

## Water: the next oil?

Water is one of our most critical resources, yet it is increasingly under threat. Global demand for water is rising dramatically, while the quality of available water continues to deteriorate. According to the United Nations, approximately 60% of the world's people will be living in 'water stressed' countries by 2025.

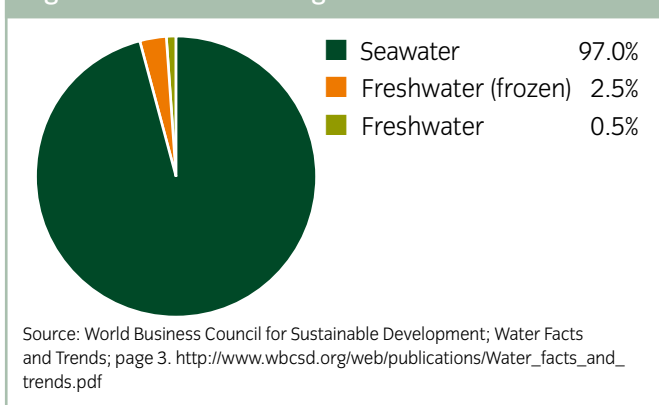
The increasing pressure on global water resources has led some to speculate that 'water is the next oil'. Water, they say, not oil, may emerge as this century's most essential – and contested – resource and may even lead to national and regional conflicts. Competition for water resources has already contributed to tensions between competing users around the globe.

Companies are also feeling the pressure. Business risks associated with water are mounting, forcing firms to consider how to address water issues in their business strategies and which strategies will be most effective in dealing with them.

### Global freshwater availability

Water seems to be an abundant resource. However, less than 3% of the world's water is fresh – the remaining 97% is seawater, which is not readily available for human use. Of the 3% that is freshwater, over 2.5% is frozen – locked up in Antarctica, the Arctic and glaciers (and, again, not readily usable). Humans must therefore rely on 0.5% for all of our freshwater needs. (See Figure 1.) The majority (98%) of this 0.5% is located in underground aquifers; the remainder is in natural lakes, human-made storage facilities (reservoirs), and rivers, and falls as rain. Further, water is not distributed evenly over the globe. Fewer than 10 countries possess 60% of the world's available fresh water supply: Brazil, Russia, China, Canada, Indonesia, US, India, Colombia and the Democratic Republic of Congo.

Figure 1: Breakdown of global freshwater available



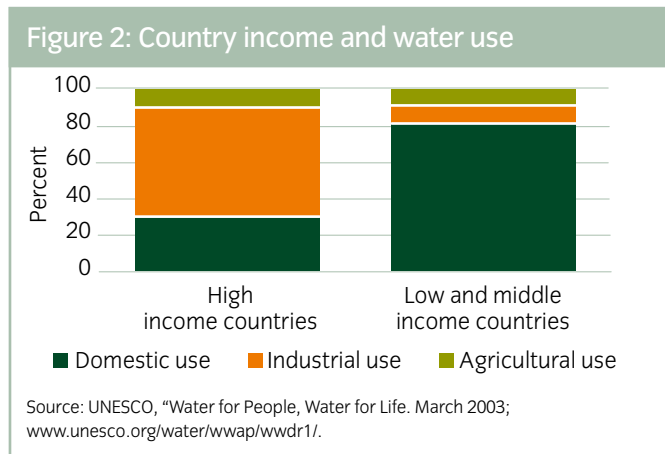
### Global water usage

Agriculture, and principally the irrigation of crops, accounts for seventy percent of all water used globally. Industry is the second largest user of water. Its uses are varied:

- Cooling in thermal power generation (coal, oil, gas, nuclear or biomass).
- Generating energy in hydroelectric dams.
- Making steam for direct drive power.
- In the production of products or to produce chemical reactions (this is referred to as process water).
- A medium for waste disposal.
- An ingredient in food, beverages and pharmaceuticals.

(Also, if the entire life cycles of products are considered, additional water is 'embedded' in many 'dry' products", due to its use in growing or manufacturing processes.) Finally, water is used domestically – most importantly, for drinking – but also for cooking, washing and sanitation.

Industrial and domestic uses of water increase with country income. Agriculture accounts for a much larger percentage of water usage in low- and middle-income countries (82% as opposed to 30% in high-income countries). (See Figure 2.) In England, water used for agriculture represents only 1% of all water used, while in India it amounts to over 90%.



## Water stress

Water stress most often refers to water scarcity, where demand exceeds supply (insufficient quantity). Water scarcity is caused by the depletion of surface and underground water, and/or the pollution of water resources.

An extreme example of surface water depletion is the demise of the Aral Sea in the former Soviet Union. Since the middle of the last century, this body of water has shrunk to less than half of its original size primarily due to the deliberate diversion of water from the Sea's inflowing rivers in order to irrigate water-intensive cotton and rice crops. By 1987, about 60% of the Sea's volume was lost, its depth declined by 14 metres and its salt concentration had doubled. By 1990, the Sea had split into two\*.

Underground aquifer depletion continues unabated, and the deterioration of the quality of water resources, caused by pollutants, remains problematic. For example, the European Union estimates that groundwater is being used at a faster rate than it can be replenished in 60% of European cities with more than 100,000 people and that 20% of all surface water in the European Union is seriously threatened with pollution.

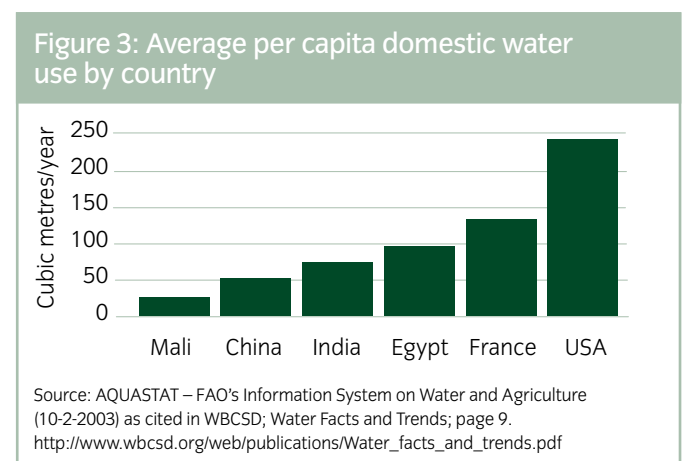
The term water scarcity can also refer to the inaccessibility of water (potable or in some cases, any water at all) in places where a sufficient quantity

of water exists. This can be caused by inadequate investment in water infrastructure by governments or companies managing water services, perhaps due to a lack of finances or political will. According to the United Nations, one in five (1.2 billion) people do not currently have access to safe drinking water, and, according to the World Health Organization and UNICEF, 5.2 million people (most of whom are children) die each year from waterborne disease.

## Global trends

Several global trends, including population growth, increasing affluence, increased economic activity, rapid urbanisation and climate change, are contributing factors to water scarcity.

The global population is projected to reach over 8 billion in 2030 (and to level off at 9 billion by 2050), which will inevitably lead to increased demands for water, for both domestic and agricultural use. In recent years, the rate of poverty alleviation – particularly in the two population giants of China and India – has increased. While this is generally good news, the downside is that affluent people use more water. Figure 3 demonstrates the wide variation in average per capita domestic water use from different nations – from 4 cubic metres per year in Mali to 215 in the US.



Continued industrialisation and expansion of tourism across the globe have also put more and more pressure on water resources. In addition, migration from rural to urban areas continues unabated, and significant investment in water infrastructure is required in order for cities to deliver water to both individuals and business, as well as process their wastewater.

Finally, climate change is expected to exacerbate the situation. It is presumed that, initially, water from melting glaciers will present a serious threat to coastal communities due to rising sea levels. However, it is believed that water will become increasingly scarce because many sources will shrink or dry up entirely. Changes in weather patterns and higher temperatures may lead to severe droughts and corresponding declines in crop yields in some regions, and increased storm activity may cause damaging flooding. The uncertainty surrounding climate change makes it extremely difficult to predict its implications on the availability of water resources globally.

### Business risks

The business risks associated with water scarcity can be significant. Water scarcity can lead to increased input costs, capacity constraints, supply chain disruptions, regulation compliance expenses, poor product quality and/or plant closures – resulting in higher operational

costs and/or capital expenditures, which may ultimately affect companies' profitability. In addition, the poor management of water-related issues can give rise to reputational/brand damage – resulting in lost turnover due to decreased product demand or even, a loss of 'license to operate'. Companies in sectors that rely heavily on water for their products or for their production processes, including utilities, beverages, metals and mining, food, pulp and paper, textiles and chemicals, are particularly exposed. Coca-Cola's experience in India in the past five years highlights the risks that water-related issues can present to companies (see Box 1).

Companies that are exposed to water-related businesses risks would be wise to consider water in their business strategies and develop effective, proactive strategies for dealing with potential problems related to water supply and quality. Companies who ignore this increasingly significant issue, do so at their peril.

#### Box 1: Coca-Cola in India

Since 2002, Coca-Cola has experienced a series of water-related challenges in India. Communities across the country have accused the company of:

- Causing severe water shortages in agricultural areas by siting its plants in drought-prone regions and subsequently over-extracting groundwater.
- Polluting groundwater and soil around its bottle facilities by improperly disposing of solid waste and wastewater.
- Distributing toxic waste to farmers as fertilizer, which pollutes the soil and groundwater.
- Selling products tainted with pesticides.

As a result, the company has suffered ill effects, many with negative financial consequences:

- Several of the company's bottling plants have lost their 'license to operate,' including one of the company's largest in the country (located in Kerala), which has been shut down since 2004.
- The company has suffered reputational damage in India and more widely. In 2005 and 2006, the company reported in its earning results that the volume of sales in India was declining. In addition, the company has faced boycotts in the US and UK,

where over 100 universities have anti-Coke programmes or axed exclusive contracts.

- In 2006, Coca-Cola products were banned in several regions of the country after a study claimed they contained unacceptably high levels of pesticide. Although the bans were temporary, the communities are aiming to have them extended through the courts.
- The company has had trouble siting new facilities due to community protests.
- Company shareholders criticised the company's handling of the problems it has faced in India and, at the company's annual meeting in 2006, challenged the company to disclose its full liabilities in the country.

The company recognises water as an important environmental impact. One of its environmental goals is to "improve water management and address broader water issues." In fact, the beverages giant identifies water as a key risk to its business. In the "Risk Factors" section of its 2005 annual report, the company states: "Water is among the potentially material risk factors identified by the company... water scarcity and poor quality could negatively impact the Coca-Cola system's production costs and capacity."

### Box 1: Coca-Cola in India (continued)

The company vigorously defends its operations in India. In its latest Environmental Report, it claims that it has improved its average bottling plant water-use ratio by 4% since 2005 and has conducted a global, comprehensive risk assessment of water resources in 811 communities where it has bottling plants. The company also co-founded the Global

Water Challenge, a global multi-stakeholder coalition and has established approximately 20 community watershed partnerships around the world.

Coca-Cola will almost certainly continue to face scrutiny in India if it does not effectively resolve its water-related business risks there.

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**Produced by the Insight Investor Responsibility Team**

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Tel: 020 7321 1162

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