

Declining water supply brings a deluge of ideas

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We live in a world in which 2.6bn people consume water from unsafe and polluted sources, according to United Nations figures. Against this, it takes up to 100,000 litres to produce 1kg of beef, 75 litres to make one computer chip and 780 litres to create one litre of fruit juice, says Waterwise, a UK non-governmental organisation – an idea known as “embedded water”.

These realities are now colliding, with serious consequences for business. “Everyone understands that water is essential to life. But many are just beginning to grasp how essential it is to everything in life – food, energy, transportation, nature, leisure, identity, culture and virtually all products used on a daily basis,” says Lloyd Timberlake of the World Business Council for Sustainable Development, a business think-tank, which next week launches a report on the subject.

Ford Motor’s Southampton plant, for instance, uses 6,000 litres of water to make one Ford Transit van, including body construction, painting, trimming and final assembly. But Waterwise says the total figure is 150,000 litres if you include the water that goes into processing the van’s components.

In the developed world, much of the water infrastructure must be replaced in the next 20 years, according to the Pacific Institute, a US think-tank, but other regions are at risk of more severe water supply problems.

In India, urban water demand is due to double and industrial demand to triple by 2025. Unreliable supply in Bangalore has already led information technology companies such as Wipro, iGate and Mphasis to consider other locations when they expand, says the Pacific Institute, while in 2003 PepsiCo and Coca-Cola lost their licences to use ground water in Kerala for their bottling plants after drought raised competition for the resource.

This month, they have faced calls for a ban in India after a report alleged their products contained high levels of pesticides. Coca-Cola was recently dropped from pension fund TIAA-Cref’s Social Choice Account, partly because of concerns over its exploitation of water around the world.

Companies must be aware of the vulnerability of their supply chains in sectors as diverse as textiles, electronics and consumer products. “Water as a business risk issue is something that we will be looking at more and more over the next few years,” says Nick Robins, head of socially responsible investment funds at Henderson Global Investors.

This explains why a company such as Unilever has initiatives ranging from a detergent that requires less rinsing for the Indian market to support for tomato farmers in Brazil to introduce drip irrigation, which cuts water use by 30 to 70 per cent, while increasing crop yields by 20 to 90 per cent, according to the World Resources Institute.

But there are also ample opportunities for business. The first issue to address if you want to reduce water use is how much you currently use, so organisations that provide metering systems, such as Itron of the US and Techem of Germany, are well placed.

Companies are also thriving by offering innovations in infrastructure replacement, filtration, irrigation and desalination. Amiad, an Israeli company listed on AIM, is doing well out of filtration and irrigation, and making inroads with drip irrigation systems that deliver fertiliser as well as water, saving on fertiliser and labour costs.

Developed countries will spend up to \$1,000bn on upgrading water and waste water systems in the next few decades, says Emma Howard Boyd, head of SRI at Jupiter Asset Management, while “demand for water from urban areas and industry in China is expected to grow by 70 per cent and 104 per cent respectively between 2010 and 2030”. Among those poised to benefit are Asian water treatment companies such as HyFlux and Biotreat, both listed in Singapore.

Other innovators include Canada-based Pure Technologies, which has developed the SmartBall, an aluminium sphere equipped with a sensor, which travels along a pipeline pinpointing the location of leaks as it goes.

Insituform, a US-based company, has developed trenchless sewer repair technology that allows utilities to repair pipes without digging up roads.

It has worked in settings as varied as underneath the White House, in nuclear power plants and a Texas prison, which was keen to repair its pipes without putting temptation in the inmates’ way.

Zander Group, a UK company, uses a moisture-retaining material to encourage desert reversal and revegetation. It works by releasing moisture to root systems over a prolonged period, reducing the need for irrigation or rainfall.

Its subsidiary, Clear Earth, will also use the material as an underlying layer for pavements and car parks, where it filters contaminants out of water run-off and allows the water time to filter back to the ground water rather than running off down the drain.

James Cameron, vice-chairman of Climate Change Capital, a UK bank focused on low-carbon projects, says: "Managing water will be a premium business to be in."

Food

It takes 200 litres of water to produce 1kg of rice

1kg of potatoes: 500 litres

1 orange: 53 litres

1 serving of lettuce: 22 litres

1 pint of milk: 250 litres

1 egg: 450 litres

1 loaf of bread: 550 litres

1 kg of butter: 18,000 litres

Textiles and consumer goods

1kg of cotton: 5,300 litres

1kg of wool: 200,000 litres

1 car: 150,000 litres

1 computer chip: 75 litres

Sources: Waterwise, Stanford University

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