

# MEASURING FASHION

# FAQ

## READ FIRST: ABOUT THE FAQ

### CONTEXT

The purpose of the Measuring Fashion report published in 2018 is to provide business leaders and key industry stakeholders with an overview of the scale of the industry's footprint and its environmental impact hotspots. The study and report was commissioned by Climate Works in 2017 to fill a gap in the apparel and footwear industry and provide a high-level, business-oriented assessment of the apparel and footwear industry's environmental footprint. It **was the first bottom-up assessment done using impact factors for each step along the value chain**, based on Quantis' knowledge and the best available data in 2018.

### RECOMMENDED USAGE

Sustainability managers, business leaders, journalists and academics can use this resource to understand areas of high environmental impact in the industry's value chain and to get a sense of the magnitude of those impacts.

### DATA CONSIDERATIONS

**The level of data provided is not intended to be used for setting corporate climate targets or developing a targeted climate roadmap.** Companies require more tailored metrics to ensure their targets and plans are effective.

Assessing impacts of the fashion industry at a *global* scale requires estimates and assumptions. This is especially true in the **apparel and footwear space because consistent environmental data is scarce. Figures vary and yield a range of results.** This is why it is critical for Quantis to be transparent about our methods and calculations. Quantis established a Steering Committee of external experts, in collaboration with ClimateWorks, and our findings were based on the best available databases. In an effort to be fully transparent, Quantis created a publicly available [Annex document](#) that lays out the full methodology. (See more on transparency and robust metrics on page 46.)

As environmental action ramps up for the fashion industry, obtaining more robust environmental data is a priority focus area for fashion brands and for Quantis. In this decade of environmental and climate action, the apparel and footwear industry has a critical role to play to institute real change. Quantis is dedicated to ensuring that fashion brands are informed and have access to robust metrics. This is a key step to focus efforts where they matter most in order to fundamentally influence business to achieve our 1.5 degree future.



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# HOW TO USE THIS REPORT

## How should I use the information and data provided in the Measuring Fashion report?

Sustainability managers, journalists and academics can use the Measuring Fashion report to understand key hotspots in the industry's value chain and get a sense of the magnitude of those impacts at an industry-wide level. **It was created as a high-level, business-oriented report to provide an overall idea of where the industry as a whole should focus.** The results are based on robust databases and were reviewed by a Steering Committee. As such, it can be used as a primer to raise awareness about the impact of fashion on the planet and a call to action for companies to collect more targeted data that will help transform their business models.

Figures can vary depending on the assumptions used to calculate these global estimates. We encourage using the ranges provided in the report when citing results (for example, “the fashion industry accounts for 5-10% of global GHG emissions” rather than “8.1% of global GHGs”). Quantis is committed to contributing our insights to the conversation and welcomes other reports that highlight the need for urgent action toward sustainable fashion.

## Can companies use the results provided in the report as the basis of a corporate footprint or to set science-based targets?

The numbers in the report represent an average picture of the entire industry's impacts. Impacts vary widely from product to product and company to company. If a business wants to understand its own footprint, it should perform a [corporate footprint assessment](#) to set more accurate targets and track progress.

Measuring Fashion was not designed to provide detailed results for science-based target setting. Since its publication, there have been increased activities around science-based targets, which are continuing to grow following the release of the [Apparel & Footwear Sector Science-based Targets Guidance](#). (For more information on setting science-based targets in the apparel industry, watch Quantis' webinar “[Moving the Needle](#)” with ASICS and WRI.)

## Does the report include specific actions for companies to take to improve their footprint?

The purpose of the Measuring Fashion report is to share a snapshot of the current total industry footprint. It includes insights into three industry-level levers for action: Rethink Energy, Disrupt to Reduce, and Design for the Future. There is also an exploration of whether a circular economy for apparel will be enough to reduce the sector's impacts. Information on how the action levers were modeled is available in the Annex document

[here](#). Detailed action plans with specific emission reduction pathways are outside of this report's scope.

## GLOBAL FOOTPRINT OF THE APPAREL AND FOOTWEAR INDUSTRY

**The total magnitude of the industry's footprint (8% of global GHG in Quantis' report) seems to differ depending on the study. How can I understand this?**

When assessing different studies, it is key to understand the assumptions and methods behind each of them. Assessments of the global impact of the fashion industry include figures that vary according to different reports, depending on the approach used to calculate the estimates, the methodology, what is in scope versus out of scope, etc. The level of variability is particularly high in the apparel industry due to a lack of robust environmental data and complexity in the value chains.

**At the time of publication, Quantis' Measuring Fashion report was the first bottom-up assessment done using impact factors for each step along the value chain.** The methodology used is explained in detail in the [report Annex](#).

**Quantis recommends using a range when communicating the results, to account for these variations in a highly complex industry.** (For example, stating "the industry's footprint represents 5-10% of global GHG emissions," rather than "8.1%.") Using a range when communicating impacts was similarly modeled in the recently released "Fashion on Climate" report by the Global Fashion Agenda and McKinsey, which estimates global GHGs of the sector at 3-10%.

Although the exact number is not known, what is certain is that the industry's contribution to global GHGs is significant, and growing fast. Companies and stakeholders need to set ambitious climate targets and shift gears to action and to transform their business models.

### **Why is data such a big topic for the apparel and footwear industry?**

Compared to other industries, the apparel and footwear industry has a very complex supply chain linked to many different sectors, including the fossil-chemical industry (for synthetic fibers), the wood sector (for cellulose-based fibers) and the agricultural sector (for animal- and plant-based fibers). With an often long and opaque supply chain, full traceability to suppliers is limited. Historically, there has been little pressure from consumers or other stakeholders for increased supply chain traceability. Therefore, the industry is not as advanced as other sectors when it comes to data on production and consumption, and their related emission profiles.

As efforts to transform the industry ramp up, apparel and footwear brands will need better data to understand where to focus their environmental action. **Developing more robust data will be a priority for the industry and for Quantis in the years ahead.**

### **What are some of the methodological assumptions underlying the study?**

The approach Quantis used to develop the study was based on multiplying production volumes by emission factors, which resulted in the industry-wide footprint. Because the industry has limited data, it is important to understand the assumptions that can create significant variation in results depending on the value selected. Here are some examples of key assumptions and data variability considerations across industry-wide studies:

- What portion of total global textiles is attributed to apparel versus to home or industrial textiles?
- What portion of total apparel uses which knitting process? (For example, flat knitting vs. circular knitting have different emission profiles due to different energy consumption requirements.)
- How to account for variability of energy or electricity use across specific fibers or fabric processing steps? (For example, diverse scientific studies show that the range of energy required for weaving can be between 4.9 - 32.9 kWh/kg of textile.)

Overall, these types of global studies do not reflect the specific practices within one company's unique supply chain. If companies want to understand their specific footprint for science-based targets or other ambitious sustainability commitments, they should perform their own corporate footprint.

### **How does Quantis view the “Fashion on Climate” Report released in 2020?**

Quantis welcomes this new report from the Global Fashion Agenda and McKinsey. The report goes to the next level by focusing on what the priority levers are for effective emission reduction for the industry, and what it would cost to implement these changes. In most cases, the report argues, recommended actions are also good for the financial bottom line. By illustrating the role of the different actors in this space, the report also emphasizes the need for collaboration to achieve the 1.5 degree target.

“Fashion on Climate” echoes a key message from “Measuring Fashion”: the core action lever is *decarbonizing the processing steps* within the industry's value chain (for example, building out energy efficiency and renewable energy measures). *Decarbonized material production* is also an important lever, but second to decarbonizing material processes. In the long term, companies will need to transform business models to decouple volume growth from value growth to stay on the 1.5 degree pathway. For example, “brands and retailers could offer products that are made to order, which would reduce the volume of garments that can only be sold at significant discounts and thereby add volume, and emissions, without contributing much value.”

Quantis is glad that the report specifically mentions consumer habits and product durability, inviting readers to “imagine a world with smaller individual wardrobes consisting of higher

value, longer life pieces, complemented by a flourishing re-commerce and rental market, and ample access to repair and refurbishing services.”

We highly encourage stakeholders to start taking a close look at the actions that apply to their value chains in more detail and to take steps quickly.

## TRANSPARENCY + ROBUSTNESS OF DATA + METHODS

### How did Quantis ensure transparency in this project?

As a science-based sustainability consultancy, Quantis is committed to transparency and scientific integrity in all our projects. To ensure transparency on our approach to modeling and use of data:

1. We organized an expert **Steering Committee** to review the assumptions and any data going into the study during the data assessment phase. The committee met three times: at the start of the project, to review data and assumptions that went into the study and at the end of the project.
2. After the study, we **shared the full model with additional methodological presentations** with ClimateWorks, our partner who had initiated the scope of work.
3. Quantis **invested separately in making the full methodology publicly available on our website**, including detailed results, findings, data sources and methodological decisions.

### Who was part of the Steering Committee?

The Steering Committee was comprised of global experts in fashion sustainability:

- Jason Kibbey, CEO, Sustainable Apparel Coalition
- Debera Johnson, Executive Director, Brooklyn Fashion + Design Accelerator, Pratt Center for Sustainable Design Strategies
- Megan McGill, Program Manager, C&A Foundation
- La Rhea Pepper, Managing Director, Textile Exchange

### How did Quantis ensure the robustness of the data used for the study?

The Measuring Fashion study is one of the most comprehensive and robust industry-wide assessments. It was conducted with the best available data at the time. The results are based in part on a state-of-the-art database (World Apparel & Footwear Lifecycle Assessment Database, or WALDB) that developed emission profiles from primary data and aligned and cross-checked with secondary data. WALDB today contains 500+ datasets including 50 different processing steps and 7 different processing countries.

Environmental data for the fashion industry is not as advanced as in other sectors (such as agri-food) and it is rapidly evolving. This is why communicating the methodological assumptions behind the report was key. It's also why Quantis continues to lead efforts to enhance environmental data for fashion through the WALDB initiative.

## **What data was used to calculate the impacts of the industry?**

We leveraged global consumption statistics from reports such as The Fiber Year report for the production quantity values of the calculation. We used the World Apparel & Footwear Lifecycle Database and ecoinvent (with the IMPACT 2002+ method) for the emission factors values, to then calculate the environmental footprint of the apparel and footwear industry. For more information, see the [Annex document](#).

## **Can Quantis share more of the data used to calculate the results in Measuring Fashion?**

When this project was undertaken, Quantis shared data and the full model with ClimateWorks (the organization commissioning Quantis to deliver the report). Quantis also shared the methods and assumptions with the project's Steering Committee. At this point in time, most of the data used is not publicly available. Quantis cannot legally share it either because the data is not owned by Quantis (e.g. licensed data from Ecoinvent), or because it is private as it was developed through a multi-stakeholder initiative funded and driven by members (i.e. the World Apparel & Footwear Lifecycle Database). Learn more about WALDB and the timeline [here](#).

## **What is WALDB? How can I access the database or learn more about the methodology?**

The World Apparel & Footwear Lifecycle Assessment Database (WALDB) is a pre-competitive collaboration led by Quantis together with a group of industry partners to develop a comprehensive database with robust lifecycle data for single processes in apparel and footwear supply chains. Partners have included Cotton Incorporated, Hugo Boss, IKEA, Kering, legero united, Lenzing, LVMH, SOEX Group/I:CO, the Sustainable Apparel Coalition (SAC), the Swiss Federal Office for the Environment, TEXAID and WWF.

It was created to fill environmental footprinting data gaps for the apparel and footwear sector. Members contribute data, help steer database development and provide assumption analysis and feedback. WALDB leverages both primary data and secondary data as main inputs, and all datasets are given a data quality rating for transparency.

WALDB is a proprietary database and the data cannot be publicly disclosed without the consent of the members. Quantis is continuously improving the datasets on WALDB and creating new datasets as defined by its members. Quantis is also developing a tool that connects the individual datasets to build a product footprint.



## Where can I find more information on the Measuring Fashion methodology?

Quantis fully outlines and documents the methodology used in Measuring Fashion [here](#).

## What was the role of ClimateWorks in this report?

ClimateWorks, an NGO focused on addressing climate change, commissioned Quantis to deliver this report, with a scope defined by ClimateWorks. As the results of the report did not align with the type of data used by ClimateWorks, the organization decided not to co-brand the report as it would not be consistent with its other publications, all the while encouraging Quantis to publish the report to help drive the industry forward.

The methodological reason for differing results between the Measuring Fashion report and ClimateWorks is that ClimateWorks takes a top-down energy modeling approach from the International Energy Agency (IEA) to quantify GHG emissions, whereas Quantis, and much of the apparel community, takes a bottom-up lifecycle approach to quantify GHG emissions. The two approaches are like comparing apples and oranges and, as such, produce differing results. The Measuring Fashion methodology has not been challenged, and it remains one of the most advanced industry studies with detailed environmental impacts.

When ClimateWorks chose not to co-brand the report, it provided the following statement to share:

*ClimateWorks Foundation mobilizes philanthropy to solve the climate crisis and ensure prosperity. Understanding and catalyzing solutions to climate change is essential to this mission. With that objective, ClimateWorks funded and partnered with Quantis to quantify how the global apparel and footwear industries contribute to climate change and explore opportunities to reduce the sector's environmental impacts.*

*ClimateWorks is proud to have supported this research. While the results were aligned with the original project scope and based on life cycle assessment science and methodology, they are not commensurate with the data sources used by ClimateWorks.*

*ClimateWorks has therefore decided not to co-brand "Measuring Fashion" report, but values the work that Quantis has done to produce this study.*

## TECHNICAL QUESTIONS ON SPECIFIC LIFE CYCLE STAGES

### **Why are the dyeing and finishing lifecycle stages so high? Did you include different dyeing technologies in your assessment?**

**Dyeing and finishing** are some of the main drivers of the apparel sector's carbon footprint because they are often very energy-intensive processes. Most of the impacts from this manufacturing stage come from electricity and heat from hard coal and natural gas. The remaining impacts are generated by other types of energy sources and chemical uses. For the detailed assumption used in the study, view the [Annex document](#).

Given the high footprint of this manufacturing stage, exploring new technologies for this lifecycle stage is important and relevant for many apparel companies. For example, dope-dyeing or waterless dyeing technology can require less chemicals and energy as the process is short and less wastewater is generated. Quantis supports a number of companies in developing specific emissions factors for new technologies.

### **What fiber types were included in the study? For synthetic fibers, was nylon also considered?**

The study included cotton fibers, synthetic fibers, cellulosic fibers and natural fibers. Due to the limited data availability at the time of the study we used the following proxies to approximate the fiber types: polyester fiber as a proxy for synthetic fibers, viscose fiber as a proxy for cellulosic fibers and linen fibers as a proxy for natural fibers. Conventional datasets were used for all fibers, without distinctions between different preferred fiber types within a fiber class (e.g., organic cotton). You can find additional information regarding the assumptions used in the detailed full report/annex report pages 54-60.

A clear understanding of the fiber material types used in their products enables companies to develop more strategic action plans that consider fiber materials choices. Quantis supports apparel and footwear companies in assessing the potential impact of fiber material choices in climate reduction strategies.

# WHAT'S NEXT

## Can the Measuring Fashion study be improved?

One key reason this report was created was to be a **call to action to gather more robust environmental data for the fashion industry**. The Measuring Fashion study could be revised and improved when more data becomes available.

There is a positive trend of continuously improving industry data, supported by pre-competitive initiatives such as the World Apparel & Footwear Lifecycle Assessment Database and the Higg Index. More and more companies are starting to report on their scopes 1, 2 and 3 data, and this is critical to moving the industry forward through data-driven decision-making and business model transformation. Quantis, too, is continuously working to refine datasets along the value chain and provide more robust and regionalized data. One key project Quantis leads is the geoFootprint tool, an online platform that visualizes and simulates the environmental footprints of key commodity crops on an interactive world map.

## Why should companies prioritize better data in the apparel and footwear industry?

Robust supply chain data is a growing priority for all players in the apparel and footwear sector because we need facts to drive innovation and support sourcing decisions. Solid metrics help businesses track progress and drive meaningful change. But having reliable data in a globalized supply chain as complex as the apparel industry is not easy. This can only be accomplished by working together.

Quantis is committed to sharing our work and expertise with actors across the industry's value chain. This is why Quantis created the World Apparel & Footwear Life Cycle Assessment Database (WALDB) together with a group of industry partners. WALDB is a comprehensive database with robust life cycle data for single processes in apparel and footwear supply chains.

## How is Quantis working toward creating better data for the apparel and footwear industry? What is involved?

Dataset modeling requires life cycle assessment (LCA) expertise and developing datasets is complex work. It involves getting suppliers on board and ready to share detailed data on their processes, reviewing and validating the data received, consolidating and compiling this data, building the methodology to fairly assess the impacts based on the latest science, developing the model to assess the impact, and going through various technical and quality checks (including getting feedback from our Advisory Board and comparing results to readily-available data in literature). As an LCA expert known for our robust metrics, Quantis is excited to partner with companies and industry stakeholders to help accelerate data-driven industry transformation.

## **How is Quantis driving transformation in the industry?**

Quantis is a leading consultancy in science-driven sustainability with a core focus on the apparel sector. We aim to leverage our expertise in environmental metrics to build business cases to accelerate transformation across the value chain to address the key environmental challenges of our time. We believe that by empowering stakeholders with knowledge, tools and science-based strategies, we are helping our clients to co-create solutions to move the needle and act now. Quantis accompanies individual companies in addition to facilitating industry-wide collaboration through leading multi-stakeholder and cross-sector initiatives on key topics such as climate, biodiversity, circularity, plastics and regenerative agriculture. We are committed to building key partnerships to drive change.

## **CONTACT**

### **Who do I contact with questions about the Measuring Fashion report?**

We're committed to working with press, practitioners, corporations, students and researchers to bring science-based insights on sustainable fashion and help accelerate the industry's transformation toward sustainable business models. We do our best to answer all questions. Please reach out to [measuringfashion@quantis-intl.com](mailto:measuringfashion@quantis-intl.com) if you have any additional questions.