Beyond its direct carbon emissions, the fast fashion industry contributes to climate change through resource-intensive production systems and unsustainable consumption patterns. The sector relies heavily on fossil fuels, particularly for producing synthetic fibres such as polyester, which are derived from petroleum. Energy-intensive manufacturing processes, often powered by coal-based energy in major garment-producing countries, further increase greenhouse gas emissions.

Deforestation associated with fibre production, land conversion for cotton cultivation, and industrial pollution all reduce ecosystems' ability to absorb carbon dioxide, weakening natural climate regulation mechanisms. Additionally, the incineration and decomposition of textile waste release further greenhouse gases, compounding the industry's overall impact.

The rapid-turnover model promoted by fast fashion encourages continuous consumption rather than long-term garment use, thereby intensifying production demands and accelerating emissions growth. Without significant structural changes in production methods, energy sources, and consumer behaviour, the fashion industry's contribution to global warming is expected to increase substantially in the coming decades.



2.2.3 Textile Waste and Landfills

Textile waste refers to discarded materials generated throughout the lifecycle of clothing, including both pre-consumer waste from manufacturing processes and 8 post-consumer garments disposed of by individuals. The rapid production model of fast fashion has dramatically increased textile waste worldwide, creating a significant environmental burden. Each year, textiles worth approximately US\$150 billion in raw materials are lost through landfilling, incineration, or export, reflecting both economic inefficiency and unsustainable resource use. In 2024, an estimated 80% of discarded clothing was sent to landfills or incinerators, while only 12% was reused and less than 1% was recycled into new fibres.

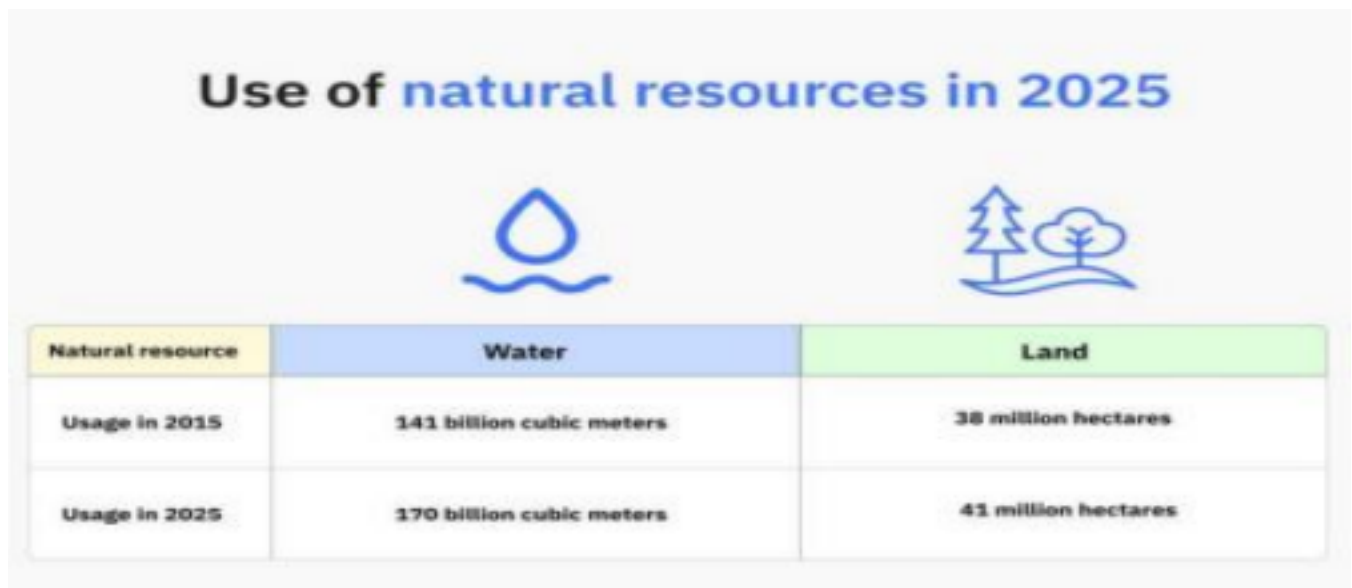
The environmental consequences of this waste stream are substantial. Synthetic textiles, which dominate fast-fashion production, can take decades or even centuries to decompose under landfill conditions. During this process, they release greenhouse gases such as methane and carbon dioxide, as well as microplastics that contaminate soil and water systems. Incineration, often presented as an alternative to landfill, generates additional carbon emissions and may release toxic pollutants into the atmosphere. Moreover, large volumes of unsold inventory and returned items are destroyed before ever reaching consumers, further accelerating waste generation. Limited recycling infrastructure, complex fibre blends, and the low durability of cheaply produced garments make it difficult to implement circular solutions at scale. Without systemic reforms that promote durability, reuse, fibre-to-fibre recycling, and extended producer responsibility, textile waste will continue to grow, making it one of the fastest-growing waste streams globally.

- 25% of clothes waste is incinerated around the world
- Only 8% of old clothes are reused globally.
- An average of 14 clothing items per person on the planet is created each year
- The average American throws away 81 pounds of clothes annually
- Clothing production is the third biggest manufacturing industry worldwide – after the automotive and technology sectors

2.2.4 Microplastics and Ocean Pollution

Microfibres are essentially small-sized particles that are released or shed into the environment from all kinds of fibrous materials (textiles), such as clothes, agricultural, industrial, and home textiles. The increasing reliance on synthetic fibres represents a major environmental concern within the fast fashion industry. Oil-derived materials such as polyester and acrylic now account for approximately 62.5% of global fibre production and are present in around 70% of garments sold worldwide. Their low cost and ease of mass production have supported the rapid, high-volume manufacturing model associated with fast fashion.

However, this has also resulted in a dramatic increase in plastic-based textile waste, with an estimated 42 million tonnes discarded annually. As a result, the fashion sector accounts for approximately 13% of global plastic waste. Unlike natural fibres, synthetic textiles do not biodegrade; instead, they fragment into progressively smaller plastic particles that persist in the environment for decades.



A significant environmental consequence of this dependence on synthetic materials includes microplastics, which are closely linked to ocean degradation. Synthetic garments continuously shed microfibres throughout their lifecycle, particularly during washing. A single garment can release up to 700,000 microfibres during a single wash. Due to their microscopic size, many of these fibres pass through wastewater treatment systems and flow into rivers, ultimately entering marine environments.

Studies estimate that synthetic microfibres may account for up to 35% of ocean plastic pollution. Once in the ocean, these microplastics accumulate in marine ecosystems, where plankton, fish, and other marine organisms ingest them. This not only disrupts aquatic food chains but also introduces plastic particles into seafood consumed by humans. Because microplastics do not fully decompose, their presence in marine ecosystems is persistent and cumulative, contributing significantly to long-term ocean pollution and biodiversity loss.

When are microplastic released in a garment's lifecycle?



2.3 Social and Economic Dimensions

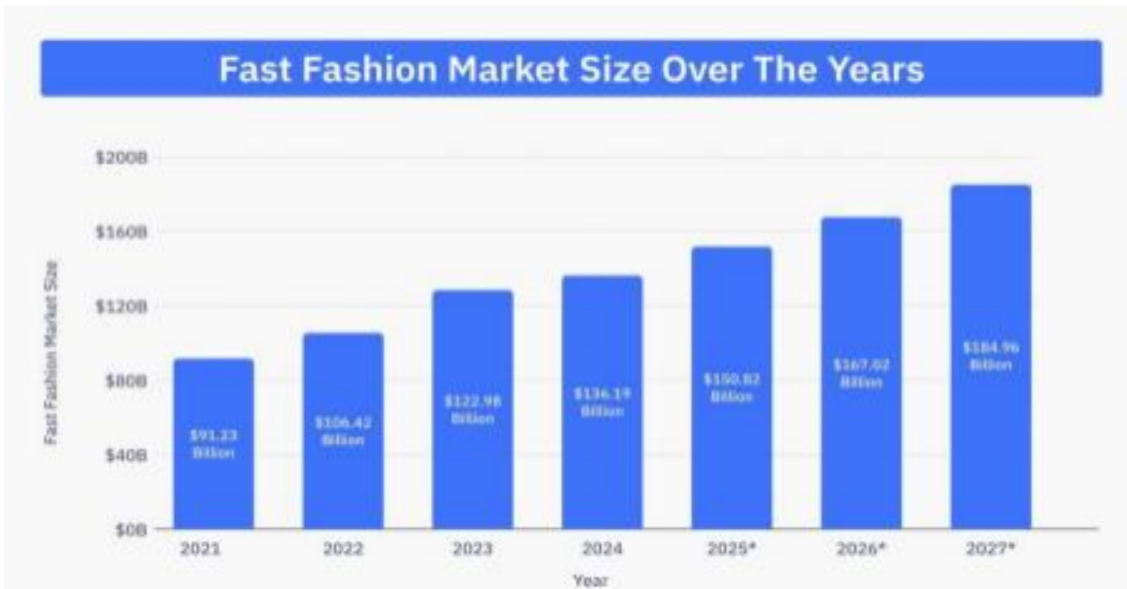
The fast fashion industry operates within a complex global system that generates significant social and economic consequences. While the sector provides employment and economic growth opportunities in many developing countries, it is also associated with labour exploitation, inequality, and structural economic dependency.

One of the most pressing social concerns is labour conditions within garment supply chains. Production is frequently outsourced to countries with lower labour costs, where regulatory enforcement may be limited. Workers often face long working hours, low wages, limited job security, and unsafe working environments. According to the International Labour Organisation, many garment workers worldwide earn wages below a living standard, despite the sector's profitability. The 2013 Rana Plaza factory collapse in Bangladesh further highlighted systemic safety failures within the industry. Additionally, the workforce is predominantly female, and women frequently encounter gender based discrimination, wage disparities, and restricted access to leadership positions.

From an economic perspective, the textile and garment sector plays a crucial role in the development strategies of several emerging economies. In countries such as Bangladesh and Cambodia, garment exports constitute a significant share of national export earnings and provide millions of jobs. Institutions such as the World Bank have noted that the apparel industry has contributed to poverty reduction and increased female labour participation in certain regions. However, this economic dependence can create vulnerabilities. Intense global competition encourages a "race to the bottom," in which countries lower production costs by weakening labour and environmental standards to attract foreign investment. The structure of global supply chains further complicates accountability. Fashion brands headquartered in developed economies often outsource production across multiple countries, making transparency and enforcement of ethical standards challenging. This fragmentation can obscure responsibility for labour abuses and environmental damage. At the same time, imposing strict environmental

Regulations without transitional support may negatively affect employment in producer countries, creating a policy dilemma between sustainability and economic stability.

Therefore, regulating fast fashion requires a balanced approach that protects workers' rights, promotes environmental responsibility, and safeguards economic development. Achieving this balance is essential for advancing both social equity and sustainable production within the global fashion industry. China occupies a central position in the global textile and apparel industry, ranking among the world's largest producers and exporters of garments and synthetic fibres. Its extensive manufacturing infrastructure, access to raw materials, and large-scale industrial capacity have made it a key hub within global supply chains. At the same time, China is also one of the largest domestic consumers of textiles, reflecting the growing purchasing power of its population. While the country has implemented stricter environmental regulations in recent years, textile production in certain regions continues to contribute to air and water pollution and high carbon emissions due to energy-intensive manufacturing processes. Given its dominant role in both production and fibre manufacturing — particularly polyester — China's environmental and industrial policies significantly influence the global sustainability trajectory of the fashion sector.



3.

Current Situation in the 21st Century

3.1 Global Production and Consumption Trends

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Global Production and Consumption Trends in the Textile Industry

The textile industry is among the top four sectors in terms of raw material and water consumption, producing apparel, household, and technical textiles. In 2015, global clothing production doubled, surpassing 100 billion garments annually. However, garments now have increasingly short life cycles, often lasting less than one year due to the linear economic model intensified by fast fashion, characterised by low prices, rapid trend turnover, and short collection cycles.

Within the European Union, efforts are underway to improve sustainability, competitiveness, and resilience in the textile sector. By 2025, Member States will be required to implement separate textile waste collection systems to promote circular economy practices and more sustainable production processes.

According to Textile Exchange's latest Materials Market Report, global fibre production increased from 125 million tonnes in 2023 to 132 million tonnes in

2024—more than double the level in 2000. Since the Paris Agreement in 2015, fibre production has grown by approximately 34 million tonnes and could reach 169 million tonnes by 2030 under a business-as-usual scenario.

Synthetic fibres, particularly polyester, dominate production, accounting for 59% of global fibre output, with most of it derived from fossil fuels. Recycled polyester remains limited and is primarily derived from plastic bottles rather than textile waste, demonstrating ongoing challenges in textile-to-textile recycling.

Despite these concerns, progress has been observed in the use of certified sustainable materials.

Currently, 34% of global cotton production is certified, two-thirds of artificial cellulosic fibre is manufactured from certified or controlled feedstock, and half of global mohair production complies with recognised sustainability standards. These developments highlight the growing importance of certification systems and transparent reporting in advancing the industry's environmental accountability.

3.2 Major Fashion-Producing Regions

The global fashion industry produces an estimated 100 billion garments annually, accounting for approximately 8–10% of global greenhouse gas emissions and 15 consuming around 93 billion cubic meters of water per year. Production is geographically concentrated in export-oriented economies, where environmental pressures associated with textile manufacturing are most pronounced.

China remains the largest textile and apparel exporter globally, contributing roughly 30% of total textile exports. Its extensive industrial capacity and energy-intensive production processes, including large-scale dyeing operations, contribute significantly to carbon emissions and water pollution. Textile dyeing is estimated to generate nearly 20% of global industrial wastewater.

Bangladesh is the second-largest garment exporter worldwide, with the ready-made garment sector accounting for over 80% of national export earnings and employing more than 4 million workers. While the industry plays a vital role in economic development, limited wastewater treatment capacity and regulatory enforcement have raised concerns about environmental sustainability.

Vietnam ranks among the top five garment exporters and employs approximately 2.5 million workers in the textile sector. Rapid industrial expansion has increased demand for water, energy, and waste management infrastructure. Similarly, India and Pakistan are major producers of cotton-based textiles. Globally, cotton Cultivation occupies approximately 2.5% of arable land and is highly water-intensive, contributing to regional water stress and ecosystem degradation.

Within Europe, Turkey, Portugal, and Italy focus primarily on higher-value or shorter-supply-chain production, often operating under comparatively stricter environmental standards, though at elevated production costs.

The United States remains a significant consumer market and producer of specialised apparel. Globally, garments are worn 36% fewer times than 15 years ago, contributing to an estimated 92 million tons of textile waste annually.

Taken together, current production patterns illustrate a structural imbalance in which environmental externalities—such as greenhouse gas emissions, water contamination, and textile waste—are disproportionately concentrated in manufacturing regions. At the same time, consumption is largely driven by higher-income markets. Addressing this imbalance represents a central governance challenge for the international community, particularly in advancing coordinated approaches to sustainable production and responsible consumption.

3.3 Existing International Regulations

In 2025, major jurisdictions are introducing stricter regulatory frameworks to address the environmental and social impacts of the fashion industry. Notably, the European Union (EU) has enacted extended producer responsibility (EPR) measures that require fashion producers — including online retailers — to fund and manage the collection, sorting, and recycling of textile waste. Meanwhile, in the United States, legislation such as California’s Fashion Environmental Accountability Act mandates comprehensive measurement and disclosure of greenhouse gas emissions for fashion brands, and proposals like the New York Fashion Sustainability and Social Accountability Act aim to enforce detailed supply chain mapping and reporting. These developments reflect a global trend toward proactive oversight of environmental impacts in the fashion industry.

Historically, compliance programs in the fashion sector focused on basic product safety, supplier audits, and documentation, generally limited to immediate suppliers (Tier 1) and reactive responses to issues. New regulations, however, demand extended producer responsibility, supply chain transparency, and structured environmental, social, and governance (ESG) reporting. This requires deeper visibility into multi-tier supply chains and adoption of traceability mechanisms beyond traditional audits.

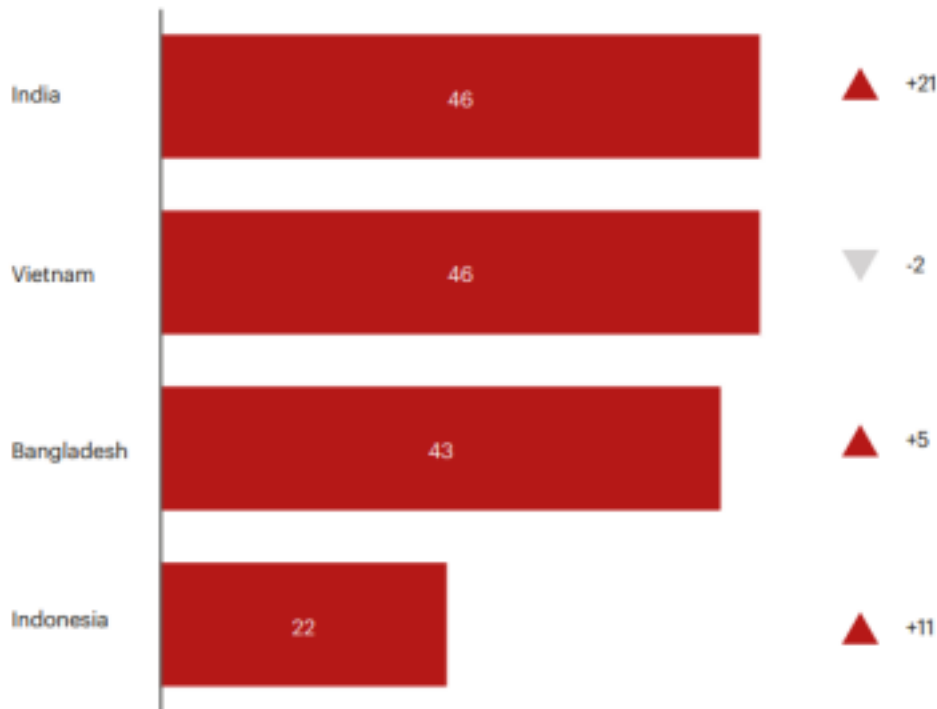
Companies are increasingly adopting advanced tools to meet these expectations.

Digital Product Passports capture lifecycle information for garments, improving traceability under emerging standards such as the EU’s Ecodesign for Sustainable Products Regulation. Blockchain-based platforms ensure tamper-proof supply chain data, and AI-driven systems support real-time risk monitoring across suppliers. Integrated data platforms help consolidate compliance information, enabling more accurate reporting and audit readiness.

To adapt successfully, compliance strategies must be embedded throughout business processes, from product lifecycle management to supplier collaboration and continuous improvement programs. This includes integrating ESG indicators within enterprise systems and fostering supplier partnerships that share responsibility for sustainability goals.

Top-ranked sourcing hotspots for the next five years,
Share of apparel CPO respondents including country in top three, %

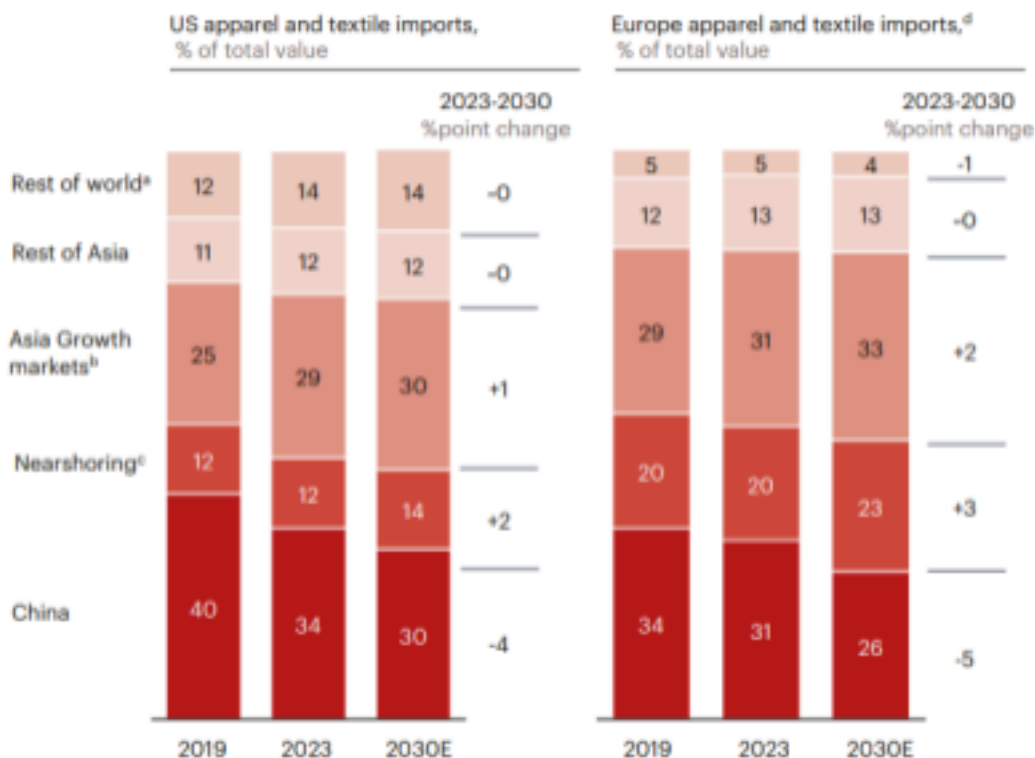
2019-2023
%point change



Non-compliance is no longer solely a regulatory issue — it is also a significant reputational and financial risk. The industry’s globalised structure has historically enabled fragmented oversight, resulting in gaps in traceability and worker exploitation. Increasingly robust legislation, such as the EU’s Corporate Sustainability Reporting Directive and various supply chain due diligence laws, aims to close these gaps and impose measurable accountability on brands.

Ultimately, compliance requirements and transparent practices are becoming competitive assets.

Consumers demonstrate a stronger preference for ethically managed brands, and visibility into environmental impacts can strengthen long-term trust and resilience. For UNEP, elevating international guidelines that encourage traceability, reporting, and extended producer responsibility can support global standards that mitigate fast fashion’s environmental footprint.



4. *Questions to Ponder*

- How can countries reduce textile waste going to landfill?
- How can governments limit water pollution from textile dyeing and manufacturing?
- What measures can reduce carbon emissions from clothing production and transport?
- How can brands be required to use fewer synthetic (plastic-based) fibres?
- What actions can increase clothing recycling and reuse rates?
- How can governments encourage consumers to buy fewer but longer-lasting garments?
 - What regulations can prevent the dumping or burning of unsold clothing?
 - How can governments encourage people to buy fewer but higher-quality clothes?
- How can brands be required to use less water and energy in production? · What actions can reduce microplastic pollution from synthetic clothing?
- How can recycling and clothing donation systems be improved?
- How can companies be held accountable for unsafe working conditions? What emergency measures can be implemented to guarantee living wages and prevent wage theft in garment-producing countries?
- How can the fashion industry shift to more sustainable materials?
- How can production levels be reduced to prevent overconsumption?
- What policies can support a circular economy in the textile sector? ·
- How can renewable energy be integrated into textile manufacturing?
- How can international cooperation help regulate global supply chains?
- How can education and awareness campaigns change consumer behaviour in the long term?
- How can international organisations develop binding global agreements that enforce minimum environmental and labour standards across transnational fashion supply chains?
- What mechanisms can ensure that multinational fashion brands are legally
- accountable for environmental damage and labour violations occurring in outsourced production countries?

5. **Possible Solutions**

Ensure Reduction of Textile Waste

Governments should implement policies to significantly reduce textile waste sent to landfills by promoting recycling programs, banning the disposal of unsold clothing, and supporting second-hand markets. This includes incentives for clothing repair services and the development of textile collection infrastructure.

Regulate Water Pollution in Textile Production

National authorities should enforce strict regulations on wastewater from textile dyeing and manufacturing processes. This includes mandatory water treatment systems, limits on toxic chemical discharge, and penalties for non-compliance to protect ecosystems and public health.

Reduce Carbon Emissions in Fashion Supply Chains

Countries should introduce emissions-reduction targets for the fashion industry by encouraging local production, sustainable logistics, and the transition to low-carbon transport. Carbon labelling on clothing products can also increase transparency for consumers.

Limit the Use of Synthetic Fibres

Governments should adopt regulations that gradually reduce the use of synthetic, plastic-based fibres by encouraging natural or biodegradable alternatives and investing in sustainable textile innovation.

Promote Clothing Recycling and Reuse

States should expand national recycling systems and support donation programs to increase reuse rates. Public-private partnerships can help scale up textile recycling technologies and infrastructure.

Integrate Renewable Energy in Manufacturing

Governments should incentivise the use of renewable energy in textiles production facilities through subsidies, tax benefits, and infrastructure investment.

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