



A drought in your portfolio: are global companies responding to water scarcity?

Water Risk Report, June 2011

This report explores corporate responses to water scarcity around the world. Our research identifies a significant proportion of global companies as being at risk from water scarcity and highlights the short time frame within which water scarcity will begin to have detrimental financial impacts for companies and their investors. Despite this, our research shows only a handful of the global 2000 companies we analysed have the policies, management systems and reporting mechanisms they need to adequately address the risks they face from water scarcity. We conclude that the vast majority of companies and investors remain unaware of both current and future water risks and are therefore failing to protect company value.

Introduction

In 2010, the UN Secretary General Ban Ki-moon stated 'Water stress threatens global economic growth' and is an issue 'as critical as climate change'. In the same year the UN Principles for Responsible Investment cited water scarcity as a critical global challenge that needs to be addressed and called on its signatories to engage with the world's largest corporations.

The world's most essential commodity without doubt is water. Yet despite its critical importance to the global economy and to human life, water is taken for granted and the impending issue of water scarcity remains largely neglected. However, investor-led initiatives related to water risks have begun to gain momentum.

Many business sectors are heavily reliant on water to grow and remain financially competitive. In addition, companies' supply chains can be heavily reliant on water as a raw material which means risks from water scarcity can be spread further across the value chain.

This paper outlines why water scarcity is fast becoming a crucial issue of relevance to investors and highlights which sectors and countries are potentially at risk. It provides an insight into current corporate responses to water scarcity and introduces EIRIS' new water methodology. It also sets out how the water agenda will likely develop in the future.

Key points

- Under a current business as usual scenario water demand will still outstrip supply by 40% by 2030. This has the potential to put USD 63 trillion of global GDP at risk by 2050.
- The world is facing global crises in energy, food and climate change. These cannot be adequately addressed without considering the role of water.
- The UN believes two-thirds of the world population will live in water stressed countries by 2025.
- EIRIS analysis shows that 54% of companies are exposed to water risks. However, worryingly less than 1% can currently demonstrate that they are adequately managing these risks.
- Of those companies exposed to risks only 9.7% have set either short or long term targets. Furthermore, only 9.7% have set water quality targets.

1 Water – an issue for companies & investors

The era of cheap and easy access to water for companies is coming to an end. This poses a potentially greater threat to business than the loss of any other natural resource, including oil. Under a business as usual scenario, which takes into account efficiency improvements and future investments in infrastructure, by 2030 demand for water will still outstrip actual supply by 40%¹.

Climate change and water scarcity are inextricably linked. The business implications of climate change have gained considerable recognition amongst businesses and investors. However, much of the focus has been on energy and greenhouse gas emissions whilst ignoring the impacts climate change will have on water sources and water quality. The growing consensus among climate experts is that freshwater is one of the most vulnerable resources to climate change and as such will be constrained.

Businesses will therefore increasingly be subject to risks that threaten their profit margins, production levels, licenses to operate and reputational value. These risks are already becoming apparent. For example, in 2008, Rio Tinto reportedly reduced output by 5% at a smelting plant¹. Media reports suggest that this was due to a summer drought in New Zealand which may have affected electricity prices, raising operating costs at the smelting plant. In 2003, Coca Cola allegedly lost its operating license to use groundwater in Kerala, India, after droughts and competition for water sparked protests. Subsequent opposition against the brand was reported in the national press. Coca Cola's operating licence was not reinstated until 2006².

In addition, the global demand for energy and food is expected to increase by 30-50% over the next 20 years and water is key to both agriculture and power generation. Solutions to tackle the energy and food crises will therefore need to take into consideration water scarcity.



Which sectors are at risk?

EIRIS has identified eleven sectors which have a significant impact arising from their water usage and quality and a further ten with a medium impact. Examples of high water risk sectors include:

Agriculture is the key risk sector and the dominant water user accounting for 70% of water use on average globally. Water usage can be as high as 90% in some developing nations. In addition, agriculture is key to the supply chains of a variety of other sectors including; food & beverages, supermarkets, fast-food chains, apparel manufacturers and retailers (e.g. cotton), printing & newspapers (timber). Ceres states that water shortages in the USA within the last two years have constrained economic growth of the agricultural sector by 5-10% per annum. In addition, water shortages in south eastern Australia and the related impacts on agriculture have led to over 20,000 job losses and have constrained GDP growth by 1% per annum.

Food and beverages sectors also carry high water risks and are also interlinked to agriculture. However, due to the high profile nature of some food and beverage companies reputational risks can be more significant. For example, in 2009 Nestle Waters announced that it had scrapped plans to build the USA's biggest bottling plant in California after years of NGO and local opposition³.

Power generators are heavily reliant on water for energy production and many nuclear and coal fired plants cannot operate without water. A report by United Nations Environment Programme (UNEP) identified in 2003 that during a severe drought France was forced to shutdown a substantial portion of its nuclear power stations responsible for supplying 75% of the nation's electricity. Similarly, in 2001 in Sao Paulo, Brazil, the city was forced to ration out energy resulting in estimated financial losses of USD 20 billion or 2% of total GDP.

Semi-conductor plants can use between two to four million gallons of ultra-pure water per day. This is the equivalent of a small city with a population of 50,000. In addition, the majority of the semi-conductors sector is located in the southern USA in areas already experiencing severe water scarcity.

Metals & mining and oil & gas sectors are also at high risk from water scarcity. These sectors require significant amounts of water for operational purposes and can also pose a significant risk to water quality. An additional risk arises as the site of operations is dictated by the location of the raw material rather than access to water.

¹ http://www.riotinto.com/documents/ReportsPublications/Comalco_NZAS_Report2005.pdf

² http://www.thecoca-colacompany.com/ourcompany/wn20060929_kerala.html

³ <http://responsiblebusiness.haas.berkeley.edu/documents/Presentations/SPS%20Gap%20Mar>

Which countries are high risk?

In 1975, water scarcity was limited to a small number of countries in Africa and the Middle East. However, by 2000 it had spread to many large and densely populated countries in Asia. By 2025 the UN predicts water scarcity will affect two thirds of the world's countries, including the USA, Australia, China and India.

Pressures on water resources are increasing as a result of economic growth, rising standards of living and global population growth which is expected to peak at about nine billion by 2050. In addition, climate change is predicted to further reduce the availability and quality of water in certain regions.

At the country level water scarcity can be defined as circumstances whereby agricultural, domestic and industrial consumption and the water required for maintaining ecosystems has approached or exceeded total annual available supply. This definition of water scarcity, developed by the International Water Management Institute, is used by EIRIS to identify its 48 'countries of concern' which have a high percentage of their territory identified as water scarce.

A study by Veolia Water and the Institute of Food Policy Research Institute estimates that 'business as usual' water management practices will put about USD 63 trillion of global GDP at risk by 2050. However this is not just a warning as water risk has already started to impact on country growth.

India: as one of the world's leading crop producers, the value of agricultural exports in India currently accounts for USD 18.1 billion and demand for crops is expected to increase by 26% by 2050⁴. The majority of food crops in India constitute rice, wheat and sugarcane which are extremely water intensive. Predicted groundwater depletion rates of 75% in a large portion of states will severely constrain the country's ability to meet agricultural demands.

USA: much of the southeast of the USA is already experiencing severe water stress. In 2009 the Californian Department of Water Resources warned the state, which is heavily dependent on agricultural and semi-conductor industries, that it is facing 'the worst drought in modern history'⁵. Ceres states that across Florida over extraction of water and climate-change-influenced sea level rises are threatening water aquifers. Miami officials now estimate it will cost the county at least USD 1.9 billion over the next 20 years to maintain the supply and quality of drinking water.

China: the external costs of water scarcity and pollution already amount to 2.3% of China's GDP of which 1.3% is attributable to water scarcity and 1% to the direct impacts of water pollution. However, the World Bank indicates that the actual costs are probably much higher. In 2007 the State Environmental Protection Administration in China asked local authorities in areas along the country's four major rivers to start implementing environmental protection measures. 700 businesses were closed, suspended or renovated as a result⁶.

2 EIRIS water research

EIRIS classifies companies into 44 water sectors. These sectors are coded by their water use and water quality impacts as being *very high*, *high*, *medium* or *low*, taking into consideration both direct and indirect water usage. In addition, 48 countries have been identified as countries of concern with regards to water scarcity. A company's sector and extent of its presence in countries of concern are used to determine its overall water risk exposure.

EIRIS' water methodology focuses on four areas:

- ▶ **Governance** – water policy, policy context, community engagement, policy leadership or collective action and remuneration linked to performance.
- ▶ **Strategy** – preventative actions for identified risks, long-term and short-term targets, supply chain targets, water quality targets.
- ▶ **Disclosure** – absolute/normalised water use data, supply chain water use, % of operations in water stressed regions, % of suppliers in water stressed regions, reporting against targets and verification.
- ▶ **Performance** – year on year reduction in water use, or transformational initiatives (e.g. technologies or innovations resulting in significant improvements in water efficiency).

Companies are then given a score of *advanced*, *good*, *intermediate*, *limited* or *no evidence* depending on EIRIS researchers' analysis of their performance against these indicators.



⁴ http://www.grailresearch.com/pdf/ContentPodsPdf/Water-The_India_Story.pdf

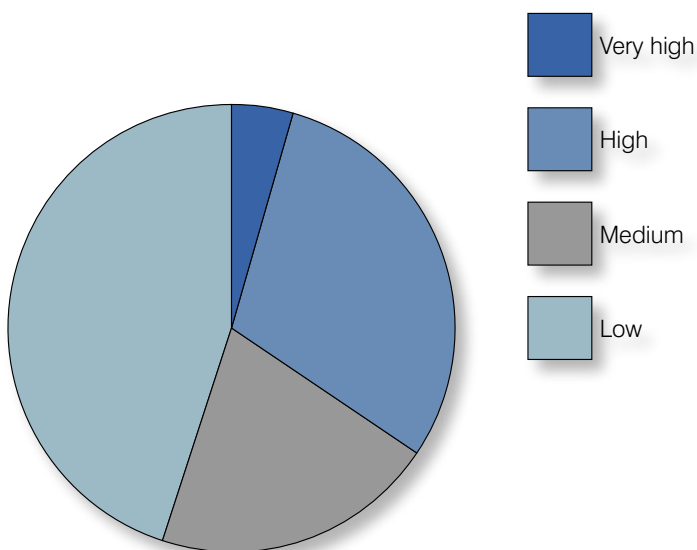
⁵ www.waterplan.water.ca.gov/docs/enews/2009/cwp_e-news020409.pdf

⁶ <http://www.asiawaterproject.org/water-crises/why-water/government-action/>

3 Research findings

EIRIS water research enables investors to identify and manage the level of water risk in their portfolios helping them to understand the related financial risk involved. The analysis in this paper is based on the assessment of companies identified by EIRIS as having a *very high* to *medium* exposure to water risks.

Figure one: % number of companies facing water risks



As shown in figure one, 54% of companies have been assessed by EIRIS as having an overall *medium* to *very high* exposure to water risk. Our analysis of water risk exposure takes into account each company's business activities and the extent to which they have a significant presence in water stressed countries.

Figure two: management response by % of companies at risk

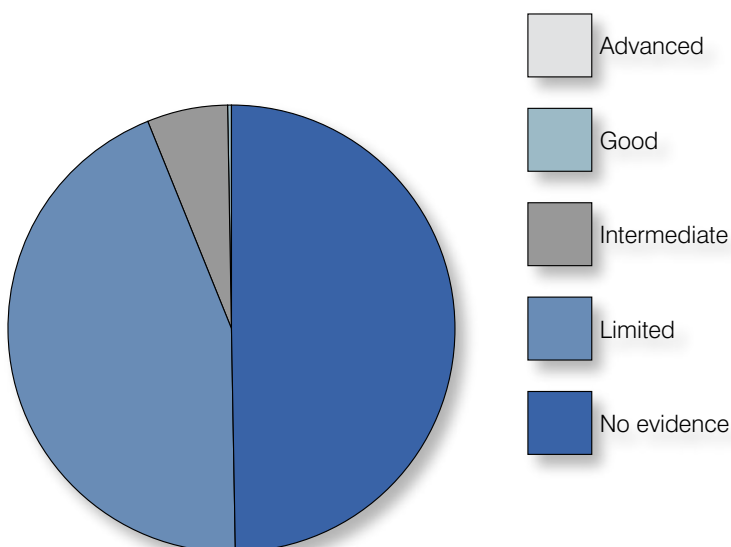


Figure two shows that of those 54% of companies identified as facing significant (i.e. *medium* to *very high* exposure) exposure to water risk, the majority of companies demonstrate limited or *no evidence* of taking action to mitigate water risks. More worryingly, only 0.22% of companies demonstrated a *good* management response, with risks being adequately managed.

Our analysis demonstrates companies remain unaware of the seriousness of water scarcity and the related risks to their business. However, further analysis reveals more promise: 36% of companies have acknowledged water as an issue to be addressed; 22% demonstrate they monitor water consumption in relation to disclosure; 9.7% have set either short-term or long-term consumption targets and 9.7% have set water quality targets.

No company demonstrates an *advanced* management response to water risk. With regards to climate change companies have had five to ten years to evolve and advance their management strategies. However water scarcity is a relatively new issue and even those companies that are water strategy leaders and innovators within their own sectors are only just beginning to fully understand the water risks they face, let alone begin to manage them.

Table 1. Sector performance

Sector	Leaders	Sector overview
Chemicals & Pharmaceuticals	Abbot Laboratories, Orica, Novartis, Merck & Company	1.9% of sector demonstrates a good response with a further 8.2% with an intermediate response
Forestry & Paper	Svenska Cellulosa, Kimberley Clark	16.6% of the sector demonstrates an intermediate response
Mining & Metals	Xstrata, Rio Tinto, Anglo American,	13% of the sector demonstrates an intermediate response
Food & Beverages	Unilever, Coca Cola HBC, SAB Miller, Nestle, PepsiCo,	12.5% of the sector demonstrates an intermediate response
Oil & Gas	BP, Suncor Energy	Only 3% of the sector demonstrates an intermediate response
Power Generators	ENDESA	Only 1% of the sector demonstrates an intermediate response

Case study: food & beverages sector

This sector is already experiencing the effects of water scarcity. Leading beverage companies have lost licenses to operate and the price and supply of primary agricultural crop inputs required by food producers have increased because of drought-induced production collapse. The global nature of the food and beverages sector means that the majority of the sector was found to have a significant presence in countries of concern.

EIRIS' analysis shows that 39% of companies within this sector have acknowledged water as a risk issue. 22% demonstrate evidence of monitoring water consumption and 9.7% have committed to some form of targets on water consumption and quality.

The leaders within this sector, whilst not yet adequately managing their risks, have demonstrated a very high level of innovation by leading on public policy, community engagement, risk disclosure and preventative actions to mitigate water risks. However, whilst they may be leaders in this sector, their management response could still be improved, particularly with regard to supply chain risk. These companies are only just beginning to fully map and understand these risks.

SAB Miller – this company is a leader with regards to water strategy within the beverages sector. It recognises the availability of water as one of the world's most pressing issues and is a signatory to the CEO Water Mandate. It is one of a handful of companies who are working to address water issues within their supply chain and working with farmers to educate on more efficient water use practises. In addition, the company has recently conducted a water footprint analysis of the entire life cycle of its beer production operations in South Africa.

4 What should investors be doing?

Some of the key actions investors should be taking as a means to better understand and manage water related risks include: assessing the exposure of companies to water risks and identifying those sectors with the most significant water use and risks to water quality.

Investors should be demanding increased levels of corporate reporting on water as well as improvements in the quality of information that is currently being disclosed.

Investors should also be encouraging companies to become aware of the opportunities and risks they face from managing, or not managing, water adequately by encouraging board level evaluations of water risk.

In addition, companies should be encouraged to make the management of water a core part of their environmental strategy on a level comparable with climate change.



5 The future

Water scarcity will come to dominate the sustainability agenda as impacts begin to be felt on a global scale. An increasing number of investors will come to realise that water scarcity is a key sustainability concern, comparable to the likes of climate change. Water risks can be integrated within portfolios with the help of EIRIS' water criteria for responsible investors.

The financial impacts of water scarcity will become fully apparent. The price of water, which has previously been under-valued and kept artificially low through subsidies, will rise globally. Water prices in Southern California rose by 14% in 2009 alone. An increase in water prices globally will affect profit margins for those sectors directly or indirectly reliant on water. As a result companies will be faced with increasing regulatory pressures related to water consumption and quality.

Water issues are also inherently political. Water scarcity could become a potential cause of tension between nations or competing domestic jurisdictions. An increase in political disruptions could threaten business operations. Additionally companies could seek to gain a competitive advantage by moving to water-rich nations in the same way that certain industries have moved to countries with cheap labour.

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6 Conclusions & recommendations

EIRIS' analysis of corporate responses to water scarcity shows that the management of water risk by companies is seriously lacking. Companies remain largely unaware of the issue or have not yet grasped the seriousness of water risks. However, water is quickly emerging as an investment issue. Leading companies within some sectors have shown promise and displayed innovative methods of responding to dwindling water supplies.

Companies now have an opportunity to position themselves ahead of the curve. Early innovators will reap the benefits of mitigating many of the risks discussed within this paper. Investors quite simply need to begin to evaluate the water risk in their portfolios.

How we can help – EIRIS' Global Water Risk Criteria

EIRIS' Water Risk Criteria help investors to design investment strategies in response to the global challenge of water scarcity. Our criteria address three questions; What is the risk exposure of a company to water scarcity? How is the company managing those risks? How is the company addressing the issue of quantitative disclosure?

EIRIS' Water Risk Criteria support a broad range of investment strategies including:

Integration: *Water Risk Factor* - provides an overall score based on EIRIS' assessment of a company's water impact and management response which is easily integrated into investment analysis

Engagement: *Water Engager* – provides detailed reports on individual company performance, designed to form the basis of detailed engagement with companies on water issues.

About EIRIS

EIRIS is a leading global provider of independent research into the environmental, social, and governance, (ESG) and ethical performance of companies. With over 28 years' experience of conducting research and promoting responsible investment strategies, EIRIS now provides services to more than 100 asset owners and asset managers globally. We work with clients to create their own ESG ratings and rankings, to engage with companies and to create specific funds for their clients. EIRIS has a multinational team of over 50 staff in London, together with offices in Boston and Paris. Additionally, we have a global network of research partners which includes research organisations in Australia, France, Israel, Germany, Mexico, South Africa, Spain and South Korea.

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