Reducing the water footprint in India

Arjen Y Hoekstra

Few companies have a water strategy, but it becomes increasingly clear that it's wiser to be prepared. Increasing water shortages are likely to start affecting an increasing number of operations and a lack of responsible behaviour may affect a company's reputation.

One of the internationals that is very much aware of the need for a wise water strategy is Coca-Cola, which is struggling with its image in India since increasing concerns over the company's water consumption led to consumer protests in 2006. In 2008, Coca-Cola was the first company in the world that fully explored the actual water footprint of one of its products. They discovered that a 0.5-litre PET bottle of Coke has a water footprint between 36 and 150 litres of water, depending on the source and production circumstances of the sugar. It became clear that the water footprint in the supply chain of the company is many times bigger than the water footprint of its own operations.

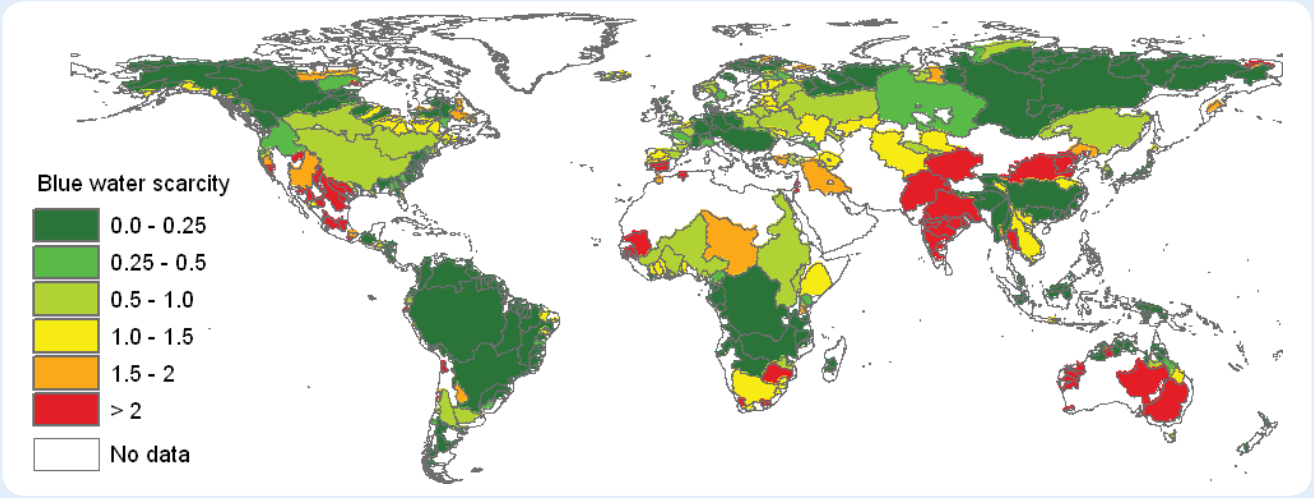
An increasing number of companies have started actively exploring their water footprints in India. This year, C&A, a European chain of fashion retail clothing stores sourcing cotton from India, finalized a study comparing the water footprint of organic versus conventional cotton in the states of Gujarat and Madhya Pradesh. As expected, the water footprint in organic farming has a much lower water footprint because of the absence of water pollution through pesticides.

Very recently, Tata released a report on the water footprint of twelve different factories within Tata Chemicals, Tata Motors, Tata Power and Tata Steel. The company claims that the report provides valuable insights on how to reach actionable response strategies for corporate leadership in water management.

The increasing interest in sustainable water use is warranted. Some of the most densely and severely stressed river basins in the world lie on the Indian subcontinent: the basins of the Ganges, Indus, Krishna, Penner and Cauvery. The 450 million people in the Ganges basin have to cope with severe water scarcity during five months per year. According to international standards, severe means water consumption exceeds 40 percent of natural runoff. Under such conditions, river flows and riverine ecosystems are heavily modified, groundwater levels drop and competition over water starts affecting people's lives.

The Indus river basin, covering parts of Pakistan and India and inhabiting 212 million people, faces severe water scarcity during eight months of the year. In the Indian provinces of Punjab, Rajasthan and Haryana, ground water is steadily being depleted. Unsustainable groundwater depletion and severe water scarcity threaten potable water supplies and agricultural output, affecting the country's food supplies and the government's

Water scarcity is particularly large in river basins on the Indian subcontinent



welfare programmes.

The water footprint in India is not sustainable. In too many places, ground water is overexploited and river flows get depleted. In addition, water pollution seems to be an intrinsic part of the Indian economy. There are places where the colour of the river shows which dye is being used in the clothes manufacturing industry. In other places, aquifers and rivers show concentrations of nutrients and pesticides that go far beyond healthy levels.

It is often thought that water problems are to be solved locally where they occur. However, generally, local water depletion and pollution are closely tied to the structure of the national or even global economy. Water is often consumed or polluted to produce cheap goods for export to other parts of the nation or other countries, also in highly water-stressed river basins. Companies will have to scrutinize and clean their supply chain.

In my new book 'The Water Footprint Of Modern Consumer Society', I propose different instruments that will help government and business to manage water more wisely. First of all, governments will need to agree on a water footprint cap for each separate catchment, in order to ensure sustainable water use at river basin level. A water footprint cap sets a maximum to the water volume that can be allocated to the various human purposes, accounting for environmental water needs. It also sets a maximum to pollution given the assimilation capacity of the basin. The total volume of 'water footprint permits' to specific users in a basin should remain below the maximum sustainable level. Water use in itself is not the problem, but not returning the water or not returning it clean is the problem. The water footprint measures exactly that: the consumptive water use and the volume of water polluted.

Government and companies together need to establish water footprint benchmarks for the most important water-intensive products, for example, food and beverage products, cotton and biofuels. The benchmark for a product will depend on the maximum reasonable water consumption in each step of the product's supply chain. In this way, producers that use water, governments that allocate water and manufacturers, retailers and final consumers in the lower end of the supply chain, share information about what are 'reasonable water footprints' for various process steps and end products. When granting certain water footprint permits to specific users, it makes sense for governments to take into account the relevant water footprint benchmarks for the different users. Furthermore, companies will need to create greater product transparency, so that consumers know what's on their plate.

Let's not wait. Companies can simply aim at a zero water footprint in their operations. This can be achieved by full recycling of water, zero leakages and minimal evaporation losses, and by capturing and reusing energy and chemicals from waste flows. And regarding supply chains, sustainable sourcing will become a precondition for corporate survival.

(The author is the Professor of Water Management, University of Twente, Netherlands. Views expressed are personal)