

Life Cycle Assessment (LCA) Report '22

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01 Main goal

Bamboo Basics' goal in the clothing industry is to produce comfortable quality underwear products with the 'business for good' model in mind. To achieve this and to contribute to our vision: accelerating the transition to a fair and non-polluting fashion industry, it is very important to be aware of the impact the brand has on the environment.

Science based

Bamboo Basics has started a science based research by using the Mobius Ecochain tool to investigate the impact of their products on three different categories: carbon footprint, water use and land use. The outcome of the science based research can be read in this report.



02 General info

An average white Bamboo Basics T-shirt contains 310 grams of fabric. This fabric consists of 68% Bamboo Viscose, 28% Organic Cotton and 4% Elastane. In this report, all impact categories are compared to a industry standard Cotton T-shirt made of 95% Cotton and 5% Elastane fabric.

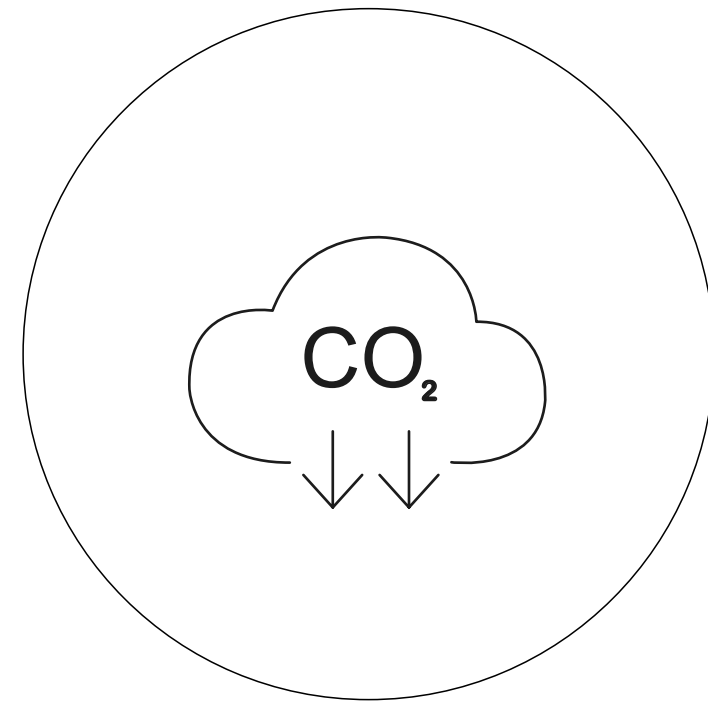


The materials have different impacts on categories like carbon footprint, water use and land use. There will be zoomed in on all three above mentioned impact categories regarding one average Bamboo Basics T-shirt and one industry standard Cotton T-shirt.

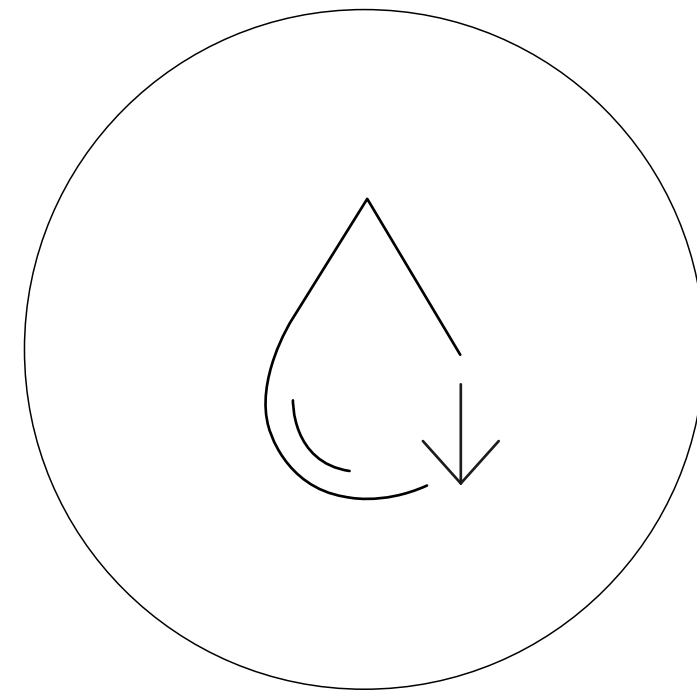
All Bamboo Basics products have emissions in terms of use of raw materials, manufacturing and end of life. All three parts of the production process mentioned are part of the calculations.

03 Comparison

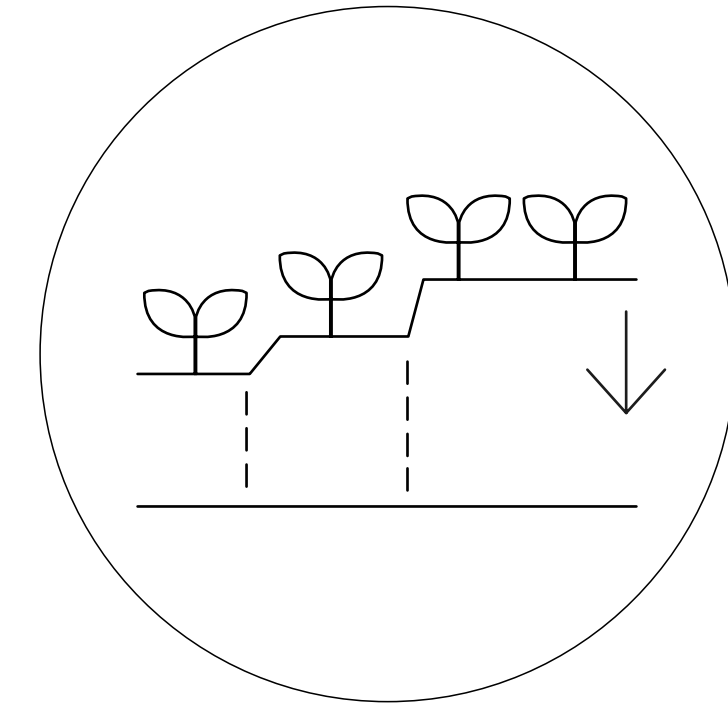
A white Bamboo Basics T-shirt, compared to an industry standard Cotton T-shirt, saves (1):



63% on
carbon footprint

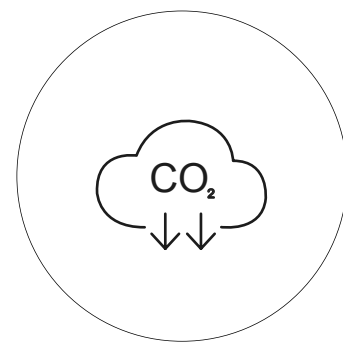


64% on
water use

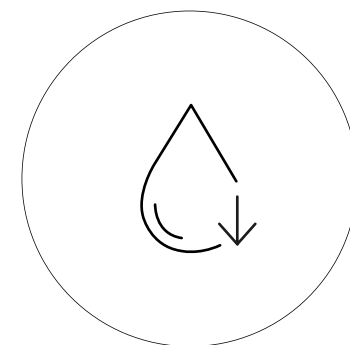


30% on
land use

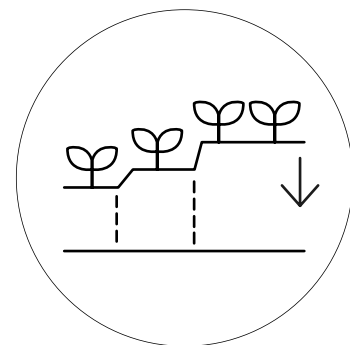
A. Bamboo Basics T-shirt



Carbon footprint
2.04 kg CO₂ eq.

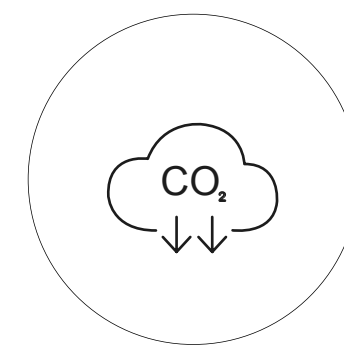


Water use
972 liter

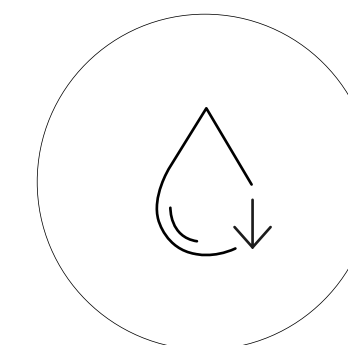


Land use
42.65 Pt

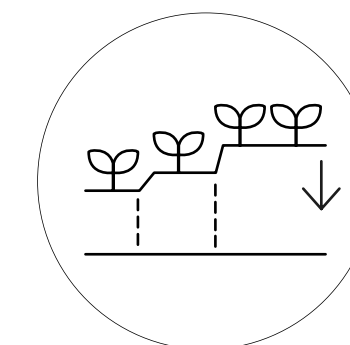
B. Standard Cotton T-shirt



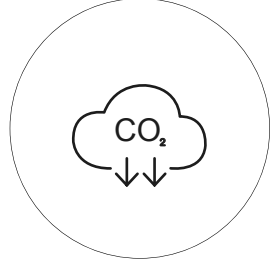
Carbon footprint
5.32 kg CO₂ eq.



Water use
2700 liter



Land use
61.33 Pt

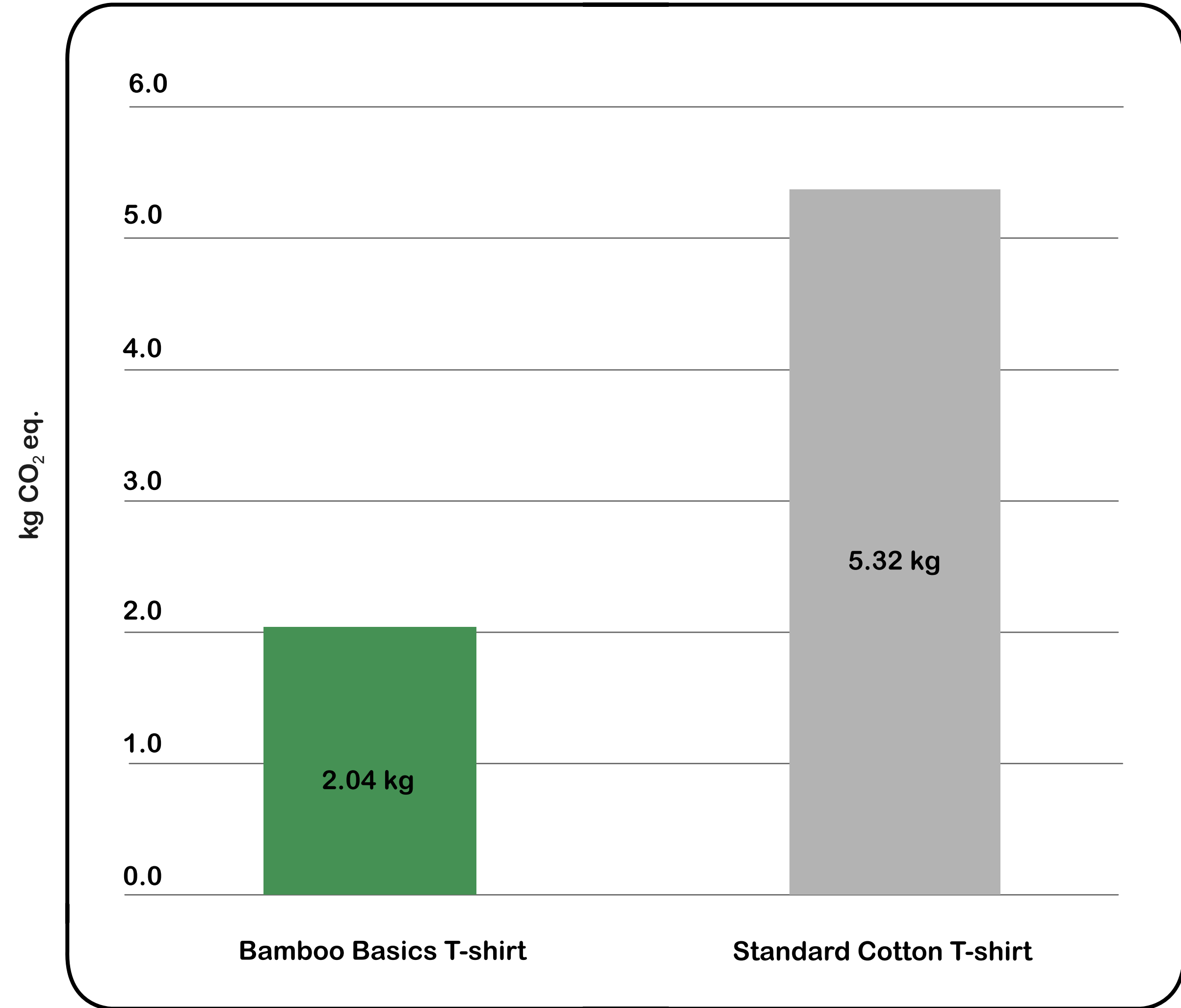


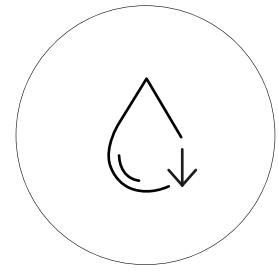
05 Carbon footprint

In this LCA report we use the Carbon Dioxide Equivalent (CO₂eq). This is the standard metric measure to compare the global warming potential of various Greenhouse Gases (GHGs) over a specified timescale. It allows a carbon footprint consisting of different GHGs to be expressed as a single number. When we talk about carbon footprint in this report, we mean the total of GHGs, including CO₂.

On the subject of carbon footprint (CO₂eq/kg), an average Bamboo Basics T-shirt has a total impact of 2.04 kg CO₂eq. The biggest contributor on this impact is the use of Bamboo Viscose fiber. After this, the use of electricity has the highest impact. The use of water has a significantly low impact on the total carbon footprint. An industry standard Cotton T-shirt calculates to have a total carbon footprint of 5.32kg CO₂eq (²), which is mostly caused by the use of Cotton fiber, electricity and bleaching. The emission of transportation of both T-shirts is, on average, 12 grams CO₂; a marginal part of the total emission.

LCA Carbon footprint - T-shirt

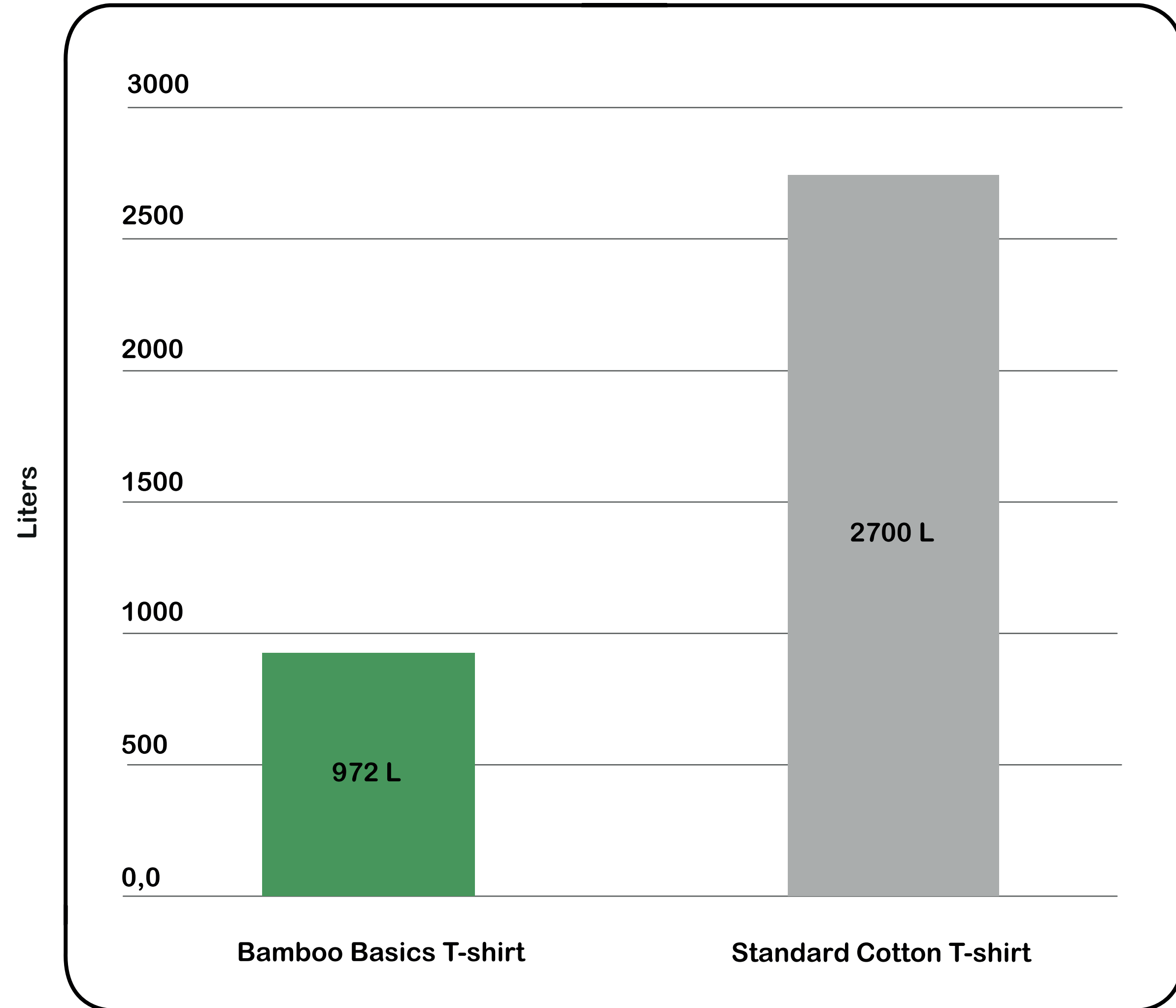


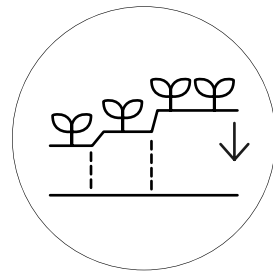


06 Water use

On average a Bamboo Basics T-shirt uses 972 liters of water. This adds up rainwater, fresh water and recycled (cleansed) water. Most of this impact originates from the use of Organic Cotton (which is 28% of the total T-shirt), as this raw material is known to be very water intensive crop. Compared to the industry standard cotton T-shirt, which uses a total of 2700 liters, the Bamboo Basics T-shirt shows to be 64% less water intensive and therefore saves a lot of water.

LCA Water use - T-shirt

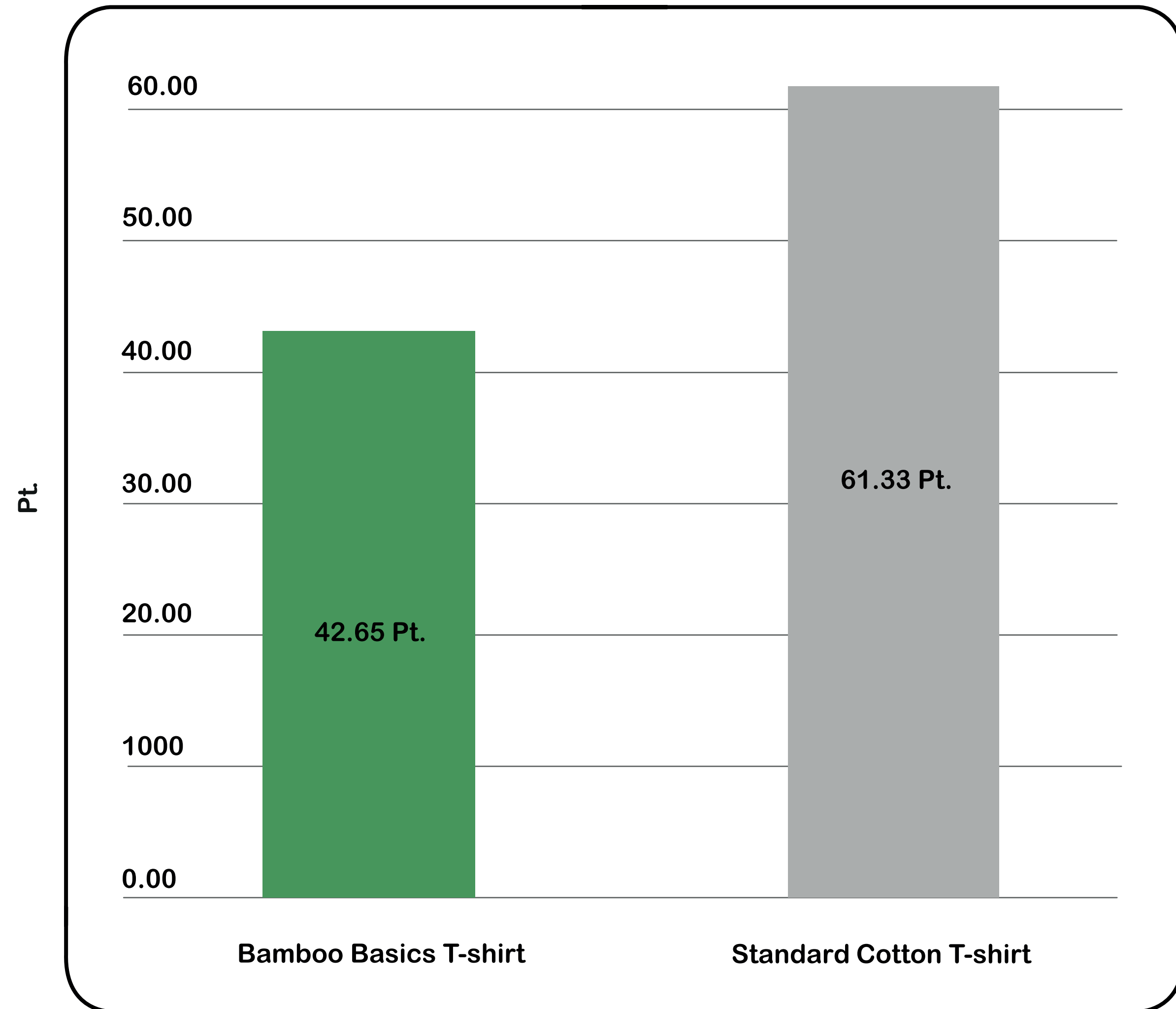




07 Land use

The category land use is calculated in Pt (points) and measures the changes in soil quality and amount of land used to grow the raw material. The lower the outcome, the better the quality of the soil and the less acres of land necessary to produce. An industry standard cotton T-shirt scores 61.33 Pt on the subject of land use. Comparing this to a Bamboo Basics T-shirt where the outcome is 42.65 Pt, this makes for a saving of land use of 30%.

LCA Land use - T-shirt





08 Conclusion

After elaborate research using the Mobius tool by Ecochain, resulting in science based outcomes within three different impact categories, the following conclusions can be made: on the subject of carbon footprint, the Bambo Basics T-shirt saves 63% on CO₂kg eq. Within water use, the savings are 64%. Lastly, a percentage of 30% is saved within land use. Altogether, it can be concluded that the Bambo Basics T-shirt is a more sustainable alternative in comparison to an industry standard Cotton T-shirt. This contributes to our vision: accelerating the transition to a fair and non-polluting fashion industry.

Take a look at bamboobasics.com to see what else we're doing to make this vision reality.

If you have any questions regarding this report, please contact info@bamboobasics.com.

09 Bibliography

(¹) MOBIUS ECOCHAIN (2022). LIFE CYCLE ASSESSMENT.

(²) RÜZGAR, A., TAŞKIN, E. G., GÜNEY, S., & CAMBAZ, N. (2017). LIFE CYCLE ASSESSMENT OF A COTTON T-SHIRT. Izmir: International Izmir Textile and Apparel Symposium.

