



Business for Social Responsibility

Water Management in China's Apparel and Textile Factories

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Table of Contents

I.	Introduction	1
II.	The Water Quality Initiative in China	2
	A. Controlling Water Pollution	
	B. Industrial Water Usage in the Textile and Apparel Industry	
	C. BSR's Sustainable Water Group	
III.	Water Management in China's Textile Factories: A Water Forum	4
	A. Presentations and Findings from the Forum	
IV.	Critical Issues Going Forward	5
V.	References	6

About This Report

This report summarizes the activities and findings of the first phase of the Water Quality Initiative in China. A joint effort by Business for Social Responsibility and the Center for Water Research at Peking University, the Initiative has two expected outcomes: 1) improvements in water quality management and water use in apparel factories (textile manufacturers, dye houses and laundries/washing facilities); and 2) decreased water risk in the China-based supply chains for global apparel companies and retailers.

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About Business for Social Responsibility

Since 1992, Business for Social Responsibility (BSR) has been providing socially responsible business solutions to many of the world's leading corporations. Headquartered in San Francisco and with offices in Beijing, Guangzhou, Hong Kong, New York and Paris, BSR is a nonprofit business association that serves its 250 member companies and other Global 1000 enterprises. Through advisory services, convenings and research, BSR works with corporations and concerned stakeholders of all types to create a more just and sustainable global economy. As a non-profit organization, BSR is uniquely positioned to promote cross-sector collaboration in ways that contribute to the advancement of corporate social responsibility and business success. For more information, visit www.bsr.org.

Note:

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1. Introduction

According to China's State Development and Reform Commission, in 2005 China's textile and apparel exports amounted to US\$117.5 billion with an annual average growth rate of 17.3 percent, accounting for about 24 percent of the global textile and apparel trade.¹ Guangdong Province, located in the southern part of China, accounts for about 23 percent of China's total textile and apparel export and 12 percent of the national GDP, higher than any single province.² Unfortunately, this tremendous growth rate is not without its downside. Together with chemicals, the textile industry is one of the largest polluting sectors in China. Dyeing of textiles carries the burden of dealing with large amounts of wastewater containing potentially toxic byproducts.

Today Guangdong Province is experiencing growing rates of infectious disease linked with water pollution, and water pollution-related chronic health problems have emerged as a significant health burden in the province. More than 2.5 million people around Guangzhou, the capital of Guangdong Province, face increased health risks from contaminated drinking water due to heavy pollution.³

China's rapidly growing economy and increasing rates of urbanization mean that both industrial and domestic water use is mounting and placing pressure on already scarce water resources. As China works to achieve a balance between environmental protection and economic development, water resources and the environment have become key issues of concern. Recent studies of water quality in Guangdong Province have found increasing levels of pollution from previous years, with 28 percent of all rivers experiencing severe pollution.⁴ Much of this stems from the fact that less than 2 percent of Guangdong's cities and towns treat wastewater.⁵

In January 2008, BSR partnered with the Center for Water Research at Peking University to launch the Water Quality Initiative in China, to determine how the private sector can reverse the degradation of water systems in southern China. The initiative is a multi-phased approach to putting in place long-term, systemic change to improve water management practices in the textile and apparel supply chain in Guangdong Province.

The aim of this report is to summarize the activities and findings from the first phase of the Water Quality Initiative in China, jointly conducted by the Environmental Research & Development team at BSR and the Center for Water Research. Through collaboration with BSR's Sustainable Water Group and a student consulting team at the Ross School of Business at the University of Michigan, BSR conducted in-factory visits at apparel and textile factories to understand the dynamics that exist between multinational buyers and their suppliers and ultimately create new approaches to compliance strategies.

With the completion of this first phase, BSR and the Center for Water Research will continue to reach out to apparel and retail companies and their suppliers, as well as local government officials in China to continue to build long-lasting, collaborative solutions to China's environmental challenges.

II. The Water Quality Initiative in China

In China, there are strong linkages between economic growth, industrialization, urbanization and natural resource pressure, and many communities are heavily dependent on economic growth related to the destruction of natural resources.⁶ In other words, within this context, it is extremely challenging to control natural resource losses without affecting local livelihoods. This section describes regulatory efforts to control water pollution, the environmental impacts of the textile industry, and BSR's approach to tackling these problems.

A. Controlling Water Pollution

Recent studies of water quality in Guangdong Province have found increasing levels of pollution from previous years, with 28 percent of all rivers experiencing severe pollution.⁷ These statistics and BSR research (discussed below) add strength to the perspective that the regulatory context has not offered much of a general deterrent for water-polluting activities. China is relatively inexperienced with law and legal institutions as a result of decades of revolution since the 1940s.⁸ After the revolution, much of the existing legal system, legal institutions and expertise were lost, and it has since had to focus on making laws and building legal institutions while lacking the experience to do so.⁹ As well, China's law enforcement "machinery" for protection of natural resources is not very well-equipped, as it lacks resources, well-trained personnel, efficient internal management and external review systems.¹⁰

The Water Quality Initiative in China was launched in an effort to uncover additional innovative tools and approaches to compliance strategies that can accommodate specific local economic and social interests, with a longer term objective of bringing into alignment economic growth and responsible management of water and natural resources in the region.

B. Industrial Water Usage in the Textile and Apparel Industry

Together with the chemicals industry, textile manufacturing is one of the largest polluting sectors in China. In general, textile processing has a very high consumption of water and energy, and a large amount of wastewater discharge.

Environmental Impacts of Textile Processing

Chemicals	25% of chemicals produced worldwide are used for textiles
Water	Growing cotton: 8,000 – 40,000 liters / 1 kg cotton Finishing of textiles: up to 700 liters of freshwater / 1 kg textile Wastewater in production: up to 600 liters / 1 kg textile
Energy	High energy consumption in production, transport, retail and use

Source: Bluesign Technologies, AFIRM RSL Seminar presentation, September 27, 2007.

As China supplies about 24 percent of the global textile and apparel trade, the environmental impacts of the industry are staggering given the statistics on the preceding chart. Unfortunately, very little data on the specific environmental impacts to water supply or quality has been collected.

Due to the various processing steps, such as de-sizing, bleaching, dyeing or finishing in aqueous solutions, the water consumption and chemicals used will differ. The variations also dictate the amount of wastewater that needs to be treated and the different treatment processes that are necessary and feasible. Generally speaking, a textile factory manager's objective should be to recycle internally and to cut down the amount, as well as the chemical load, before releasing wastewater into the environment. Before its release, the water is typically treated again by different means.

For global brands and retailers that source finished products from Guangdong Province, the management of wastewater is a fundamental aspect of responsible supply chain management. When apparel and textile factories release untreated or insufficiently treated wastewater into the environment, the media and consumers have historically focused on the global brands that contract with those factories, rather than on the factories themselves. And in many cases, these brands are the best placed to bring about change. For these global brands, water management – which in this case refers to conservation, usage efficiency and recycling, wastewater treatment and discharge – is one area of their supply chains where they can exert a fair amount of control and influence.

Within the context in which this industry operates, a unified voice of multinational companies sourcing from the region providing clear incentives for pollution control aligned with factory needs represents the starting point for a much larger dialogue including local government and communities.

C. BSR's Sustainable Water Group

In 1995, BSR brought together global apparel and retail companies to develop and implement responsible practices around water use and wastewater discharge in textile and apparel supply chains. Formerly known as the Apparel Water Quality Working Group (AWQWG), today the Sustainable Water Group is a partnership of nine global apparel companies: Coldwater Creek Inc., The Gap Inc., H&M Hennes & Mauritz AB, JCPenney, Levi Strauss & Co., L.L.Bean Inc., Nike, Inc., Nordstrom, Inc. and Timberland. This group has developed Water Quality Guidelines that aim to mitigate the potential harmful impacts and business risks faced by companies operating around the world, where regulations and enforcement can vary dramatically from country to country.

Through this working group, BSR worked with member companies to select and facilitate visits to factories to conduct informal surveys related to water use and discharge. The overall objective of the comparative study among factories was to understand and characterize the dynamics between global brands and their suppliers.

III. Water Management in China's Textile Factories: A Water Forum

In February 2008, BSR worked with a student consulting team from the Ross School of Business at the University of Michigan to conduct a series of factory visits in China to identify patterns in factory water management, i.e. the technological, contractual and/or policy factors that improve or hinder performance. The results and recommendations from the factory visits were shared at a Water Forum on April 7, 2008, at Sun Yat-Sen University in Guangzhou. The Forum explored water quality and supply through the lens of industrial water usage in the apparel industry, with participation and dialogue from global brands, Chinese suppliers, NGOs and government officials.

A. Presentations and Findings from the Forum

Three sets of presentations were made: Professor Jianyao Chen, from the Department of Water Resources and Environment and the School of Geographical Science and Planning at Sun Yat-Sen University, illustrated the changes in urbanization and water resources in Guangzhou; Natural Resources Defense Council (NRDC) presented its case study on pollution prevention in the textile sector in Jiangsu Province; and the student consulting team from the Ross School of Business presented the findings of its research into the strategic challenges and opportunities in Guangdong Province. This detailed and extensive information was then discussed among the variety of voices participating in the Forum.

Key Findings from NRDC Presentation:

- Considerable opportunities exist for low-cost improvements in time, materials, water and energy.
- Increases in production efficiency equal increased profits due to reductions in energy usage, time and materials.

Key Findings from Ross School of Business Presentation:

- Water management is not a priority business issue for factories.
- Current government regulations and enforcement offer little incentive to improve water management; thus, factories managers have little to no rationale for improvement.
- Most factories believe that regulatory compliance meets the brands' management requirements. Brands could benefit from sending a unified message on wastewater discharge standards, monitoring and enforcement.

Figure 1. Key Observations and Takeaways

Factories...

- Exist in highly diverse regulatory and operational environments
- Are complying with government regulations
- Are coping with many strategic business issues



Factory Managers...

- Are making decisions based on their unique situations without necessarily considering environmental context
- Perceive compliance as sufficient to meet government and brand requirements
- Believe water management is not a pressing issue

There is a clear opportunity to increase awareness of the importance of improving water management in apparel factories.

Source: Bejinariu, S. et. al. 2008. "Beyond Compliance: Strategic Challenges & Opportunities in the Apparel/Textile Supply Chain." Presented at BSR/Center for Water Research Water Forum on April 7, 2008.

The conclusions from the Forum were clear and echo much of what we have learned from the past decade of supply chain compliance engagement:

- Incentives for performance have to be aligned, including brand valuation, factory understanding and government enforcement.
- Knowledge is the key driver of change, including both an understanding of what should be done as well as why it is important.
- People are at the center of this equation: people administrate systems, maintain plants, improve processes and make business decisions.

IV. Critical Issues Going Forward

Water re-use and recycling and wastewater treatment should be an integral part of a suite of demand and supply measures that together can bring about more sustainable water management in China. To facilitate the uptake of industrial water management practices, the following issues will be critical:

1. Greater appreciation of human influence on the water cycle on the part of Chinese society
2. Increased collaboration between global companies and local environmental protection bureaus in Guangdong Province to create the regulatory and control mechanisms that allow for economic growth and environmental protection at the same time
3. Unified, consistent messaging from global companies to their Chinese suppliers on best practices and standards around water usage, discharge and pollution

The next step for BSR and the Center for Water Research will be to develop forward-looking curriculum that will be disseminated through the China Training Institute (<http://www.ctichina.org>). The curriculum will focus on the CEO business case, practical steps for managers, workers and practitioners, and the building of a peer-based community of managers, workers and practitioners.

Today, a unique opportunity exists to build collaboration in southern China to meet the enormous challenge of coordinating environmental and public health objectives, and the general treatment of water as a common property resource. BSR is addressing this challenge via training programs at the managerial and individual worker levels in order to increase awareness of the intersections of environment and health. The goal is to bring together global companies, their suppliers and representatives of Chinese government sectors that are responsible for water pollution regulation and enforcement, and create corporate strategies for effective water management to address both natural resource and public health concerns.

For more information on how your company can get involved in the next phase of this initiative, please contact Linda Hwang, Environmental R&D Manager, at lhwang@bsr.org.

VI. References

¹ “China: Textile Exports up 25% in 2006.” Danmex China Business Resource, January 13, 2007. Available at <http://www.danmex.org/spansk/tekst.php?id=310>.

² “S. China province reinvents self to lead national change.” Reuters, November 26, 2006.

³ “Polluted water puts residents at risk.” *Business Daily Update*, April 3, 2007.

⁴ Brownlow, K. and Renzi, S. 2007. “Is Guangdong the Dark Horse in Addressing Ecological and Human Health Threats?” Woodrow Wilson International Center for Scholars, China Environment Series 9 (2007). Available at http://www.wilsoncenter.org/index.cfm?topic_id=1421&fuseaction=topics.publications&group_id=375132.

⁵ Ibid.

⁶ World Bank. 2001. “Attacking Poverty, World Development Report, 2000-2001.” Washington: World Bank; World Bank. 2006. “Equity and Development, World Development Report 2006.” Washington: World Bank.

⁷ Brownlow, K. and Renzi, S. 2007. “Is Guangdong the Dark Horse in Addressing Ecological and Human Health Threats?” Woodrow Wilson International Center for Scholars, China Environment Series 9 (2007). Available at http://www.wilsoncenter.org/index.cfm?topic_id=1421&fuseaction=topics.publications&group_id=375132.

⁸ Pei, M. 1999. “Legal Institutions and Security of Economic Transactions in Post Socialist Countries: The Case of China.” Princeton University, Department of Politics. Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=151138.

⁹ van Rooij, B. 2006. “Regulating Land and Pollution in China: Lawmaking, Compliance, and Enforcement: Theory and Cases.” Doctoral thesis. Leiden University Press, Van Vollenhoven Institute for Law, Governance and Development, Faculty of Law, Leiden University. Available at <http://hdl.handle.net/1887/5433>.

¹⁰ Peerenboom, R. and He Xin. 2008. “Dispute Resolution in China: Patterns, Causes, and Prognosis.” *The Foundation for Law, Justice and Society*. Available at <http://www.fljs.org>; van Rooij, B. 2006. “Regulating Land and Pollution in China: Lawmaking, Compliance, and Enforcement: Theory and Cases.” Doctoral thesis. Leiden University Press, Van Vollenhoven Institute for Law, Governance and Development, Faculty of Law, Leiden University. Available at <http://hdl.handle.net/1887/5433>; Turner, J. 2006. “New Ripples and Responses to China’s Water Woes.” *ChinaBrief*, 6(25).