

The Environmental Cost of Clothes

An estimated 65 percent of the world's clothing is now manufactured in China at significant environmental cost to that country. But as Chinese communities start to call local polluters to account for specific incidents and the government gets tougher on violators, some brands are starting to think about the reputational risks around using suppliers that disregard local standards to produce low-cost apparel.

Last year, according to the [American Apparel and Footwear Association](#), Americans spent about \$340 billion on clothing and shoes, accounting for 75 percent of the global market. Of that, 99 percent of shoes and 98 percent of clothing were made abroad, where environmental and social laws are less stringent and enforcement of those that do exist is significantly looser.

In China, according to the World Bank 17 to 20 percent of industrial water pollution comes from textile dyeing and treatment, indeed 72 toxic chemicals in China's water originate solely from textile dyeing. Of these, 30 cannot be removed.

That's a real problem for the textile industry and a risk to the reputations of brands that don't pay attention to how their supply chains are producing.

There are, however, recent initiatives such as the Sustainable Apparel Coalition, which includes Wal-Mart, Hanes, J.C. Penney, Nike, Gap Inc, H&M, Levi Strauss, Marks & Spencer, and Patagonia, among others and the Natural Resource Defense Council's "Clean by Design." Both were established to try to promote best practice and set standards for the industry.

The initiatives are trying to help factories think about how they produce and consumers, think about how they buy.

In China, Polluted water causes 75 percent of diseases and over 100,000 deaths annually, the World Health organization has said. Meanwhile, cancer rates among villagers who live along polluted waterways are much higher than the national average.

"There is huge room for improvement in the textile industry as a whole," said Ma Jun, director of the Institute for Public and Environmental Affairs (IPE) and the author of perhaps most influential book on China water issues.

Estimates are that 70 percent of lakes and rivers in China are polluted, as well as 90 percent of the groundwater. In all, an estimated 320 million Chinese do not have access to clean drinking water – more than the entire population of the United States.



China Textile Facts

In China, the textile and dyeing sectors emitted more wastewater than any other sector in Guangdong Province, according to a 2009 report from the Guangdong Academy of Sciences on regional environmental policy. The same industry was listed among the top five producers of solid waste and 6th in energy consumption.

Nationwide, the textile industry is the fourth-largest contributor to Chemical Oxygen Demand (COD) pollution, ranking behind only paper, food and chemicals, according to Ma Jun.

In 2009, he said, textiles contributed to 8.3 percent of COD, while in 2003 the sector's contribution was about 5.6 percent. The textile industry is also one of the major dischargers of ammonia and nitrogen, ranking fourth nationwide with a contribution of about 6.6 percent.

Textile and dyeing plants also emit heavy metals into the water, including cadmium, chromium, mercury, lead, and copper.

“The impact of textile pollution is larger,” Ma Jun said. “Relatively more people are exposed to heavy metal pollution from textiles than any other industry. There are “several thousand” violators from the industry featuring among the IPE lists of factories and that have been fined for polluting China’s water and air as they produce the clothes worn around the world.

Part of the problem, he says, is that fines are relatively low, between 50,000 and 100,000 yuan, and generally imposed annually rather than per violation. “There is little incentive for companies to clean up,” Ma Jun said.

There are varied processing steps, including de-sizing, bleaching, dyeing or finishing in aqueous solutions and each of course means different water consumption and chemicals wastewater discharge. According to a 2008 [Business for Social Responsibility report](#), “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.”

Exporting Pollution

It used to be that clothing was made close to home, so we knew when a textile mill or garment manufacturer was polluting the local water or air and U.S. mill towns experienced some of the same problems China now faces, with local rivers often fetid and colored by dye.

With greater awareness of the hazards, then years of battling, government regulatory authorities set tougher environmental and labor standards to make sure production wasn't exploitative or damaging to our air and water. Manufacturers were forced to comply, installing capture equipment on smokestacks and treating any wastewater before pumping it into rivers.

But that made clothing more expensive to produce and then with the opening of China in the mid-1970s and the growing availability in the 1980s of cheap labor along with manufacturing capability, most of the production process gradually shifted there. Eventually, environmental and social laws were put in place in China too, but often local enforcement is limited and corruption rampant.

That has meant many factories and textile mills have been able pollute at will, with any violation fines often insignificant relative to profit. That, and the fact that an abundant migrant labor force comprised of some of the hundreds of millions who previously lived below the poverty line and were willing to work for cheap, meant clothing could be produced at prices that didn't factor in either the real cost of labor or the environmental damage.

Those costs were left for future generations to cover in health care, clean-up and other forms of support.

The result is that we are all now hooked on the irrationally cheap. Prices of fabric and clothing imported to the U.S. have fallen 25% since 1995, partly due to the downward pricing pressure brought by discount retail chains, according to an article in the [Wall Street Journal](#).

Still, in China, the future is now. While migrant workers, now with a better standard of living, want fair wages and benefits such as health insurance, the Chinese government recognizes that the holy grail of economic growth at the 10 percent plus levels seen over the past two decades is unsustainable if the rampant environmental degradation continues apace.

Unrest has been growing across the country, particularly around perceived labor and environmental violations, with tens of thousands of mostly small protests annually, many of them unreported.

In general there is significant pressure on local suppliers to cut costs and this has only become worse over the past year with labor prices rising in Chin. The manufacturers cut corners on environmental standards to lower their costs and win contracts.

Besides the cost of cleaning up contaminated water, land and air, pollution will cost China billions in additional health care, lost productivity and early mortality, dragging down growth, the government recognizes. The World Bank in a 2007 report estimated China's environmental

costs at around \$100 billion a year, or about 5.8 percent of GDP, including the impact on mortality.

So any way you look at it, those clothes we like to buy in abundance, and have been taught in recent years to purchase and throw away without thought because prices are so cheap and styles constantly new, are a real problem for the environment, for workers who make them and ultimately for China's economy.

In a [report](#) released in December, Greenpeace recounted time spent in two textile industry towns in Guangdong province: Xintang, the "Jeans Capital of the World," and Gurao, a manufacturing town 80% of whose economy is devoted to bras, underwear, and other clothing articles.

Greenpeace testing found five heavy metals (cadmium, chromium, mercury, lead, and copper) in 17 out of 21 water and sediment samples taken from throughout Xintang and Gurao. In one sample, cadmium exceeded China's national limits by 128 times.

Xintang, known as the "Jeans Capital of the World", produces over 260 million pairs of jeans annually, equivalent to 60% of China's total denim production, and 40% of the jeans sold in the United States each year.

Gurao, "the capital of sexy," in 2009 produced 200 million bras, or enough for every third woman in China to have one. But this prosperity has come at the cost of the degradation of the local river, the Xiao Xi.

Villagers told Greenpeace that the dirty, fetid river is no longer fit for drinking or laundry. Fish no longer live in the river and people living nearby complain that they must endure the stench from the waste water. When the river overflows, their yards and homes are flooded by waste water.

Unfortunately, Gurao and Xintang are not unique, representing just 2 out of 133 textile manufacturing cluster towns where there exists unregulated or at least tolerated hazardous chemical use and release – all in the name of economic growth and jobs.

True, the rise of China over the past few decades has been startling, and the achievements not to be forgotten. In no other time in history has one government accomplished a similar feat: Pulling some 300 million people out of poverty. The questions remain, however, around the price of that transformation and how the government will choose to address this looking forward.

Indeed the 12th five-year plan, unveiled in March, includes provisions for reform that involve working to rebalance China's Economy and improve livelihoods. The government is keen to shift the growth model from export and investment driven to domestic consumption drive, and will focus on the quality of economic growth, not just the growth rate itself, perhaps reducing GDP targets to around 7 percent. There will be additional investment in alternative energies and a push toward promoting less-polluting industries, with a shift away from more polluting producers.

As wages rise in China, however, this is a trend that is already underway, with some of the dirtiest factories moving to Bangladesh, Pakistan and Vietnam, where regulations are even lighter and costs less. Once again, rather than cleaning the supply chain and charging higher prices to reflect cleanup costs and higher wages, some brands are just looking further south.

Sustainable Supply Chains?

Luckily, this is not universally the case. There are retail brands that are looking to improve their own supply chains and influence the industry more broadly.

In March a coalition of retail companies, apparel and shoe manufacturers, fashion houses, non-profits, and the U.S. Environmental Protection Agency launched a new organization that seeks to reduce the environmental and social impacts of the clothing industry worldwide.

The [Sustainable Apparel Coalition](#) (SAC), which includes Wal-Mart, Hanes, J.C. Penney, Nike, Gap Inc, H&M, Levi Strauss, Marks & Spencer, and Patagonia, among others, will help to develop improved sustainability strategies and tools to measure and evaluate sustainability performance. The group of thirty organizations began working on this informally last year.

The group announced it was developing a database of the environmental effects of every manufacturer, component and process in apparel production, with the aim of using the gathered information to give the garments a sustainability store.

Part of the problem for the apparel industry is the complexity of the supply chain. There are many bits and bobs that go into producing our clothes and each piece may be produced in a different factory and then assembled in yet another. That means accounting for the environmental impact of any one item of clothing, tracing the zippers, the buttons, the natural fabric, the dyed fabric, is quite a feat.

Still, for the new coalition, tracing the various parts that make up one jacket or pair of trousers is the goal, along with conveying that information to the consumer. The idea is that eventually there is a label that allows shoppers to see how well their coveted item of clothing is produced and learn about its impact on both the planet and people.

And as consumers we all have a responsibility to think about how much and how we consume. Are our expectations around price and how long we use an item of clothing unrealistic?

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.
Reprinted in BSR, "Water Management in China's Apparel and Textile Factories," 2008*