



Changing fashion

The clothing and textile industry at the brink of radical transformation

Environmental rating and innovation report 2017

Contents

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oekom research AG ensured the objectively
transparent assessment of all companies
assessed through the use of a stringent and
clear methodology and the application of
monitoring processes.

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Executive summary

The clothing and textile industry offers style and functionality. It sells dreams and provides a stage for self-expression. But the industry produces an environmental impact which is far from sustainable. Looking at the environmental challenges in this sector, WWF is asking: **How will fashion brands fulfil customers' dreams in the future while contributing to the well-being of society and the environment at large?**

Doing 'business as usual' will not be an option for the industry nor for the planet in the long run. To stay financially successful, companies will find it necessary to reduce their environmental impact and to respect the ecological boundaries of our planet. WWF's vision is that the clothing and textile industry contributes to a world in which humans live in harmony with nature. There is a long way to go to make this vision come true, but WWF believes it to be possible, if the industry takes **bold action and leadership for transformation**.

This report shows how frontrunners are improving the environmental performance of their value chain, and how they are adopting innovative business models which could reduce the sector's impact on the environment drastically. These innovations, in combination with disruptive global mega-trends such as digitalization, indicate that the clothing and textile industry is at the brink of radical transformation. It is time to use these transformative dynamics to create a radically different and more sustainable clothing and textile industry.

Being far from sustainable is an ecological and financial risk

The clothing and textile industry has an ecological footprint which is far from sustainable. **The industry emits 1.7 billion tonnes of CO₂ annually, is responsible for extensive water use and pollution, and produces 2.1 billion tonnes of waste annually**, to name just a few aspects.¹

Global consumption of clothes doubled between 2000 and 2014.² Today, on a global average, every person buys 5kg of clothes per year, but in Europe and the USA the figure is as high as 16kg.³ Overall apparel consumption is projected to rise even further, from 62 million tonnes in 2015 to 102 million tonnes in 2030. This projected increase in global fashion consumption will create further environmental stress and risks.⁴

Environmental impacts should furthermore be of financial concern to brands. A recent study by the Boston Consulting Group indicates that brands' profit margins could fall by at least 3 percentage points by 2030 due to rising costs for labour, raw materials and energy, if companies continue with business as usual. This would add up to approximately €45 billion per year of lost profits for the industry.⁵



WWF sees three areas for leadership:

- 1. Environmental efficiencies:** The clothing and textile industry improves its most material environmental performance (e.g. water use and pollution, climate protection, chemicals).
- 2. Innovation and transformation:** The industry reinvents its business models, with the aim of decoupling the industry's expected growth from resource use and negative environmental impacts.
- 3. Sustainable consumption:** Consumers find creative solutions to reduce their consumption of clothes, share or swap clothes, and buy mindfully, without compromising their desire for style and self-expression.

The clothing and textile industry at the brink of radical transformation

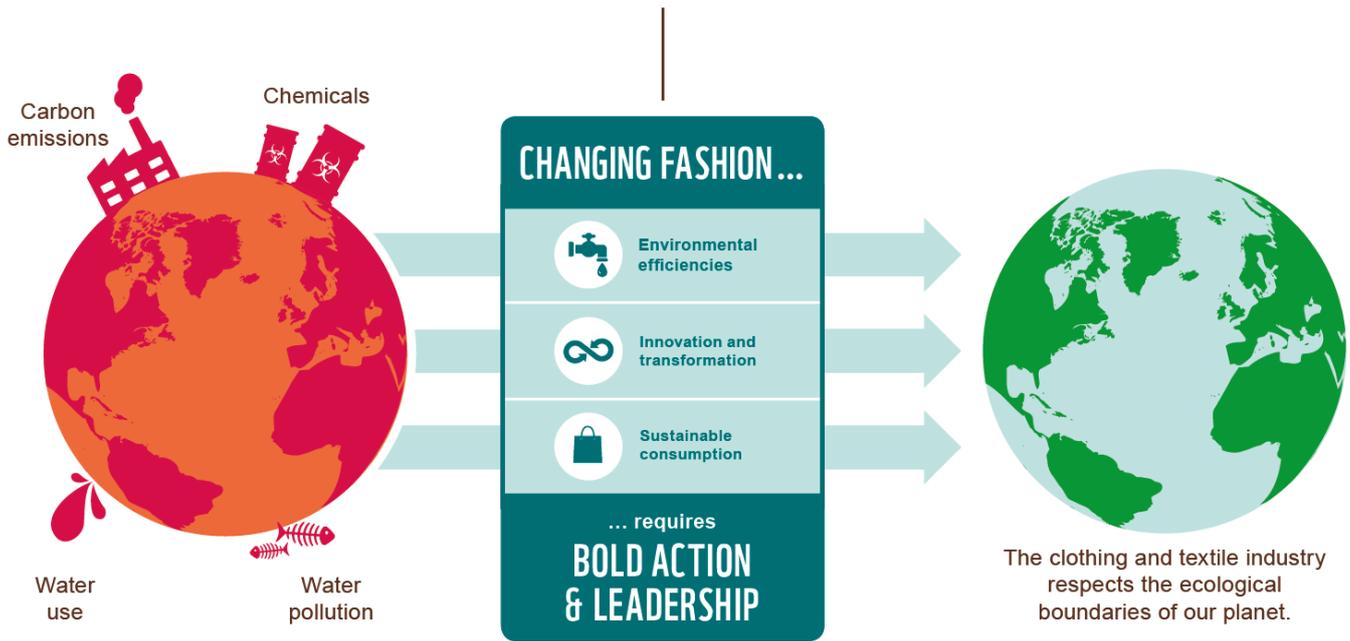


Figure 1: The clothing and textile industry at the brink of radical transformation

Environmental rating of 12 brands pinpoints areas of improvement

The report presents a rating of 12 major brands, based on data provided by oekom research AG. The results show that none of the surveyed companies was ranked in the highest classification of ‘visionary’. H&M was classified as ‘ambitious’; Nike, adidas and Mammut were ranked in the ‘upper midfield’; VF Corporation (e.g. The North Face, Timberland), Hugo Boss, Odlo and Calida ended up in the ‘lower midfield’; and Triumph, Chicorée, PKZ and Tally Weijl were classified in the ‘latecomers / intransparent’ group – meaning they take very limited action regarding environmental issues, or do not disclose any information.

WWF harnessed the corporate ratings of oekom research AG and used the environmentally relevant sections of those ratings for purposes of this report. These sections focus on 11 environmental topics WWF considered most relevant for this report – such as climate change, water use and pollution, raw materials and stakeholder engagement. The rating focuses on environmental topics only since this is WWF’s area of expertise. The brands of various sizes were selected from different segments of the clothing and textile industry, such as premium market, discount market and outdoor/athletic wear.

The more detailed results show that more than half the companies have not taken any steps at all to counter climate change, which is concerning. There are also significant gaps regarding the use of sustainable raw materials, the use of water, and the prevention of water pollution and hazardous substances. However, the results also show that frontrunners of the industry use scientific tools and take action for sound environmental management.

The report calls upon companies to make improvements in the following material aspects: (1) Strategy to operate within the planet’s ecological boundaries, (2) climate change, (3) water management and stewardship, (4) raw materials, (5) joint environmental management in the supply chain, (6) chemicals management, (7) investment, stakeholder engagement and responsibility for public policy, and (8) new business models to decouple consumption from resource use.

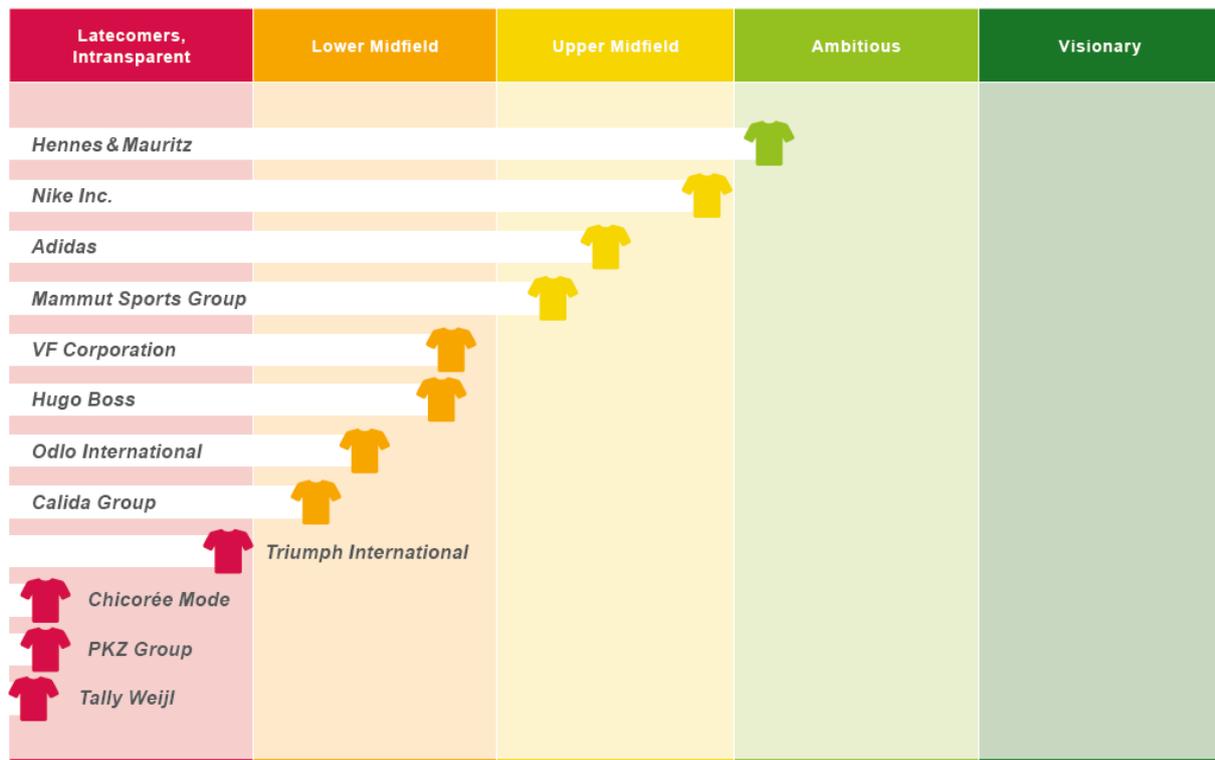


Figure 2: Rating results

Transformational change and innovation for sustainability

To meet the challenges of the future, the clothing and textile industry will need to take bold action for transformational change and innovation. Or, as Nike puts it: "What becomes abundantly clear is efficiencies alone will not suffice – for Nike, or the world. **The world needs systemic change at scale. We must innovate.**"⁶ Improving efficiencies will neither be enough to operate within planetary boundaries nor to achieve the Sustainable Development Goals by 2030.

This report shows examples of how frontrunners in the industry invest in process, product and business model innovations. Searching for and promoting innovation to transform long-established, unsustainable business practices are essential. A few brands and start-ups aspire to invent new business models that have the potential to radically transform the industry towards one that operates within the Earth's carrying capacity. These first-movers are pulling the industry away from its linear 'make-sell-dispose' approach towards more circular business models. The report draws attention to business model innovations in the area of reduction, repair, reuse, sharing and recycling, but also to product innovations (e.g. more sustainable fibres) and innovative processes.

Consumers find creative solutions to reduce the industry's environmental impact

This report has also gathered creative ideas on how **consumers can contribute to reducing the industry's environmental impact**. To have a positive impact, consumers could, for example:

- Buy less
- Simplify their style and wardrobe, for example by using timeless, high-quality clothes and enriching those with accessories and second-hand items
- Wash, care for and repair their clothes
- Buy second-hand clothes, swap or rent their outfits, or bring them to a recycling facility
- Buy organic, green and high quality items
- Use their voice to inform friends, to provide feedback to their preferred brands, to vote on relevant public policy, and to support non-governmental organizations.

This report – together with follow-up reports for tracking of progress – should be seen as an encouraging and constructive contribution to the sector's transformation towards sustainability. WWF will repeat this rating in two to three years to track progress. This report is only one piece in a whole range of activities that the WWF network is carrying out in the clothing and textile industry.



Introduction - Towards a more sustainable clothing and textile industry



Far from sustainable

Brands and retailers in the clothing industry offer style and functionality, sell dreams and strongly influence our beliefs and behaviours. And they produce an ecological footprint which is far from sustainable. According to estimates, the clothing and textile industry emits 1.7 billion tonnes of **CO₂** annually and is therefore a significant contributor to global warming.⁷ It increases local **water impacts** due to water pollution and the high volumes of water required for growing raw materials and wet processing. The textile industry uses a lot of **toxic chemicals**, particularly in processing, which often leads to severe damage to water basins, soil and biodiversity.⁸ In addition, the industry produces 2.1 billion tonnes of **waste** such as disposed clothing or off-cuts each year, of which only 20 per cent is recycled.⁹

The environmental pressure is exacerbated by the fact that consumption of clothes increases year by year and that consumers keep their garments only about half as long as they did 15 years ago. **Global consumption of clothes doubled between 2000 and 2014.**¹⁰ Today, on a global average, every person buys 5kg of clothes per year, but in Europe and the USA the figure is as high as 16kg.¹¹ Overall apparel consumption is projected to rise even further, from 62 million tonnes in 2015 to 102 million tonnes in 2030.¹² This projected increase in global fashion consumption will create further environmental stress: by 2030, the global clothing and textile industry is expected to use 50 per cent more water, emit 63 per cent more greenhouse gases (GHGs), and produce 62 per cent more waste, compared to 2015.¹³

Environmental impacts should also be of financial concern to brands. A recent study by the Boston Consulting Group indicates that brands' profit margins could fall by at least 3 percentage points by 2030 due to rising costs for labour, raw materials and energy, if companies continue with business as usual. This would add up to approximately €45 billion per year of lost profits for the industry.¹⁴ Another study indicated that if the Danish apparel sector paid the entire externalized costs of indirect land-use change, water consumption, air and water pollution and GHG emissions, the total costs would be equivalent to 11.7 per cent of total revenue for the sector. As the average profit for the sector in 2012 was 6 per cent of revenue, integrating the environmental footprint would result in the sector operating at a net loss.¹⁵

Due to these challenges in the clothing and textile industry WWF is asking: **How will fashion brands fulfil customers' dreams in the future while contributing to the well-being of society and the environment at large?**



Vision: to build a future in which people live in harmony with nature

WWF’s vision is to stop the degradation of the planet’s natural environment and to build a future in which people live in harmony with nature. In the case of the clothing and textile industry, this means considering the ecological boundaries of our planet and its limited resources. WWF’s *Living Planet Report* demonstrates that we’re consuming nature’s resources and services as if we had 1.6 Earths at our disposal. In addition, research suggests that we’ve already crossed four of nine “Planetary Boundaries” – safe thresholds for critical Earth system processes that maintain life on the planet (see figure 3).¹⁶ The Planetary Boundaries concept, defined by researchers from the Stockholm Resilience Centre,¹⁷ describes an environmentally safe operating space for human activity. There are various concepts that refer to living within the planet’s ecological limits.

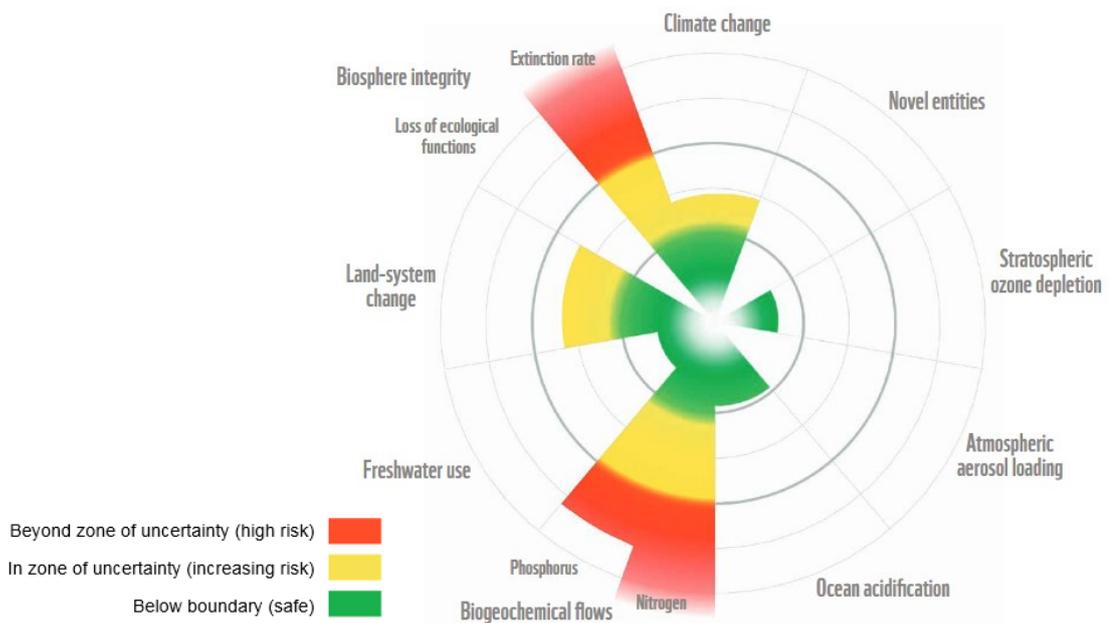


Figure 3: Planetary boundaries (Steffen et al. 2015)

The clothing and textile industry needs to find a modus operandi which allows it to respect the ecological boundaries of our planet and its limited resources, for example regarding climate change, biochemical flows, freshwater use and pollution. This would enable the clothing and textile industry to contribute to a future in which humans live healthy lives in harmony with nature, without overusing resources or polluting more than the planet can take. This approach would also take the industry, and the world, closer to achieving the universal **Sustainable Development Goals** by 2030. There is a long way to go to make this vision come true, but WWF believes it to be possible, if the industry and related stakeholders take bold and ambitious steps for transformation.

This Report

This report by WWF Switzerland – together with follow-up reports for tracking of progress – should be seen as an encouraging and constructive contribution to the sector’s transformation towards operating within the ecological boundaries of our planet. It is only one piece in a whole range of activities the global WWF network is carrying out in the clothing and textile industry (see box 1 on page 11 for some examples).

The report is structured as follows. Chapter 1 provides an overall picture of the clothing and textile industry. It explores the sector’s value chain, market developments, dynamics and trends, and puts them into relation to the key environmental impacts of the sector. Chapter 2 describes the results of an environmental performance benchmark, based on data provided by oekom research AG. Chapter 3 explores how innovations by the sector can lead to transformational change and to becoming future fit as an industry. The report demonstrates how innovation can lead to more sustainable products, processes and even business models. Finally, chapter 4 provides recommendations for sustainable consumer behaviour.

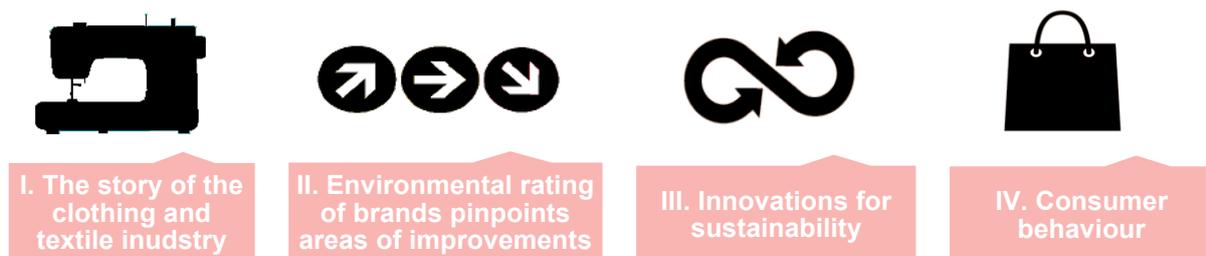


Figure 4: This report

This report focuses on environmental issues, and does not address social aspects and labour rights. While WWF acknowledges the importance of social matters and the devastating and unacceptable conditions many employees in parts of the clothing and textile industry are suffering from, our expertise lies in improving the environmental impacts of the sector. Organizations like the **International Labour Organization**, the **Fair Wear Foundation** and the **Clean Clothes Campaign** are dedicated to improving working conditions and supporting the empowerment of workers in the global clothing and textile industries. WWF strongly supports their efforts.

BOX 1: WWF's engagement with the clothing and textile industry

WWF has a long-standing history of engagement with the clothing and textile industry and takes various measures to help transform this sector towards a more sustainable modus operandi. Our approach is to co-create science-based and innovative solutions, which lead to positive impacts:

Transformational partnerships. The global WWF network partners with major apparel and textiles companies to improve their environmental performance. WWF and its partner companies set ambitious environmental targets and jointly implement projects along the supply chain. We undertake comprehensive due diligence processes, which include social issues, before collaborating with a company. Current partner companies of the global WWF network include *H&M*, *Levi Strauss*, *Marks & Spencer* and others.

Promotion of more sustainable cotton. WWF is a co-founder of the *Better Cotton Initiative* (BCI), publishes an annual *sustainable cotton ranking report* in collaboration with Pesticide Action Network UK and Solidaridad, and is also involved in *organic cotton acceleration projects*, for example in India and Pakistan.

Water stewardship. WWF's *water stewardship* approach supports brands in setting holistic strategic responses to water, and supporting local-level collective action for water governance in many key textile production regions. For example, *WWF and H&M* have been working together since 2011 on water stewardship, which makes H&M's own operations and value chain cleaner and more water efficient, and brings companies, governments, NGOs and communities together to share water resources in a more sustainable way. Furthermore, WWF offers a *water risk filter* and has recently published a report on *imported water risks*.

Science-based targets. The *Science Based Targets Initiative* is a joint initiative by CDP, UN Global Compact, World Resource Institute and WWF. It supports companies in setting GHG emission reduction targets consistent with the level of decarbonization required by science to limit global warming to less than 1.5°C/2°C compared to pre-industrial temperatures. Companies that have already set or are committed to science-based targets include Kering, asics and Puma. Guidance on sectoral decarbonization approaches for the apparel industry has recently been launched.

Roundtables and initiatives. WWF is contributing its expertise to various roundtables and initiatives within the textile industry. For example, we are an active member of the *Sustainable Apparel Coalition*, which focuses on building the Higg Index, a suite of tools, which brands, retailers and manufacturers can use to assess the sustainability impacts of their entire value chains and identify areas for improvement.

Changing consumer behaviour. We engage with customers of our partner companies and the public to raise awareness and to inspire change.

I. The story of the clothing and textile sector



A global industry with a highly complex supply chain

The global clothing industry is worth US\$2.4 trillion in value.¹⁸ Countries like Bangladesh, China, India, Turkey, Pakistan and Vietnam are top supplying countries of garments for the global clothing and textile markets.¹⁹ Some countries are extremely dependent on the clothing industry. For instance, in Bangladesh it accounts for about 80 per cent of total export earnings and generates over 4 million direct jobs.²⁰

The clothing and textile industry is built on a complex and diversified value chain including many actors: raw material manufacturers, fibre and fabric producers, wet processors, garment assembly companies, brands, retailers, consumers, and disposal/recycling agents (see figure 5 on page 14).

Clothes are made from natural fibres, chemical fibres or a mix of both. Around a third of fibres used for clothing are natural fibres such as cotton, wool, silk, flax, hemp and jute; the other two-thirds are synthetic fibres such as polyester, nylon, polyamide, acrylic and polypropylene, or natural polymers like viscose, acetate and modal.²¹



Top left to bottom right:
Designer studio, cotton farmer, industry workshop scenery, jeans

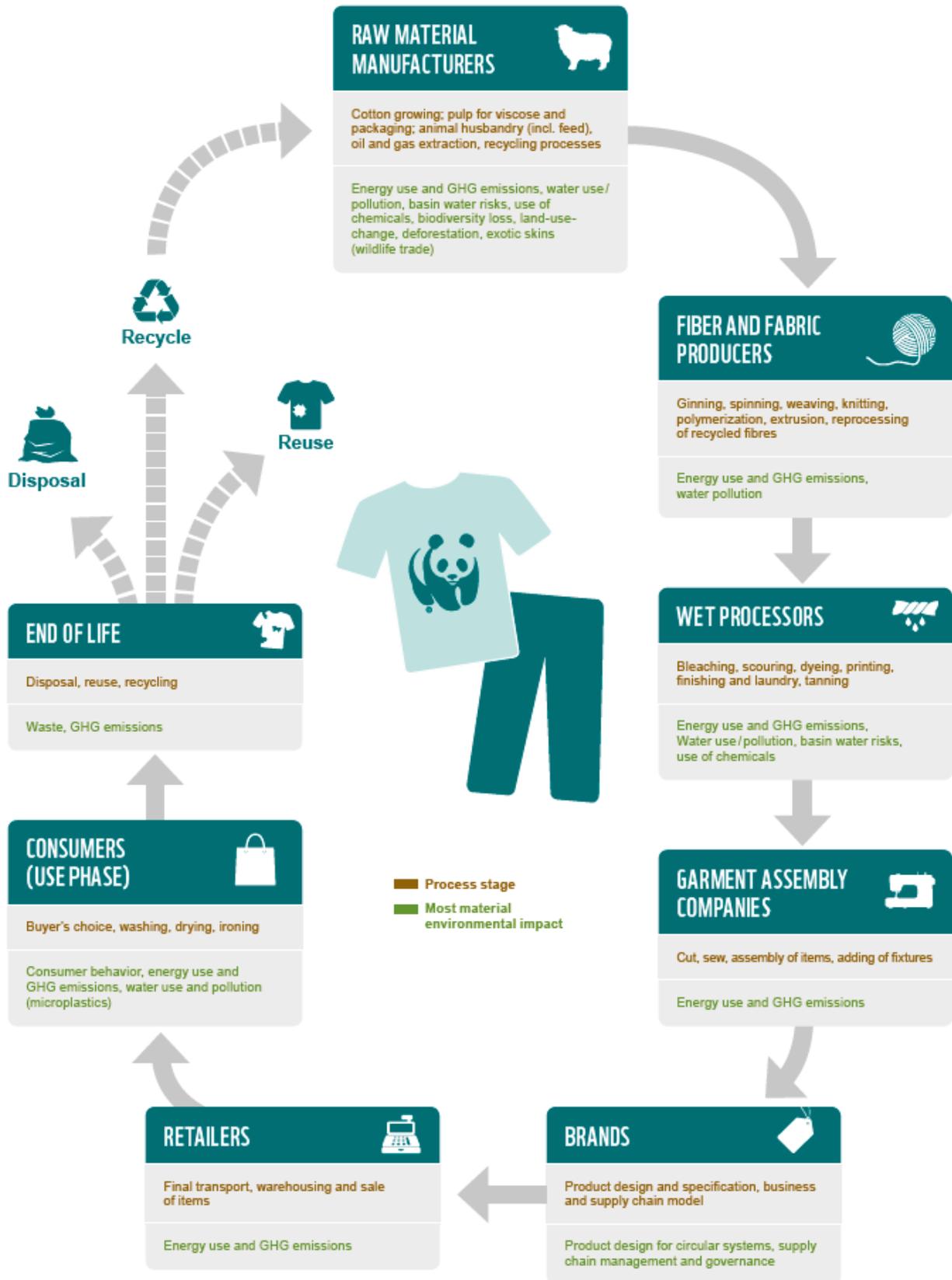


Figure 5: The clothing and textile value chain

Significant environmental impacts

The clothing and textile sector faces many sustainability issues along the supply chain.²² The four most pressing environmental impacts – energy use and greenhouse gas emissions, water use, pollution through chemicals and microplastics, and waste – are described in more detail below.

Energy use and greenhouse gas emissions. According to estimates, the clothing and textile industry emits 1,7 billion tonnes of CO₂ annually and is therefore a significant contributor to global warming.²³ This contribution to global GHG emissions is alarming, particularly when taking into account that the level of atmospheric CO₂ already today exceeds the safe human operating space by 20 per cent.²⁴ There are several GHG emission hotspots in the apparel supply chain, particularly the processing phase, the washing and drying of garments by consumers and the production of raw materials.²⁵

Water use, water quality and water basin risks. The clothing and textile industry uses high volumes of water, particularly in raw material production like cotton growing, in dyeing and wet processing stages, and during the use phase by consumers. It is estimated that growing one kilogram of cotton needs up to 20,000 litres of water, depending where and how it is grown.²⁶ The World Bank estimates that 20 per cent of industrial water pollution comes from textile dyeing and treatment.²⁷ Water use and pollution lead to increased environmental stress at the water basin level, particularly in apparel producer countries such as India and China, which are already suffering from medium or high levels of water stress and water pollution.²⁸

Use of chemicals and microplastics. The production of fabrics requires different kinds of harmful chemicals, which can be toxic and cause damage to the environment as well as the workforce. Chemicals are used throughout the apparel supply chain both in natural fibre production (pesticides) and in the production of final garments (e.g. dyes and colourants, detergents, water or stain repellents, performance enhancing coatings, fire retardants).²⁹ Conventional cotton accounts for 24 per cent of global sales of insecticides and 11 per cent of all pesticides.³⁰ Clothing made from polyester poses an as yet unknown threat to the oceans and eventually to the planet. When washing these clothes, microplastic fibres are released, which find their way to the oceans. According to a recent study by IUCN,³¹ clothes and textiles are the number one source of primary microplastic to the oceans, accounting for around 35 per cent of the global total.³²

Waste. Currently 80 per cent of all clothing produced ends up in incinerators or landfill, and only 20 per cent is recycled.³³ The US Environmental Protection Agency estimates that textile waste occupies nearly 5 per cent of all landfill space.³⁴ However, one challenge is that, globally, collection rates for clothes are very low. Germany outperforms most countries in recycling by collecting almost 75 per cent of all used clothing. But elsewhere the collection rates are far lower: 15 per cent in the United States, 12 per cent in Japan and 10 per cent in China.³⁵ Another challenge when trying to reduce waste is that methods of recycling old clothes such as shredding or chemical digestion have their limitations in terms of costs and lowered quality. Several companies invest a lot in research and development of recycled clothes. However, design for disassembly and circularity, as well as quality issues, are yet to be fully addressed. H&M, for example, says the company can only mix 20 per cent of recycled cotton fibres into new clothes at the moment for quality reasons.³⁶

BOX 2: Key market trends

To transform markets, it is important to understand market trends that are drivers of or barriers to sustainable transformation of the industry. For example, the importance of brand value and reputational risks could encourage brands to strive for more sustainable products, which can be used as a competitive advantage in marketing campaigns. Automation and digitalization will force brands to innovate their business models – this could, ideally, be used to drive more sustainable business models. However, the fast-fashion trend and population growth could put further pressure on natural resources and hence counter the ambition of a more sustainable fashion industry. Relevant key industry trends are summarized below:

Competitive market. Brands and clothing retail companies are in a highly competitive market; they try to maintain and grow their market share through intensive marketing campaigns. Due to low requirements for initial capital investment there are numerous new brands and market entrants. Substitutes such as homemade clothes or second-hand clothing are currently a negligible threat to the established market players.³⁷

E-commerce, social media and big data. Online and mobile technologies are significantly shifting the way consumers purchase apparel and textile products. To respond to this trend, established and new apparel retailers are developing their online capabilities and analysing big data to predict new trends.³⁸

Sales and profitability. The sector is characterized by high volatility, low predictability and low profit margins. A trend towards more and more discounts to attract consumers has led to lowered profit margins for stores. Volatile raw material prices, particularly of natural fibres due to their dependency on good weather conditions, have a significant impact on profitability.³⁹

Fast fashion. Fashion products move increasingly fast from the design to the store, which is reshaping the product life-cycle as well as production patterns in the sector. In 2000, the average store had only two collections per year. Currently, the market average is around five, but can be as high as 12-16 (H&M) or even 24 (Zara). By compressing production cycles and turning out up-to-the-minute designs, fast-fashion businesses have enabled shoppers not only to expand their wardrobes but also to refresh them quickly. Consumers keep clothing items about half as long as they did 15 years ago,⁴⁰ and global consumption of clothes doubled between 2000 and 2014.⁴¹

Population growth and growing middle class. Demand for textile and apparel products is fuelled by population growth and the rising middle class in emerging economies.⁴² The Boston Consulting Group has estimated that overall apparel consumption will rise from 62 million tonnes in 2015 to 102 million tonnes in 2030.⁴³

Automation, digitalization and technology. Garment and textile production is characterized by low-skill and labour-intensive production that requires routine and manual tasks. Studies estimate that up to 88 per cent of these jobs could be at risk of automation. The use of 3D printing and robotics could potentially disrupt the industry and its complete value chain.⁴⁴



II. Environmental rating of brands pinpoints areas of improvement

Benchmark of 12 brands

To incentivize the sector towards strong environmental performance, WWF Switzerland has assessed and compared the environmental stewardship of 12 major brands. The rating is based on data provided by oekom research AG and considers a comprehensive set of environmental issues such as GHG emissions, water use and pollution, chemicals management, waste, and others.

In this environmental rating, **none of the surveyed companies managed to achieve the highest classification of ‘visionary’**. H&M was ranked as ‘ambitious’; Nike, adidas and Mammut as ‘upper midfield’; and VF Corporation (e.g. The North Face, Timberland), Hugo Boss, Odlo and Calida as ‘lower midfield’. Triumph, Chicorée, PKZ and Tally Weijl were ranked in the ‘latecomers / intransparent’ group (Figure 6). These findings are in line with those of other studies. A recent study by Boston Consulting Group and Global Fashion Agenda, for example, indicates that over half of the industry has shown little effort so far.⁴⁵

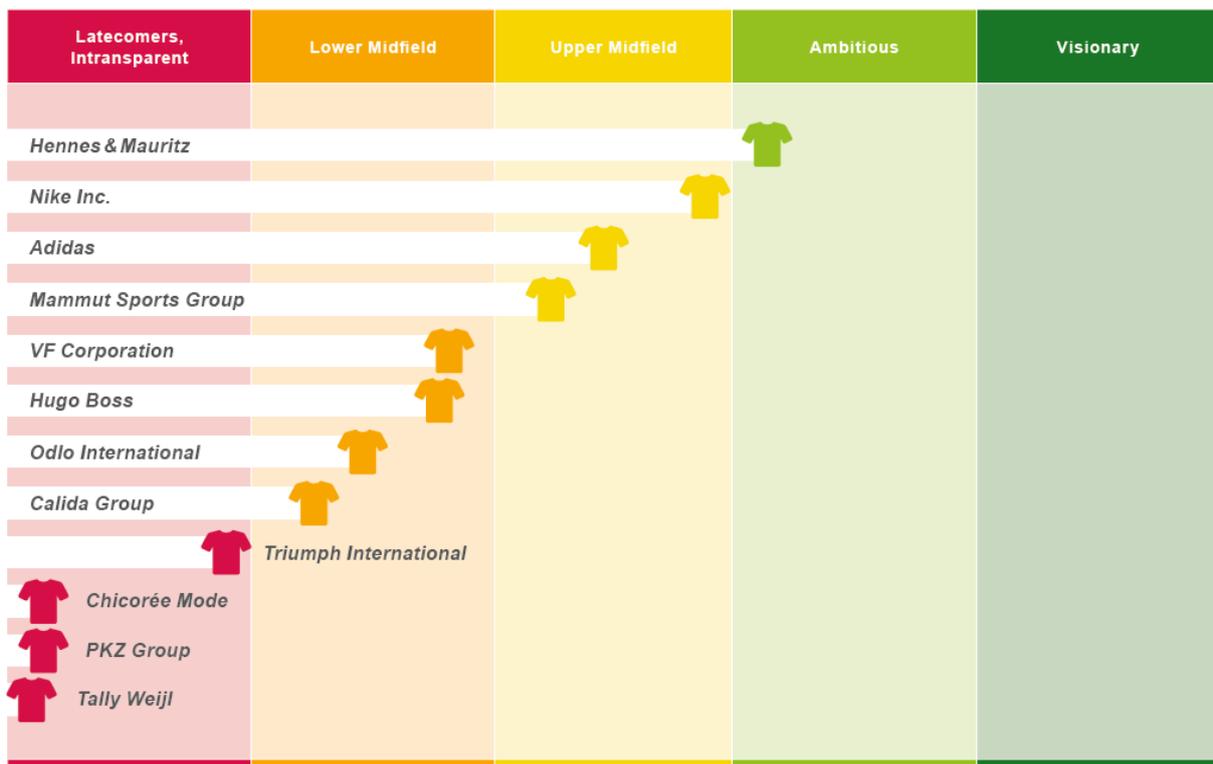


Figure 6: Rating Results

BOX 3: About the rating

The selection of brands reflects the following aims: (1) analysing brands from different segments such as premium market, discount market and outdoor/athletic wear; (2) looking at brands of various sizes; (3) including the most relevant clothing companies headquartered in Switzerland, based on turnover. Together, these brands represent approximately 5-8 per cent of the global clothing market.

The aim of WWF Switzerland's first rating of the clothing and textile industry is to serve as a baseline study for WWF's vision for a more sustainable clothing and textile industry. WWF would like to see significant improvements towards operating within the ecological limits of our planet, and is keen to encourage and collaborate with companies to foster progress in line with one planet thinking. The aim is to include more clothing and textile brands in the future. By regularly repeating the rating, we aim to pinpoint areas for possible improvement, enable monitoring of future improvements and track progress.

The rating is based on data provided by the internationally renowned sustainability rating agency **oekom research AG**. oekom research AG used their standard rating methodology for the clothing and textile sector.

To build up a comprehensive picture of companies, oekom's analysts collected information both from the companies and from other sources such as media, research institutes and NGOs. At the time of the initial compilation of the rating, the companies were given the opportunity to comment on and add to the findings. H&M, Nike, adidas, Mammut, Hugo Boss, Triumph and PKZ provided feedback during the rating process and supplemented the draft rating with additional internal company information.

Environmental policy and management systems
Climate change strategy
Travel and transport
Environmental management in the supply chain
Use of environmental assessment tools in product design
Raw materials
Water use and hazardous substances in manufacturing
Environmental management of retail stores (if applicable)
Eco-efficiency
Stakeholder engagement, human rights, community involvement and public policy influence
Customer and product responsibility (e.g. substances of concern in products and sustainable product portfolio)

oekom research AG has benchmarked companies against approximately 100 criteria. One-third of the criteria were sector-specific, while two-thirds were general ones which could be applied to any sector. Out of the criteria provided on each company by oekom research AG, WWF selected almost 60 that were relevant to the company's environmental performance. The data used for this report was compiled or last updated between late February and early May 2017.

oekom research AG attributed a weighting to the different criteria, depending on the environmental impact of the specific topics in the context of the textiles and apparel industry. The criteria concerned with raw materials and manufacturing processes, for example, are underlined with a higher weighting than transport and travel.

Figure 7: Rating sections

Results of the environmental rating

Figure 8 shows how the 12 selected companies were rated in 11 areas relevant for a comprehensive environmental management. The following key points can be drawn from the detailed analysis of data provided by oekom research AG on the surveyed brands in the clothing and textile industry.

Company	Country	Participation in Rating Process	Overall score environmental rating	Environmental policy and management systems	Climate change strategy	Travel and transport	Environmental management in the supply chain	Use of environmental assessment tools in product design	Raw materials	Water use and hazardous substances in manufacturing	Environmental management of retail stores (if applicable)	Eco-efficiency	Stakeholder engagement, human rights, community involvement and public policy influence	Customer and product responsibility (includes e.g. substances of concern in products and sustainable product portfolio)
				Environmental policy and management systems	Climate change strategy	Travel and transport	Environmental management in the supply chain	Use of environmental assessment tools in product design	Raw materials	Water use and hazardous substances in manufacturing	Environmental management of retail stores (if applicable)	Eco-efficiency	Stakeholder engagement, human rights, community involvement and public policy influence	Customer and product responsibility (includes e.g. substances of concern in products and sustainable product portfolio)
Hennes & Mauritz	SE	X	Ambitious	Yellow	Green	Yellow	Green	Yellow	Yellow	Green	Yellow	Yellow	Green	Green
Nike Inc.	US	X	Upper midfield	Yellow	Green	Yellow	Green	Green	Yellow	Green	Yellow	Yellow	Yellow	Yellow
Adidas	DE	X	Upper midfield	Green	Yellow	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Mammut Sports Group	CH	X	Upper midfield	Yellow	Red	Green	Green	Red	Yellow	Yellow	White	Red	Green	Yellow
VF Corporation	US		Lower midfield	Yellow	Green	Yellow	Yellow	Red	Yellow	Yellow	Red	Yellow	Yellow	Yellow
Hugo Boss	DE	X	Lower midfield	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Odlo International	CH		Lower midfield	Red	Red	Yellow	Yellow	Red	Yellow	Yellow	White	Red	Red	Yellow
Calida Group	CH		Lower midfield	Red	Red	Yellow	Yellow	Red	Yellow	Yellow	Red	Red	Red	Yellow
Triumph International	CH	X	Intransparent / latecomers	Yellow	Red	Red	Red	Red	Red	Red	Red	Red	Red	Yellow
Chicorée Mode	CH		Intransparent / latecomers	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
PKZ Group	CH	X	Intransparent / latecomers	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Tally Weijl	CH		Intransparent / latecomers	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red

Figure 8: Rating results per section

The criteria and rating results are explored and discussed in more detail in **appendix I**. Furthermore, WWF Switzerland has conducted an in-depth analysis of the companies' support of relevant public policy in Switzerland. The findings of this public affairs analysis are displayed in **appendix II**. In summary, the data provided by oekom research AG shows the following:

Overall environmental management. Overall, the clothing and textile industry does not perform well in environmental management. Only a few of the surveyed leading brands have taken ambitious or visionary action in selected areas. The rating also shows a large spread of environmental performance among companies, with some of them taking ambitious action, and others showing no or very little effort towards serious environmental management. Most of the brands, particularly smaller ones with limited geographical reach, take no or very limited action to manage their environmental footprint.

Raw materials, water use and hazardous substances. Raw materials, as well as water use and use of hazardous substances in manufacturing, are important topics in the textile industry, so are given a greater weighting in the overall rating. There are significant gaps and concerns related to criteria in these important aspects of environmental management.

Climate change. More than half of the surveyed companies have taken no or very limited steps to counter climate change. Considering the influence of the clothing and textile industry on climate change discussed above, this finding is concerning.

Scientific tools and eco-efficiency measurement. The uptake of scientific tools and eco-efficiency data collection in the industry is slow. While some companies show efforts in this regard, only one company is committed to the thorough use of environmental assessment tools in product design. Some first-moving companies monitor and manage eco-efficiency of their own operations (e.g. stores) and of their first-tier suppliers. Only few companies, e.g. H&M, implement measures in their extended supply chain and also collect relevant eco data at suppliers beyond tier 1.

Transparency and stakeholder dialogue. Particularly among companies in the lower midfield and 'intransparent/latecomers' category, there is a lack of reporting and transparency, and an apparent lack of commitment to ambitious action. This is undesirable for the environment, but also for consumers, investors, communities, political bodies, and other stakeholders. Furthermore, it is a major economic and reputational risk for the industry itself.



Call to action

The rating revealed that, out of the sample, large companies such as H&M, Nike and adidas, as well as the Swiss-based medium-sized company Mammut, are taking important steps towards reducing the industry's environmental footprint. However, none of the companies assessed in this rating was classified as 'visionary'. From an NGO and environmental perspective, this is not good enough. **We call upon companies in the clothing and textile industry to take more determined action towards better environmental management and to align their business models with the limits of the planet.**

The different market positions provide the companies in question with various levers to shape an environmentally sustainable development of the clothing and textile industry. However, each company can contribute significantly within its own sphere of influence, be it on a national or global level, to a highly specific issue or to the general discourse, as well as alone or in conjunction with its customers, suppliers and competitors. Based on the results of this rating, the following general recommendations can be made to the industry:

1. **Strategy to operate within the planet's ecological boundaries.** Environmental policies, strategies and targets should be determined based on scientific concepts and should be designed to respect the planet's ecological boundaries and limited natural resources. Science-based targets (see below) address this in the context of climate change.⁴⁶ Similar target-setting methods for other boundaries such as freshwater use still need to be developed, but early concepts such as context-based water targets⁴⁷ can be taken into consideration.

2. **Climate change.** Companies should contribute to combating climate change and implementing the 2016 Paris Agreement by setting science-based targets in line with keeping global warming to 1.5°C/2°C. Well over 200 companies worldwide have set or are committed to science-based targets. A few of them stem from the clothing and textile industry such as Kering, asics and Puma.⁴⁸

3. **Water management and stewardship.** Brands need to understand the areas of highest risk and impact on water, and work with raw material producers and suppliers in the wet processing stage to reduce their impacts on local water systems for both quality and quantity. In these water-related supply chain hotspots, companies should implement water-saving technologies, reduce water pollution, apply best practice in wastewater treatment and invest in innovation for water management. Moreover, brands need to understand the context-based water risks along their supply chain, since in some locations there are systemic water challenges that create operational, reputational or regulatory risks for

them and their suppliers. Water risks typically arise at the basin level. Creating or joining collective action at basin-level in high-risk basins helps to address these risks. With the water stewardship approach, stakeholders collaboratively seek to improve practices in key river basins. Joint private and public sector engagement drives stronger water management and governance beyond the company's direct operations and value chain.

4. **Raw materials.** The production of raw materials for natural and synthetic fibres always has an impact on the environment. However, companies should analyse and measure this impact, which depends on the nature of the raw materials, location of production and production processes. Careful choice, design, as well as good sustainability standards and labels can reduce the environmental impacts of raw materials. Equally important is the absolute reduction of use of newly sourced raw materials, for example through repairing and recycling processes, improving the durability and longevity of garments, and reducing consumption. Companies should switch to 100 per cent sustainable materials with the lowest possible footprint. **WWF's sustainable cotton ranking** provides further information on major brands' shift and ambition for 100 per cent sustainable cotton.

5. **Joint environmental management in the supply chain.** Companies should take responsibility for all tiers of their supply chain, including raw materials and manufacturing. This is a challenge in the highly fragmented supply chain of the clothing and textile industry. WWF therefore highly recommends companies to seek

pre-competitive collaboration to tackle 'systemic' challenges in the industry. Pre-conditions to collaboration are transparency, openness to new ways of working and trust. Industry initiatives and platforms as well as standards and certification can foster collaboration. Cooperatively, the measurement and analysis of data, as well as the implementation of eco-efficiency programmes in supply chains, might become more feasible.

6. **Chemicals management.** Companies need to set up a strategy for managing chemicals within their supply chain and should aim for zero hazardous chemicals. This work can be guided by NGO or industry programmes, like the **Greenpeace DETOX campaign** or the **Zero Discharge of Hazardous Chemicals (ZDHC)** programme, which both work on the elimination of hazardous chemicals in the textile supply chain. Furthermore, the company's commitment can be fostered by standards and certification bodies. Circular economy concepts such as **Cradle to Cradle** even go a step further; they work on eliminating all chemicals that could be a problem in circular production chains, where end-of-life-products are directly reused as inputs for the next generation of materials.

7. **Investments, stakeholder engagement and responsibility for public policy.** Companies should increase transparency and take environmental responsibility within their full sphere of influence, including, but not limited to, their investments (e.g. in capital goods and pension funds), their engagement in public affairs (e.g. in their associations or by directly taking positions on public policy), and their engagement with stakeholders (e.g. sustainability reporting).

8. **New business models to decouple consumption from resource use.** Considering the current environmental impact of the textile supply chain, it is unavoidable to discuss the necessity of decoupling consumption from resource use. This could be achieved by new business models, which reduce the speed and level of consumerism, and counter the emerging throwaway culture in the clothing and fashion industry. Brands could develop creative solutions for responsible marketing. Furthermore, product design should be based on insights of life-cycle analysis, and should aim for the garments' longevity and circularity. Further research and development should be conducted on transformational processes, products and even business models, which draw the industry away from the traditional linear model towards a more circular approach.

WWF is looking to build a vision of the ideal action plan. Some of these actions will be feasible within the current operating system of the clothing and fashion industry. However, some will require transformational change, which could potentially disrupt current business models in the sector. The next chapter will look at how the clothing and textile sector could be transformed, beyond gradual efficiency improvements.

III. Innovations for sustainability



Why efficiencies alone will not suffice

To meet the challenges of the future, the sector needs to transform itself radically. Some frontrunners have already acknowledged this fact and have started creating innovative processes, products and business models that might enable these companies to drastically reduce their environmental footprint.

Some companies have recognized and promote the innovation imperative. For example, Nike writes: “What becomes abundantly clear is efficiencies alone will not suffice – for Nike, or the world. The world needs systemic change at scale. We must innovate.”⁴⁹ These innovations will be both technological and social. For companies, this even makes sense from a financial perspective: a recent study has shown that going beyond current solutions would be a business opportunity worth more than €80 billion.⁵⁰

Innovative business models need to take into account the limitations and carrying capacity of the planet. Materializing this quantum leap in the clothing and textile industry requires completely new ways of thinking. Questions in line of the following could and should be asked:

WHAT IF dying did not require any water at all?

WHAT IF all fashion companies used 100 per cent recycled materials?

WHAT IF the clothing and textile industry emitted only very little greenhouse gas during the production process?

WHAT IF our clothes left no harmful traces?

WHAT IF clothing brands ensured that clothes have a second, third, fourth life by leasing them?

WHAT IF repairing and sharing created benefits for consumers and a business case for companies?

Searching for and promoting innovation to transform long-established, unsustainable business practices are essential. Some of the innovation stories WWF has found are summarized in this chapter. These innovations are driven by innovative start-ups, SMEs and leading brands.



BOX 4: Process, product and business model innovations

Various studies distinguish between different forms and levels of innovation, such as process, product and business model innovation.

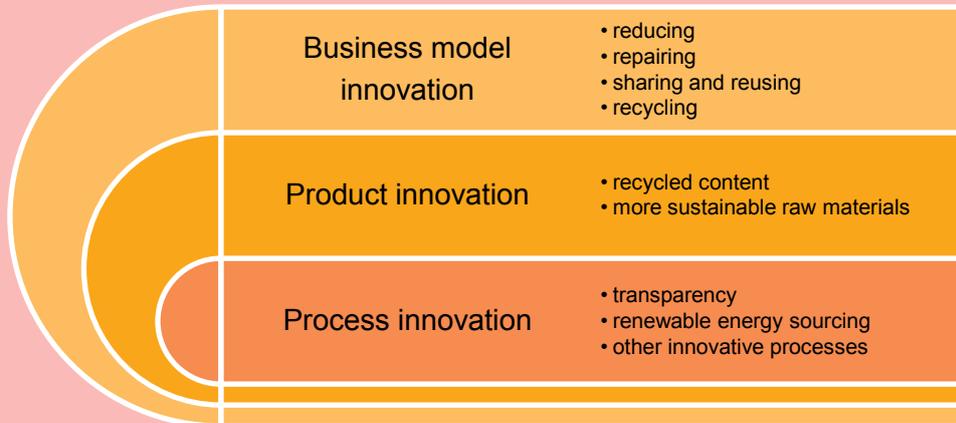


Figure 9: Three-level innovation framework: process, product, and business model innovations.⁵¹

Process innovation leads to manufacturing processes with a reduced environmental footprint, particularly regarding energy, GHG emissions, water and chemicals. **Product innovation** generates better products, e.g. through recycled content or certified raw materials and manufacturing. Process and product innovation often focus on improvements of the current system. In order to see radical transformation of the sector, process and product innovation will not suffice. What is needed, maybe most of all, is business model innovation.

Business model innovation changes the way the business is done and value is created. Business models are the fundamental structures for how companies create, deliver and capture value.⁵² The aim of business model innovation from a sustainability perspective is to drastically reduce the resources and material input needed in the sector's value chain, and to reduce the environmental impact of the sector's activities. Even with transformed business models, companies should be able to deliver excellent service and cater to the needs of their customers. Sustainable business models should enable companies to operate within the ecological boundaries of our planet. The new models could follow the principles of sufficiency and/or circular economy. Sufficiency covers reductionist strategies such as consuming/producing less and slowing down. Circular economy looks at closed-loop systems, repairing and the sharing economy. Other business model innovations with environmental benefits include

- 'product as a service' (e.g. renting instead of selling clothes)
- 'physical to virtual' (replacing physical infrastructure such as retail stores with virtual services)
- 'produce on demand' (producing clothes only when customer demand has been quantified)
- and 're-materialization' (sourcing materials from recovered waste).⁵³

Innovation stories in the clothing and textile sector

The innovation stories listed below were selected based on their level of ambition in terms of reach, relevance, feasibility and scalability. Due to the variety and diversity of existing innovations, we do not claim to provide a complete picture. We describe concepts that are relevant to the environmental impacts of the sector, that have been tested and already exist, and that might be brought to scale.

The stories are structured according to the three-level-innovation framework explained in box 4 – even though it is not always easy to draw a strict line between process, product and business model innovation. Nevertheless, the stories falling under reducing, repairing, reusing/sharing as well as recycling/recycled fibres can be understood as part of **business model innovation**. These follow sufficiency and/or circularity principles and are thus the most far-reaching conceptual remodelling of the clothing and textile industry. More sustainable fibres fall predominantly under **product innovation**. These innovations, although equally important, do not aim to disrupt the current linear take-make-dispose model of the clothing and fashion industry. The final innovation stories – better processes – are **process innovations**, which aim to make transformative improvements to the current operating model of the clothing and textile industry.

Business model innovation

Reducing

Don't buy this jacket by Patagonia: in 2011 Patagonia started this campaign to remind its consumers to only buy stuff if they really needed it. While this can be seen as only a marketing campaign, it may point to new thinking in the industry. Patagonia made a business model out of this campaign by opening a second-hand store in collaboration with eBay.

Repairing

Repair Truck and Worn Wear by Patagonia extends the campaign: Worn Wear celebrates the stories of the clothes worn by consumers, keeps gear in action longer through repair and reuse, and recycles garments when they're beyond repair.

Repairing instruction by Vaude and Ifixit: Vaude and some other companies collaborate with the online repair service platform Ifixit to make repairing of garments at home easy.

Nudie Jeans repair shops: Nudie Jeans offers repair shops at its stores and promotes repairing as a normal and important step along the consumer journey.

Swedish government reduces tax on repairs to clothes: Not only companies can incentivize customers to bring back clothes for repairing, but governments can play a role too. To combat its 'throwaway consumer culture', Sweden has announced tax breaks on repairs to clothes from 25 per cent to 12 per cent.

Reusing and sharing

Yerdle Recommerce: Founded in 2012 as a California Benefit Corporation, Yerdle Recommerce provides logistics and technology that makes it easy for brands to buy back and resell their items. Levi's, Patagonia and Eileen Fisher work with Yerdle to facilitate second-hand sales of their clothes.

Filippa K has innovated its business model to ensure that its products receive a **second or third life through reuse**. The company has operated a profitable second-hand store in Stockholm since 2008 and has started to rent out clothes through its lease concept.

walkincloset.ch, **kleihd.ch** in Zurich, **renttherunway.com**, **sharewear.se** and **rentez-vous.com** are examples of start-ups that offer sharing of clothes through clothes swaps or renting.

Recycling and recycled fibres

Specialized recycling companies such as **I:CO** and **Tell-Text** collaborate with companies to collect clothing for reuse and recycling.⁵⁴

H&M aims to become **100 per cent circular by 2030**. H&M pledges to use 100 per cent recycled or sustainably sourced material by 2030. The **Global Change Award** by H&M fosters several new tech solutions in line with recycling and circular economy.

Fully biodegradable pants by Swiss brand Freitag: F-ABRIC textiles are 100 per cent naturally biodegradable – including threads and selvage. A piece of clothing thus becomes fertile soil for new raw materials and the cycle continues.

Recycled underwear collection by Swiss brand Odlo is 100 per cent recycled and 100 per cent recyclable.

Transforming marine pollution into sportswear. adidas pledges to phase out virgin plastic from its production processes and works with Parley for the Oceans to invent products made from recycled plastic collected in marine environments.

Nike Grind is a palette of premium recycled materials, which is already used in 71 per cent of Nike footwear and apparel products. Nike Grind is part of Nike's work towards a closed-loop future.

Cotton recycling / Re-looping fashion is re-producing old cotton clothing into new material, maintaining the quality of the re-produced fibres. The closed-loop value chain maintains the value of the material, eliminates waste and reduces water consumption.

Product innovation

More sustainable fibres

Coop's own brand Naturaline is **100 per cent certified organic cotton, certified Fairtrade, traceable right back to the farm and CO₂ neutral**. Unavoidable CO₂ emissions are offset directly at the source. Together with the bioRe® Foundation, Coop has built 3,600 biogas plants and installed over 3,000 efficient ovens.

100 per cent sustainable cotton. Large companies such as Ikea, C&A, H&M, Adidas and Nike recognize the environmental effects of cotton farming and have launched efforts to purchase only cotton from sustainable sources in the near future.

Organic cotton accelerator was founded by C&A, H&M, Eileen Fisher, Kering and Inditex. It is a multi-stakeholder initiative that prototypes organic cotton acceleration projects, which should be ready for roll-out and scaling by 2018. Currently, C&A is the world's biggest purchaser of organic cotton.⁵⁵

Indian-based Chetna Coalition (Chetco) has established and maintained **market access** for thousands of farmers in India who produce organic-Fairtrade cotton.

TENCEL® is a lyocell fibre from Lenzing, which is extracted from wood. The fibre production itself is eco-friendly due to the closed loop system.

Process innovation

Innovative processes

Climate positive value chain: H&M wants to make its value chain (from cotton farms to customer's washing machines) climate positive by 2040 through energy-efficiency measures, promotion of renewable energy, climate resilience and carbon sinks.

ColorDry by Nike is a technology that dyes fabric without water. ColorDry instead uses CO₂ in the dyeing process. In FY15, this facility saved 20 million litres of water in Nike's supply chains. Other companies such as adidas and Levi's also promote waterless dyeing.⁵⁶

The North Face's popular Denali jacket is **made of 100 per cent recycled materials and utilizes new dyeing processes** that use up to 50 per cent less water and chemicals. By using recycled plastics in the Denali, 30 million plastic bottles are being kept out of landfill every year.

Archroma Advanced Denim Technology by Patagonia is an innovative dye process that colours denim with sulphur dyestuffs that bond more easily. This results in much shorter production lines that use 84 per cent less water, 30 per cent less energy and emit 25 per cent less CO₂ compared to conventional denim dyeing processes.

The stories selected here reveal that the clothing and textile sector is working on potential transformations towards greater sustainability, even though few of them have been brought to scale nor have they transformed the industry. WWF trusts that the industry has the capability to take the necessary leadership, and will further invest in research and development, creativity and innovation to transform the sector and make it fundamentally better for the environment than it currently is. In support of the industry's transformational aspirations WWF Switzerland is piloting a strategic approach to business model innovation for sustainability in collaboration with corporate partners (see box 5).

BOX 5: Business model innovation for sustainability at WWF Switzerland

Megatrends as drivers. Scarce resources, climate change, digitalization, changing customer needs and demographic change are rapidly transforming our world. This challenges companies, as current business models are often no longer profitable. However, these challenges can also be seen as business opportunities.

Pilot project for business model innovation. WWF Switzerland, Impact Hub Zurich and selected partner companies are currently piloting an approach to strategically develop new business models, which are not only profitable, but also contribute to solving global and industry-specific environmental challenges. In collaboration, WWF wants to set new impulses for an exponential transformation of sectors and markets towards more sustainability, and eventually towards operating the ecological boundaries of our planet.

A lean, collaborative process. In a 'lean innovation process', the partners are aiming to develop new business models. The goal of this process is to create minimum viable products for innovative business ideas, and to test and iterate them by seeking customer feedback. Innovation and transformation can be achieved more effectively through unconventional perspectives of the various stakeholders involved.

Contact us to learn more.

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IV. The consumer's choice



Finally, you and every consumer play an important role in transforming the clothing industry towards sustainability. WWF believes consumers have a crucial role to play, and offers six practical recommendations:

(1) Reduce, (2) Care and repair, (3) Reuse, (4) Recycle, (5) Buy mindfully, and (6) Use your voice!

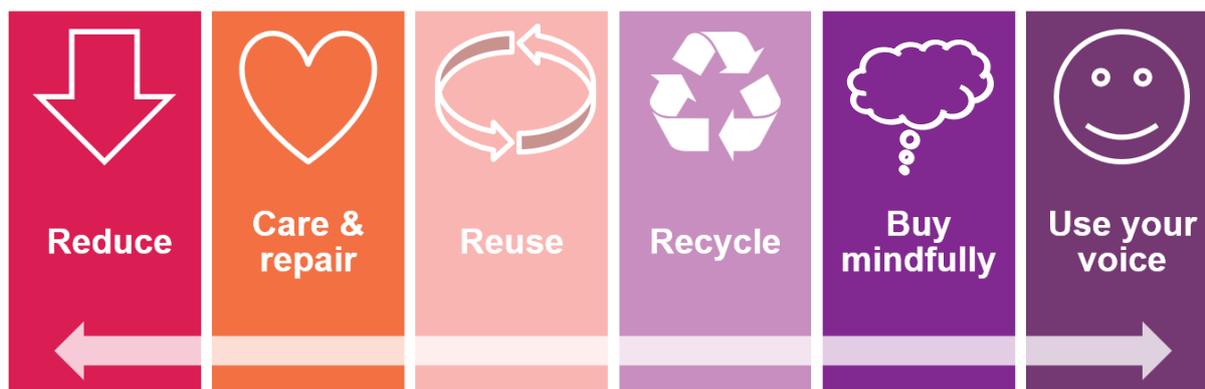


Figure 10: How consumers can contribute to a more sustainable clothing and textile industry

Reduce



Buy less. Of course, we like to buy new items from time to time. But we have so much stuff we don't need, and mostly we wear the same few clothes from our closet. On average, each person in OECD countries buys 20kg of clothing per year.⁵⁷ A study in the UK found that there are 3.6 billion items of clothing left unworn in wardrobes – 57 items per person in Great Britain.⁵⁸ So, if you want to buy a piece, please ask yourself whether you really need it. Because buying less is not only good for the environment, but also helps you save money and time.

Simplify your style, dress your personality. Fashion is a great way to dress your personality. WWF suggests using timeless, high-quality clothes instead of buying several new items too often. The marketing expert Sheena Matheiken showed in the *Uniform Project*TM (→ box 6) how easy it is to wear just a single dress and enrich it with accessories and second-hand items.

BOX 6: Uniform ProjectTM - 1 dress, 365 days

The Uniform Project started in 2009 when a young woman realized she was drowning in the doldrums of an uninspired advertising career. Creatively and ethically drained by the corporate world, she came up with an unusual creative challenge: to wear the same dress for an entire year – but, and this is where the real challenge came in, she'd have to make it look unique every single day. She also vowed to make the challenge more meaningful by turning it into a fundraiser to send less fortunate kids to school.

<http://www.theuniformproject.com>

Simplify your wardrobe. Have a look at your wardrobe and clean from it all the pieces you haven't worn in the past year. There is a lot of guidance on how to simplify your wardrobe. Many people who have followed the advice of Marie Kondo, bestselling author of *Magic Cleaning*, have found that decluttering a wardrobe can even be "life-changing". This of course only works if we do not fill the emptied shelves with new clothes.

Care and repair



Wash and care. One-third of the carbon footprint of the life of a garment occurs during the use phase – through washing, drying and ironing the clothes.⁵⁹ By not using the tumble dryer you can save around 10 per cent of the total carbon footprint and a lot of water – plus your clothes live longer. Washing your clothes less often and at lower temperatures can also reduce their carbon and water footprint significantly.⁶⁰ And did you know that many Japanese and Chinese wash their laundry cold? This is why the footprint in their use phase is very small, compared to people in Europe and North America.⁶¹

Repair your clothes. More and more people want to work with their own hands. If you like craftsmanship (or craftswomanship), consider repairing your clothes. The company Patagonia's Worn Wear campaign tells stories to motivate customers to start repairing their clothes.⁶² There are also more and more repair cafes or sewing shops that offer a space, sewing machines and support. For instance, the NGO **Social Fabric** in Zurich rents out sewing spaces. There are also **repair cafes** in many cities. Meanwhile, tailors offer their services at surprisingly moderate prices. In many cities, you will also find workshops for clothes design and manufacturing, or you can get guidance on YouTube and other online sources.



Reuse



Buy second-hand clothes. Extending the (used) life of clothes overall has the largest potential of lowering the environmental footprint of clothing.⁶³ An easy way to extend the use phase of clothes – apart from using them longer yourself – is to donate them to charities, or sell them on flea markets or online platforms such as Kleiderkreisel.de or ricardo.ch.

Rent your outfits. If you rent your clothes you will share your outfits with others and thereby prolong the life of a garment. This potentially reduces the need to manufacture new clothes. Examples of renting and shared wardrobes are kleihd.ch in Zurich, renttherunway.com, sharewear.se and rentez-vous.com.

Swap your clothes. More recently, swapping online platforms like swishing.co.uk and local swapping parties have become popular. It is easy to organize a clothes swap with your friends or at work. WWF Switzerland regularly organizes clothes swaps in its cafeteria. Host a clothes swap party yourself (see box 7) or simply go to a clothes swap that is organized (semi-)professionally, like the walkincloset.ch.

BOX 7: How to organize a clothes swap party

1. Invite your friends or colleagues to your clothes swap.
2. You will need a space to display/hang up the clothes and a changing room (e.g. a washroom)
3. Everyone brings as many unused fashion items (e.g. clothes, accessories) as they want.
4. All fashion items are displayed in one location (no name tags, no price tags are needed).
5. Everyone is free to pick as many items as they want, for free.
6. Leftover clothes can be donated to a charity.

It's a great way to get new clothes (for free) and give a new life to items you no longer use.

Recycle



Do not throw your clothes into the rubbish bin – even if your clothes are broken and cannot be repaired anymore. Companies that collect clothes are experts in recycling them. They will define whether your donated clothes can be reused, partly recycled, or whether they need to be downcycled, shredded into pieces and used for insulation in the construction sector, for example.

Buy mindfully



Buy organic and green. There are several standards and labels in the clothing and textile industry. WWF particularly recommends buying sustainable cotton, including organic cotton, Fairtrade cotton, Cotton made in Africa and Better Cotton. You can check WWF's *sustainable cotton ranking* or *siegelklarheit.de* for more information on sustainable labels and standards. Swiss and international brands and retailers such as Coop, Migros and H&M, but also smaller companies, offer their own branded ecological collections, and there are other companies that make being green a central part of their business. The website *Getchanged.net* reveals a large collection of fashion brands that produce according to high ecological standards.

Buy wisely. If you buy new clothes, prefer high-quality basics made by responsible brands. You can mix these basics with your swapped, rented or second-hand accessories and fashion items. Consider that trends usually do not last that long, and question whether you must follow all trends.

Use your voice



Address the topic with your friends and colleagues. Inform your colleagues about the negative impact of clothing and textile companies on the environment and discuss potential solutions and actions you can take.

Contact your preferred fashion brand. Send companies your positive or negative feedback on their sustainability performance. If your preferred label does not provide green collections, or does not transparently communicate their environmental and social performance, voice your concern to the company.

Vote for a sustainable transformation of the economy. Particularly in a direct democracy such as Switzerland your vote for a sustainable transformation of the economy counts. WWF Switzerland regularly *publishes recommendations* on how to vote on certain topics, including issues such as green economy.

Support non-governmental organizations. Consider supporting the work of WWF or other NGOs engaged in the fashion industry. WWF strategically approaches the textile and other industries with the aim to move companies' performances towards sustainability. You can *support the work of WWF* as a volunteer, with a donation and much more.

Appendices



Climate change strategy

In this section, oekom research AG analyses whether the company takes a public position on climate change and acknowledges its own responsibility towards climate protection. It also looks at the scope and activities covered by greenhouse gas inventories, as well as the disclosure of calculation method and level of external assurance. It Furthermore, it evaluates greenhouse gas reduction targets and action plans, as well as the disclosure of climate change risks and mitigation strategies.

Hennes & Mauritz	Green
Nike Inc.	Green
Adidas	Green
Mammut Sports Group	Red
VF Corporation	Green
Hugo Boss	Yellow
Odlo International	Red
Calida Group	Red
Triumph International	Red
Chicorée Mode	Red
PKZ Group	Red
Tally Weijl	Red

Discussion: Large companies such as H&M, Nike, adidas, VF Corp and Hugo Boss clearly acknowledge climate change, state their commitment to reduce greenhouse gas emissions, and measure and reduce scope 1 and 2 greenhouse gas emissions. These companies also disclose and have started to manage risks related to climate change such as disruption of global logistics chains through extreme weather events, decrease in the availability of raw materials (e.g. cotton) due to climate change, rising costs for energy, water and raw materials, and other risks. The majority of the companies surveyed in this rating have taken no or very limited steps to implement greenhouse gas inventories, to set reduction targets, and to take action against global warming as an integrated part of their sustainability management.

Travel and transport

This section analyses efficient transport logistics, modes of transportation, and business travel. The criteria cover the companies' measures to reduce business travel and offset emissions and to increase the efficiency of transport logistics, as well as their use of different modes of transportation such as air, road, train and ship.

Hennes & Mauritz	Yellow
Nike Inc.	Orange
Adidas	Orange
Mammut Sports Group	Green
VF Corporation	Orange
Hugo Boss	Yellow
Odlo International	Yellow
Calida Group	Orange
Triumph International	Red
Chicorée Mode	Red
PKZ Group	Red
Tally Weijl	Red

Discussion: Mammut is the only company performing in the 'ambitious' category for this criterion. Mammut uses a system consisting of efficient distribution centres in combination with route planning. Companies in the 'ambitious' and 'midfield' performance level use environmentally favourable modes of transportation such as ship and rail instead of air and road in a strategic way. However, none of the companies strategically uses other measures such as demand and supply planning or improved load capacity to decrease environmental impacts of transport

Environmental management in the supply chain

Regarding environmental management in the supply chain, oekom research AG looks at the content, bindingness and coverage of environmental supplier standards. It also looks at procedures to ensure compliance with the environmental supplier standard, such as assessment of environmental risks in the supply chain, training of key suppliers, supplier audits, procedures and reporting in case of environmental non-compliance and training of employees in purchasing departments.

Hennes & Mauritz	Green
Nike Inc.	Yellow
Adidas	Green
Mammut Sports Group	Green
VF Corporation	Yellow
Hugo Boss	Orange
Odlo International	Yellow
Calida Group	Orange
Triumph International	Red
Chicorée Mode	Red
PKZ Group	Red
Tally Weijl	Red

Discussion: H&M, adidas and Mammut have taken ambitious and even visionary (H&M) measures to improve environmental management in the supply chain. The supplier standard of these companies refers to the implementation of an environmental management system and requires the supplier to systematically manage their environmental impact. The supplier standard is binding and needs to be signed by suppliers. In some cases, the supplier standard requires suppliers to extend the standard to their suppliers. These companies also conduct detailed risk assessments, audit their suppliers with regards to the environmental performance and define corrective action plans. Furthermore, they train staff in the purchasing department on the company's environmental supplier standard. H&M and

adidas also regularly conduct trainings and re-audits to support their suppliers and to check the progress of implementation of corrective action plans.

Another five of the surveyed companies have some environmental management concerning their suppliers in place, and another four have established very few or no measures. Data provided by oekom research AG has shown that all companies in the lower midfield or intransparent/latecomers category for this criterion perform better in adherence to labour standards and acceptable working conditions of their suppliers, but clearly underperform in terms of environmental management in their supply chain.

Use of environmental assessment tools in product design

This section analyses the measures taken by the company to use environmental assessment tools in product design in order to minimize the environmental impact of products throughout their life-cycle. This can be done on a company-level, or as part of an industry initiative.

Hennes & Mauritz	Orange
Nike Inc.	Green
Adidas	Yellow
Mammut Sports Group	Red
VF Corporation	Red
Hugo Boss	Orange
Odlo International	Red
Calida Group	Red
Triumph International	Red
Chicorée Mode	Red
PKZ Group	Red
Tally Weijl	Red

Discussion: Nike is the only company analysed that has taken a visionary approach on this criterion. oekom research AG comments on Nike’s approach as follows: *“Comprehensive measures have been taken to use environmental assessment tools in product design to minimise the environmental impact of products throughout their life cycle. The company reports on its own sustainability index for both shoes and apparel. It includes energy use, GHG emissions, waste, water and chemistry. Details on the methodology, including lifecycle steps, and external verification are provided. The index is used as a decision-making tool which can be used to score new designs. Nike states that it provides its product creation teams with training in how to use the indexes and on the importance of focusing on the sustainability of materials. The teams are given scoring targets for each season of products they design. In addition, the company has developed a scoring system for its new products. It has set overall targets and publishes the summary of the results on its website.”*

Data indicates that H&M, adidas and Hugo Boss use some environmental assessment tools in product design. Measures taken include conducting life-cycle assessments and establishing databases on environmental aspects of materials and processes to support the design teams with facts. H&M and adidas state that they are members of the Sustainable Apparel Coalition and support the development of the Higg Index, which measures sustainability impacts along the product life-cycle. Having said this, the results also show that most of the companies analysed take no or very limited action in this regard.

Raw materials

This section looks at the company’s action concerning cotton, leather and environmentally preferable materials. In terms of cotton, oekom research AG analyses the company’s policy on the use of genetically modified cotton, the strategy to ensure sourcing of cotton from sustainable cultivation, and the percentage of certified organic cotton used in textiles. The criteria also cover the company’s strategy to ensure sourcing of hides from sustainable farming for leather production, and the company’s strategy to increase the use of environmentally preferable materials. Furthermore, major controversies relating to raw materials are analysed.

Hennes & Mauritz	Yellow
Nike Inc.	Light Green
Adidas	Yellow
Mammut Sports Group	Yellow
VF Corporation	Orange
Hugo Boss	Red
Odlo International	Orange
Calida Group	Orange
Triumph International	Red
Chicorée Mode	Red
PKZ Group	Red
Tally Weijl	Red

Discussion: The four leaders in this rating – H&M, Nike, adidas and Mammut – outperform the other companies regarding raw materials. The majority of the analysed companies take no or very limited action concerning more sustainable raw materials. Companies that perform well purchase a high percentage of organic and/or more sustainable cotton, and have set ambitious targets to substantially increase the sourcing of more sustainable cotton in the near future. Some companies support initiatives such as the Better Cotton Initiative (BCI) or the Organic Cotton Accelerator (OCA). Furthermore, the better performing companies have set a strategy to increase the use of environmentally preferable material such as recycled materials. Finally, companies have taken measures to ensure their leather does not come from cattle ranches that have been involved in deforestation in the Amazon, such as the implementation of traceability systems or participation in industry initiatives such as the Leather Working Group.

Water use and hazardous substances in manufacturing

In this part, oekom research AG analyses the companies' measures to manage water use in their supply chain, including water policy, measures to ensure sustainable water use in manufacturing, strategy and measures to eliminate hazardous substances from wastewater streams, as well as major controversies relating to water use in manufacturing. Furthermore, the company's strategy to restrict and reduce the use of hazardous substances in manufacturing, as well as controversies relating to hazardous substances, is analysed. Analysis of controversies is based on external information such as academia/research and NGOs.

Hennes & Mauritz	Light Green
Nike Inc.	Yellow
Adidas	Yellow
Mammut Sports Group	Yellow
VF Corporation	Orange
Hugo Boss	Red
Odlo International	Yellow
Calida Group	Yellow
Triumph International	Red
Chicorée Mode	Red
PKZ Group	Red
Tally Weijl	Red

Discussion: H&M outperforms the other companies in regard to the management of water use and hazardous substances in manufacturing. Another five companies are in the upper midfield relating to manufacturing. Half of the analysed companies take no or very little action concerning environmental issues of manufacturing. Companies performing well report in detail on e.g. water risk assessments, implementation of water saving technologies, requirements for and auditing and support of suppliers, optimization of products and cooperation with stakeholders such as NGOs. Nike and H&M assess their supply chain against country- and basin-level water risk data, acknowledging that basin-level information is more important and valuable than national-level data. Mammut, Calida and Odlo work with suppliers that are certified against standards like bluesign, which are concerned with the reduction of water consumption, reusing cooling water, installing closed water circuits, chemicals management, wastewater treatment, and hazardous substances management. Better-performing companies have also taken reasonable measures to restrict and reduce hazardous substances in manufacturing. Measures taken include a manufacturing restricted substances list, reduction targets and outphasing timelines, positive lists for the substitution of hazardous substances, regular supplier audits and capacity building, development of innovative production processes using less hazardous chemicals, and cooperation with industry stakeholders on chemical safety. For instance, adidas, Nike and H&M have made a commitment to zero discharge of hazardous chemicals by 2020. Mammut has set a target of switching all waterproofing treatments for its clothing range to PFC-free alternatives by 2022. adidas also reports on new dyeing processes that require up to 50 per cent less chemicals.

Environmental management of retail stores (if applicable)

In this section, oekom research AG analyses policies and measures with regard to environmental management of retail stores. In particular, guidelines and measures regarding energy efficiency and use of energy from renewable sources, as well as certifications for environmental design, green building standards and environmental management of retail locations, are taken into account. This section is only applicable if retail stores account for a considerable part of the surveyed company's environmental impact.

Hennes & Mauritz	Yellow
Nike Inc.	Yellow
Adidas	Yellow
Mammut Sports Group	Red
VF Corporation	Red
Hugo Boss	Red
Odlo International	Red
Calida Group	Red
Triumph International	Red
Chicorée Mode	Red
PKZ Group	Red
Tally Weijl	Red

Discussion: H&M, Nike and adidas have taken some measures to improve energy efficiency in heating, cooling, ventilation and lighting and/or to increase the use of renewable energy sources. Both companies use energy management systems and set targets to reduce electricity use. Nike has received certifications for environmental design and management for a small percentage of total floor space of its stores. Furthermore, Nike reports that it regularly holds building design workshops for Nike retail operations to help embed sustainability into design and construction of new facilities. adidas reports that it has a store manual that includes a separate section on environmental aspects. The manual shares best practices and acts as a guidance tool for the local architects when they build new stores. However, these three better-performing companies do not disclose information on whether the company has a systematic approach to energy efficiency in heating, cooling, ventilation and lighting, for example through natural ventilation, heat recovery in air ventilation, green roofs, or combined heat and power. None of the other companies are committed to systematic management of the environmental impact of their retail stores. The few stores of Mammut and Odlo do not account for a considerable part of these two companies' environmental impact. This criterion was therefore not applicable to Mammut and Odlo.

Eco-efficiency

This unit looks at the measurement of eco-efficiencies of the surveyed companies' own operations, retail stores, as well as own and outsourced production and transport. This includes the energy intensity, water intensity, and greenhouse gas emission intensity. Furthermore, the total amount of waste generated, as well as waste intensity, are being considered. Intensity is measured against product item, if available, and otherwise against net sales. Also, the total amount of waste generated is considered. In addition, the trend of energy, water, greenhouse gas emissions and waste intensity over the last years is evaluated.

Hennes & Mauritz	Yellow
Nike Inc.	Yellow
Adidas	Red
Mammut Sports Group	Red
VF Corporation	Orange
Hugo Boss	Yellow
Odlo International	Red
Calida Group	Red
Triumph International	Red
Chicorée Mode	Red
PKZ Group	Red
Tally Weijl	Red

Discussion: Eight out of twelve analysed companies are evaluated as 'intransparent/latecomers', four are in the midfield, and none of them is above midfield. The eight 'intransparent/latecomers' companies do not report any or very limited eco-efficiency data for their own operations and supply chain. These results show that the majority of companies/brands in the clothing and textile industry do not systematically collect relevant and useful eco-efficiency data in the supply chain beyond their own operations.

Stakeholder engagement, human rights, community involvement and public policy influence

This section covers the company's stakeholder dialogue, including their sustainability reporting, reporting quality and assurance of reporting. Furthermore, the section covers the company's commitment to human rights, including major controversies relating to human rights. In this section, oekom research AG also look at the company's community involvement activities. In addition, the section analyses the companies' transparency and disclosure in regard to their relations with governments, political contributions and lobbying activities.

Hennes & Mauritz	Green
Nike Inc.	Yellow
Adidas	Yellow
Mammut Sports Group	Green
VF Corporation	Orange
Hugo Boss	Yellow
Odlo International	Red
Calida Group	Red
Triumph International	Orange
Chicorée Mode	Red
PKZ Group	Red
Tally Weijl	Red

Discussion: H&M, Mammut, Nike, adidas and Hugo Boss outperform the other companies regarding stakeholder engagement, human rights, community involvement and public policy influence. Companies that perform well in this section have put in place a sustainability reporting system which covers various relevant sustainability issues such as supply chain management, environmental management, product responsibility, industry-specific environmental impacts as well as social impacts. H&M and Hugo Boss are the only companies with limited assurance of their sustainability reporting; the other companies have no assurance. Companies performing better in this section have made a formal commitment to respect human rights, and have taken a strategic approach to community involvement, charitable giving and employee volunteering. None of the companies analysed transparently and proactively disclose their contributions to governments and/or lobbying activities to influence public policy. Some companies such as Triumph, adidas, Hugo Boss and Mammut state that political contributions are prohibited.

Customer and product responsibility

This section covers various topics related to customers such as substances of concern in products and animal welfare. Furthermore, these criteria look at the company’s strategy on sustainable product portfolio, including longevity and recyclability of products, but also customer awareness-raising activities and measures to promote more sustainable products and services.

Hennes & Mauritz	Green
Nike Inc.	Orange
Adidas	Yellow
Mammut Sports Group	Yellow
VF Corporation	Orange
Hugo Boss	Yellow
Odlo International	Orange
Calida Group	Yellow
Triumph International	Yellow
Chicorée Mode	Red
PKZ Group	Red
Tally Weijl	Red

Discussion: H&M, adidas, Mammut, Hugo Boss, Calida and Triumph perform better than the other surveyed companies in these criteria. Another three companies are in the midfield, and only three companies are in the intransparent category. Companies that perform well in regard to customer and product responsibility provide a detailed list which restricts the content of substances of concern in finished garments sold to consumers, leather products and shoes, and conducts reasonable monitoring regarding this issue. Some companies such as Triumph, adidas and Mammut meet or exceed the Oeko-Tex 100 standard and use external certification by Oeko-Tex 100 and bluesign, or external laboratories for monitoring. Furthermore, companies such as H&M exclude the sale of furs and leather which is not a by-product of meat production and exclude the sale of raw materials coming from protected animal species. Some of the groups’ brands offer a lifetime warranty, or have taken first steps to upcycle used products. However, none of the companies offer a comprehensive strategy on longevity and recyclability of products, which would for example include a commitment regarding durability, reparability and recyclability of products, timelessness of design, specific principles in design guidelines, comprehensive repair services and implementation of closed-loop recycling systems. All surveyed companies except Chicorée, Nike, Triumph and PKZ Group have taken some measures to increase customer awareness on sustainability impacts of products during their life-cycle (e.g. customer information on how to reduce environmental impacts during the use phase). Some companies such as adidas and Mammut also encourage their customers to reduce, reuse and recycle. Furthermore, half of the surveyed companies take reasonable measures to promote more sustainable products and services.

Deep-dive into the political engagement of companies in Switzerland

Due to its expertise and experience in political processes in Switzerland, WWF has conducted its own rating for political engagement of companies in Switzerland. This analysis has been conducted by WWF Switzerland in addition to data provided by oekom research AG. **The following results did not influence the result of the environmental rating, which was solely based on data provided by oekom research AG.**

To assess the engagement of clothing and textile companies surveyed in environmental policy debates in Switzerland, we looked at their direct and indirect (i.e. via their business associations) engagement in key industry-relevant environmental policies and pre-parliamentary initiatives in the period between 2011 and 2016. This concerned 11 different political issues in the fields of energy, climate, transportation and economic policy.

All surveyed companies are in the lower midfield in WWF's rating of their political engagement. The analysis of the results shows that many of the clothing and textile companies in question do not engage actively in public policy. Instead, they back the positions of their associations. The associations sometimes advocate and at other times oppose key environmental interests, but in many cases, they do not take any position at all despite political relevance for their members.

Calida Group and Mammut are rated slightly lower than the others due to their membership of the Swiss Textiles association. Swiss Textiles actively lobbied against the revision of the Environmental Protection Act, which led to negative points in our rating. These negative points were partly compensated by Swiss Textiles' advocacy for the revision of the CO₂ regulation after 2020 and the positive evolution of their position on the Energy Strategy 2050. All other companies are not members of any association that does political lobbying in Switzerland. Furthermore, the results have shown that none of the companies take any political action in Switzerland themselves. This widespread political inactivity is surprising, particularly since the companies were directly influenced by the public policies analysed by WWF-Switzerland.

WWF is convinced that public policy sets a framework for sustainable industries and economy and thereby creates a level playing field. We recommend that companies take the following actions:

Membership in associations. Carefully assess company membership in associations. Even though reasons for membership can be manifold, companies need to be aware that most associations are politically active. Companies can support their associations in public affairs and influence their association's political positions.

Political action. Act as an individual company to improve and support environmental policies. This can be done by, for example, informing the members of parliament about their support or publicly speaking out in favour of environmental policies.

Collaboration and exchange. Maintain an exchange on environmental policy with WWF Switzerland or other relevant organizations. WWF Switzerland regularly shares its public policy recommendations, as well as detailed background information, with interested stakeholders.

References

Other references have been included in the text as hyperlinks.

- ¹ https://www.copenhagenfashionsummit.com/wp-content/uploads/2017/05/Pulse-of-the-Fashion-Industry_2017.pdf
- ² <http://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/style-thats-sustainable-a-new-fast-fashion-formula>
- ³ Muthu eds. (2015), Handbook of Sustainable Apparel Production, CRC Press Boca Raton
- ⁴ https://www.copenhagenfashionsummit.com/wp-content/uploads/2017/05/Pulse-of-the-Fashion-Industry_2017.pdf
- ⁵ dito
- ⁶ <http://about.nike.com/pages/environmental-impact>
- ⁷ https://www.copenhagenfashionsummit.com/wp-content/uploads/2017/05/Pulse-of-the-Fashion-Industry_2017.pdf, <https://www.forbes.com/sites/jamesconca/2015/12/03/making-climate-change-fashionable-the-garment-industry-takes-on-global-warming/#60c47e9c79e4>
- ⁸ <http://www.newsweek.com/2015/08/21/environmental-crisis-your-closet-362409.html>
- ⁹ https://www.copenhagenfashionsummit.com/wp-content/uploads/2017/05/Pulse-of-the-Fashion-Industry_2017.pdf
- ¹⁰ <http://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/style-thats-sustainable-a-new-fast-fashion-formula>
- ¹¹ Muthu eds. (2015), Handbook of Sustainable Apparel Production, CRC Press Boca Raton
- ¹² https://www.copenhagenfashionsummit.com/wp-content/uploads/2017/05/Pulse-of-the-Fashion-Industry_2017.pdf
- ¹³ dito
- ¹⁴ dito
- ¹⁵ <http://eng.mst.dk/media/176130/nca-danish-apparel-sector.pdf>
- ¹⁶ Living Planet Report: http://wwf.panda.org/about_our_earth/all_publications/lpr_2016/
- ¹⁷ Steffen, W. et al. 2015. Planetary boundaries: guiding human development on a changing planet. *Science*, 347(6223).
- ¹⁸ <http://www.mckinsey.com/industries/retail/our-insights/the-state-of-fashion>
- ¹⁹ https://www.cbi.eu/sites/default/files/market_information/researches/trade-statistics-apparel-2016.pdf
- ²⁰ <http://bgmea.com.bd/home/pages/TradeInformation#.UgH9sZL0FRs>
- ²¹ <http://textileexchange.org/wp-content/uploads/2017/02/TE-Preferred-Fiber-Market-Report-Oct2016-1.pdf>
- ²² <https://www.businessoffashion.com/community/voices/discussions/can-fashion-industry-become-sustainable>
- ²³ <http://www.forbes.com/sites/jamesconca/2015/12/03/making-climate-change-fashionable-the-garment-industry-takes-on-global-warming/#4c61fe5f778a>
- ²⁴ Steffen, W. et al. 2015. Planetary boundaries: guiding human development on a changing planet. *Science*, 347(6223).
- ²⁵ https://www.bsr.org/reports/BSR_Apparel_Supply_Chain_Carbon_Report.pdf
- ²⁶ http://assets.worldwildlife.org/publications/458/files/original/2050_criteria_final_low_res_online_viewing.pdf?1
- ²⁷ <http://www.sustainablecommunication.org/eco360/what-is-eco360s-causes/water-pollution>
- ²⁸ http://glaasaaward.org/wp-content/uploads/2015/05/GLASA_2015_StateofApparelSector_SpecialReport_Water_150624.pdf; A recent study by WWF estimates the imported water risk through the textile industry in Switzerland: www.wwf.ch/water-risk; Anderson, E.N. (2015): China's Water Problems. In: China Policy Institute Policy Paper, 2015, No. 6.
- ²⁹ http://drustage.unep.org/chemicalsandwaste/sites/unep.org.chemicalsandwaste/files/publications/CIP_textile%202011%20case%20study%20report.pdf
- ³⁰ http://wwf.panda.org/about_our_earth/about_freshwater/freshwater_problems/thirsty_crops/cotton/
- ³¹ <https://portals.iucn.org/library/sites/library/files/documents/2017-002.pdf>
- ³² <http://www.patagonia.com/blog/2016/06/what-do-we-know-about-tiny-plastic-fibers-in-the-ocean/> accessed on 22.4.2017
- ³³ https://www.copenhagenfashionsummit.com/wp-content/uploads/2017/05/Pulse-of-the-Fashion-Industry_2017.pdf
- ³⁴ <http://www.purewaste.org/media/pdf/textile-product-waste-fast-facts.pdf>
- ³⁵ <http://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/style-thats-sustainable-a-new-fast-fashion-formula>
- ³⁶ http://sustainability.hm.com/content/dam/hm/about/documents/en/CSR/2016%20Sustainability%20report/HM_group_SustainabilityReport_2016_FullReport_en.pdf
- ³⁷ MarketLine 2015
- ³⁸ <https://www.ft.com/content/621d20c0-7033-11e6-a0c9-1365ce54b926>
- ³⁹ MarketLine 2015
- ⁴⁰ dito
- ⁴¹ <http://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/style-thats-sustainable-a-new-fast-fashion-formula>
- ⁴² dito
- ⁴³ <http://www.eulerhermes.com/mediacenter/Lists/mediacenter-documents/Textile-Global-Report.pdf>
- ⁴⁴ https://www.copenhagenfashionsummit.com/wp-content/uploads/2017/05/Pulse-of-the-Fashion-Industry_2017.pdf
- ⁴⁵ http://www.ilo.org/public/english/dialogue/actemp/downloads/publications/2016/asean_in_transf_2016_r2_future.pdf;
- ⁴⁶ http://www.ilo.org/public/english/dialogue/actemp/downloads/publications/2016/asean_in_transf_2016_r6_textil.pdf
- ⁴⁷ https://www.copenhagenfashionsummit.com/wp-content/uploads/2017/05/Pulse-of-the-Fashion-Industry_2017.pdf
- ⁴⁸ <http://sciencebasedtargets.org/>
- ⁴⁹ <http://pacinst.org/publication/exploring-case-corporate-context-based-water-targets/>
- ⁵⁰ <http://sciencebasedtargets.org/companies-taking-action/>
- ⁵¹ <http://about.nike.com/pages/environmental-impact>
- ⁵² https://www.copenhagenfashionsummit.com/wp-content/uploads/2017/05/Pulse-of-the-Fashion-Industry_2017.pdf
- ⁵³ https://www.copenhagenfashionsummit.com/wp-content/uploads/2016/07/model_behavior_20_business_model_innovations_for_sustainability.pdf
- ⁵⁴ https://www.copenhagenfashionsummit.com/wp-content/uploads/2016/07/model_behavior_20_business_model_innovations_for_sustainability.pdf
- ⁵⁵ <http://www.newsweek.com/2016/09/09/old-clothes-fashion-waste-crisis-494824.html>
- ⁵⁶ <http://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/style-thats-sustainable-a-new-fast-fashion-formula>
- ⁵⁷ <https://www.theguardian.com/sustainable-business/dyeing-textile-sector-water-risks-adidas>;
- ⁵⁸ <https://www.theguardian.com/sustainable-business/sustainable-fashion-blog/2015/apr/24/nike-and-adidas-show-cautious-support-for-eco-friendly-dye-technology>
- ⁵⁹ https://www.ellenmacarthurfoundation.org/assets/downloads/publications/TCE_Report-2013.pdf
- ⁶⁰ <http://www.oxfam.org.uk/media-centre/press-releases/2016/06/over-three-billion-clothes-left-unworn-in-the-nations-wardrobes-survey-finds>
- ⁶¹ http://www.wrap.org.uk/sites/files/wrap/valuing-our-clothes-the-cost-of-uk-fashion_WRAP.pdf
- ⁶² dito
- ⁶³ http://www.topten.eu/uploads/File/Professional/Other%20Pro%20Guidelines/Flyer_Coldwash_2014.pdf
- ⁶⁴ <https://wornwear.patagonia.com/>
- ⁶⁵ http://www.wrap.org.uk/sites/files/wrap/valuing-our-clothes-the-cost-of-uk-fashion_WRAP.pdf



Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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