

MESM 2009 Group Project Proposal

Patagonia's Water Footprint

Proposer:

Amelia Nuding
amelia.nuding@gmail.com
(718)288-6703

Faculty Sponsors Approached:

Gary Libecap
Roland Geyer

STATEMENT

Water is an essential element of life on this planet for climate, habitat and nourishment. Apart from these obvious ecological values, freshwater plays an essential role in the world economy as well, though its value is rarely reflected in its cost. As human demand for water increases and water resources decline, there is a growing awareness of the importance in assessing water availability, the required quality and quantities for activities and the impacts that human activities may have on water resources. Businesses have recently voiced their need to better understand their water use, which has in part led to the development of water accounting methods known as “water footprinting.” The World Business Council for Sustainable Development (WBCSD, 2008) has developed the Sustainable Global Water Tool, which assists industries in measuring their water consumption through the supply chain, while the Water Footprint Network is producing cutting edge resources on this topic (Gerbens-Leenes, Hoekstra 2008). These works, among others, will inform the specific methodology developed for this group project, which will focus on product-level water footprinting for Patagonia.

Patagonia, an apparel company with a strong environmental mission statement and a history of product-level footprint efforts for energy, greenhouse gas emissions and waste, is interested in conducting internal product water footprints, using six of their current products, and establishing a methodology for future water footprint efforts. Assessing water quantity, sources, and quality across product life cycles is important for understanding and mitigating business risks along with addressing environmental and societal impacts on the communities.

OBJECTIVES

The objective of this project is to develop water footprints for six garments and to develop a standardized methodology. This will entail:

- A calculation of water (rain, ground and surface) used for each garment, beginning with the raw materials, through its use in the supply chain to the end of its useful life.
- A comparison of the water impacts for three pairs of garments with different emphases:

- Water Quality (and/or quantity of water): the Synchronia Snap Zip or Snap T (10.6 oz) and the Better Sweater (9.5 oz King weight product).
 - Geographic source region: the Merino 3 Crew (New Zealand Wool) and a product using wool from the US.
 - Quantity of water used (and/or quality of water): W's Cotton T-shirt and W's Simply Organic T (very similar weight to the T-shirt).
- A risk analysis for the business.
 - An analysis of environmental and/or social impacts and recommendations for mitigation.

SIGNIFICANCE

An assessment of the water footprint of Patagonia's garments will:

- Provide a detailed assessment of the company's impacts on the environment.
- Provide a sound basis for environmental management solutions.
- Develop a methodology for Patagonia to continue these efforts into the future.
- Contribute to the development of water footprinting methodologies.

BACKGROUND

Patagonia, an outdoor apparel company, has long been dedicated to promoting environmental stewardship both outdoors and within its own facilities. Patagonia recently launched "The Footprint Chronicles," which is a detailed look into the manufacturing journey of 15 articles of clothing, as part of their effort to become a more sustainable business. Key aspects of the product life cycle include raw material origins (farm or wellhead), raw material processing and manufacturing (fiber to textile), product manufacture (sewing and finishing), distribution and sales (wholesale, retail, internet/mail), consumer use and maintenance (laundry), and end-of-useful-life (recycle/disposal). Patagonia recently began gathering water use data in an effort to create a water footprint and they are looking to the Bren School students to help develop this further.

Patagonia's headquarters are located in Ventura, CA. The majority of the supply chain is located abroad, including China, Thailand, and Turkey, though there is ongoing domestic sourcing as well. One of their key suppliers is located in Los Angeles, CA, and will be available to the students for visitation and possibly for taking measurements.

STAKEHOLDERS

- Local water agencies
- Garment Industries
- Other industries interested in water footprinting
- Life Cycle Assessment analysts
- The Water Footprint Network
- World Business Council for Sustainable Development

APPROACH AND AVAILABLE DATA

Questionnaires regarding quantity and quality of water will be developed and distributed to supply chain manufacturers. When specific information is not available, generic data (world average numbers or weighted averages of commodities on the world market) may be used. The data will be synthesized into a calculation tool developed by the students, informed by pre-existing tools such as life cycle assessment tools and the WBCSD Global Water Tool.

Patagonia has had substantial success in its data collection efforts for its Footprint Chronicles, obtaining significant quantitative information directly from the supply chain typically over a two month period. A similar data collection experience is expected for this group project and Patagonia will work with the supply chain manufacturers as well as the students to obtain this data. Patagonia will take responsibility for monitoring the status of data collection efforts and talk directly to suppliers where needed to meet deadlines.

DELIVERABLES

A final report and a presentation to the clients will be delivered, to detail the quantity and types of water consumed in their production processes, to identify the sources of those waters and to assess the water quality impacts associated with the selected garments. The results will lead to management recommendations regarding the most water efficient fabrics and minimization of harmful impacts.

REFERENCES

Gerbens-Leenes P.W., Hoekstra A.Y. 2008. Business Water Footprint Accounting: A tool to assess how production of goods and services impacts on fresh water resources worldwide www.waterfootprint.org

WBCSD (World Business Council for Sustainable Development). Global Water Tool. (2008) <http://www.wbcd.org/templates/TemplateWBCSD5/layout.asp?type=p&MenuId=MTUxNQ&doOpen=1&ClickMenu=LeftMenu=LeftMenu>

CLIENT:

Patagonia
259 W. Santa Clara St. Ventura, CA 93001

CONTACTS:

Elissa Loughman – Environmental Analyst

Phone: (805)667-4733

Email: ELISSA_LOUGHMAN@patagonia.com

Jill Dumain – Director of Environmental Analysis

Phone: (805)667-4553

Email: JILL_DUMAIN@patagonia.com

ANTICIPATED FINANCIAL NEEDS AND SOURCES OF SUPPORT

- Provide initial contacts and supporting internal documents
- Supervision of the project in collaboration with the Bren students and faculty advisor
- Possible summer internship for 1 Bren student