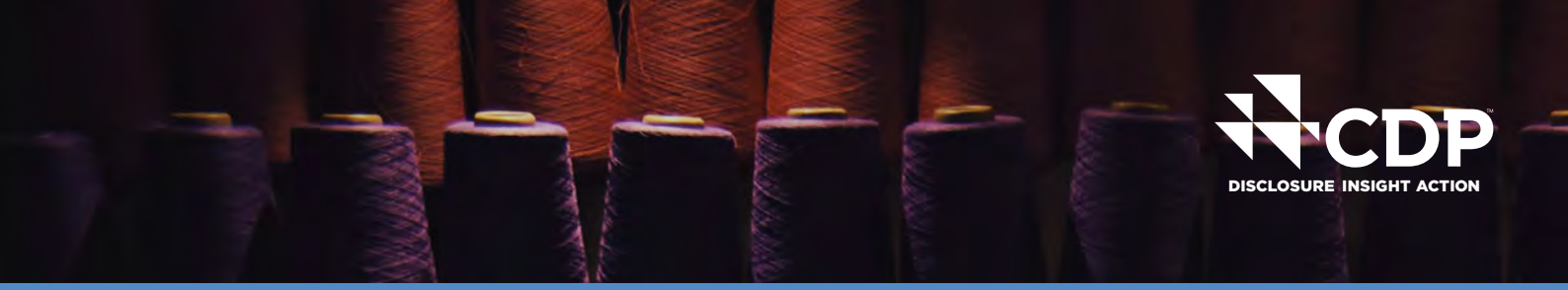
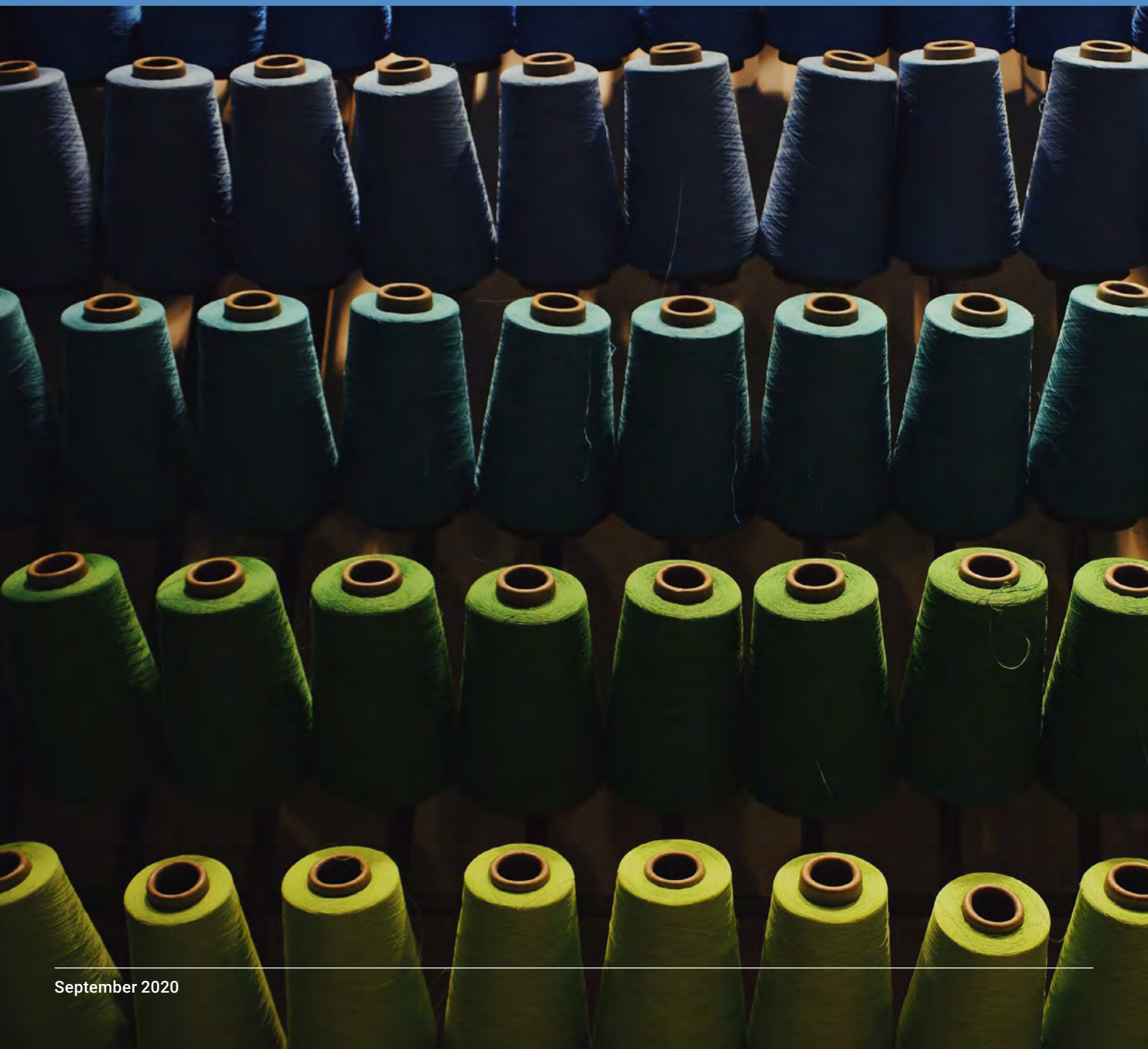


CDP
DISCLOSURE INSIGHT ACTION

INTERWOVEN RISKS, UNTAPPED OPPORTUNITIES

The business case for tackling water pollution in apparel and textile value chains



September 2020

CONTENTS

04 **Key findings**

05 **Key actions for companies**

06 **Introduction**

08 **A risky value chain**

10 **Awareness of pollution risks is low**

13 **What are companies doing to clean up?**

16 **Changes are afoot**

22 **The importance of disclosure**

24 **Appendix I**

26 **Appendix II**

27 **References**

To read company responses in full, please go to https://www.cdp.net/en/responses

Important Notice

This report may be used by anyone providing acknowledgment is given to CDP. This does not represent a license to repackage or resell any of its contents without the express permission of CDP.

CDP has prepared the data and analysis in this report based on responses to the CDP 2019 water security questionnaire. No representation or warranty (express or implied) is given by CDP as to the accuracy or completeness of the information and opinions contained in this report. You should not act upon the information contained in this publication without obtaining specific professional advice. To the extent permitted by law, CDP does not accept or assume any liability, responsibility or duty of care in reliance on the information contained in this report. All information and views expressed herein by CDP are based on their judgment at the time of this report and are subject to change without notice. Guest commentaries where included in this report reflect the views of their respective authors; their inclusion is not an endorsement of them.

'CDP' refers to CDP Worldwide, a registered charity number 1122330 and a company limited by guarantee, registered in England number 05013650.

© 2020 CDP Worldwide. All rights reserved.

Світшот
329₴
COLINS

KEY FINDINGS

Transparency and disclosure on water security is low among companies in the apparel and textile sector.

- 54% of apparel and textile companies (brands, manufacturers and retailers) failed to report crucial water-related information through CDP when requested to do so by investors or purchasers in 2019.
- Only 21% of the largest 100 apparel and textile companies by market cap reported water-related data through CDP.

Water pollution risks are prevalent across the whole apparel and textile value chain, but the majority of companies disclosing through CDP remain blind to these risks.

- 21% of disclosing companies report water pollution risks that have the potential to pose a substantive financial or strategic risk to their business. The majority of these reported risks were identified in the manufacturing stages of the value chain.
- Only 8% of disclosing companies reported substantive risks associated with raw material production, and not a single company considers pollution at the product use and disposal phases to be a substantive risk to their business.
- Less than a quarter of responding companies (23%) dislosed water pollution-related targets or goals anywhere in their value chain; only 6% monitor and report progress against these targets.

The business opportunities associated with tackling water pollution appear to be underestimated, but are there to be seized. Some companies are beginning to respond.

- 29% of disclosing companies reported business opportunities related to reducing water pollution, totalling US$184 million. Three opportunities alone are estimated to be worth US$174 million.

The importance of building business resilience has never been more important; there is no better time for companies to take action.

- Investors, regulators, customers and consumers alike are mounting pressure on apparel and textile companies to transparently measure, manage and reduce their impact on the water environment across their whole value chain. Companies that act quickly will gain a competitive advantage and become leaders of a renewed and sustainable fashion industry.
- Addressing water pollution should be a key component of revised business strategies in the wake of the COVID-19 pandemic.

The data and findings of this report are based on the 62 companies who disclosed through CDP's water security questionnaire in 2019 and have activities within the apparel, footwear and household textiles sector. Throughout this report the use of "apparel and textile" is used to encompass the apparel, footwear and household textiles sector.

KEY ACTIONS FOR COMPANIES

1. Consider the whole value chain (raw material production through to product use and ultimate disposal) in your company's water-related risk assessments, targets and strategies.

2. Incentivize effective water pollution mitigation through:
   - the implementation of C-suite incentives related to water.
   - ensuring that pollution is designed out at the product design stage.

3. Invest in solutions such as sustainable materials, circularity and technological innovation to boost efficiency, resilience and brand image.

4. Engage and develop relationships with all your suppliers to improve awareness of, and tackle, water pollution risks. Use CDP's supply chain program to request water disclosure from your suppliers.

5. Build trust with your stakeholders by transparently disclosing your water-related metrics annually through CDP's disclosure platform.

INTRODUCTION

The apparel and textile industry is one of the largest industries in the world, both in terms of annual revenue (over US$2.5 trillion pre-pandemic[1]) and environmental degradation[2].

The global proliferation of fast fashion[3] has had, and continues to have, a significant detrimental impact on the natural environment. Over the last 20 years there has been a twofold increase in the amount of clothing produced[4], despite a global population increase of only 28%. If the negative environmental and societal externalities associated with the apparel and textile industry were addressed, the benefit to the global economy is estimated to be upwards of US$190 billion / year[5].

The availability of sufficient amounts of good quality freshwater is vital for health, livelihoods, ecosystems and economic production and yet cannot be guaranteed in many regions of the world. The apparel and textile sector exacerbates global water scarcity through excessive freshwater consumption (in 2015 alone, the sector used 79 billion cubic metres of water), and through its substantial contribution to water pollution[6].

Despite strides in recent years to reduce water pollution in the sector's global value chain through Greenpeace's DETOX campaign[7], NRDC's Clean By Design programme[8], the Sustainable Apparel Coalition[9], ZDHC[10] and more, there remains a lack of urgency across the sector to tackle the issue, as this report highlights.

A recent review by the World Bank revealed that water pollution can significantly reduce economic growth[11]. It also poses serious risks to businesses. The apparel and textile sector faces widespread material risks from its contribution to water pollution across the whole value chain. Yet with these risks comes an exciting opportunity for companies, and the firms financing them, to address the issue, increasing their resilience and opening the door to substantial financial rewards.

The COVID-19 pandemic has reinforced the need for resilience in supply chains and business operations[12]. The apparel and textile sector, as a whole, is insufficiently prepared for crises. The impact of COVID-19 on the industry has emphasized this, with the average market cap of apparel and textile companies dropping by almost 40% between January and March of 2020[13], much steeper than the overall stock market. Many companies feel that they now stand at a crossroads, choosing between short-term economic gains, or doubling down on their environmental commitments[14]. Companies that respond by taking action to accelerate the green transition will increase their ability to mitigate and respond to future shocks and crises, including those posed by water pollution.

Investors, regulators, purchasers, consumers and civil society are paying close attention to which path these companies take. They are calling for apparel and textile companies to be transparent on environmental and social issues and take action aligned with business resilience and water security for all. Those companies which act quickly, and are transparent with their actions, will become the leaders of a renewed fashion industry.

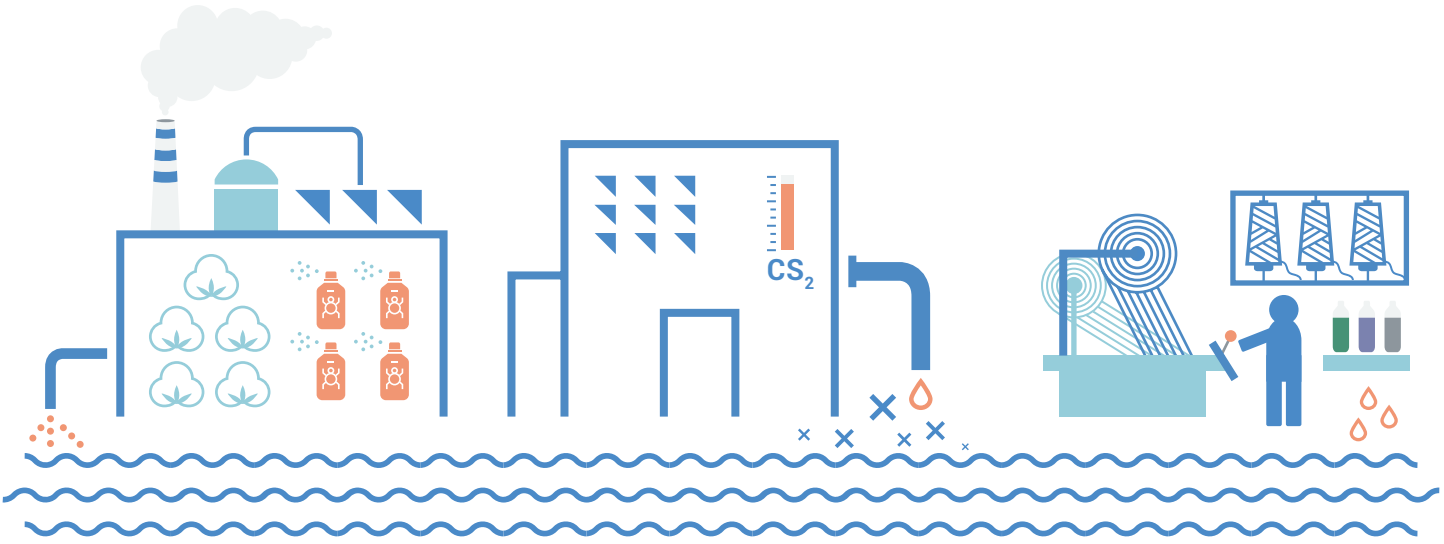
The impact of the apparel and textile sector on water pollution

1 Cotton production

Cotton production accounts for **16%** of all insecticides used worldwide, a significant proportion of which are washed out of soils, polluting rivers and groundwater bodies. In 2017 alone approximately **50** farmers died, and a further **800** admitted to hospital in Maharashtra, India, due to the overuse of insecticides on cotton crops[15].

2 Factory (national level)

The textile manufacturing sector contributes **US$28 billion** a year to Bangladesh's export revenue, and discharges an estimated **217 million** cubic meters of polluted wastewater into the environment. This contaminated water is widely used to irrigate fruit and vegetables which are sold nationally and internationally. This produce has been found to contain arsenic, chromium, mercury and textile (azo) dyes, substances that can be mutagenic and carcinogenic to humans[17,18].



3 Micro and nanofiber pollution

A truly global issue[19]: the washing of 1 kilogram of synthetic garments can release between **640,000 – 1,500,000 microfibers**[20]. It was recently discovered that microplastics can enter and accumulate in human body tissue, however the health implications are not yet known[21].

4 Landfill waste

Over **92 million** tonnes of textiles are disposed of each year, much of which goes to landfill[22]. Depending on the structural integrity of the landfill site, landfill leachate, containing microfibers, dyes and other toxic substances which remain on fabrics, may seep into and pollute local groundwater and surface water sources[23].

* This is a revised version of the infographic which appeared in the original version of this report. The original version contained unverified information.

A RISKY VALUE CHAIN

Water pollution is prevalent across the whole global apparel and textile sector value chain, from the production of raw materials, through to the ultimate disposal of clothes, shoes and household textiles.

The generation and emission of toxic chemicals pollutes rivers, lakes and aquifers – which are used by local communities and businesses among others – leading to knock-on impacts for human health, livelihoods and economies. Recent data compiled by the World Bank suggests that pollution can reduce economic potential of downstream areas by up to one third[24].

Companies operating in the sector therefore face a multitude of risks stemming from pollution – such as regulatory penalties and shut-downs, losing their social licence to operate and damaging their brand image.

These risks can be tackled, managed, and even transformed into opportunities.

Kering reports that it is committed to expanding the scope of its environmental impact assessment to include the impact of a product's use and end of life stages of the value chain, as part of its 2025 sustainability strategy.

Design
80%

of a product's environmental impact through its life cycle is designed into the product[25].

Kering's "Smart Sourcing" initiative, brings together designers and experts in supply chain management, R&D and sustainability to encourage its brands to incorporate sustainably produced raw materials and more environmentally sustainable manufacturing processes into the design of products.

Fiber production

Synthetic fibers
63%

of global fiber production[27]. Requires 70 million barrels of oil per year[28]. Produced waste-water can contain lead, arsenic, benzene and other pollutants[29].

Plant based natural fibers
29%

of global fiber production[30]. Cotton production uses 6% of all pesticides and is a significant user of fertilisers[31]. The overuse and mistiming of application can result in these agrochemicals leaching into aquatic systems.

Man-made cellulosic fibers
6.4%

of global fiber production[32]. The wastewater from viscose production contains sulfuric acid, zinc sulphates and organic matter. If released untreated this can result in an increase in the chemical oxygen demand of receiving water bodies[33].

Livestock
~1%

of global fiber production[34]. Livestock excreta contains nutrients, pathogens and, due to modern veterinary medicines, heavy metals, hormones and antibiotics. These pollutants can be mobilised and enter aquatic systems.

Kering calculated that the impact of water pollution on the company totalled **€68 million** per year, with most of this impact derived from the production of raw materials[26].

Recycling

Though it reduces lifecycle impacts considerably, recycling can still pose water pollution risks. The discharge of high temperature water following thermal recycling and the release of untreated wastewater produced from chemical recycling can impact aquatic systems[49].

Reuse

The reuse of textiles reduces pollution risk compared to the use of new products. Subsequent washes release fewer microfibers[48] and most chemicals originally embedded within the product have been washed out.

Disposal
92 million

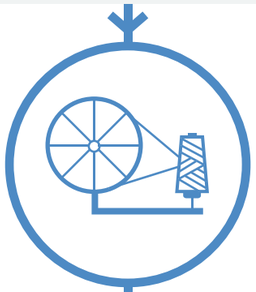
tonnes of textile waste is sent to landfill or incinerated each year[50]. Dyes, chemicals and microfibers remaining on textiles can leach out of the landfill into the soil, contaminating groundwater and surface water.

Retail
33%

of clothing manufactured for retail is never sold, with unsold stock often being incinerated or sent to landfill[43].

Transportation

A product may have circumnavigated the globe multiple times before it is sold[41]. The intentional or unintentional release of wastewater from cargo ships can have adverse impacts on water quality[42].

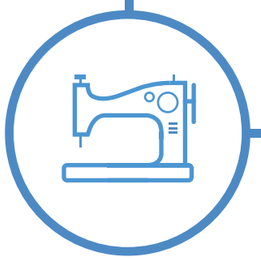


Yarn manufacture

Lubricants, accelerators and solvents used in the spinning and weaving stages may be released into the environment if wastewater is untreated[35].

Gap Inc. is committed to acquiring more sustainable raw materials by:

- Committing to sourcing 100% sustainable cotton (organic, recycled and Better Cotton Initiative cotton)
- Taking steps to source more recycled polyester and nylon fibers
- Working with suppliers to eliminate the use of materials derived from protected forests



Product use

Microfibers are released from textiles, through washing[44] and detachment via the wind[45]. These microfibers have the potential to harm aquatic life and human health if consumed[46]. Washing goods can also release chemicals remaining on the product from manufacturing, for example phthalates and PFCs[47].

Manufacturing
75 million

people are employed in the textile sector globally, 80% of which are women[39]. Inadequate access to safe clean water, sanitation and hygiene facilities remains prevalent in textile factories across the world, resulting in open defecation and the contamination of local water bodies[40].

Wet processing
>15,000

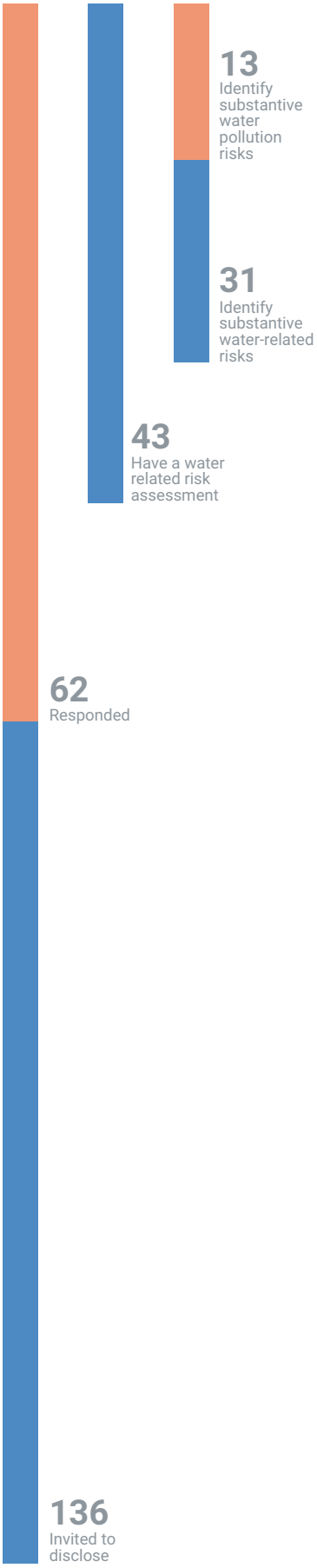
unique chemicals are used in traditional wet processing[36], including heavy metals, organic processing agents, salts and surfactants, all of which can harm freshwater ecosystems and human health[37]. Azo dyes, the largest group of synthetic dyes used, are not readily biodegradable, can bioaccumulate, and some have been known to be mutagenic and carcinogenic to humans[38].

H&M acknowledges the importance of developing and maintaining strong relationships with all their suppliers to ensure they all consistently report water performance through the Higg Index, conducting regular site visits and incentivising high performance with more orders.

H&M also reports developing innovative methods for wet processing that help mitigate water pollution risks in the manufacturing stage. The company recently invested in Colorifix, an industrial-scale biological dyeing alternative, which uses no hazardous chemicals and reduces water use by up to 90%. H&M is currently piloting the technology[52].

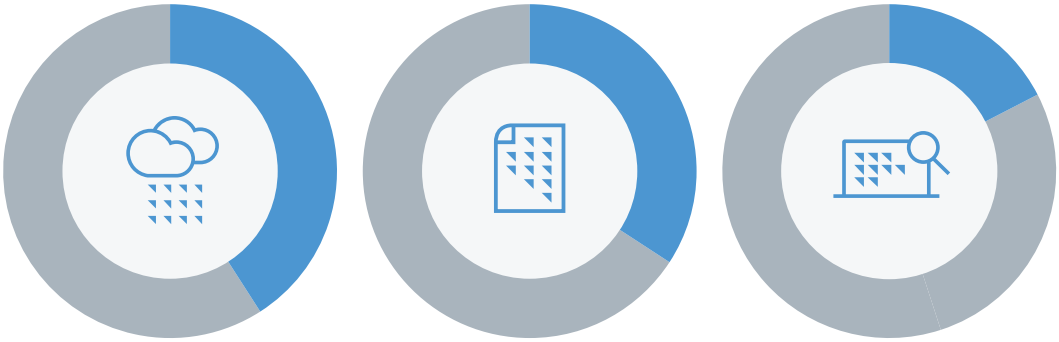
NOTE: This is a illustrative view of the apparel sector value chain. The number of actors involved in the production of a single textiles product has been found to surpass 50[51]. The information in this infographic is not an exhaustive list of pollutants associated with each stage of the value chain.

AWARENESS OF POLLUTION RISKS IS LOW



Responding to risks and seizing opportunities requires awareness, monitoring, transparency and disclosure. Despite the multitude of business risks stemming from the adverse impact of this sector on water quality, transparency of these risks, and how companies are addressing them, is low compared to other sectors.

Of the 136 apparel and textile companies (brands, retailers and manufacturers) invited to disclose through CDP's water security questionnaire by investors and purchasers in 2019, only 62 (46%) responded. This represents just 21% of the top 100 apparel and textile companies by market cap, including **H&M, Inditex** and **Kering**. The response status for all companies can be found in Appendix I.



Physical risks

7 companies reporting
16 physical risks

Regulatory risks

6 companies reporting
7 regulatory risks

Reputational risks

3 companies reporting
4 reputational risks

Of those 62 responders, just 21% (13/62) identified water pollution as a substantive financial or strategic risk to their business, be it a regulatory, reputational or physical risk. This aligns with the findings of **CDP's Global Water Report 2019**, which identified that companies across most sectors are either blind to, or are not reporting, risks related to water pollution.

The majority of substantive water pollution risks reported by companies were identified in the wet processing and manufacturing stages of the value chain such as spinning, dyeing and washing. This reflects the general perceived understanding of where water pollution poses the most significant risks[53] and the focus of previous initiatives on tackling this issue[54]. Yet water pollution poses considerable risks throughout the entire apparel value chain, from the use of fertilizers and pesticides in the production of cotton through to the laundering of clothes with harmful detergents and their ultimate disposal. Only five companies (8%) reported substantive risks associated with raw material production, and not a single company considers pollution at the product use and disposal phases to be a substantive risk to their business.

Our analysis of disclosures indicates that some companies do at least acknowledge pollution risks beyond the manufacturing stages of their value chains, even if they are not reporting them as substantive risks. However, only:

- 11% of disclosing companies (**Woolworths Holdings Ltd, Kering, Burberry Group, Gap Inc., H&M, Hanesbrands Inc.** and **Inditex**) acknowledge water pollution issues at each stage of the value chain in their disclosures, including product use and disposal. These companies demonstrate a progressive and transparent understanding of the scale of the issue.
- One respondent (**H&M**) acknowledges microfiber pollution, noting that the company engages with consumers to encourage the use of guppy bags when washing clothes to reduce the release of microfibers. This statistic is alarming given the fact that the production, use and disposal of textile goods all contribute to the release of micro or nanofibers.

Physical and regulatory water pollution risks are the most commonly reported substantive risks, potentially due to the relative simplicity of estimating their financial impact. Despite being defined as substantive, to date, fines and penalties associated with water pollution are likely to have appeared relatively unsubstantial on a company's profit and loss sheet. For example, **a major apparel manufacturer** estimated that fines associated with the discharge of untreated wastewater could be up to US$100,000. With tighter regulatory change anticipated, the materiality of these risks is likely to increase.

Reputational risks are less frequently reported, but leading companies understand that their environmental and social responsibility, and therefore reputation, extends far beyond their direct operations, and covers the entire value chain. In 2020 numerous fashion brands experienced adverse reputational impacts. In March, after being associated with suppliers linked to the forced labor of Uighurs in China[55], the market cap of several large brands fell by up to 30%, and in July **Boohoo**'s market cap fell by 44% after the company was reported to be acquiring goods from a factory in Leicester, UK, which was alleged to have been employing modern slavery practices[56].

With rapidly growing investor awareness of water pollution risks[57], and increased public scrutiny on companies who outsource their environmental impacts to other companies, the severity of reputational risks posed by water pollution is intensifying. CDP data suggests that these reputational risks are underreported, and those companies that do report such risks, report very different financial implications.

A responding textile manufacturer recognized that customers would reduce orders if the company did not perform sufficiently well in self-evaluations using the Higg Index.

FINANCIAL IMPACT:

US$126 million

approximately 7% of the company's market cap.

Woolworths Holdings Ltd. identified that if the company were linked to suppliers who were manufacturing or purchasing raw materials in an environmentally harmful way then there is a risk that the company's brand could be damaged.

FINANCIAL IMPACT:

> **Difficult to estimate financial impact from a reputational risk at this stage.**

VF Corporation reported that due to the flexibility of their global supply chain, water pollution does not pose a reputational risk as the company has the ability to move capacity from one facility to another if an environmental incident were to occur.

FINANCIAL IMPACT:

None reported

In summary, the majority of apparel and textile companies disclosing through CDP do not demonstrate a comprehensive awareness or understanding of the potential water pollution risks that exist across their value chains. This suggests that many companies are underreporting and underestimating their risk exposure and are thus poorly positioned to manage that exposure and to seize the business opportunities of taking action.

WHAT ARE COMPANIES DOING TO CLEAN UP?

How companies are responding to substantive water pollution-related risks

Investment in pollution abatement

6 companies taking
8 actions

Value chain engagement

4 companies taking
9 actions

Tighter supplier performance standards

4 companies taking
7 actions

Supplier diversification

1 company taking
2 actions

Regulator engagement

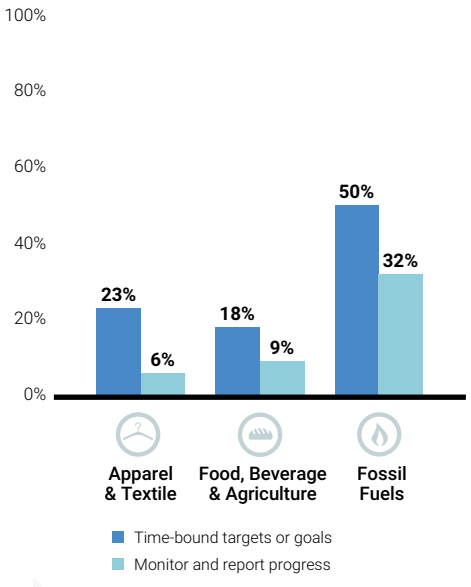
1 company taking
1 action

Of the 62 apparel and textile sector companies disclosing to CDP water in 2019, 13 companies identified 27 responses to substantive water pollution-related risks.

How the apparel and textile sector performs relative to other high impact sectors

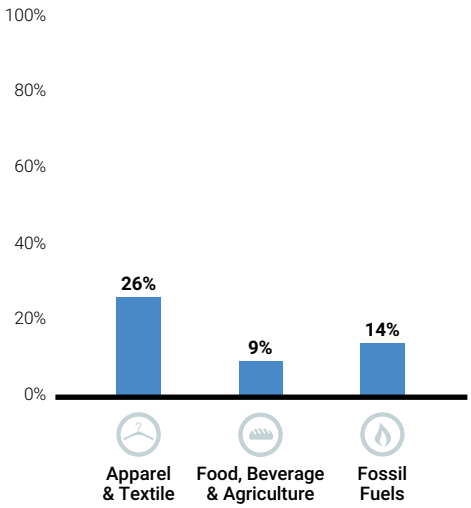
Targets

% of respondents setting time-bound targets or goals to reduce water pollution vs the % who monitor and report progress against these targets.



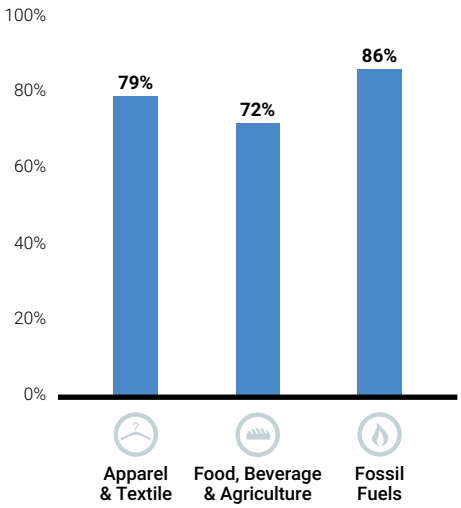
Value chain engagement

% of respondents that engage with suppliers, customers and other stakeholders through the value chain on water related metrics.



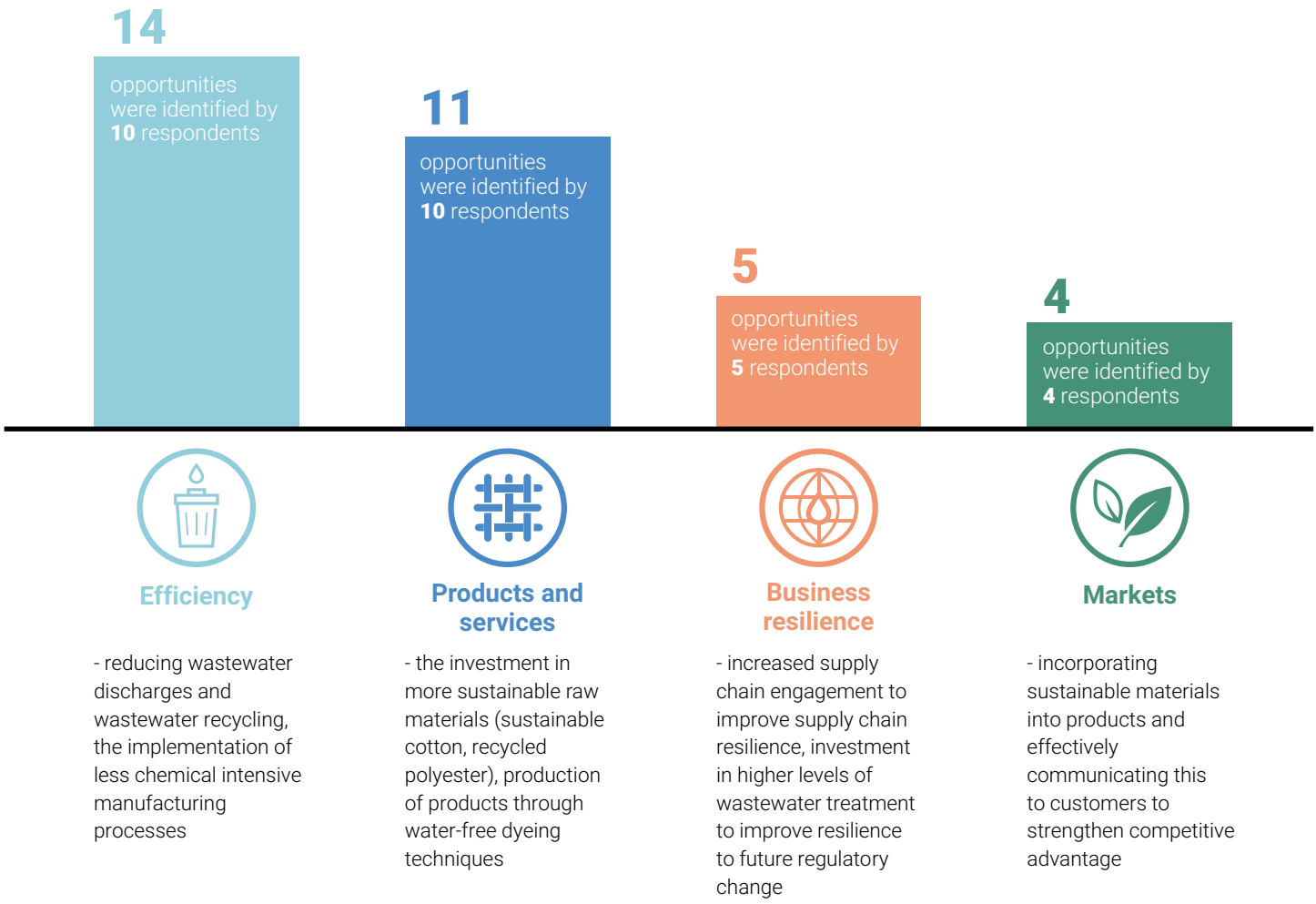
Board level oversight

% of respondents who have board level oversight of water-related issues.



This aligns with the findings of the Fashion Transparency Index 2020, which noted that 24% of the top 250 fashion brands and retailers have set time-bound water pollution reduction commitments[59].

Opportunities related to water pollution reduction identified by companies



Alongside risk management, addressing water pollution can also drive business opportunities. 18 apparel and textile sector respondents identified 34 opportunities directly related to water pollution reduction within their value chain. The potential financial benefits were estimated for 15 of these opportunities (44%), with a reported combined value of **US$184 million**.

Tackling water pollution within the value chain not only increases efficiency and business resilience to physical, regulatory and reputational risks, it also presents companies with an opportunity to improve their brand image and reputation to consumers, investors and purchasers.

Eight companies identified that through reducing the water pollution impact of their products across their value chain, they would be able to tailor their products to the purchasing behaviours of the more sustainably minded consumer, improving their reputation and thus gaining a competitive advantage over their peers.

- **Adidas** identified that investment in more sustainable materials (sustainable cotton and recycled polyester) and innovative dyeing techniques would allow the company to reduce operational costs, but also create competitive advantage and improve brand image.

- **Gap Inc.** recognised that the purchasing decisions of consumers are shifting towards more sustainable products. As a result of this **Gap Inc.** are ensuring that sustainability, including reduction in water pollution, is embedded into product design, raw material selection and wet processing techniques and that each brand is committed to communicating their sustainability goals, values and actions to their consumers.

Five of the eight companies identifying opportunities related to reputational improvements were unable to quantify the associated financial benefits, referencing difficulties with assessment and the complexity of market dynamics as challenges to quantification.

Three companies, however, were able to estimate the financial impact of such opportunities, reporting that through reducing water pollution across their supply chain, and thereby improving brand image, they could increase annual revenues by **up to 10%**. The value of these three opportunities alone totalled up to **US$174 million** per year, accounting for 95% of the combined value of all reported water pollution reduction-related opportunities.

Our data suggests that the majority of responding apparel and textile companies are unaware of, or underestimating, the substantial financial benefits which could be gained through addressing water pollution. Leveraging changes in water pollution reduction across the value chain requires a long-term commitment and often does not yield immediate results. This may explain why certain apparel and textile companies are failing to take advantage of the opportunities posed by water pollution reduction. And, of those who do, why many disclose that they struggle to quantify the financial benefits brought about by these opportunities.

To seize these opportunities companies must first recognize that their environmental responsibility extends throughout their value chains and then identify and assess where water pollution risks arise.

Engagement and the development of relationships with suppliers and customers is critical, yet only **26%** of respondents reported engaging with both. To holistically address water pollution, apparel and textile companies must transition from traditional transactional relationships with suppliers and customers towards a model whereby they collaborate to identify and capitalize on opportunities to mitigate pollution. **CDP's supply chain program** allows companies to work with their suppliers to pinpoint risks and identify opportunities to reduce pollution, whilst the Alliance for Water Stewardship's Standard (AWS Standard) can provide best practice for brands and suppliers looking to implement water stewardship across their supply chain and operations.

Companies need to act fast, seize these opportunities and be transparent with their actions in order to secure competitive advantage and keep ahead of regulatory changes. This offer ends soon.

CHANGES ARE AFOOT

The tides are beginning to turn. Consumers are responding to the detrimental impacts posed by fast fashion[60] and altering their purchasing habits accordingly; regulations and policies that improve the sustainability of the sector are being proposed and implemented at a faster rate; and financial institutions are more aware than ever of the general lack of resiliency shown by the sector[61].

Regulation and policy shift

48%

of disclosing companies

consider the actions of regulators within their water-related risk assessments

> We consider regulators in our risk assessments, as they are our first interface with local and international regulations. Our Code of Vendor Conduct requires, and our factory assessment process checks for, full compliance with country and local environmental laws and regulations.
>
> **– Gap Inc.**

Sights on a circular economy

The European Union and the Ellen MacArthur Foundation[62] have identified that a systematic change from linearity to circularity is needed[63]. Circularity results in fewer resources consumed, a reduction in waste produced and the minimization of hazardous substances used across the value chain. The application of circularity principles across the EU economy has the potential to increase EU GDP by 0.5% by 2030 and create 700,000 jobs[64], with textiles accounting for a large proportion of this.

Whilst the EU Strategy for Textiles is not expected to be released until 2021, the European Commission's circular economy action plan[65] and current trends indicate that a key emphasis will likely be placed on circularity, eco-design and sustainable supply chains[66]. Other regions worldwide are also beginning to identify the benefits. For example, the Indonesian government has identified circularity as a means to tackle water pollution in line with the Sustainable Development Goals[67].

Only 10% of apparel and textile companies disclosing through CDP identified opportunities relating to the improved use of recycled materials, or designing in materials based on their potential for circularity. **Burberry Group**, **Adidas** and **Gap Inc.** are examples of companies that are advancing opportunities linked to circularity.

Burberry Group identified that through increasing its procurement of recycled cotton it is able to increase its resilience to fluctuations in the cost of cotton due to future water scarcity. **Adidas** noted that through investments in recycled polyester it is able to position itself as a leader in innovation, increase its preparedness to face future challenges and risks in a more informed and resilient way, and improve brand image. **Gap Inc.** detailed that all of its brands expanded their efforts to embed sustainability into product design and raw materials selection, with product teams selecting materials based on water quality impacts and potential for circularity.

Micro and nanofibers: A global pollution risk

The washing of synthetic textiles is considered to be the primary source of microplastics in the aquatic environment, accounting for approximately 35% of all microplastics released globally[68]. It is estimated that for every kilogram of synthetic fabric washed, between 640,000 and 1,500,000 micro and nanofibers are released. These substances are released to the environment across each stage of the apparel and textile sector value chain, thus having detrimental impacts on a global scale. They are proven to adsorb harmful substances used in the production of textiles, such as perfluorinated chemicals (PFCs), organotins, and nonylphenol ethoxylates (NPEs)[69], potentially causing these chemicals to bioaccumulate in aquatic organisations and/or be transported further afield, increasing the scale of their impact.

It is not only synthetic fibers which are polluting the aquatic environment. Natural fibers such as cotton and hemp have been shown to remain persistent in the environment when coated in chemicals, such as flame retardants, which are applied during the manufacturing process. Recent research suggests that natural microfibers are more prevalent in the marine environment than synthetic microfibers[70].

Despite a significant research gap, microfibers represent an urgent global problem which is creating opportunities for value chain engagement and innovative business models. Mitigation in the supply chain is key, reducing the need for costly and time-consuming clean-up initiatives further along the value chain.

Policy action can support innovation and the implementation of best practice and technological solutions to mitigate the release of these substances[71]. We are already beginning to see early regulatory and policy change, with single use plastic bans being implemented across the world[72,73,74]. Alongside adhering to policy changes, the apparel and textile industry plays a vital role itself in innovating and addressing this issue[75].

Only a single apparel or textile company disclosing through CDP water mentions microfibers in their response (**H&M**). This is concerning; it indicates a lack of awareness among responding companies of the impacts of their products as well as the business case for taking action. The issue will only become more prevalent over the coming decade[76].

Taxing pollution

The Swedish government is currently considering the implementation of a tax on clothes and shoes[77] containing toxic chemicals, specifically REACH substances of very high concern (SVHCs)[78]. The proposed tax, of €3.66 per kilogram of clothing and footwear is due to come into force on 1st April 2021. It will be applied to all produced or imported clothing to Sweden, with deductions of up to 95% available if the company can prove that, over the product's whole value chain, none of the targeted chemicals have been used. As well as contributing to public finances by approximately €68.6 million / year, the tax will reduce the release and exposure of harmful chemicals from apparel production through to use and disposal.

Sweden is a global frontrunner in using market-based instruments to disincentivize environmentally harmful behaviour[79], and is certainly setting the precedent for how green taxes can be used to encourage corporate-supplier engagement to minimize water pollution across the value chain.

Consumer awakening

42%

of disclosing companies

consider the actions of customers and consumers within their water-related risk assessments

> Consumer insights and expectations are factored in the company-wide water risk assessment in a broad way and any change in behaviour and expectation can be captured by the process. On top of that, adidas actively monitors the consumer expectations through its Consumer Insights team and the ongoing analysis of adidas NPS (Net Promoter Score). Moreover, adidas' active participation in social media allows the company to identify current trends among the different groups of consumers, which feeds into the risk and brand assessment.
>
> **– Adidas**

Consumers are progressively becoming more aware of the environmental degradation caused by the fashion industry. Internet searches for "sustainable fashion" tripled between 2016 and 2019; media outlets and publications shine a light on the issue on a weekly basis[80]; and environmental activist demonstrations targeted at the industry are being held across the world[81]. All of this is contributing to a transformation in customer purchasing decisions.

A survey conducted by McKinsey[82] identified that 66% of US consumers now consider sustainability when making a luxury purchase, with younger generations increasingly stating that they are willing to pay more for products which have a proven minimized environmental impact (Gen X – 17%, Millennial – 26%, Gen Z – 31%). This increased consciousness in sustainability is translating directly into more sustainable purchases[83].

As more data becomes readily accessible[84], consumers are beginning to see past the greenwashing façade. There is now a demand for companies to not only become more transparent with their water-related policies, but to produce a roadmap setting out ambitious targets. Public disclosure against these targets allows civil society, consumers, investors and purchasers to hold companies to account. In 2019, less than a quarter (23%) of responding apparel and textile companies disclosed setting targets or goals related to water pollution reduction, with only 6% monitoring and reporting on progress.

When supported with sufficient evidence, sustainability contributes significant value to brand image. Unsupported and superficial claims, meanwhile, pose a reputational risk. Transparency and disclosure are essential for credibility.

Investor awareness

42%

of disclosing companies

consider the actions of investors within their water-related risk assessments

> Increasingly investors and other shareholders ask for our water data and management approach at a group and individual business level and as such, investor concerns are increasingly included in water risk assessments. For example, sharing with investors how we are managing our impact on water resources and addressing their key concerns, such as assessing our exposure to water stressed areas, supports our brand reputation and approach to responsible business practices.
>
> **– Associated British Foods (the holding company of Primark)**

> We need robust water quality information in order to monitor trends and see how things are moving. It makes the markets better informed and leads to better decisions.
>
> **- Wilhelm Mohn, Head of Sustainability, NBIM**

> Many of our investors are interested in our resource management program and expect us to responsibly manage our risks throughout our owned manufacturing and supply chain. As a method of engagement, through CDP, we are publishing this information for our investors to better understand our approach to water-related risk.
>
> **– VF Corporation (the holding company of brands such as The North Face, Vans and Timberland)**

Investors are beginning to recognise the material risks posed by water pollution. Increasingly, they are expecting companies to have a comprehensive understanding of the water-related risks they face through their value chain, and to publicly disclose this information.

BlackRock, the world's largest asset manager and one of the largest investors of the 62 apparel and textile companies reporting through CDP on water in 2019 (appearing in the top 20 holders for 44 of the 62 companies) recently released a report acknowledging the material risks posed by water stress, including pollution. BlackRock highlighted that those companies which manage water resources more efficiently through their value chain, when compared to their peers, may offer more resilient and therefore appealing earnings streams in the transition to a more sustainable economy[85].

Central banks and financial supervisors are also calling for investors to incorporate water-related risk metrics into their investment decisions. The European Central Bank (ECB), for example, identifies water stress and pollution as significant risks to financial institutions, and is therefore encouraging investors to include these risks in their investment decisions[86].

Apparel and textile companies need to be transparent with investors on the water pollution risks they face, and more importantly the actions they are taking to mitigate and reduce these risks across their whole value chain. By accurately and comprehensively disclosing through CDP, certain apparel and textile companies can get ahead through demonstrating their comparative transparency, awareness, proactivity and resilience.

COVID-19 has accelerated these trends, bringing sustainability into sharp focus - **15% of consumers in Europe and the US are expected to purchase more sustainable apparel[87] and investors are expected to substantially boost their focus on environmental, social and governance metrics**[88].

The pandemic has delivered a shock to the global economy, one which has impacted the apparel and textile sector especially hard, wiping out approximately 30% of the industry's business in 2020[89] and highlighting the flaws in the textiles value chain. Whilst previous crises have been shown to accelerate green transformation[90], there is a fear that sustainability efforts and concerns will be relegated whilst companies focus on the short-term economic distress.

Public and private actors are now calling on apparel and textile suppliers, peer companies[91] and policymakers[92] to maintain and enhance the sector's sustainability efforts in the post-pandemic recovery. In August 2020 a coalition of leading actors in the apparel and textile sector, including CDP, signed an open letter to call on the sector to speed up their sustainability efforts in their COVID-19 recovery, emphasising the importance of transparency and disclosure, value chain engagement and circularity principles. There is demand for green to be the new normal.

Apparel and textile companies who fully integrate sustainability within their recovery plans and transparently disclose on progress will gain an improved brand image and competitive advantage, get ahead of the curve with regards to anticipated regulatory change, and appear more resilient to investors, ultimately becoming leaders of a renewed fashion industry[93].

THE IMPORTANCE OF DISCLOSURE

Investors

Companies should disclose their water management strategy, risks, responses and opportunities, [...] strive to report relevant data for supply chains and products and services [...] and should report sufficiently granular data to internationally recognized reporting initiatives[94].

– Norges Bank Investment Management

Consumers

Fashion companies must come to terms with the fact that a more distrusting consumer expects full transparency across the value chain[95].

– McKinsey

Apparel and textile related organisations

Companies must take advantage of digitalization, innovative business models, and end-to-end solutions – with transparency playing a central role – in order to assess and demonstrate positive environmental and social impact to stakeholders [...] Only by enabling widespread transparency to all of their stakeholders will companies be able to adapt in a rapidly changing market[96].

– Sustainable Apparel Coalition

Global institutions

Although water quality data are critical for regulators, their value increases exponentially when they become available to the public. This allows individuals and businesses to make smarter and more informed decisions on matters that effect their health, livelihoods, and productivity. Relative to the expenses of monitoring water quality, publishing the data online is a low-cost complement that pays tremendous social dividends[97].

– World Bank

Regulators and policymakers

Transparency and disclosure helps investors, consumers, policymakers and other stakeholders to evaluate the non-financial performance of large companies and encourages these companies to develop a responsible approach to business[98].

– European Union's Non-Financial Reporting Directive

Stakeholders are calling for accessible, accurate and comprehensive information that demonstrates responsibility for reducing water-related risks and impacts[99]. CDP's water security questionnaire provides a valuable platform to facilitate this transparency and dissemination of information.

CDP's water security questionnaire tracks key performance indicators such as corporate governance, risk management and value chain engagement in order to provide consistent, quantifiable, and comparable data and insights to investor shareholders and purchasing organisations. These insights are then used to make smarter, more informed investment and purchasing decisions. In 2019 2,433 companies disclosed on water through CDP, with this data shared with 525 investors, representing over $96 trillion in assets and 125+ purchasing companies.

Our data shows that disclosure through CDP is driving meaningful corporate action on water. Comparing the actions of the cohort of companies disclosing over several years shows the percentage of companies:

- with board level oversight for water targets increasing from 67% to 81% over 6 years (2014-2019)
- reducing or maintaining water consumption increasing from 31% to 46% over 3 years (2017-2019)

The European Union's Non-Financial Reporting Directive (EU NFRD) requires large companies to disclose information on the way they manage social and environmental challenges. The EU NFRD is currently under review, with growing pressure for the inclusion of water security metrics in order to help deliver the data investors need[100]. Those apparel and textile companies already disclosing through CDP's water questionnaire are ahead of the curve in terms of the data they gather and report. They are not only prepared for the revised EU NFRD, but also for the forthcoming development of science-based targets for the interrelated systems of freshwater, biodiversity, land and oceans[101].

There is a plethora of tools, initiatives and standards available specific to the apparel and textile sector which can help companies collect information from, and work with, suppliers to reduce their water impacts. These include CDP's supply chain program, the ZDHC Foundation[102], the Sustainable Apparel Coalition's (SAC) Higg Index[103], the Alliance for Water Stewardship (AWS) Standard[104] and the Fashion Pact[105].

Disclosing through CDP allows companies to build trust and credibility by providing information directly to investors and purchasers, using a market-leading and standardized disclosure system. This process enables companies to demonstrate their involvement in the above initiatives whilst also reporting progress against a comprehensive set of water stewardship indicators. CDP's water scoring system provides an opportunity for companies to benchmark themselves against their peers, ultimately driving a race to the top between companies.

Only through enabling widespread transparency and disclosure will companies be able to adapt to the rapidly changing market, especially in a post-COVID-19 economy.

APPENDIX I

Disclosing companies' key metrics

● = Yes ✕ = No

NOTE: Key metrics for the 62 companies with activities in the apparel and textile sector that disclosed through CDP's water questionnaire in 2019 and were analyzed for this report.

Organization	Country	Primary industry	Disclosure	CDP Water Security Score 2019	Value chain engagement with suppliers and customers	Conduct a water-related risk assessment	Identify water pollution risks which pose a substantive financial or strategic risk to the company	Targets and goals to reduce water pollution	Identified opportunities related to reducing water pollution	Board level oversight for water issues
adidas AG	Germany	Apparel	Public	B	●	●	●	●	●	●
Ahold Delhaize	Netherlands	Retail	Public	D	✕	●	✕	✕	✕	●
Asics Corporation	Japan	Manufacturing	Public	B-	✕	●	✕	✕	●	●
Associated British Foods	United Kingdom of Great Britain and Northern Ireland	Retail	Public	B	●	●	✕	✕	✕	●
Bic Camera Inc	Japan	Retail	Public	D	✕	✕	✕	✕	✕	✕
Burberry Group	United Kingdom of Great Britain and Northern Ireland	Apparel	Public	B	✕	●	●	●	●	●
Capri Holdings Limited	China, Hong Kong Special Administrative Region	Retail	Non-public	N/A	Private	Private	Private	Private	Private	Private
Citizen Watch Co.,Ltd.	Japan	Manufacturing	Public	B	✕	●	✕	✕	✕	●
Clicks Group Ltd	South Africa	Retail	Non-public	B	Private	Private	Private	Private	Private	Private
Don Quijote Holdings Co., Ltd.	Japan	Retail	Non-public	C-	Private	Private	Private	Private	Private	Private
Eclat Textile Co Ltd	Taiwan, Greater China	Apparel	Public	C	✕	●	✕	✕	●	●
Fast Retailing Co., Ltd.	Japan	Retail	Public	B	✕	●	●	✕	●	●
Foot Locker Inc	United States of America	Retail	Non-public	N/A	Private	Private	Private	Private	Private	Private
Formosa Taffeta Co.	Taiwan, Greater China	Apparel	Non-public	B	Private	Private	Private	Private	Private	Private
Foschini Group Ltd	South Africa	Retail	Non-public	F	Private	Private	Private	Private	Private	Private
Gap Inc.	United States of America	Retail	Public	A-	●	●	✕	●	●	●
Gildan Activewear Inc.	Canada	Apparel	Non-public	B	Private	Private	Private	Private	Private	Private
Guala Closures Group	Italy	Manufacturing	Public	N/A	✕	●	✕	✕	✕	●
H&M Hennes & Mauritz AB	Sweden	Retail	Public	B	●	●	●	●	●	●
Hanesbrands Inc.	United States of America	Apparel	Public	B-	●	●	✕	●	✕	●
Hermes International	France	Apparel	Non-public	B	Private	Private	Private	Private	Private	Private
Inditex	Spain	Retail	Public	A-	●	●	●	●	●	●
J Sainsbury Plc	United Kingdom of Great Britain and Northern Ireland	Retail	Public	A	●	●	●	●	✕	●
Kering	France	Apparel	Public	B	●	●	●	●	●	●
Kroger	United States of America	Retail	Public	C	✕	●	✕	✕	✕	●
Lowe's Companies, Inc.	United States of America	Retail	Public	C	✕	✕	✕	✕	✕	●
LVMH	France	Apparel	Public	C	●	●	✕	✕	●	●
Metro AG	Germany	Retail	Public	B	●	●	✕	✕	✕	●
MİGROS TİCARET A.Ş.	Turkey	Retail	Public	B	●	●	●	✕	✕	●
NIKE Inc.	United States of America	Apparel	Non-public	N/A	Private	Private	Private	Private	Private	Private
Nisshinbo Holdings Inc.	Japan	Manufacturing	Public	B-	✕	●	✕	✕	✕	●
Pick 'n Pay Stores Ltd	South Africa	Retail	Public	B	●	●	✕	✕	✕	●
PUMA SE	Germany	Apparel	Non-public	C	Private	Private	Private	Private	Private	Private
PVH Corp	United States of America	Apparel	Public	A-	✕	●	●	●	●	●
Shoprite Holdings Ltd	South Africa	Retail	Public	B-	✕	●	✕	✕	✕	●
SUNNYLITE TRADING CO., LTD	Taiwan, Greater China	Apparel	Public	N/A	✕	✕	✕	✕	✕	✕
Tapestry Inc	United States of America	Retail	Public	C	✕	●	✕	✕	✕	●
Target Corporation	United States of America	Retail	Public	B-	✕	●	✕	●	✕	●
Teejay Lanka PLC	Sri Lanka	Apparel	Public	B-	✕	✕	✕	✕	✕	●
Toyota Tsusho Corporation	Japan	Services	Non-public	B	Private	Private	Private	Private	Private	Private
Under Armour Inc	United States of America	Apparel	Non-public	N/A	Private	Private	Private	Private	Private	Private
VF Corporation	United States of America	Apparel	Public	B-	●	●	✕	✕	●	●
Wal Mart de Mexico	Mexico	Retail	Non-public	B-	Private	Private	Private	Private	Private	Private
Walmart, Inc.	United States of America	Retail	Public	C	●	●	✕	✕	✕	●
WM Morrison Supermarkets Plc	United Kingdom of Great Britain and Northern Ireland	Retail	Public	C	✕	✕	✕	✕	✕	●
Woolworths Holdings Ltd	South Africa	Retail	Public	B	●	●	●	●	●	●
YÜNSA YÜNLÜ SANAYİ VE TİCARET A.Ş.	Turkey	Apparel	Public	B-	✕	●	✕	●	●	●
PRIVATE SUPPLIER	Bangladesh	Apparel	Non-public	N/A	Private	Private	Private	Private	Private	Private
PRIVATE SUPPLIER	Brazil	Apparel	Non-public	N/A	Private	Private	Private	Private	Private	Private
PRIVATE SUPPLIER	China	Apparel	Non-public	N/A	Private	Private	Private	Private	Private	Private
PRIVATE SUPPLIER	Germany	Apparel	Non-public	N/A	Private	Private	Private	Private	Private	Private
PRIVATE SUPPLIER	India	Apparel	Non-public	N/A	Private	Private	Private	Private	Private	Private
PRIVATE SUPPLIER	Japan	Manufacturing	Non-public	N/A	Private	Private	Private	Private	Private	Private
PRIVATE SUPPLIER	Japan	Apparel	Non-public	N/A	Private	Private	Private	Private	Private	Private
PRIVATE SUPPLIER	Japan	Apparel	Non-public	N/A	Private	Private	Private	Private	Private	Private
PRIVATE SUPPLIER	Mexico	Apparel	Non-public	N/A	Private	Private	Private	Private	Private	Private
PRIVATE SUPPLIER	Mexico	Apparel	Non-public	N/A	Private	Private	Private	Private	Private	Private
PRIVATE SUPPLIER	Mexico	Apparel	Non-public	N/A	Private	Private	Private	Private	Private	Private
PRIVATE SUPPLIER	Mexico	Apparel	Non-public	N/A	Private	Private	Private	Private	Private	Private
PRIVATE SUPPLIER	Netherlands	Manufacturing	Non-public	N/A	Private	Private	Private	Private	Private	Private
PRIVATE SUPPLIER	United States of America	Apparel	Non-public	N/A	Private	Private	Private	Private	Private	Private
PRIVATE SUPPLIER	United States of America	Apparel	Non-public	N/A	Private	Private	Private	Private	Private	Private

APPENDIX II

Companies with activities in the apparel and textile sector who were invited to disclose through CDP's water security questionnaire in 2019 by investors or purchasers but failed to do so

NOTE: This table refers only to companies' 2019 water security response status, as it is 2019 data that is used in this report. Please note that companies are requested to disclose on an annual basis and some companies that did not disclose in 2019 may disclose in 2020. The CDP disclosure platform remains open until September 30, 2020.

ABC-Mart, Inc.
Aeon Co., Ltd.
Anta Sports Products Ltd
Aoyama Trading Co., Ltd.
ARVIND Ltd
Avi Ltd
Canadian Tire Corporation, Limited
Carrefour
CARREFOURSA CARREFOUR SABANCI TİCARET MERKEZİ A.Ş.
Casino Guichard-Perrachon
CCC
Cencosud SA
Colruyt
Compagnie Financière Richemont SA
Costco Wholesale Corporation
Dick's Sporting Goods, Inc.
Dollar General Corporation
E-MART Co., Ltd
Feng Tay Enterprises Co Ltd
FF Group (Folli Follie)
Grupo Carso S.A.
H2O Retailing Corporation
HUGO BOSS AG
Hyosung Corporation
ICA Gruppen
Isetan Mitsukoshi Holdings Ltd.
Izumi Co., Ltd.
J. Front Retailing Co., Ltd.
L Brands, Inc.
Loblaw Companies Limited
Lojas Renner S.A.
Lotte Shopping
LPP S.A.
Lululemon Athletica Inc.
Magnit
Marks and Spencer Group plc
Marui Group Co., Ltd.
Matahari Department Store Tbk
Moncler
Mr Price Group Ltd
Next
Nitori Holdings Co., Ltd.
Polo Ralph Lauren Corporation
Pou Chen Corp.
Prada
Ross Stores Inc
Ryohin Keikaku Co., Ltd.
Samsung C&T
Seven & I Holdings Co., Ltd.
Shenzhou International Group Holdings Ltd
Shimamura Co., Ltd.
Shinsegae
Sports Direct International
Steinhoff International Holdings
Swatch Group
Tesco
Tiffany & Co.
TJX Companies, Inc.
Toyobo Co., Ltd.
Truworths International
Urban Outfitters, Inc.
Welspun India Ltd
Wesfarmers
Woolworths Limited
Yue Yuen Industrial
PRIVATE
PRIVATE
PRIVATE
PRIVATE
PRIVATE
PRIVATE
PRIVATE
PRIVATE
PRIVATE

REFERENCES

1. McKinsey & Company. 2020. *The State of Fashion 2020 Coronavirus Update*. https://www.mckinsey.com/~/media/McKinsey/Industries/Retail/Our%20Insights/Its%20time%20to%20rewire%20the%20fashion%20system%20State%20of%20Fashion%20coronavirus%20update/The-State-of-Fashion-2020-Coronavirus-Update-final.pdf
2. Bick, R., Halsey, E. and Ekenga, C., 2018. The global environmental injustice of fast fashion. *Environmental Health*, 17(1). https://ehjournal.biomedcentral.com/articles/10.1186/s12940-018-0433-7
3. Niinimäki, K., Peters, G., Dahlbo, H., Perry, P., Rissanen, T. and Gwilt, A., 2020. The environmental price of fast fashion. *Nature Reviews Earth & Environment*, 1(5), pp.278-278. https://www.nature.com/articles/s43017-020-0039-9
4. Ellen MacArthur Foundation, 2017. *A New Textiles Economy: Redesigning Fashion's Future*. https://www.ellenmacarthurfoundation.org/assets/downloads/publications/A-New-Textiles-Economy_Full-Report.pdf
5. Global Fashion Agenda, 2017. *Pulse of the Fashion Industry*. https://globalfashionagenda.com/wp-content/uploads/2017/05/Pulse-of-the-Fashion-Industry_2017.pdf
6. Niinimäki, K., Peters, G., Dahlbo, H., Perry, P., Rissanen, T. and Gwilt, A., 2020. The environmental price of fast fashion. *Nature Reviews Earth & Environment*, 1(5), pp.278-278. https://www.nature.com/articles/s43017-020-0039-9
7. Greenpeace, 2018. *Destination Zero: Seven years of detoxing the clothing industry*. https://storage.googleapis.com/planet4-international-stateless/2018/07/destination_zero_report_july_2018.pdf
8. https://www.nrdc.org/resources/clean-design-apparel-manufacturing-and-pollution
9. https://apparelcoalition.org/
10. https://www.roadmaptozero.com/
11. World Bank, 2019. *Quality Unknown: The invisible water crisis*. https://openknowledge.worldbank.org/bitstream/handle/10986/32245/9781464814594.pdf?sequence=8&isAllowed=y
12. https://www.cdp.net/en/articles/companies/the-powerful-link-between-environmental-transparency-and-economic-resilience
13. https://globalfashionagenda.com/wp-content/uploads/2020/06/22062020-Concept-note-event-Impacts-of-COVID-19-on-Textile-Policy-in-the-EU.pdf
14. Boston Consulting Group, 2020. *Rebuilding A More Sustainable Fashion Industry After COVID-19*. https://apparelcoalition.org/wp-content/uploads/2020/04/Weaving-a-Better-Future-Covid-19-BCG-SAC-Higg-Co-Report.pdf
15. https://www.bbc.co.uk/news/world-asia-india-41510730
16. Changing Markets Foundation, 2018. *Dirty Fashion Revisited: Spotlight on polluting viscose giant*. http://changingmarkets.org/wp-content/uploads/2018/02/DIRTY_FASHION_REVISITED_SPOTLIGHT_ON_A_POLLUTING_VISCOSE_GIANT-1.pdf
17. Sakamoto, M., Ahmed, T., Begum, S. and Huq, H., 2019. Water Pollution and the Textile Industry in Bangladesh: Flawed Corporate Practices or Restrictive Opportunities? *Sustainability*, 11(7), p.1951. https://www.mdpi.com/2071-1050/11/7/1951
18. Lellis, B., Fávaro-Polonio, C., Pamphile, J. and Polonio, J., 2019. Effects of textile dyes on health and the environment and bioremediation potential of living organisms. *Biotechnology Research and Innovation*, 3(2), pp.275-290. https://www.sciencedirect.com/science/article/pii/S2452072119300413
19. Hale, R., Seeley, M., La Guardia, M., Mai, L. and Zeng, E., 2020. A Global Perspective on Microplastics. *Journal of Geophysical Research: Oceans*, 125(1). https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2018JC014719
20. De Falco, F., Di Pace, E., Cocca, M. and Avella, M., 2019. The contribution of washing processes of synthetic clothes to microplastic pollution. *Scientific Reports*, 9(1). https://www.nature.com/articles/s41598-019-43023-x
21. https://www.acs.org/content/acs/en/pressroom/newsreleases/2020/august/micro-and-nanoplastics-detectable-in-human-tissues.html
22. Niinimäki, K., Peters, G., Dahlbo, H., Perry, P., Rissanen, T. and Gwilt, A., 2020. The environmental price of fast fashion. *Nature Reviews Earth & Environment*, 1(5), pp.278-278. https://www.nature.com/articles/s43017-020-0039-9
23. Castillo, M. and Barceló, D., 2001. Characterisation of organic pollutants in textile wastewaters and landfill leachate by using toxicity-based fractionation methods followed by liquid and gas chromatography coupled to mass spectrometric detection. *Analytica Chimica Acta*, 426(2), pp.253-264. https://www.sciencedirect.com/science/article/abs/pii/S000326700000828X
24. World Bank, 2019. *Quality Unknown: The invisible water crisis*. https://openknowledge.worldbank.org/bitstream/handle/10986/32245/9781464814594.pdf?sequence=8&isAllowed=y
25. https://www.ellenmacarthurfoundation.org/circular-economy/what-is-the-circular-economy
26. Kering (2019). *Environmental Profit and Loss* (EP&L). https://keringcorporate.dam.kering.com/m/788c4d5588730055/original/Kering-EP-L-report-2019.pdf
27. Textile Exchange (2020). *Preferred Fiber & Materials Market Report 2020*. https://textileexchange.org/wp-content/uploads/2020/06/Textile-Exchange_Preferred-Fiber-Material-Market-Report_2020.pdf
28. https://www.eea.europa.eu/themes/waste/resource-efficiency/textiles-in-europe-s-circular-economy
29. Bakke, T., Klungsøyr, J. and Sanni, S. (2013). Environmental impacts of produced water and drilling waste discharges from the Norwegian offshore petroleum industry. *Marine Environmental Research*, 92, pp.154–169. https://www.sciencedirect.com/science/article/pii/S0141113613001621
30. Textile Exchange (2020). *Preferred Fiber & Materials Market Report 2020*. https://textileexchange.org/wp-content/uploads/2020/06/Textile-Exchange_Preferred-Fiber-Material-Market-Report_2020.pdf
31. Pesticide Action Network UK (2018). *Is Cotton Conquering its Chemical Addiction?* https://issuu.com/pan-uk/docs/cottons_chemical_addiction_-_update?e=28041656/62705601
32. Textile Exchange (2020). *Preferred Fiber & Materials Market Report 2020*. https://textileexchange.org/wp-content/uploads/2020/06/Textile-Exchange_Preferred-Fiber-Material-Market-Report_2020.pdf
33. Water Footprint Network (2017). *Water Footprint Assessment of Polyester and Viscose*. https://waterfootprint.org/media/downloads/WFA_Polyester_and__Viscose_2017.pdf
34. Textile Exchange (2020). *Preferred Fiber & Materials Market Report 2020*. https://textileexchange.org/wp-content/uploads/2020/06/Textile-Exchange_Preferred-Fiber-Material-Market-Report_2020.pdf
35. Niinimäki, K., Peters, G., Dahlbo, H., Perry, P., Rissanen, T. and Gwilt, A., 2020. The environmental price of fast fashion. *Nature Reviews Earth & Environment*, 1(5), pp.278-278. https://www.nature.com/articles/s43017-020-0039-9
36. Roos, S., Jönsson, C., Posner, S., Arvidsson, R. and Svanström, M. (2018). An inventory framework for inclusion of textile chemicals in life cycle assessment. *The International Journal of Life Cycle Assessment*, 24(5), pp.838–847. https://link.springer.com/article/10.1007/s11367-018-1537-6
37. Niinimäki, K., Peters, G., Dahlbo, H., Perry, P., Rissanen, T. and Gwilt, A., 2020. The environmental price of fast fashion. *Nature Reviews Earth & Environment*, 1(5), pp.278-278. https://www.nature.com/articles/s43017-020-0039-9
38. Brüschweiler, B.J. and Merlot, C. (2017). Azo dyes in clothing textiles can be cleaved into a series of mutagenic aromatic amines which are not regulated yet. *Regulatory Toxicology and Pharmacology*, 88, pp.214–226. https://www.sciencedirect.com/science/article/pii/S0273230017301812
39. KPMG (2018). *Threading The Needle*. https://www.comunicarseweb.com/sites/default/files/kpmg-threading-needle-report.pdf.
40. https://washmatters.wateraid.org/blog/the-thirst-for-fashion-must-first-quench-the-industry-workers-need-for-water
41. Niinimäki, K., Peters, G., Dahlbo, H., Perry, P., Rissanen, T. and Gwilt, A., 2020. The environmental price of fast fashion. *Nature Reviews Earth & Environment*, 1(5), pp.278-278. https://www.nature.com/articles/s43017-020-0039-9
42. https://www.mlive.com/news/2016/07/1m_fine_for_ship_that_dumped_o.html
43. https://www.ecotextile.com/2016042122078/fashion-retail-news/one-third-of-all-clothing-never-sold.html
44. De Falco, F., Di Pace, E., Cocca, M. and Avella, M., 2019. The contribution of washing processes of synthetic clothes to microplastic pollution. *Scientific Reports*, 9(1). https://www.nature.com/articles/s41598-019-43023-x
45. Wright, S.L., Ulke, J., Font, A., Chan, K.L.A. and Kelly, F.J. (2020). Atmospheric microplastic deposition in an urban environment and an evaluation of transport. *Environment International*, 136, p.105411. https://www.sciencedirect.com/science/article/pii/S0160412019330351
46. Hwang, J., Choi, D., Han, S., Jung, S.Y., Choi, J. and Hong, J. (2020). Potential toxicity of polystyrene microplastic particles. *Scientific Reports*, 10(1). Available at: https://www.nature.com/articles/s41598-020-64464-9#:~:text=It%20is%20generally%20accepted%20that
47. Niinimäki, K., Peters, G., Dahlbo, H., Perry, P., Rissanen, T. and Gwilt, A., 2020. The environmental price of fast fashion. *Nature Reviews Earth & Environment*, 1(5), pp.278-278. https://www.nature.com/articles/s43017-020-0039-9
48. De Falco, F., Di Pace, E., Cocca, M. and Avella, M., 2019. The contribution of washing processes of synthetic clothes to microplastic pollution. *Scientific Reports*, 9(1). https://www.nature.com/articles/s41598-019-43023-x
49. Sandin, G. and Peters, G.M. (2018). Environmental impact of textile reuse and recycling – A review. *Journal of Cleaner Production*, 184. http://www.sciencedirect.com/science/article/pii/S0959652618305985?via=ihub.
50. Niinimäki, K., Peters, G., Dahlbo, H., Perry, P., Rissanen, T. and Gwilt, A., 2020. The environmental price of fast fashion. *Nature Reviews Earth & Environment*, 1(5), pp.278-278. https://www.nature.com/articles/s43017-020-0039-9

51. Norden (2012). *Prevention of Textile Waste*. https://www.diva-portal.org/smash/get/diva2:701022/FULLTEXT01.pdf
52. https://www.reuters.com/article/us-fashion-colorifix/hm-backed-startup-puts-bacteria-to-work-in-green-dyeing-process-idUSKBN1Y115Y
53. Niinimäki, K., Peters, G., Dahlbo, H., Perry, P., Rissanen, T. and Gwilt, A., 2020. The environmental price of fast fashion. *Nature Reviews Earth & Environment*, 1(5), pp.278-278. https://www.nature.com/articles/s43017-020-0039-9
54. Greenpeace, 2018. *Destination Zero: Seven years of detoxing the clothing industry.* https://storage.googleapis.com/planet4-international-stateless/2018/07/destination_zero_report_july_2018.pdf
55. Australian Policy Strategy Institute, 2020. *Uyghurs For Sale*. https://www.aspi.org.au/report/uyghurs-sale
56. https://www.thetimes.co.uk/article/boohoos-sweatshop-suppliers-they-only-exploit-us-they-make-huge-profits-and-pay-us-peanuts-lwj7d8fg2
57. NBIM (2020). *Water management: Expectations of companies.* https://www.nbim.no/contentassets/635a7a472b944e3281faf6ea2e57354e/water-management_2020_web.pdf
58. https://www.cdp.net/en/articles/supply-chain/supplier-engagement-leaderboard-2019
59. Fashion Revolution (2020). *Fashion Transparency Index*. https://issuu.com/fashionrevolution/docs/fr_fashiontransparencyindex2020?fr=sNmI5NzYxMDk0OA.
60. https://goodonyou.eco/
61. https://mk0eeborgicuypctuf7e.kinstacdn.com/wp-content/uploads/2020/04/Civil-Society-European-Strategy-for-Sustainable-Textiles.pdf
62. Ellen MacArthur Foundation, 2017. *A New Textiles Economy: Redesigning Fashion's Future*. https://www.ellenmacarthurfoundation.org/assets/downloads/publications/A-New-Textiles-Economy_Full-Report.pdf
63. European Commission (2019). *Sustainable Products in a Circular Economy - Towards an EU Product Policy Framework contributing to the Circular Economy.* https://ec.europa.eu/environment/circular-economy/pdf/sustainable_products_circular_economy.pdf
64. European Commission (2018). *Impacts of circular economy policies on the labour market.* https://op.europa.eu/en/publication-detail/-/publication/fc373862-704d-11e8-9483-01aa75ed71a1/language-en.
65. European Commission (2020). *A new Circular Economy Action Plan.* https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1583933814386&uri=COM:2020:98:FIN.
66. https://ecdpm.org/talking-points/to-circularity-and-beyond-comprehensive-eu-strategy-for-textiles/#:~:text=Although%20the%20textiles%20strategy%20will,ecodesign%20requirements%20for%20textile%20products.
67. Republic of Indonesia (2017). *Eradicating Poverty and Promoting Prosperity in a Changing World.* [online] Available at: https://sustainabledevelopment.un.org/content/documents/15705Indonesia.pdf.
68. De Falco, F., Di Pace, E., Cocca, M. and Avella, M., 2019. The contribution of washing processes of synthetic clothes to microplastic pollution. *Scientific Reports*, 9(1). https://www.nature.com/articles/s41598-019-43023-x
69. Ellen MacArthur Foundation, 2017. *A New Textiles Economy: Redesigning Fashion's Future*. https://www.ellenmacarthurfoundation.org/assets/downloads/publications/A-New-Textiles-Economy_Full-Report.pdf
70. Suaria, G., Achtypi, A., Perold, V., Lee, J.R., Pierucci, A., Bornman, T.G., Aliani, S. and Ryan, P.G. (2020). Microfibers in oceanic surface waters: A global characterization. *Science Advances*, 6(23). https://advances.sciencemag.org/content/6/23/eaay8493
71. http://www.oecd.org/water/Workshop_MP_Textile_Summary_Note_FINAL.pdf
72. https://www.gov.uk/government/consultations/single-use-plastic-banning-the-distribution-andor-sale-of-plastic-straws-stirrers-and-plastic-stemmed-cotton-buds-in-england
73. https://www.europarl.europa.eu/news/en/press-room/20181018IPR16524/plastic-oceans-meps-back-eu-ban-on-throwaway-plastics-by-2021
74. https://www.greenpeace.org/africa/en/blogs/11156/34-plastic-bans-in-africa/
75. Henry, B., Laitala, K. and Klepp, I.G. (2019). Microfibres from apparel and home textiles: Prospects for including microplastics in environmental sustainability assessment. *Science of The Total Environment*, 652. https://www.sciencedirect.com/science/article/pii/S004896971834049X
76. Akdogan, Z. and Guven, B. (2019). Microplastics in the environment: A critical review of current understanding and identification of future research needs. *Environmental Pollution*, 254. https://www.sciencedirect.com/science/article/pii/S0269749119302039
77. https://www.regeringen.se/49597f/contentassets/5184c042af094e7281343c2b8d31a68e/skatt-pa-modet--for-att-fa-bort-skadliga-kemikalier-sou-202020.pdf
78. https://echa.europa.eu/candidate-list-table
79. OECD (2014). *Environmental Performance Reviews: Sweden.* https://www.oecd.org/environment/country-reviews/Sweden%20Highlights%20web%20pages2.pdf
80. McKinsey & Company (2019). *The State of Fashion 2020.* https://www.mckinsey.com/~/media/McKinsey/Industries/Retail/Our%20Insights/The%20state%20of%20fashion%202020%20Navigating%20uncertainty/The-State-of-Fashion-2020-final.pdf.
81. https://www.theguardian.com/environment/2020/feb/15/extinction-rebellion-protest-at-gatwick-and-london-fashion-week
82. McKinsey & Company (2019). *The State of Fashion 2020.* https://www.mckinsey.com/~/media/McKinsey/Industries/Retail/Our%20Insights/The%20state%20of%20fashion%202020%20Navigating%20uncertainty/The-State-of-Fashion-2020-final.pdf.
83. Balderjahn, I., Peyer, M., Seegebarth, B., Wiedmann, K.-P. and Weber, A. (2018). The many faces of sustainability-conscious consumers: A category-independent typology. *Journal of Business Research*, 91 https://www.sciencedirect.com/science/article/pii/S0148296318302588
84. https://goodonyou.eco/how-we-rate/
85. BlackRock (2020). *Troubled Waters.* https://www.blackrock.com/us/individual/literature/whitepaper/bii-water-risks-july-2020.pdf
86. European Central Bank (2020). *Guide on climate-related and environmental risks*. https://www.bankingsupervision.europa.eu/legalframework/publiccons/pdf/climate-related_risks/ssm.202005_draft_guide_on_climate-related_and_environmental_risks.en.pdf
87. McKinsey & Company. 2020. *The State of Fashion 2020 Coronavirus Update.* https://www.mckinsey.com/~/media/McKinsey/Industries/Retail/Our%20Insights/Its%20time%20to%20rewire%20the%20fashion%20system%20State%20of%20Fashion%20coronavirus%20update/The-State-of-Fashion-2020-Coronavirus-Update-final.pdf
88. https://www.google.co.uk/amp/s/amp.ft.com/content/50eb893d-98ae-4a8f-8fec-75aa1bb98a48
89. Boston Consulting Group, 2020. *Rebuilding A More Sustainable Fashion Industry After COVID-19.* https://apparelcoalition.org/wp-content/uploads/2020/04/Weaving-a-Better-Future-Covid-19-BCG-SAC-Higg-Co-Report.pdf
90. Mariana, M. and Perez. (2016). Innovation as Growth Policy: The Challenge for Europe. *Oxford University Press*, Ch. 9, pp. 227-262. https://econpapers.repec.org/paper/srussewps/2014-13.htm
91. https://wwf.panda.org/wwf_news/?539631/Open-Letter-on-Sustainable-post-Covid-recovery-in-textile-sector
92. The Policy Hub (2020). *Proposal for an EU Green Recovery Plan in the Textile, Apparel and Footwear Industry.* https://assets-global.website-files.com/5dcda718f8a683895d9ea394/5ee900cb33584060390fac17_Policy%20Hub_Green%20Recovery%20Plan%20Proposal_June2020.pdf.
93. Boston Consulting Group, 2020. *Rebuilding A More Sustainable Fashion Industry After COVID-19.* https://apparelcoalition.org/wp-content/uploads/2020/04/Weaving-a-Better-Future-Covid-19-BCG-SAC-Higg-Co-Report.pdf
94. NBIM (2020). *Water management: Expectations of companies.* https://www.nbim.no/contentassets/635a7a472b944e3281faf6ea2e57354e/water-management_2020_web.pdf
95. McKinsey & Company (2018). *The State of Fashion 2019.* https://www.mckinsey.com/~/media/McKinsey/Industries/Retail/Our%20Insights/The%20State%20of%20Fashion%202019%20A%20year%20of%20awakening/The-State-of-Fashion-2019-final.pdf
96. Boston Consulting Group, 2020. *Rebuilding A More Sustainable Fashion Industry After COVID-19.* https://apparelcoalition.org/wp-content/uploads/2020/04/Weaving-a-Better-Future-Covid-19-BCG-SAC-Higg-Co-Report.pdf
97. World Bank, 2019. *Quality Unknown: The invisible water crisis.* https://openknowledge.worldbank.org/bitstream/handle/10986/32245/9781464814594.pdf?sequence=8&isAllowed=y
98. https://ec.europa.eu/info/business-economy-euro/company-reporting-and-auditing/company-reporting/non-financial-reporting_en
99. European Environmental Bureau (2020). *EU Industrial Strategy for Achieving the "Zero Pollution" Ambition Set with the EU Green Deal.* https://mk0eeborgicuypctuf7e.kinstacdn.com/wp-content/uploads/2020/03/EEB-basic-elements-on-Industry-Strategy-IED-FIN-1.pdf
100. https://www.cdp.net/en/articles/governments/a-major-chance-to-mainstream-non-financial-reporting-in-europe
101. Sciencebasedtargetsnetwork.org
102. https://www.roadmaptozero.com/
103. https://apparelcoalition.org/the-higg-index/
104. https://a4ws.org/
105. https://thefashionpact.org/?lang=en

For more information please contact:

CDP Water Security

Cate Lamb
Director

Christina Copeland
Associate Director

Catherine Moncrieff
Associate Director

Laureen Missaire
Senior Project Officer

Fraser O'Halloran
Project Manager

This report has been created as part of a three-year project (2020-2022) which aims to tackle the interconnected water challenges – pollution, scarcity, governance, access – that stakeholders involved in, and living adjacent to, textile and apparel production may contribute to or face. Alongside CDP, the project will be delivered by Alliance for Water Stewardship (AWS), Aid by Trade Foundation, Solidaridad and Water Witness, with funding from the Swiss Agency for Development and Cooperation (SDC).

CDP Worldwide
Level 4
60 Great Tower Street
London EC3R 5AD
Tel: +44 (0) 20 3818 3900
water@cdp.net
www.cdp.net

© CDP 2020