

Water scarcity: the biggest

Toby Pickard, Senior Sustainability Analyst at the Institute of Grocery Distribution (IGD), discusses the implications of increasing water scarcity for food security and how companies can respond to water-related risks.

Water is a vital resource for the food and grocery industry. The combination of limited availability and high demand, including the expected impacts of climate change, mean food companies are subject to increasing water-related risks.

Within the last few years, water availability has disrupted the supply of commodities on a global scale. For example, in 2010, Russia, one of the world's biggest producers of wheat, barley and rye, suffered the worst drought on record, which devastated crops in parts of the country and consequently imposed a ban on grain exports, causing international grain prices to spike.

The UK is often perceived as a wet country, with a lot of water availability. However, this is not actually the case. Drought is already a pressing issue in the UK this year; the South East, Anglia and other parts of the UK have already been officially declared drought zones this year, and more areas were expected likely to be affected as we continued to experience a prolonged period of very low rainfall.

Understanding the impact

Water affects every stage of supply chains, from raw material to consumer. The extent of any impact and the risk from water scarcity is determined by a number of factors:

- Use – whether water is used for human or animal consumption, for processing or cleaning;
- Season – summer can bring high irrigation demand, winter can bring flooding and freezing;
- Location – what are local supply and demand conditions;
- Product – impacts can vary tremendously depending on the type of product;
- Source and quality – both freshwater supply and effluent disposal.

The degree of water-related risks to companies depends on a combination of all these factors.

Water-related risk and implications

Water scarcity poses risks to companies as it means that they may not have sufficient water, or water of the required quality, to operate.

The water-related risks that companies face have

been summarised by WWF-UK as:

- Physical risks – deterioration in product quality/safety; raw material or product shortages

Implication: Without adequate water supply, companies are likely to move their sites and operations as it will impact product production and quality. One of the UK's big four retailers recently stated that they expect their supply chains to change in the future due to water availability and quality. Retailers and manufacturers will need to understand where water is likely to be most plentiful in the near future, and start investing in efficiency measures.

- Financial risks – escalating cost of direct water use, fluctuating and/or escalating cost of raw materials/products/services, requiring significant water input

Implication: As demand for water increases and availability decreases, the value of water will increase, causing companies significant costs. Companies will also need to understand the costs associated with effluent production, as water stewardship with catchment areas becomes a more prevalent issue.

- Regulatory risks – tightening regulation leading to cost increases; outright bans on specific practices and reputational risks associated with litigation

Implication: Due to the growing demand for water, regulation will need to play a greater role in managing this finite resource. The UK government recently published its Water White Paper and will publish a draft Water Bill for pre-legislative scrutiny in early 2012 and introduce a Water Bill as soon as Parliamentary time allows. Industry will need to understand the ramifications of the changes in legislation.

- Reputational risks – from actual or perceived irresponsible use of water, either directly by companies or in their supply chains.

Implication: Certain industries have already experienced negative media and local campaigns due to perceived irresponsible use of water. With increasingly transparent supply chains due to technological advances, companies that don't act in a responsible manner will come under more scrutiny, with the danger of negative campaigns damaging brand reputation

threat to global food security?

A recent report produced by Ceres, UBS and Bloomberg, concludes that most companies operating in water-intensive industries are failing to provide investors with adequate information on the water-related risks they face and, in many cases, have little idea how their supply chains could be affected by water shortages.

The Earth Policy Institute believes that water scarcity is now the single biggest threat to global food security. The World Bank has predicted that by 2025 two-thirds of the world's population will not have enough drinking water. In addition, a recent study by the 2030 Water Resources Group found that there could be a potential shortfall of 40% in water resources available across the world by 2030.

Assessing the impact

A business must be aware of both its direct water use, and the water 'embedded' in food and grocery products. There are a number of activities a company can undertake to assess the impact; some simple, some more complicated. We suggest three stages:

1. Start with your site(s) – first meter water and then undertake a water balance (water balancing is a mathematical calculation, which shows where water comes in and goes out of a site or business);
2. Assess your supply chains ◦Analyse the sustainability of water supplies. For example, identify raw materials supplied from areas of local water scarcity; Determine if water quality is an issue, either as supply or as effluent; Understand the local impact of water – analyse water use and your relationship to other water users in the same locality;
3. Undertake a full analysis of embedded water in a specific product ◦Include reference to the different

sources of embedded water – focus on the more vulnerable sources of water; ◦Consider how to quantify impact as well as volume. Companies may not need, or wish, to cover all three stages. However, to assess the full impact of water on your business you will have to move beyond water used directly to address water in your supply chains.

A volatile future

Already this year, global grain and feed prices have continued to be volatile partly due to speculation caused by recent weather events that have threatened output potential in some of the world's main exporting regions.

Through IGD's continued work on raising the matter of water over the last few years, we are helping educate industry about the issues and opportunities that better water stewardship presents. We are noticing a growing awareness of the issue of water availability and quality from industry. However, the industry still has a lot to learn and do. Water is one of the key topics we cover in our sustainability workshop which helps industry understand the strategic importance of sustainability.

In May, IGD is bringing together a select group of organisations from academia, industry, utility, NGO and government. The group seeks to understand what is required to incentivise water users to embrace water stewardship and move to significantly improved water resource management. The group aim to do this by developing a scenario-based project, which explores how the food and grocery industry should act now to avoid wide-ranging problems. The outcome of this meeting will be disseminated through the water section of the IGD website.

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We have been without a Membership officer for some time and Council has resolved to increase our efforts to fill this honorary post, which also needs updating. In the future, more emphasis needs to be given to profile-raising, promoting the services of the Association to a wider community and developing more effective outreach, particularly to postgraduate applied biologists. Success in these areas would have the effect of increasing our domestic

membership, while developing our international activities will offer opportunities to enhance overseas recruitment. I would be very happy to review the remit of the post with prospective candidates and explore these and other ways of increasing membership and our engagement with applied biologists worldwide. If any member is interested in the post, or would like to suggest a colleague who may be interested, please contact me directly (t.j.hocking@wlv.

ac.uk) for further discussion. When nominated and elected, the officer becomes a member of Council and Trustee and has opportunities to contribute to the overall development of the Association. Please consider if you can help the AAB in this role. Many thanks.

-AAB President, Trevor Hocking