FABRIC Engagement Brief on Nature

Textiles and Apparel Sector

Finance *for* Biodiversity Foundation

Fabric | Fostering action on biodiversity through responsible investment in clothing

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Overview

- This brief on the **Textiles and Apparel Sector** is part of a collection of Sectoral Engagement Briefs on nature and informs the FABRIC (Fostering Action on Biodiversity through Responsible Investment in Clothing) collaborative engagement initiative led by investors and coordinated by the Finance for Biodiversity (FfB) Foundation.

- The purpose of this sector brief is to provide background on the Textiles and Apparel sector and explain why engaging with it is crucial for addressing nature-related issues. It aims to support investors in their engagement practices with companies, offering a foundation to build relationships focused on biodiversity and environmental sustainability.

- The FABRIC collective engagement focuses on the Textile Sector, identified through a multi-tool pilot analysis conducted by the FfB Foundation. The multitool pilot analysis applies four biodiversity-impact assessment tools to provide biodiversity footprint scores of sectors and industries with significant environmental impacts.

- The **Textiles and Apparel sector** contributes to **1% of the overall impact on biodiversity** from companies in the MSCI World Index—a leading benchmark that tracks the performance of approximately 1,500 large and mid-cap companies across 23 developed market countries.

- The industry has a substantial negative impact on the environment, being responsible for **10% of global carbon emissions** and contributing to **35% of all primary microplastics** released into the environment from the laundering of synthetic clothes.

- Based on the **Science-Based Targets Network (SBTN) Sectoral Materiality** results—a tool that helps users screen for potentially material environmental impacts relevant to their sector and company activities—the main impact drivers in the upstream part of the Textiles sector's value chain are: ***Terrestrial use, Freshwater use, Marine use, Water use, Greenhouse Gas (GHG) emissions, Water pollutants, Soil pollutants, Solid waste,*** and ***Disturbances***. The main impact drivers of the Textiles sector's **direct operations** are: ***Terrestrial use, Water use, GHG emissions, Water pollutants,*** and ***Soil pollutants***.

- Engaging with this sector can contribute to the achievement of several targets of the **Kunming-Montreal Global Biodiversity Framework**, including: **Participatory and Biodiversity-Inclusive Spatial Planning and Restoration of Degraded Ecosystems** (Targets 1, 2, and 3); **Conservation and Recovery of Threatened Species and Sustainable Use of Biodiversity** (Targets 4 and 5); **Reduce Pollution Risks** (Target 7); **Climate Action for Biodiversity** (Target 8); **Enhance Biodiversity and Sustainability in Agriculture, Aquaculture, Fisheries, and Forestry** (Target 10); **Fair and Equitable Sharing of Benefits** (Target 13); **Disclosure of Risks, Dependencies, and Impacts on Biodiversity** (Target 15); **and Sustainable Consumption Choices** (Target 16).

Table of Contents

What's Inside the Brief

This brief on the Textiles and Apparel Sector is part of a collection of sectoral engagement briefs developed by the members of the Finance for Biodiversity (FfB) Foundation under the working group "Engagement with Companies." Its purpose is to support investors in their engagement practices with companies on nature-related issues in the Textiles and Apparel industry. In alignment with the FABRIC collective engagement, this brief is meant to inform and support investors on the impacts and sectoral background surrounding the textile industry.

Corporate engagement enables investors to enter discussions with company management to change or influence company actions and strategic directions. In this case, this brief is meant to facilitate more effective decisions about curbing biodiversity loss in the Textiles and Apparel sector. It builds on the FfB Foundation's Guide on Engagement with Companies for financial institutions where guidance is provided on ways to engage with companies on biodiversity.

This brief is composed of four sections:

1. **Overview of the Sector:** This section provides an overview of the Textiles and Apparel sector, including how it specifically impacts and depends on nature, particularly in sensitive locations. It also examines some of the most forward-looking regulations on biodiversity that can inspire investors as they guide the transformation of the companies in their portfolios. Additionally, it considers how the sector links to the objectives of the goals and targets of the Kunming-Montréal Global Biodiversity Framework (**GBF**)—an international agreement adopted in December 2022 under the UN Convention on Biological Diversity (CBD), which sets out an ambitious pathway to reverse biodiversity loss by 2030 and to reach the global vision of a world living in harmony with nature by 2050.

2. **Sector-Specific Company Actions:** This section considers, in detail, some of the most relevant sector-specific company actions—including current commitments that can already be taken and initiatives that are already happening—that investors can mention and share during engagement with companies to help stimulate progress in addressing biodiversity loss. This section concludes with recommended best practices for companies in this sector.

3. **Engagement Questions:** This section lays out a series of questions that can serve as a starting point to build relationships between investors and the companies they are engaging with on nature-related issues.

4. **Supporting Tools:** The fourth section provides a curated set of useful supporting tools that can be used to assist the engagement process.

This brief has been developed in alignment with the sectoral guides published by the Taskforce on Nature-related Financial Disclosures (TNFD) and the partnership between Business for Nature (BfN), the World Economic Forum (WEF) and the World Business Council for Sustainable Development (WBCSD) as well as the sectoral reports from Planet Tracker. It has been written by investors for investors and informs the FABRIC collaborative engagement initiative.

PART I:

Connections between the Textiles and Apparel Sector and Nature

Introduction

The Textiles and Apparel sector includes retailers of apparel, accessories, luxury goods, footwear and textiles. In a broad definition, textile products are those containing at least 80%, by weight, of textile fibre and thus include leisure apparel and clothing accessories, household/interior textiles as well as technical textiles. The textile industry includes the transformation of natural and man-made fibres into yarns and fabrics as well as, through the Cut, Make-up and Trim process (CMT), the production of finished and functional textile articles.

There are two types of fibres used to produce textiles: natural fibres (be they of vegetable origin, such as cotton or flax/linen or animal origin, such as wool); and man-made fibres (be they natural polymers, synthetic polymers, fossil-based or bio-based, such as polyester or inorganic fibres, such as glass and metal fibres). In addition, all non-textile components of animal origin, notably leather, and fur, used in the production of garments and footwear are a part of the ecosystem as well. The industry has a large negative impact on the environment and is deemed responsible for 10% of global carbon emissions,[1] as well as 35% of all primary microplastics released into the environment from the laundering of synthetic clothes.

The FfB Foundation chose to produce an engagement brief on the Textiles and Apparel sector based on the results of its multi-tool pilot analysis, which applies four biodiversity-impact assessment tools to provide biodiversity footprint scores of high-impact sectors and industries. In the analysis, the Textiles and Apparel sector was identified as generating 1% of the overall impact on biodiversity from companies in the MSCI World Index.[2] While the sector was not been identified within the Top 10 biodiversity-impact ranking of company industries, its importance to investors and their engagement objectives; and the broader potential impacts and dependencies of both upstream and downstream operations make this sector of prime importance to understand in more detail.

Table 1 below presents the different classifications and scope of the Textiles and Apparel sector that have been developed by various actors operating in this space. These systems, and their accompanying codes per sector, are meant to help investors manage and track the progress of the companies in their portfolio as well as determine which specific type of activities the companies in their portfolio are involved in; and, thus, the biodiversity risks, impacts and dependencies they face. Indeed, it is particularly important for investors engaging with companies to know this information so that they can be aware of the companies' economic sector's supply chains and also be able to understand where the impacts are occurring, and which actors can have the most influence to transform practices for the overall processes in the sector.

[1] See: https://www.europarl.europa.eu/topics/en/article/20201208STO93327/the-impact-of-textile-production-and-waste-on-the-environment-infographics

[2] The MSCI World Index was used as the company universe, as it is a leading benchmark for many investors. The index captures large and mid-cap companies across 23 developed markets with 1,564 constituents.

Nomenclature of Economic Activities (NACE)[3]	C13 - Manufacture of textiles C14 - Manufacture of wearing apparel
Global Industry Classification Standard[4] (GICS) Level 3	252030 – Textiles, Apparel and Luxury Goods
Sustainable Industry Classification System[5] (SICS)	Apparel, Accessories and Footwear; Building Products and Furnishings (partially covered: furnishings only)
International Standard Industrial Classification[6] (ISIC)	131 - 139 - 141 - 142 - 143 - 151 - 152
ENCORE Classification[7]	"Textiles"; "Apparel, Accessories and Luxury Goods"

Table 1: Classification and scope of the Textiles and Apparel sector

Figure 1 below illustrates the value chain of the Fashion and Apparel sector proposed by BfN, WEF, and WBCSD. Companies will need to map out their full value chain[8] to have a clear view of the impacts on nature that have been caused, or contributed to, by a business and its supply chain as well as the dependencies of the business on nature.[9]

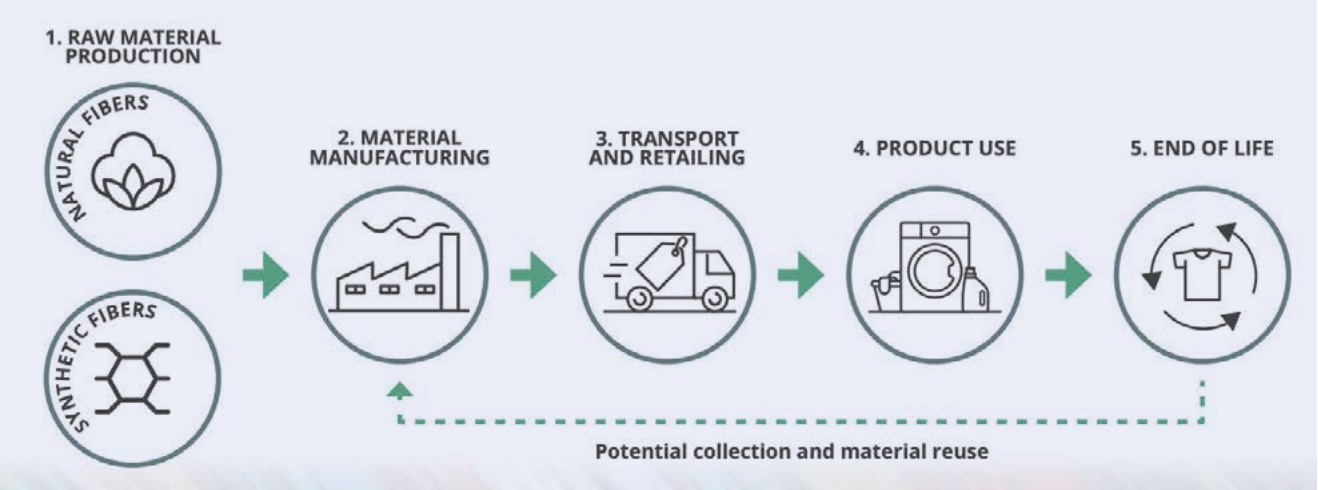

Figure 1: Value chain illustration proposed by BfN, WEF and WBCSD for the Textiles and Apparel sector

Source: Business for Nature, Priority actions towards nature positive future: Fashion and Apparel (2023)

[3] The Statistical Classification of Economic Activities in the European Community, commonly referred to as NACE, is the industry standard classification system used in the European Union.

[4] The Global Industry Classification Standard (GICS) is an industry taxonomy developed in 1999 by MSCI and Standard and Poor's (S&P) for use by the global financial community.

[5] SASB Standards use the Sustainable Industry Classification System® (SICS®) to group companies based on shared sustainability risks and opportunities.

[6] The International Standard Industrial Classification of All Economic Activities (ISIC) is the international reference classification of productive activities.

[7] ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) is a free online tool that sets out how the economy – sectors, subsectors and production processes – depends and impacts on nature.

[8] A value chain goes beyond the selling of goods and products by offering value throughout the customer journey, from marketing to after-sales support. The supply chain focuses on sourcing materials and delivering goods to the customer.

[9] See: https://tnfd.global/about/why-nature-matters/

The textile industry interacts with the agriculture and livestock sector for the supply of natural fibres, such as cotton and wool, the timber and paper pulp industry for the supply of man-made cellulosic fibres and with the petrochemical industry for the supply of synthetic fibres. It also leans on the chemical industry in terms of dyeing and finishing chemicals. In addition, the textiles sector is a supplier to many sectors, from automotive to construction, from heavy industry to medicine. Retailing and stores, which are effective in bringing high-value-added products to the consumers, are the last links of the sector's supply chain.

The textiles sector's ecosystem is among one of the most globalised value chains that exist today, according to the report "Data on the EU Textile Ecosystem and its competitiveness" from the Center for Industrial Studies.[10] It is mainly composed of small and medium-sized enterprises (SMEs), which represent 99.5% of the companies that are active in this ecosystem. The countries that account for most of the apparel demand are the United States and China, both generating substantially higher revenues than any other country in the world. In 2022, China led the rankings for the highest value of apparel exports. Other important exporter countries are the European Union, India and Turkey.[11] The U.S. was second only to the EU in the value of apparel imports.[12] Textile production is generally subcontracted to suppliers in different countries, leading to forceful competition that brings costs down.[13]

The complexity of the value chain can prevent stakeholders from identifying the sustainability impacts of organisations. Furthermore, Planet Tracker, a think tank focused on sustainable finance, identifies a significant discrepancy between the location of negative environmental impacts and the location of capital within the supply chain. Fabric manufacturing and fibre production are associated with much of the textile supply chain's environmental impact – including 74% of resource consumption, while only making up a collective 7% of the sector's market capitalisation. That's why in the report "Following the Thread", Planet Tracker is calling on investors to pressure retailers to work with their supply chains as they look to reduce their negative environmental impacts.

Textiles, Apparel and Luxury Goods are part of the "Consumer Discretionary Sector" in the Global Industry Classification Standard industrial (GICS) classification, which encompasses those businesses that tend to be the most sensitive to economic cycles. Most items produced by the sector are non-durable goods that are used up over a short period of time, meaning the demand is influenced by the purchasing power of consumers.

The revenue of the global apparel market was calculated to amount to US$1.53 trillion in 2022. The sector today is characterised by high volatility, low predictability, and generally low-profit margins - expect for recognised brands that can implement high mark-ups on their products. The trend of the sector towards faster and more flexible production and lower prices has been accelerated by the phase-out of the Multifibre Arrangement in 2005, an international trade agreement involving clothing and textiles that imposed quotas on the amount of clothing and textiles that developing countries could export to developed nations. Apparel is a labour-intensive industry, and it is estimated that 75 million people are employed in clothes manufacturing today, 80% of whom are young women between the ages of 18 and 24. According to the 'GRI Sector Standards Project for Textiles and Apparel', the poor working conditions and wages are some of the main concerns in this sector as they do not meet global living standards.

How this sector impacts and depends on nature

It is crucial for investor engagement practices to be anchored in science and best practices in order to help drive the sustainable transformation of companies towards the goals and targets of the Kunming-Montréal Global Biodiversity Framework (GBF). Understanding, as well as measuring, how the sector impacts and depends on nature, therefore, is essential for the better management of supply chains and to encourage more biodiversity friendly and regenerative practices.

Figure 2 below shows the impacts of the Science Based Targets for Nature (SBTN) Sectoral Materiality Tool for the Textiles Sector, illustrated and adapted by the FfB Foundation. This sectoral materiality tool helps users carry out a first screening of what types of environmental impacts are potentially materially relevant to their sector and also to their company's activities, as part of Step 1a of the SBTN guidance. The results provided by the tool were normalised on a scale of 0-100 and represented

[10] See: https://www.csilmilano.com/

[11] See: https://euratex.eu/wp-content/uploads/EURATEX_FactsKey_Figures_2022rev-1.pdf

[12] See: https://www.statista.com/topics/5091/apparel-market-worldwide/#topicOverview

[13] See: https://www.ilo.org/global/industries-and-sectors/textiles-clothing-leather-footwear/lang--en/index.htm

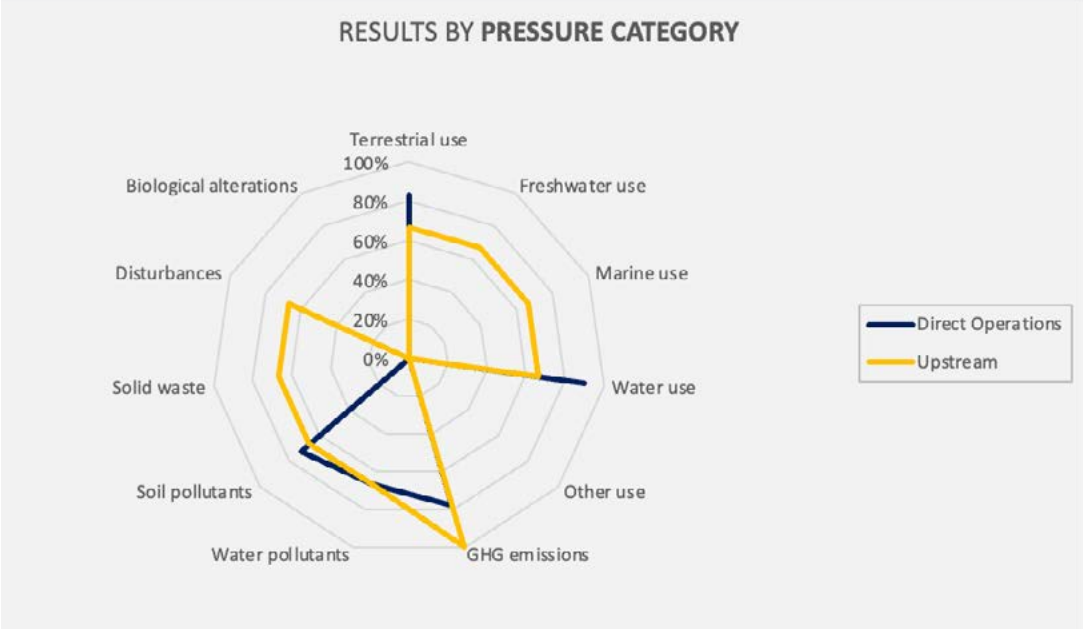

Figure 2: SBTN Impacts Materiality Analysis for the Textiles and Apparel sector

Source: Adapted and designed by the Finance for Biodiversity Foundation (2023)

in "spider graphs". Direct operation ratings (see the blue line in the graph below) are based on ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) - a free, online tool that helps organisations and businesses explore their exposure to nature-related risks and take the first steps towards understanding their dependencies and impacts on nature (see Part IV of this brief on Supporting Tools for a more detailed information on the main impacts and dependencies identified in the ENCORE database). The upstream ratings (see the yellow line in the graph) are obtained from both ENCORE and also EXIOBASE - a multi-regional input-output model and database which contains data describing the global economy. Note downstream ratings are not included as these are under development.

Based on the SBTN Sectoral Materiality results, the main impact drivers in the upstream part of the Textiles sector's value chain are: terrestrial use; freshwater use; marine use; water use; Greenhouse Gas (GHG) emissions; water pollutants; soil pollutants; solid waste; and disturbances. The main impact drivers of the Textiles sector's direct operations are terrestrial use; water use; GHG emissions; water pollutants; and soil pollutants.

The fashion industry is estimated to be responsible for 10% of global GHG emissions.[14] Manufacturing processes have high energy requirements and lead to non-product outputs, which include gaseous emissions. Moreover, polyester, a commonly used material in fast fashion, is a synthetic petroleum-based fibre made from a non-renewable resource, and its production is very energy-intensive, which contributes to further environmental impact.

Animal-based fibres, like leather, produce methane and other GHGs at the farm level, which contributes significantly to climate change. This impact on the climate is further compounded by deforestation rates that the sector generates, as millions of trees are logged every year and turned into man-made cellulose fibres. Terrestrial-use pressure also comes from cattle ranching for meat and leather, another driver of deforestation, as well as from the mining of precious metals, diamonds, and gemstones that are used in jewellery. The cultivation of raw material for fibres can also lead to soil pollution. For example, cotton farming accounts for 4.7% of the world's pesticide use and 10% of its insecticide sales – far higher than its comparative land use.[15] This also creates health issues for farmers through contamination.

[14] See: https://www.europarl.europa.eu/news/en/headlines/priorities/climate-change/20191129STO67756/emissions-from-planes-and-ships-facts-and-figures-infographic

[15] See: https://bettercotton.org/field-level-results-impact/key-sustainability-issues/pesticides-and-crop-protection-in-cotton-farming/

The Textiles and Apparel sector is also highly water intensive. For example, according to figures from the United Nations Environment Programme (UNEP), it takes 3,781 litres of water to make a pair of jeans, from the production of the cotton to the delivery of the final product to the store.[16] The water consumption of this sector is particularly documented in Europe. The European Environment Agency estimates that in 2020, about 4,000 million m^3 of blue water (approximately $9m^3$ per person) was required to produce all clothing, footwear, and household textiles purchased by EU households. This ranks textiles' water consumption in third place, after food and recreation and culture.[17] At the global level, textile production is estimated to be responsible for about 20% of global clean water pollution from dyeing and finishing products. About 3,500 substances are used in textile production. Of these, 750 substances have been classified as hazardous for human health and 440 as hazardous for the environment. Furthermore, some sources estimate that laundering synthetic clothes accounts for 35% of primary microplastics released into the environment.[18]

Finally, the Textiles and Apparel sector currently generates a high level of solid waste. Less than half of used clothes are collected for reuse or recycling, and only 1% of used clothes are recycled into new clothes,[19] since technologies that would enable clothes to be recycled into virgin fibres are only now starting to emerge. Of the 100 billion garments produced each year, 92 million tonnes end up in landfills. This means that the equivalent of a rubbish truck full of clothes ends up on landfill sites every second. If the trend continues, the number of fast fashion waste is expected to soar up to 134 million tonnes a year by the end of the decade.[20] In Europe, between 2000 and 2015, clothing production doubled, while the average use of an item of clothing decreased.[21] As textile waste ends up in landfills, it decomposes and produces methane as well as pollutes groundwater, as rainwater comes into contact with chemicals from the clothing. This can also generate health issues for local communities.[22]

Sensitive locations within the sector's value chains

Investors can benefit from knowing the locations that are concerned with the supply chains of an overall industry. The TNFD provides sectoral guidance for individual companies on how to "Locate" their impacts on biodiversity, as the first step of their LEAP assessment (Locate- Evaluate-Assess-Prepare), a four-step integrated assessment framework for nature-related issues. As expressed in the TNFD recommendations,[23] nature-related impacts and dependencies are location-specific and therefore require local, context-specific assessment and responses. Sensitive locations are areas that are important for biodiversity, including species, and/or areas of high ecosystem integrity, and/or areas of rapid decline in ecosystem integrity; and/or areas of high physical water risks; and/or areas of importance for ecosystem service provision, including benefits to Indigenous Peoples, local communities and stakeholders.[24] The assessment of impacts on sensitive locations will therefore greatly vary for each individual company.

Considering the amount of pressure that the Textiles and Apparel sector places on terrestrial ecosystems and its dependence on natural fibres, we chose to display, in Figure 3 below, a map of the land use for raw materials (pre-economic allocation[25]) at country level around the world. This map is from the Fashion Nature Risk Lens, a tool to help fashion brands assess the biodiversity impact of their material usage which has been developed by The Fashion Pact, a non-profit organisation forging a nature-positive, net-zero future for fashion, through CEO-led collaboration. Darker colours mean more area is under production for fashion materials (shown in purple). Green areas are deforestation fronts.[26] White areas are non-productive zones, such as tundra. See also Box 1 below that shows the land-use production risk for the main Textiles and Apparel raw materials.

[20] See: https://earth.org/statistics-about-fast-fashion-waste/

[21] See: https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/729405/EPRS_BRI(2022)729405_EN.pdf

[22] See: https://www.textilewastefacts.com/

[23] These are recommendations that provide companies and financial institutions of all sizes with a risk management and disclosure framework to identify, assess, manage and, where appropriate, disclose nature-related issues, green transition plans, nature markets and bioeconomy investment strategies.

[24] See: https://tnfd.global/wp-content/uploads/2023/08/Guidance_for_Financial_Institutions_v1.pdf?v=1695215983

[25] See: https://knowledgebase.carboncloud.com/why-do-you-work-with-economic-allocation

[26] See: https://wwfint.awsassets.panda.org/downloads/deforestation_fronts___drivers_and_responses_in_a_changing_world___full_report_1.pdf

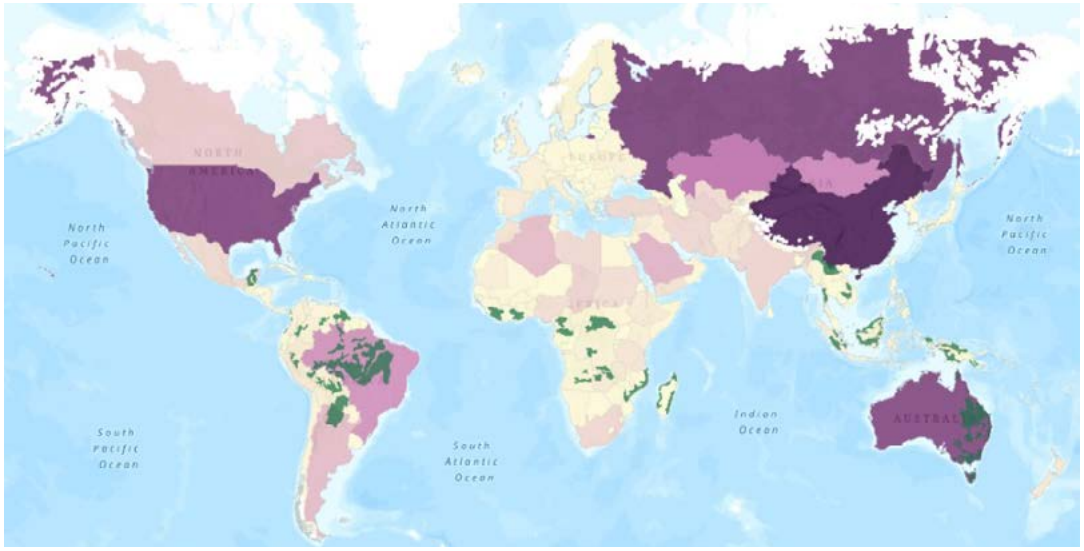

Figure 3: Map of land use for raw material for Textile and Apparel sector at the country level

Source: Fashion Nature Risk Lens (2023)

Box 1: Land-use production risk for the main Textiles and Apparel raw materials

- **Cashmere** - is produced in China, Mongolia, Afghanistan and Iran. Cashmere is not typically associated with deforestation risk; rather, the key risk to biodiversity is rangeland degradation.

- **Cotton** - is produced in 88 countries around the world, with the main producers being China, India, USA, Brazil and Pakistan. If cotton is being grown in proximity to a deforestation front, further investigations may be needed to understand if cotton is playing a role in any forest clearance. Cotton is rotated with soy in some regions, which may be something to explore further for companies sourcing cotton from Brazil.

- **Cattle leather** - is one of the most widely produced and exported textiles, with almost all countries producing leather. Cattle production occupies a large area, requiring over 1 billion hectares to produce the cattle whose hides enter leather supply chains (pre-economic allocation). Cattle ranching is thought to be the primary direct driver of forest clearance in several deforestation fronts.

- **Man-made cellulosic fibre (MMCF)** - is predicted to come from around 22 countries. Overall, an estimated 13 million hectares is required to produce MMCFs for the fashion sector (post-economic allocation). The countries with the largest area under production are expected to be China, South Africa, USA, Sweden and Finland. Production of the raw material used to produce MMCFs has been linked to deforestation of old-growth forests by organisations such as Canopy. The complexity and opaqueness of the MMCF supply chain, however, makes it very difficult to identify where risks may be highest, since materials can move long distances before entering a dissolving wood pulp (DWP) mill.

- **Silk** - is produced in around 20 countries around the world, with a large majority (around 142,000 tonnes, nearly 80% of global production) produced in China. An estimated 6 million hectares of land are estimated to be under production for silk, with most of this in China and India. The biggest risk to biodiversity in silk production is likely to be water consumption.

- **Sheep's wool** - is produced in around 93 countries around the world. The countries with the largest total area estimated to be under sheep production for wool are Australia, China, Russia, Kazakhstan, and Mongolia.

Source: Fashion Nature Risk Lens (2023)

Forward-looking regulations relevant to the sector

Investors can be inspired by forward-looking regulations on biodiversity to guide the transformation of the companies in their portfolio. With engagement, they can exercise influence on companies to improve their practices and be prepared in the context of a sustainable policy transition, which goes further than simply complying with environmental safeguards. In the Textiles and Apparel sector, the most forward-looking regulations on biodiversity have been identified in Europe and in the United States.

Europe

The EU Commissions' strategy for sustainable and circular textiles, adopted in 2022, aims to create a coherent framework for the transition of the textiles sector and to present a vision for the transition, where, by 2030, textile products placed on the EU market are long-lived and recyclable, and, to a great extent, are made of recycled fibres, free of hazardous substances and production respects social rights and the environment.

Among other actions, the Commission will set design requirements for textiles so that they last longer and are easier to repair and recycle. The Commission will also set requirements on minimum recycled content; introduce clearer information and a Digital Product Passport; address the unintentional release of microplastics from synthetic textiles; tackle greenwashing to empower consumers and raise awareness about sustainable fashion; introduce mandatory and harmonised Extender Producer Responsibility rules[27] for textiles; restrict the export of textile waste; and incentivise circular business models, including reuse and repair sectors.

The Ecodesign for Sustainable Products Regulation (ESPR), proposed in March 2022, creates a framework to set ecodesign requirements for products, including textiles. The current Ecodesign Directive 2009/125/EC, covering only energy-related products, has a long track record of delivering benefits to businesses, consumers, and the environment. In 2021 alone, the impact of the current ecodesign measures, covering 31 product groups, saved EUR 120 billion in energy expenditure for EU consumers and led to a 10% lower annual energy consumption. The new proposal is the cornerstone of the Commission's approach to more environmentally sustainable and circular products. It will set ecodesign requirements and enable the setting of performance and information requirements for almost all categories of physical goods placed on the EU market.

The Waste Shipment Regulation, proposed in 2021, will help restrict the export of textile waste. In 2023 the Commission proposed a revision to the Waste Framework Directive to introduce mandatory and harmonised Extended Producer Responsibility (EPR) schemes for textiles in all EU Member States. In this scheme, producers will bear the costs of managing textile waste, incentivising them to create more eco-friendly products. By introducing common EU-wide EPR rules, the proposal streamlines the requirement for separate textile collection starting in 2025. Producers' contributions will finance investments in collection, sorting, re-use, and recycling facilities, encouraging sustainable practices and circularity. Social enterprises focused on textile treatment will find enhanced business opportunities, creating a larger market for second-hand textiles.

United States

The Fashion Sustainability and Social Accountability Act is a proposed legislation (under discussion) mandating that large fashion companies map their supply chains, whilst addressing the broader environmental and social impacts of their operations. All fashion manufacturers or retailers with annual worldwide gross receipts exceeding US$100 million that do business within the state of New York are covered within this Act. Some of the required due diligence indicators under this Act, include: Carbon emissions; Water footprint; Chemical use; Worker wages; Collective bargaining; and others.

[27] OECD defines Extended Producer Responsibility (EPR) as an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle.

How the sector links to the objectives of the Global Biodiversity Framework

The sustainable transformation of companies in the Textiles and Apparel sector can contribute to halting biodiversity loss by 2030. Below is a list of issues to keep in mind, and also levers that could be activated in the sector, with regard to the targets of the Global Biodiversity Framework (GBF), and which could be applied to find ways to reduce company pressures on biodiversity and/or develop concrete solutions for nature recovery. The GBF targets that are most directly relevant for this sector are:

Targets 1, 2 & 3 - Participatory and Biodiversity-Inclusive Spatial Planning and Restoration of Degraded Ecosystems: The Textiles and Apparel sector relies on agriculture to produce natural fibres of vegetable origin or animal origin. It needs to prevent supply chain issues such as deforestation and pollution of air, soil, and water, and promote regenerative practices.

Target 4 & 5 - Conservation and Recovery of Threatened Species and Sustainable Use of Biodiversity: This sector relies on agriculture for natural fibres and leather, creating terrestrial-use pressures. In addition, due to the use of fibres of animal origin, such as fur, the textiles sector can generate risks for wildlife species.

Target 7 - Reduce Pollution Risks: The Textiles and Apparel sector is generating high levels of pollution that could be reduced through more efficient production processes. The use of chemicals and leather production can lead to significant freshwater pollution. Cotton production has large fertiliser inputs, and fast fashion leads to high amounts of waste, including plastic, as packaging and microplastics released when clothes are washed.

Target 8 - Climate Action for Biodiversity: The Textiles and Apparel sector is a large emitter, not only from its production processes but also from the cultivation of natural fibre, as well as from cattle ranching for leather and its associated deforestation impacts.

Target 10 - Enhance Biodiversity and Sustainability in Agriculture, Aquaculture, Fisheries, and Forestry: This target directly refers to agroecology, calling for a substantial increase of biodiversity-friendly practices that contribute to the resilience and long-term efficiency and productivity of agriculture systems. It is about ensuring that agricultural areas to produce fibres within the context of the textiles sector are managed sustainably.

Target 13 - Fair and Equitable Sharing of Benefits: The Textiles and Apparel sector is labour-intensive, globalised, and the working conditions are an overall source of concern. The profit is concentrated downstream of the value chain in the distribution of high-value-added designed products.

Target 15 - Disclosure of Risks, Dependencies, and Impacts on Biodiversity: Measuring, managing, and disclosing nature-related risks and opportunities by companies, including from the Textiles and Apparel sector, will ultimately support a shift in global financial flows toward nature-positive outcomes.

Target 16 - Enabling Sustainable Consumption Choices: The Textiles and Apparel sector can participate in raising supplier and consumer awareness to help enable more informed decisions and sustainable consumption choices.

PART II:

Recommended Company Actions to Help Address Biodiversity Loss

Introduction

All companies in the Textiles and Apparel sector need to have a strategic ambition to minimise negative biodiversity impacts and, where possible, contribute to the reversal of biodiversity loss by 2030. Ideally, the company's biodiversity ambitions should be embedded in the company's overall business and climate strategy. In this section, we outline information on the various actions, initiatives and commitments that are currently being taken by companies within this sector and that investors can mention and share during their engagement with companies that can help stimulate their progress towards addressing biodiversity loss.

As a starting point, investors need to ensure that companies understand their supply chains' dependency and impacts on nature, as identified through a Biodiversity Risk and Impact Assessment conducted following the TNFD LEAP[28] process. The assessment should encompass biodiversity loss pressures on all relevant biomes, as well as evaluate risks and impacts across the whole supply chain, from indirect raw material and components suppliers to how consumers use and dispose of the company's products. The assessment will allow companies to identify and address the most material biodiversity risks and impacts, notably relying on the SBTN Materiality Screening Tool, as well as understanding its sphere of influence. From there, companies should define a biodiversity strategy to lay out quantitative and time-bound targets, against a baseline with clear cut-off dates, and actions to fulfil their biodiversity ambition. The design and implementation of the plan should prioritise rights-based approaches and be developed in collaboration with Indigenous Peoples and local communities when they are affected.

Recommended company actions

In terms of sector-specific best practices for the Textiles and Apparel sector, we have identified some concrete examples that would be useful for companies and investors in their discussions. Based on relevant literature and observations of the sector, these actions are identified by investors as best practices:

Upstream: Sustainable procurements and biodiversity assessments

- Invest in the development of new fibres that will lower the environmental effects of production and garment making.
- Drive towards less extractive sourcing models and adopting regenerative solutions.
- Establish higher labour and environmental standards for suppliers and set up mechanisms to make supply chains more transparent.
- Develop standards and practices for designing garments that can be easily reused or recycled.

Direct operations: Sustainable production and circular economy

- Pursue technological innovation to improve the economics and quality of recycling. Support the development of mechanical- and chemical-recycling technologies. The fibres produced by mechanical recycling, for example, are shorter and lower in quality than virgin fibres and therefore less useful to apparel makers. Chemical recycling could improve on this as technology advances.
- Unlock the environmental and economic potential of circular business models (such as rental, resale, repairs, and remaking).
- Increase energy efficiency and the use of renewable sources.
- Pursue a context-driven approach to water stewardship, including eliminating hazardous chemicals and ramping up sustainable chemical management to minimise the risks to water, land, and people.

[28] See TNFD's Tool catalogue for Nature-related data tools to help assess nature-related issues and aligned with the TNFD's LEAP approach. See: https://tnfd.global/guidance/tools-catalogue/

Downstream: Stakeholders relations and risks monitoring processes

- Increasing the demand for recycled materials through clear commitments on using more recycled input could drastically accelerate the uptake of clothing recycling.
- Implement clothing collection at scale.
- Encourage consumers to care for their clothes in low-impact ways. Washing garments in hot or warm water and drying them at high heat or for longer than needed uses a lot of energy.
- Develop additional services, like renting or customisation, as options to increase revenue while minimising the amount of new materials being purchased by consumers.
- Drive high usage rates based on a commitment to design garments that last.
- Using influence on social trends to promote sustainable fashion instead of current "fast fashion" consumer preferences.
- Reactive risk management:
- Robust grievance mechanisms, ensuring adequate protections and accessibility;
- Non-compliance protocols to address supplier non-compliance, ideally using an "exclude then engage for re-inclusion" approach.

This list is non-exhaustive and only aims to provide investors with a set of concrete examples to mobilise during discussions with companies to stimulate their progress in their journey to address biodiversity loss.

For a systematic analysis and a deeper understanding of how companies can develop their nature-positive roadmaps, we would like to make particular reference to specific sectoral guidance for the Fashion and Apparel sector that was released in 2023 by Business for Nature (BfN), the World Economic Forum (WEF) and the World Business Council for Sustainable Development (WBCSD).

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For the Fashion and Apparel sector, the guidance provides an overview of potential key impacts and dependencies on nature and then sets out a series of sector-specific actions that businesses operating in this sector need to take in order to halt and reverse biodiversity loss by 2030 - the mission at the heart of the Kunming-Montreal Global Biodiversity Framework - and that also contribute towards building equitable, just and nature-positive economies. These sector-specific actions build on the high-level business actions on nature that cover Assess; Commit; Transform, and Disclose (ACT-D).

The priority actions identified for the Fashion and Apparel sector in this report are: 1) avoid and reduce the use of high-impact or uncertified materials; 2) avoid and reduce the use of hazardous chemicals across your supply chain; 3) avoid and reduce freshwater use through sustainable water management; 4) restore degraded land and move towards regenerative agricultural practices; and 5) transform your business model and build for circularity.

Commitments and sustainability initiatives

Building on these actions, various commitments for companies in the Textiles and Apparel sector (see Box 2) as well as sustainability initiatives (see Box 3) are also in place. These not only demonstrate what is already happening within and among companies in the sector, but it also shows the level of ambition that is needed from the companies that investors are engaging with to effectively halt and reverse biodiversity loss.

Box 2: Examples of relevant commitments and initiatives for companies in the Textiles and Apparel sector

- The SBTN provides technical guidance to enable companies to assess, prioritise and set a quantitative and time-bounded science-based target for nature to decrease their impacts on land. It has provided supplementary guidance to reduce impacts on biodiversity. The SBTN will release further guidance for companies to act upon and track progress against these targets in 2024.
- The SBTi's Forest, Land and Agriculture (FLAG) Guidance provides the world's first framework for companies in land-intensive sectors to set science-based targets that include land-based emission reductions and removals. Setting targets and disclosing publicly.
- The CEIC developed guidance on corporate target-setting for the circular economy, on the whole value chain from upstream sourcing to downstream products end-of-life, in order to mobilise measurable progress.
- The CEO Water Mandate seeks to mobilise a critical mass of business leaders to address global water challenges through corporate water stewardship, notably through the Water Resilience by 2050 Pledge.
- The AgWater Challenge, led by Ceres and the World Wildlife Fund (WWF), is engaging major companies with significant agricultural supply chains on water stewardship. Since its launch in 2016, eleven companies have joined the challenge by making strong commitments to protect freshwater in their agricultural supply chains.
- Act4nature International is an initiative led by business networks with scientific partners, environmental NGOs and public bodies. Its objective is to develop the mobilisation of companies in favour of biodiversity through pragmatic commitments supported by their CEOs.
- 1t.org Corporate Pledge offers for-profit organisations the opportunity to formalise a commitment towards conserving, restoring, and growing 1 trillion trees by 2030.
- Led by the Ellen MacArthur Foundation, the New Plastics Economy Global Commitment has united more than 500 organisations behind a common vision of a circular economy for plastics. Driven by the goal of tackling plastic pollution at its source, companies representing 20% of all plastic packaging produced globally have committed to ambitious 2025 targets to help realise that common vision.

Box 3: Leading sustainability initiatives in the Textiles and Apparel sector

- The Fashion Pact began as a call to action to fashion CEOs to rally and build a courageous collective to address the industry's environmental impacts.
- The Sustainable Apparel Coalition (SAC) brings together expertise from across the globe to develop sustainable solutions that redefine the industry. The SAC has created an index for measuring the full life-cycle impact of clothing and footwear products.
- Global Fashion Agenda is a non-profit organisation that fosters industry collaboration on sustainability in fashion to accelerate impact.
- Fashion for Good works directly with the fashion industry to innovate towards solutions that are better for people and the planet and empower behaviour change through a sustainable fashion Museum and Innovation Platform.
- Textile Exchange guides and supports a growing community of brands, retailers, manufacturers, farmers, and others committed to climate action towards more purposeful production, right from the start of the supply chain.

PART III:

Call to Action: Questions for Investors to Engage Companies on Nature

As investors enter engagements with companies in the Textiles and Apparel sector, the following list of questions to evaluate companies' performance and push for more ambitious actions might be considered. The questions have been organised following the structure of the **FABRIC investor expectations**, covering **Ambition**, **Assessment and Traceability**, **Targets and Action Plan**, **Disclosure and Communication**, **Governance**, **Influence and Stakeholder Engagement**, and **Additional Specific Investor Expectations by Sub-Category of Activities**. These questions aim to serve as a starting point to build relationships between investors and the companies they are engaging with on nature-related issues, encouraging proactive steps toward biodiversity conservation and sustainable practices.

1. Ambition

Objective: Companies should publicly commit to reducing their negative impacts on nature throughout the entire lifecycle of their products, from sourcing to end-of-life, aiming to align with global biodiversity targets by 2030.

Public Commitment: Have you publicly committed to reducing your negative impacts on nature across your entire product lifecycle, from sourcing to end-of-life, in alignment with the Global Biodiversity Framework's targets by 2030?

Integration into Strategy: Where does nature and biodiversity fit within your company's overall sustainability strategy?

Reporting Frameworks: Have you committed to regularly reporting on biodiversity using established frameworks, such as the Taskforce on Nature-related Financial Disclosures (TNFD)?

Science-Based Targets: Have you set or plan to set science-based targets for nature (SBTN) to guide your efforts in minimizing biodiversity loss?

2. Assessment and Traceability

Objective: Companies need to assess and publicly disclose nature-related dependencies, impacts, risks, and opportunities at the operational level and throughout their value chains, with a focus on improving traceability.

Priority Locations: Can you provide information on the locations of your assets and activities, including those in your upstream and downstream value chains, that meet the criteria for priority locations under the TNFD framework?

Supply Chain Traceability: What percentage of your supply chain is fully traceable today (including Tier 1 suppliers and beyond)? What measures are you taking to improve traceability, especially for high-volume and high-impact fibres and raw materials?

Fibre Mix Disclosure: Do you assess and publicly disclose the mix and volumes of fibres used in your products?

Impact Assessment: Have you conducted a comprehensive assessment of your nature-related impacts and dependencies, including holistic life cycle analyses of your products by geographical area?

Metrics and Monitoring: What metrics are you using to assess and manage material nature-related risks and opportunities? Do you monitor and report on the presence of threatened species (e.g., IUCN Red List species) in areas affected by your operations?

Risk Scenario Analysis: Does your organization undertake nature-related risk scenario analysis? How resilient is your strategy based on these analyses, and what are the implications for your business and financial planning?

Biodiversity Impact Assessments: Do you conduct biodiversity impact assessments for new suppliers or projects, particularly in research, development, or facility expansion?

Wastewater and Chemical Exposure: Do you disclose supplier wastewater test results and your exposure to hazardous chemicals? How are you addressing these issues?

3. Targets and Action Plan

Objective: Companies should set science-based, time-bound targets and develop concrete action plans to reduce negative impacts on nature, prioritizing their main impact drivers.

Science-Based Targets: Have you set clear, science-based targets to reduce your negative impacts on nature, particularly regarding land use and freshwater, in line with the findings from your impact assessments?

Action Plan Development: Have you established and implemented an action plan to achieve these targets? What are the key components and timelines of this plan?

Specific Commitments:

- **Fossil Fuel Phase-Out:** Have you committed to phasing out the use and purchase of virgin fossil fuels in your production processes?
- **Zero Deforestation:** Have you publicly committed to eliminating deforestation and ecosystem conversion throughout your value chain by a specified date, adhering to recognized frameworks like the Accountability Framework Initiative?
- **Circular Economy Practices:** What measures are you taking to promote circularity, such as extending product lifespans, using recycled or sustainable fibres, reducing textile waste, and improving end-of-life product management?

Collection Policies: Have you implemented policies to reduce the number of new collections issued each year to minimize waste?

Chemical Management: Are you setting targets to reduce or eliminate the use of hazardous chemicals, especially during the dyeing and finishing processes?
Renewable Energy Use: Have you committed to using 100% renewable energy in your direct operations? What is your timeline for achieving this?

4. Disclosure and Communication

Objective: Companies need to transparently report on biodiversity-related data and communicate their initiatives to stakeholders, increasing awareness and accountability.

TNFD Reporting: Are you reporting publicly on biodiversity-related data in alignment with the TNFD framework?

Product Volumes and Collections: Do you disclose the number of collections issued per year and the volume of products sold?

Customer Awareness: What initiatives are you undertaking to increase customer awareness about circularity, sustainable practices, and the environmental impacts of textile care?

Investment Disclosure: Do you disclose your investments (both capital expenditures and operational expenditures) dedicated to transitioning toward nature-positive practices? How are these investments being deployed?

5. Governance, Influence and Stakeholder Engagement

Objective: Companies should establish strong governance structures, engage with stakeholders throughout the value chain, and influence policy to create an enabling environment for implementing their action plans and achieving targets.

Board Oversight: What governance structures, policies, and procedures are in place to ensure effective oversight of your biodiversity strategy? Does the Board have a designated committee or position responsible for nature-related dependencies, risks, and opportunities?

Executive Compensation: Is environmental sustainability performance, including biodiversity metrics, incorporated into the remuneration of senior executives? Which key performance indicators (KPIs) are used?

Sourcing Policies: Do you embed nature-related indicators in your procurement strategies and policies? Have you established a strong sourcing policy with concrete measures to address non-compliance?

Lobbying and Advocacy: Do you disclose all lobbying activities related to environmental policies, especially those concerning circularity and recycling schemes? Are you actively engaging with governments to support extended producer responsibility initiatives?

Supplier Engagement: How are you engaging with your suppliers to ensure that human rights and nature-related topics are managed sustainably? Do you have incentive mechanisms or contractual clauses based on environmental criteria?

How do you ensure that the cost of transition is shared in a fair and equitable way without penalising small actors in your supply chain while accompanying them towards change?

Stakeholder Partnerships: Are you involved in partnerships or alliances with stakeholders to optimise the sourcing and use of key raw materials?

Consumer Initiatives: Are you developing initiatives to raise consumer awareness about sustainable practices, such as low-impact garment care and promoting high usage rates?

Additional sector specific questions for sub industries like ***"Raw Materials***, ***Fibres***, ***and Fabrics Producers", "Synthetic Fibres Producers", "Sportswear ", "Luxury", "Footwear", "Fast Fashion and Apparel Retailers"***, can be considered to highlight the specific impacts of each activity stream. Some are available in the FABRIC "investors' expectations".

By aligning these general engagement questions with the FABRIC investors' expectations, we aim to foster meaningful dialogues with companies in the Textiles and Apparel sector. These questions are designed to encourage transparency, accountability, and proactive action toward reducing negative impacts on biodiversity and promoting sustainable practices throughout the industry.

PART IV:

Supporting Resources for Company Analysis

This section provides various supporting tools in the form of recommended resources and collaborative engagements covering issues in the sector, as well as sector-specific and cross-sectoral data sources. These supporting tools help to access more information and build further knowledge to mobilise when engaging with companies: examples of KPIs to monitor, additional resources, existing collaborative investor engagements on key topics for the sector, and data sources.

As part of this supporting information section, we also provide the main impacts (high and very high materiality ratings) and dependencies (very high materiality ratings) identified in ENCORE for the Textiles and Apparel sector, including the explanation of impacts generated by the sub-industry.

Recommended resources

We recommend the following resources to help investors gather more information about the sustainable transformation of the Textiles & Apparel sector toward the protection of biodiversity:

- Ellen MacArthur Foundation report "A new textiles economy" outlines a vision for a new textiles economy based on the principles of a circular economy. It offers a direction of travel on which the industry can agree and focus its efforts. In a new textiles economy, clothes, textiles, and fibres are kept at their highest value during use and re-enter the economy afterwards, never ending up as waste.
- The EU Ecolabel for Textiles products guarantees a more sustainable fibre production, a durable product, a lesser polluting production process, and strict restrictions on the use of hazardous substances. See this Textile Factsheet and Footwear Factsheet for more information.
- IN Sustainable Textile and Apparel Parks (INSTEP) is a collaborative approach to step up the sustainable production of textiles and apparel via Industrial Parks, reaching multiple factories and shared facilities, with assessments and interventions to reduce environmental impact and improve working conditions.
- Apparel Impact identifies, funds, scales, and measures the apparel and footwear industry's proven environmental impact solutions.
- UN Alliance for Sustainable Fashion is an initiative of various United Nations agencies and allied organisations designed to contribute to the Sustainable Development Goals (SDGs) through coordinated action in the fashion sector. Specifically, the Alliance works to support coordination between UN bodies working in fashion and promoting projects and policies that ensure that the fashion value chain contributes to the achievement of the targets of the SDGs.
- The Better Cotton Initiative (BCI), or just Better Cotton for short, is the largest cotton sustainability programme in the world, with more than 2,500 members in the Better Cotton network. The initiative aims to embed sustainable farming practices and policies so that on cotton farms the soil is healthy and land, water and other resources are managed for the good of local communities and the planet.

Collaborative engagements covering issues in the sector

While the FABRIC investor engagement is only limited to the Textiles and Apparel sector, we encourage investors to participate in other collaborative efforts to address biodiversity challenges more widely. In its Guide on Engagement with Companies, the FfB Foundation built an Overview of biodiversity-related collaborative engagements, to help investors discover initiatives to point financial institutions to ongoing engagements that they can join. We identify the following collaborative engagements as interesting topics relevant to the Textiles and Apparel sector:

- Aviva, Storebrand AM, ChemSec: Investor Initiative on Hazardous Chemicals*
- Finance and Deforestation Advisory Group: Finance Sector Deforestation Action - To eliminate commodity-driven deforestation from their investment and lending portfolios by 2025, investors intend to engage with companies to reduce deforestation-related risks while supporting the transition to a sustainable agricultural sector.

- Ceres: Valuing Water Finance Initiative - The Valuing Water Finance Initiative is a global investor-led effort to engage companies with a high water footprint to value and act on water as a financial risk and drive the necessary large-scale change to better protect water systems.
- First Sentier Investors: Investor Collaboration Marine Microplastic Pollution - First Sentier Investors is leading, in collaboration with the UK's Marine Conservation Society, a programme to engage with the manufacturers of domestic and commercial washing machines to fit filtration technology to their products, as a standard feature. In addition to engaging with companies, they have engaged with a number of regulators as part of this initiative.
- VBDO: Investors call for urgent action to reduce plastics from intensive users of plastic packaging - Engagement from investors who believe that companies must set their sights higher and act more swiftly to address the plastics crisis through reducing their dependence on single-use plastic packaging, working to bring production and consumption of plastics within the limits of the planetary boundaries and alignment with the Paris Agreement and the Kunming-Montreal Global Biodiversity Framework.

* For more information on these collaborative engagements initiatives, please contact info@financeforbiodiversity.org

Sector-specific and cross-sectoral data

Investors looking for data specific to the Textiles and Apparel sector can turn to the following sources:

- Fashion Nature Risk Lens Biodiversity Risk & Impact Dashboard explores the land-based biodiversity impacts of fashion materials in raw material production.
- The Fashion Transparency Index ranks 250 of the world's largest fashion brands and retailers based on their public disclosure of human rights and environmental policies, practices, and impacts, across their operations and supply chains. The eighth edition of the index shows that: just 12% publish a responsible purchasing code of conduct; 99% do not disclose a commitment to reduce the number of new items they produce; only 7% of major fashion brands publish their supplier wastewater test results; only 29% of brands disclose the breakdown of fibres sources annually.
- Planet Tracker has developed an interactive dashboard mapping the Global Value Chain for Textiles into six nodes, identifying nearly 4,000 companies that cover the whole garment lifecycle, from upstream activities, such as Raw Material Manufacturing and Fibres Production, to downstream stages such as Retail and Post-Sale activities. By providing a series of key financial metrics and ratios, the first two sections of the dashboard allow for an in-depth comparison of the nodes that make up the Textiles Value Chain.

For cross-sector information, we recommend turning to the following data sources:

- Aqueduct Water Risk Atlas tool - Managed by the World Resources Institute, Aqueduct's tools use open-source, peer-reviewed data to map water risks such as floods, droughts, and stress. It helps to analyse water risks and identify activities that withdraw and consume water in locations with very high baseline water stress.
- Carbon Disclosure Project or CDP (Forest, Land, Water) provides companies, investors, states, and regions with opportunities to measure and manage their nature-related dependencies, impacts, risks, and opportunities. Companies can disclose their environmental data and investors can sign up to request this data.
- Forest 500 by Global Canopy ranks the 500 ranking the most influential companies driving tropical deforestation.
- Exploring Natural Capital Opportunities, Risks and Exposure (ENCORE) is a free, online tool that helps organisations explore their exposure to nature-related risk and take the first steps to understand their dependencies and impacts on nature.
- The Global Biodiversity Information Facility (GBIF) is an international network and data infrastructure funded by the world's governments and aimed at providing anyone, anywhere, open access to data about all types of life on Earth.
- IBAT Alliance - the Integrated Biodiversity Assessment Tool (IBAT) provides authoritative geographic information about global biodiversity.
- The SBTN Natural Lands Map of "Core Natural Lands" is intended to be used in the Science Based Targets Network target on "no conversion of natural ecosystems".
- WWF Biodiversity Risk Filter - Corporate and portfolio-level screening tool to help companies and investors prioritise action on what and where it matters the most to address biodiversity risks.
- WWF Water Risk Filter - Corporate and portfolio-level screening tool to help companies and investors prioritise action on what and where it matters the most to address water risks.

ENCORE Impacts and Dependencies Database - Textiles and Apparel

Below are listed the main impacts and dependencies identified in ENCORE for the textile industry. Note that these are only from direct activities and therefore do not capture the whole value chain.

1. ENCORE Impacts - Pressures

Disturbances (e.g., noise, light) - Medium Impact

- The manufacture of textiles and the processes of spinning, weaving, and finishing generate noise and light pollution from machinery operation and production lighting, potentially disrupting or harming species populations.

Emissions of Non-GHG Air Pollutants - Medium Impact

- Textile manufacturing releases non-greenhouse gas air pollutants like volatile organic compounds (VOCs), particulate matter, NOx, SO_2, and CO due to the use of chemicals such as sodium hydroxide and formaldehyde, contributing to environmental pollution.

Generation and Release of Solid Waste - Medium Impact

- Manufacturing processes produce large volumes of solid waste—including glass, metal, plastic, paper, wood, rubber, and leather—which can lead to habitat degradation and land contamination.

Emissions of Toxic Pollutants to Water and Soil - Medium Impact

- The use of dyes and chemicals in textile manufacturing leads to the release of toxic substances into water and soil, contaminating ecosystems through wastewater discharge and processing effluents.

Volume of Water Use - Medium Impact

- Large quantities of water are required for processing materials, dyeing, finishing, washing, and cleaning textiles, which can deplete local water supplies, increase drought risk, and affect ecological habitats.

2. ENCORE Dependencies - Ecosystem Services

Education, Scientific, and Research Services - Very High Dependency

- Spinning, weaving, and finishing textiles from natural products rely heavily on scientific knowledge and education about the properties of natural materials.

Water Supply - Medium Dependency

- Textile manufacturing depends on ecosystem services that provide a sufficient quantity and quality of water necessary for cleaning, processing raw materials, and various production stages.

Solid Waste Remediation - Medium Dependency

- Ecosystems contribute to mitigating the harmful effects of organic and inorganic solid waste produced during textile processing by transforming these substances.

Water Purification Services - Medium Dependency

- The industry relies on ecosystems to purify water, maintaining the chemical composition needed for detoxifying effluents and other critical production processes.

Water Flow Regulation Services - Medium Dependency

- Ecosystems regulate river flows and groundwater levels, ensuring a consistent water supply and mitigating flood risks essential for manufacturing processes like spinning, dyeing, and washing.

Flood Mitigation Services - Medium Dependency

- Manufacturing sites and infrastructure depend on ecosystem services that protect against flooding through coastal and river flood mitigation.

Storm Mitigation Services - Medium Dependency

- Ecosystems provide protection against wind, sand, and other storms, safeguarding manufacturing facilities and infrastructure from storm-related damages.

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Invitation to join

This guide is one of the many steps in our journey towards fully integrating biodiversity as financial institutions. We encourage financial institutions from all continents to start integrating biodiversity into their activities and decision-making in order to halt and reverse biodiversity in this decade. The Finance for Biodiversity Foundation working groups with leading banks, investors and insurers will continue to collaborate on joint actions. Financial institutions are welcome to join as a member.

Get in touch

Responses and ideas? Please reach out to Finance for Biodiversity Foundation via info@financeforbiodiversity.org

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Fabric | Fostering action on biodiversity through responsible investment in clothing