

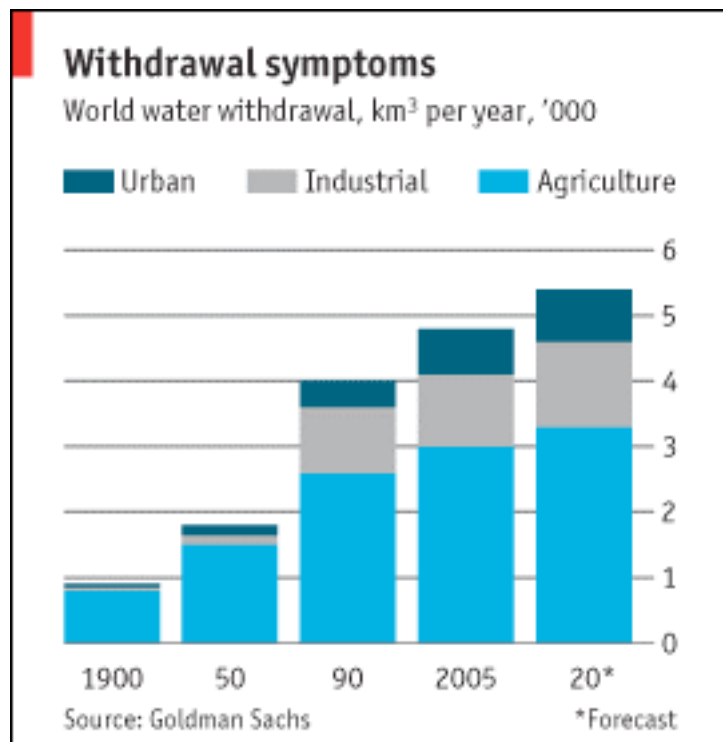
## Business and water Running dry

### Everyone knows industry needs oil. Now people are worrying about water, too

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“WATER is the oil of the 21st century,” declares Andrew Liveris, the chief executive of Dow, a chemical company. Like oil, water is a critical lubricant of the global economy. And as with oil, supplies of water—at least, the clean, easily accessible sort—are coming under enormous strain because of the growing global population and an emerging middle-class in Asia that hankers for the water-intensive life enjoyed by people in the West.

Oil prices have fallen from their recent peaks, but concerns about the availability of freshwater show no sign of abating. Goldman Sachs, an investment bank, estimates that global water consumption is doubling every 20 years, which it calls an “unsustainable” rate of growth. Water, unlike oil, has no substitute. Climate change is altering the patterns of freshwater availability in complex ways that can lead to more frequent and severe droughts.



Untrammelled industrialisation, particularly in poor countries, is contaminating rivers and aquifers. America’s generous subsidies for biofuel have increased the harvest of water-intensive crops that are now used for energy as well as food. And heavy subsidies for water in most parts of the world mean it is often grossly underpriced—and hence squandered.

All of this poses a problem, first and foremost, for human welfare. At the annual World Water Week conference in Stockholm this week, delegates focused on measures to extend access to clean water and sanitation to the world's poor. But it also poses a problem for industry. "For businesses, water is not discretionary," says Dominic Waughray of the World Economic Forum, a think-tank. "Without it, industry and the global economy falter."

Water is an essential ingredient in many of the products that line supermarket shelves. JPMorgan, a bank, reckons that five big food and beverage giants—Nestlé, Unilever, Coca-Cola, Anheuser-Busch and Danone—consume almost 575 billion litres of water a year, enough to satisfy the daily water needs of every person on the planet.

Although agriculture uses most water (see chart), many other products and services also depend on it. It takes around 13 cubic metres of freshwater to produce a single 200mm semiconductor wafer, for example. Chipmaking is thought to account for 25% of water consumption in Silicon Valley. Energy production is also water-intensive: each year around 40% of the freshwater withdrawn from lakes and aquifers in America is used to cool power plants. And separating just one litre of oil from tar sands—a costly alternative fuel made viable by high oil prices—requires up to five litres of water.

Quality matters as much as quantity. According to the World Bank, around 90% of the rivers in China near urban areas are seriously polluted. The overall cost of water scarcity—from pollution and the depletion of groundwater—is estimated to be 147 billion yuan (\$21.4 billion) a year, or almost 1% of China's annual output. In 2007 poor water-quality cost China some \$12 billion in lost industrial output alone.

Elsewhere, Taipei City in Taiwan no longer allows companies to tap its groundwater, because of shortages. Firms in drought-ridden Australia have lived under stringent water restrictions for years. Southern Company, an electricity utility based in Atlanta, temporarily shut down some of its power plants last summer because of a drought. Indeed, according to a survey by the Marsh Centre for Risk Insights, 40% of *Fortune* 1000 companies said the impact of a water shortage on their business would be "severe" or "catastrophic"—but only 17% said they were prepared for such a crisis.

Not all companies are sitting still. Since 1995 Dow has reduced the amount of water it uses per tonne of output by over a third. Nestlé cut its water consumption by 29% between 1997 and 2006, even as it almost doubled the volume of food it produced. And at Coca-Cola bottling plants from Bogotá to Beijing, schools of fish swim in water tanks filled with treated wastewater, testament to the firm's commitment to clean all its wastewater by 2010 (it is 84% of the way there).

Cynics say such programmes are mere public relations. There is some truth to

this. Companies that use freshwater in areas where it is scarce are understandably unpopular. Activists have attacked both Coca-Cola and Pepsi, for instance, for allegedly depleting groundwater in India to make bottled drinks. Coca-Cola took the matter to court and was exonerated by an independent commission, which blamed a regional drought for water shortages, but activists were not mollified. Coca-Cola has responded by redoubling its attention to water—for instance, by backing a scheme in Kaladera to teach villagers how to harvest rainwater and irrigate crops more efficiently. “Regulatory licences to water are not enough,” says Jeff Seabright of Coca-Cola. “We need a social licence—the OK from the community—to operate.”

Cutting water consumption can also make business sense. Using less water reduces spending on water acquisition and treatment, and on the clean-up of wastewater. Some firms have no choice. Elion Chemical in China is working with General Electric to recycle 90% of its wastewater to comply with Beijing’s strict new “zero-liquid discharge” rules, which bar companies from dumping wastewater into the environment. Of Nestlé’s 481 factories worldwide, 49 are in extremely water-stressed regions where water conservation and re-use is the only option.

Such farsightedness is, alas, only a drop in the bucket. In a drought, even water-efficient factories can run into trouble. Moreover, the water used within a factory’s walls is often only a tiny fraction of a firm’s true dependence on water. José Lopez, the chief operating officer of Nestlé, notes that it takes four litres of water to make one litre of product in Nestlé’s factories, but 3,000 litres of water to grow the agricultural produce that goes into it. These 3,000 litres may be outside his control, but they are very much a part of his business.