he carbon tootprint concept has assisted businesses in understanding the level of greenhouse gas emissions created by their activities, and where water resources are used.

Developing a Product Water Footprinting Methodology for Patagonia

As anthropogenic climate change and population growth increase the stress on water resources in many parts of the world, businesses must begin to closely monitor their reliance and impact on freshwater systems.

- PROJ 1. Develop a simple, replicable methodology to measure the water use for any garment, and
- 2. Assess the environmental impact of supply chain water use

Patagonia is an outdoor clothing company committed to producing quality goods with an little environmental impact as possible. This invovles evaluating the raw materials used, investing in innovative technologies, and eliminating waste where possible. Product water footprinting is a tool that increases understanding of supply chain impacts on water resources.

WATER FOOTPRINTING

More useful than the total water volume used, a water footprint clarifies the type of water use, as well as where, when and how the water was used (Hoekstra et al. 2009). Water footprints also have environmental impacts depending on the conditions of the system where each footprint is located.



CASE STUDY: WOMEN'S SIMPLY ORGANIC T-SHIRT



Surface water Rainwater

Untreated water



METHODOLOGY



1452

183

Turkey

- Exclude indirect water uses, such as facility water use and transportation.
- Exclude water used in the production of peripheral goods, such as capital equipment and packaging.
- Exclude industrial discharge that is treated at a wastewater treatment facility.



various colors

LOW

Water for bleaching and dyeing fabric

3L

utting and sewing, Printing graphic

> No significant direct water use

.Taking a closer look at cotton production Regionalizing the impacts of consumed blue water in cotton growing using the Water Stress In begins to communicate the environmental impacts of cotton production on water resources.

Boundaries and Scope Only include direct water uses from the most water intensive manufacturing processes, such as irrigation and dyeing.



to develop meaningful strategies that link water footprinting with environmental impacts and associated business risk

Benefits

- complex calculations.
- footprint.

Regionalized Blue Water Volume (per T-shirt) Blue Water Volume x (WSI / WSIGlobal Average)

Comparing Suppliers ...

Organic cotton can be sourced from both Turkey and China. The region in Turkey has a WSI of 0.126 and the region in China has a WSI of 1.0. The global avareage WSI is 0.1336. For purposes of comparison, we assume that both growers require the same volume of consumptive blue water, 198L. Since China is in a water stressed region relative to the global average, its footprint grows. Conversely, the footprint in Turkey shrinks.



This body of work forms the foundation for a simple, replicable water footprinting methodology

• Determines—to a first order approximation—product water use without extensive research or

 Allows Patagonia to compare business risks and water impacts across suppliers and garments by assessing the degree of water stress in a region, and applying the results to a product

• Applies to any garment, and can be of use to other businesses, textile or otherwise.

