The WH$_2$OLE Story

social environmental context

Water & Business: How To Avoid the Coming Crisis

Water: The WH_2OLE Story

Who we are

Context is a consultancy specialising in corporate sustainability strategy and communications.

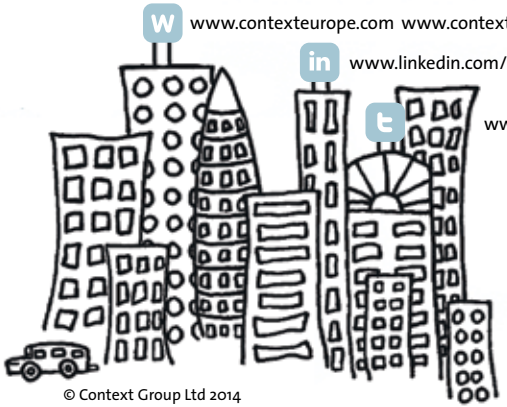
Since 1997, we have helped multinationals formulate corporate sustainability strategies, engage with stakeholders and communicate with internal and external audiences.

The Context team is transatlantic – we work seamlessly between our offices in London, Los Angeles and New York.

www.contexteurope.com www.contextamerica.com

www.linkedin.com/company/context-group

www.twitter.com/Context_Group



Contents

Water risk in context

There's a reason water is one of the four elements of ancient and medieval philosophy. And why priests in ancient Egypt used "nilometers" to measure the great river's ebb and flow and predict floods and droughts.

Not only essential to life, water is also the wellspring of the global economy. Practically every product needs it and it powers our energy and food supply. We may think we have come a long way since boats were the main mode of transport. But when the Mississippi River, which transports US$180 billion of cargo a year, reached near record lows in 2012, forcing some barge traffic to grind to a halt, the commercial impacts were global.

In recent times, we have been astonishingly cavalier about such a precious resource. Farming absorbs two-thirds of all freshwater, yet wastes up to 40% of its share through inefficient practices. And most of us – as consumers, businesses, communities, even countries – have little or no idea how much water we consume.

In deep water

Such profligate attitudes are beginning to change as the scale of today's water challenge becomes apparent. With demand outstripping supply in many parts of the world, **WATER SCARCITY** is now a fact of daily life for 1.2 billion people. And bad as it is, that figure is expected to rise exponentially along with population growth, energy needs and consumer demand. The implications for people, business and the environment are profound. So much so that, two years running, the World Economic Forum has ranked water supply as a top five risk to global stability, alongside severe income gaps and systemic financial failure[1].

Investors, too, are growing nervous about corporate **WATER RISK**: 530 of them, for example, now back the **CDP's WATER DISCLOSURE PROGRAMME** aimed at Fortune 500 companies in thirsty sectors like food and drink, mining, utilities and pharmaceuticals.

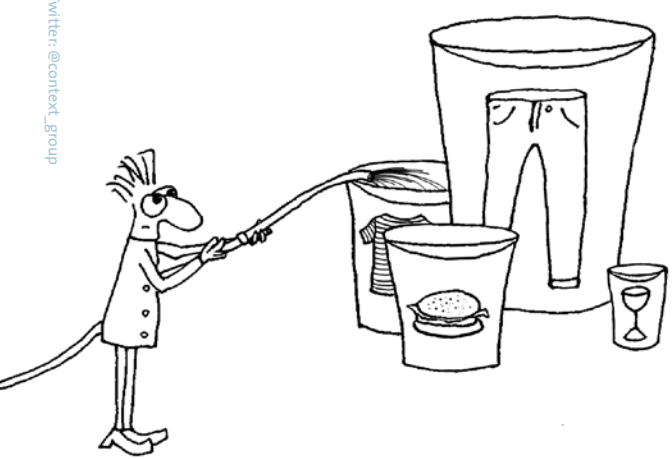
And with good reason. Diminishing water supplies are already disrupting business operations, power generation capacity and supply chains around the globe, with prospects of far more troubled waters ahead. Analysts calculate that business as usual water use and management practices could put at risk US$63 trillion of global GDP by 2050[2]. That's 1.5 times the size of today's entire global economy.

Water's virtual virtues

Water's invisible presence is everywhere – in the food we eat, the clothes we wear and the products that fill our homes. Every day the average person drinks a modest 2–4 litres of water. But on top of that they consume 2,000–5,000 litres of "virtual" or hidden water, embedded in the food they eat[3]. For example, it takes 53 gallons of water (for raising cattle, bottling and processing) to produce a single glass of milk. How about other popular products?

Product	Virtual water needs
1 glass of wine	32 gallons
1 glass of beer	20 gallons
1 cup of coffee	37 gallons
1 apple	18 gallons
1 egg	53 gallons
1 burger	660 gallons
1 pair of jeans	2,900 gallons
1 cotton t-shirt	66 gallons

With thanks to National Geographic and the Water Footprint Network



Keeping afloat

Ironically, water's unique quality as a life-giving human right has made it harder to conserve. It is chronically under-priced for its value and utilities generally have incentives to provide more water, not less.

Regardless of public policy, however, there is much the private sector can do to manage water better and reduce its exposure to a rising tide of risk. Like other environmental mega-trends, water scarcity brings both risks and opportunities for business. First-mover companies have been mapping their water risk and reaping the benefits in cost and water savings for close to a decade. Others have gone the innovation route, developing water-light products or water-efficient processes that cater to a more water-aware world.

This book provides a snapshot of all the information you need to follow suit. An overview of corporate water-related risks, tools and strategies to address them, cases studies of first movers and a glossary of useful water terms. (Navigational note: the phrases and organisations **CAPITALISED** throughout are defined in the glossary.)

As an apt Chinese proverb says, "not only can water float a boat, it can sink it also". To help your company stay in calm waters, read on.

Why business should be worried

Water is not yet high on most boardroom agendas. But it should be. For many reasons, as we explain below, water is fast becoming as important as carbon to corporate responsibility and reputation. Not to mention its potential for disrupting your company's operations, supply chain and, ultimately, bottom line.

Not so long ago, water was a concern primarily for national and local governments who regulate its supply. Although agriculture (70% of freshwater use) and industry (20%) drew most water, except in very arid regions there was more than enough to go around. In recent decades, this has become less and less true. In many places, we are horribly over-exploiting water sources, undercutting their ability to replenish. Adequate water for human needs is at risk from Central and South America to the Middle East, Eastern Europe, Sub-Saharan Africa and parts of Central and South Asia, including China[4].

Given these alarming trends, water policy has seeped into the business arena. Spooked investors are asking questions about water's disruptive capacity, especially of clients in water-intensive industries, like food and drink, mining, oil and gas, textiles and pharmaceuticals or those located in areas where water is scarce or there are transboundary tensions over its use.

No major business, however, should make the mistake of thinking water is not something it needs to worry about. Most big companies have a global supply chain which means their business depends to some degree on smooth operations in water-scarce regions. Ultimately, it comes down to simple maths. When there isn't enough reliable water to go around, issues of supply, cost, regulation or reputation are likely sooner or later to affect most multinationals on the planet.

<1% of earth's water is usable by people

40% of people worldwide live in areas of severe water stress

60% of European cities' ground-water is being over-exploited

70% of industrial wastewater in developing countries is dumped without treatment

The (scary) facts

- Earth's surface is three-quarters water yet only 2.5% is drinkable, and less than 1% – about 200,000 km^3, mostly underground – is usable by people.
- Four in ten people worldwide already live in areas of severe **WATER STRESS** and one in five occupy river basins being emptied faster than nature can replenish them. Business has to compete for this over-subscribed supply.
- Water use is rising twice as fast as population, as emerging countries shift from starch-based to meat and dairy-heavy diets that require 8–10 times more water.
- Seven in ten waterways longer than 1,000 km no longer reach the sea in places, including tributaries of the Nile, Colorado and Yellow Rivers.
- Urban sprawl is sucking water sources dry; in six of ten European cities groundwater is being over-exploited.
- In developing countries up to 70% of industrial **WASTEWATER** is dumped without treatment; as water becomes scarcer, such corporate practice will come under closer scrutiny.
- Flooding impacts about 500 million people every year, at a cost of US$15 billion. Flood damage is the second-biggest water risk factor companies report, after scarcity.
- Power needs in China, the world's factory, are expected to triple in the next 20–30 years; yet most of its coal reserves lie in northern water-stressed regions.
- Availability of underground water is an unknown quantity in some regions due to little or no data.

Facts from unwater.org/statistics

The forecast: a perfect storm on the horizon

The situation today is bad enough. But two global mega-trends make tomorrow's water forecast much more dire. Factor in their predicted impacts and the strain on our planet's water supplies could tip from worrying to critical in the next 20–30 years.

A booming population...

More people need more water – for food, drink, sanitation, energy, consumer goods, landscaping, recreation, you name it. By 2030 there will be eight billion people on earth, by 2050 at least nine billion. This unprecedented baby boom will have an exponential effect on water needs. In 2030, the UN predicts that almost half the world's population (47%) will be living in areas of high water stress.

But the challenge goes beyond simple population growth. As the global middle class expands, so does its appetite for goods, energy and water-intensive, meat-heavy diets. To meet all these multiplying demands, says the UN, developing countries will need 50% more water than today in 2025, developed countries 18% more. Food demand alone is predicted to grow by half by 2030 and energy demand from hydropower by 60%[5].

A changing climate...

At the same time, rising global temperatures will disrupt traditional rainfall patterns worldwide, with fundamental consequences for society, commerce and industry. While some areas will be able to adapt (think grape-growing in southern England), many others will struggle. Half the farmland in Latin America will suffer from creeping desert or saltwater intrusion by 2050 if the climate modellers prove correct[6].

Climate change will also whip up more extreme weather events that disrupt business and society with too much or too little water. In 2011, droughts, floods and other extreme events cost the US economy alone at least US$55 billion, according to NOAA. But future costs could dwarf this figure. The damage from Superstorm Sandy alone topped US$70 billion. Globally, the OECD's list of 20 cities most vulnerable to sea level rise includes such major financial and industrial centres as New York City, Tokyo, Shanghai, Mumbai, Dhaka and Bangkok.

What's more, today's global supply chains ensure that extreme events can create waves half a world away. The knee-deep floods that shuttered electronics components factories in Bangkok in November 2011, for example, led to parts shortages at Intel, Apple and Panasonic and other IT giants[7].

The consequences: rising competition and costs.

All these trends will make water scarcer and therefore more precious. By 2025, two-thirds of global citizens will experience **WATER STRESS**. And what policymakers have dubbed the "water–food–climate nexus" will squeeze every last drop out of water supplies as food production and energy use soar in regions where the climate change forecast is for less rain.

While the dire warnings of water wars sounded by some environmentalists have (so far) failed to materialise, competition for supply will undoubtedly heat up. And not just between countries who squabble over shared rivers or lakes. Businesses operating in water-scarce or drought-plagued areas will need to negotiate access alongside communities and farmers, with all the parties jostling to stand first in line.

Dwindling water supply will also intensify reputational risks, focused on inflammatory issues like water pollution and the perception that businesses "steal" water from communities. Coca-Cola's bottling plants in Kerala, India, which became a global rallying point for environmentalists, are perhaps the most infamous example. More recently came Walmart's embarrassing admission that it violated the US Clean Water Act in disposing of pesticides at California facilities[8].

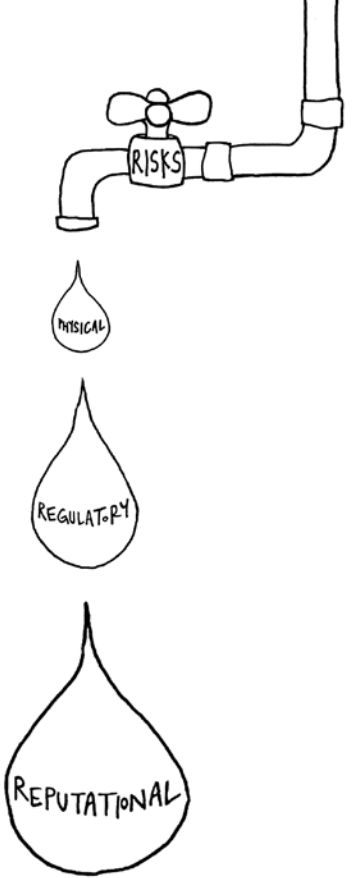
As a general rule, increased competition for commodities leads to higher prices. In much of the world, water has so far defied this norm because of its unique role as a life-giving human right. But this seems likely to change as demand soars, especially given the mounting evidence that people use less water when paying more for it. And business is likely to bear the brunt of rising costs. In June 2012, for example, China announced that it would adopt higher water rates for water-intensive industries. The lesson for smart businesses: factor in the prospect of higher water costs in the near future.

Rating your risks

All in all, water is becoming a seriously risky business for business. Half the multi-nationals that responded to the CDP's 2012 Global Water Report reported "detrimental" water-related impacts in the previous year.

So what about your own company? What specific risks do you face? Clearly, this depends on what sector and geographic area you operate in. But given the global nature of today's economy, all large companies can benefit from a water risk analysis of their operations, products and supply chains.

Specific risks your facilities and suppliers may face range from higher water prices and tighter withdrawal limits to polluted discharges and flooding. These can be boiled down into three manageable categories: physical, regulatory and reputational.



Physical risks

Those posed by too much or too little water (scarcity, drought, flooding) and by poor water quality (pollution). Can impact business operations and supply chains.

Regulatory risks

Those posed by government restrictions on water use; pricing water supply and waste discharge, issuing licences to operate, setting quality standards, etc.

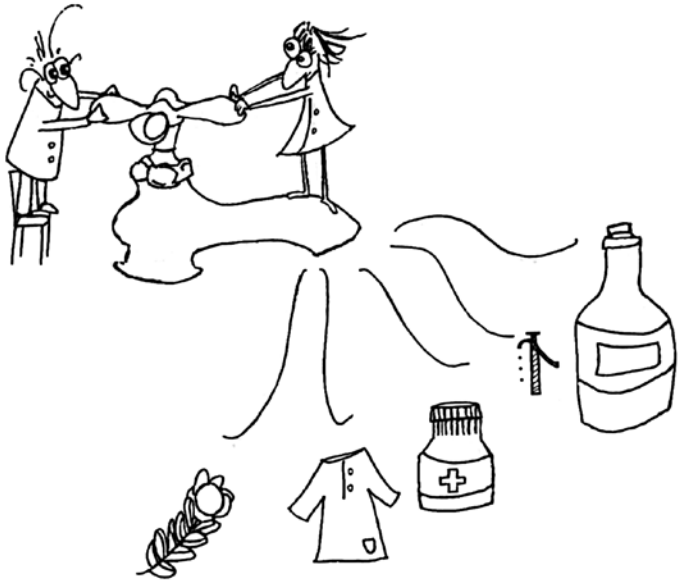
Reputational risks

Those posed to a company's image and brand and potentially its customer base. Among the most common are water access conflicts and pollution that affects domestic supply and/or harms aquatic life.

All three types of risk are mutually reinforcing. When water supplies diminish, regulation tends to become stricter and the public becomes more aware of (and potentially hostile to) businesses that share their water.

Several online water risk tools use these three categories to help companies assemble their water risk profile. Our Tools section (page 20) provides a choice of five widely used tools.

How to reverse the flow



The world's approach to water needs to change, fast. With demand expected to outstrip supply by 40% as soon as 2030, there is little time – and even less water – to waste.

For commerce and industry, which use a fifth of all freshwater, there are two approaches that make sense. Shrink your own **WATER FOOTPRINT**. And develop products and services that help other businesses and consumers to shrink theirs. (For agriculture, the path is trickier and depends more on what others do. Almost a quarter of the food we grow is lost between field and fork, for example – with supermarkets and consumers among the culprits[9].)

The good news, given the low bar many businesses are starting from, is that there is much they can do to use water more efficiently. (We give some examples in our roadmap below and in the case studies starting on page 35.) But smart companies should not necessarily take a blanket approach to water conservation and management.

Water is not the new carbon

Why? Because, unlike carbon, water is a local, not a global, challenge. Saving a litre of water in the Sahara matters hugely; in the Amazon it is neither here nor there. So unlike carbon – where companies should look to reduce their emissions everywhere – a universal global water management strategy makes little sense. Setting basic rules across your operations for conserving water

supply is important. But when it comes to major investments, companies should prioritise their water efforts where the risks are greatest and the impacts will be highest. This is the surest way of minimising your overall **WATER RISK**.

Is there a silver lining to the raincloud?

Yes! Efficiency and product development require financial and time investment, of course. But your return on this investment could be handsome. Putting aside the reputational benefits, there are many opportunities on tap for managing your water better.

Just as using less energy has saved businesses money, so water conservation can generate efficiency windfalls while conserving scarce supply. **WATER SCARCITY** is also fuelling an emerging industry in water-efficient technologies and products.

Seven in ten of the 191 Global 500 companies that completed the CDP's 2012 water survey claimed to have identified such opportunities. Even allowing for over-optimism, this illustrates the scale of potential bottom-line benefits.

A water management roadmap

Nevertheless, for the many companies just starting to think about their **WATER FOOTPRINT**, the prospect can be daunting. Here are some sensible ways you can go about it.

Map

The cliché that you can't manage what you don't measure is especially true of water. Companies (and countries) need to prioritise areas of highest scarcity – and therefore risk. They also need to understand where their water comes from and its local context. Is it drawn from ground or surface water? How much is **BLUE** (freshwater) and how much **GREY** (treated and recycled)?

Is there enough water from the local basin for all users and do communities have a clean supply and easy access? Is **WASTEWATER** from your facility affecting local water quality?

Ideally, this mapping should go beyond operations to include key supplier facilities. For many sectors (e.g. textiles, food companies), much of a company's **WATER USE** – and risk – will be generated in the supply chain. Several water risk tools we highlight later on can help you to pinpoint such weak spots. Once you have this data at your fingertips you can risk rate your sites and suppliers and use the results to inform a strategic water management plan.

Many brand name companies are doing exactly this. Nestlé, for example, has combined global geospatial data with its own site-based water resources review programme to identify vulnerable plants and target them for conservation actions. The results are impressive: Nestlé's global use of water in operations is down 32% from a decade ago, while its production is up 73%.

Save

In parts of the world where water demand is outstripping supply, maximising efficiency is about much more than cost cutting. It could be the difference between having a viable local economy to operate in – or not. Take drought-plagued Phoenix in Arizona in the US, which gets an average of 8.3 inches of rainfall a year. With its supply dependent on the depleted Colorado River basin, some predict it will be a ghost city by the end of the century. The lesson for business? In high-risk locations, make every last drop of water productive. This will not only generate goodwill by easing the squeeze on local water demand. It will also help you prepare for potential water shortages or regulatory actions such as price increases.

To work best, however, efficiency efforts should be a team effort by everyone who shares a water source. Which is why businesses also need to...

Collaborate

Even for the most entrepreneurial and deep-pocketed companies, solving the water challenge is very difficult. Hence water is an increasingly active arena for collaboration among business, government, NGOs and academia.

Perhaps the best-known water club for multinationals is the **CEO Water Mandate**, open to all UN Global Compact companies. It provides corporate guidelines on water disclosure and manages a fledgling Water Action Hub that acts like an online water dating tool. Companies looking to improve water management in a specific location can search for potential partners among local businesses, municipal authorities, NGOs and communities.

Unsurprisingly, companies in thirsty industries are leading the way. Global brewer SABMiller, for example, enlisted the help of WWF and the German development agency GIZ to map the water footprint of its operations and suppliers in Peru, Ukraine, Tanzania and South Africa. It now works with farmers and governments to improve efficiency in stressed watersheds.

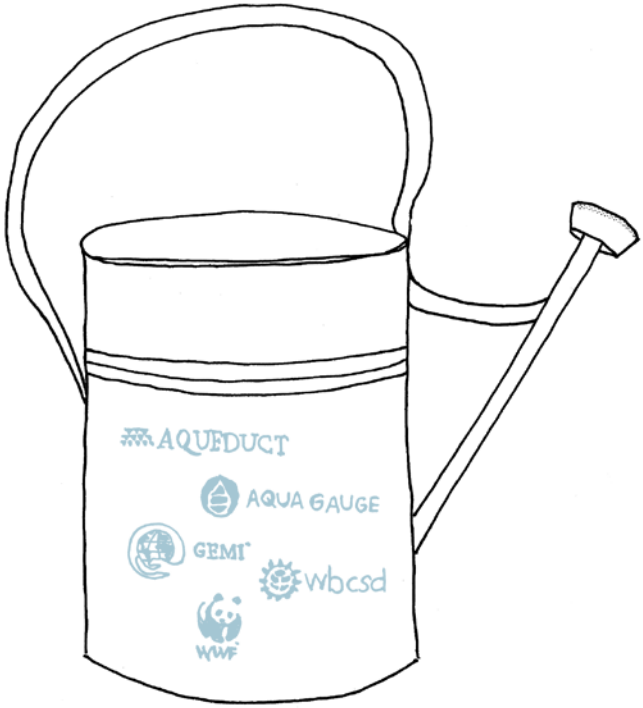
Innovate

Given that life depends on access to clean, reliable water, it is hard to think of a commodity better suited to R&D investment. But water's cheap price tag has meant that incentives to innovate have historically been weak. As **water scarcity** has risen up the political and corporate agendas, however, so have efforts to invent and deploy water-saving technologies and products.

The recent burst of innovations range from leak-plugging, water-saving and recycling technologies for farm, commercial and domestic use, to the design of water-light products (e.g. concentrated laundry liquid soaps) that engage consumers and generate sales. According to Global Water Intelligence, around US$237 million of venture capital was invested globally in water technology companies from January to August 2012 alone. This is good news for companies – whether you develop the technologies and products, or pioneer their use to reduce your water footprint.

(See also our Unilever and Syngenta case studies on page 35 and page 37.)

Where to go for help



We realise that's a lot to take in, let alone act on.

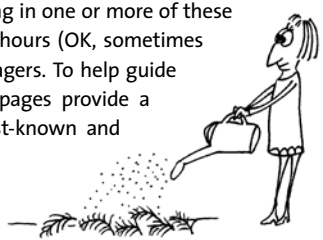
Luckily, you don't have to go it alone. There is plenty of useful help for companies who want to map their water use and start to address business risks, including bottom line and reputation. And much of the help is free!

As water becomes a hot topic, so tools have proliferated to help both the private and public sector gauge and manage water risks at global, national and local (**WATER BASIN**) level.

These are generally based around online questionnaires and spreadsheets, which the tool then overlays with geographic water databases. The result is topline guidance for companies on where their operations (and in some cases supply chains) face most water risks. Armed with this information, companies can prioritise where to put their efforts and design strategic and effective water management strategies.

Publishing the results, and how you plan to respond, can also be a useful way of engaging your investors and stakeholders and of reporting on water.

Take our word for it: investing in one or more of these tools is well worth the few hours (OK, sometimes days) required of busy managers. To help guide your choice, the next few pages provide a snapshot of five of the best-known and most widely used options.



Aqueduct Water Risk Atlas

aqueduct.wri.org

An online global water risk mapping tool that helps companies, investors and governments identify their exposure to 12 water risk indicators.

Who developed it?

The Washington DC-based World Resources Institute (WRI), in alliance with foundations and leading companies including Goldman Sachs and GE. Academic, corporate and NGO experts screened the methodology and tool, among them the US EPA, World Bank, Nanjing and Yale universities and the CDP water programme.

What does it do?

Uses a hydrological model and up-to-date ground and surface water withdrawal data to map risks for 15,000 water catchment areas worldwide. By entering site information, companies can identify water-related threat levels to their direct operations and supply chains, informing management strategies. Aqueduct's 12 physical and regulatory risk indicators range from water stress levels and the likelihood of floods and droughts, to threats to local freshwater species and the presence or absence of safe drinking water.

What do I have to do?

Use the online tool to view customised maps of indicator risks tailored to your company's circumstances and site locations. To make this easier, Aqueduct has preset weighted indicators for nine key sectors – agriculture, food and drink, chemicals, electric power, oil and gas, mining, textiles, semi-conductor and construction materials. You can also compare risk indicators and scores across your sites by inputting up to 250 locations. Download your results in map or Excel spreadsheet form.

Who uses it?

The maps have been downloaded by thousands of companies, consultancies, government agencies, investors and researchers worldwide. Corporations using Aqueduct to inform strategy include Dow Chemical, DuPont, McDonald's, GE, Procter and Gamble, Owens Corning and Deere & Company.

WBCSD Global Water Tool©

www.wbcsd.org

Launched ahead of the pack in 2007, the Global Water Tool (GWT) helps companies and organisations map their water use and assess risks to their global operations and supply chains.

Who developed it?

More than 20 members of the World Business Council for Sustainable Development (WBCSD), led by CH2M HILL, designed the tool and provide oversight and pilot testing. The Nature Conservancy and Global Reporting Initiative also lent their expertise.

What does it do?

Compares a company's operations with the best available water, sanitation, population and biodiversity information on a country and watershed basis, allowing business managers to make informed water decisions across their portfolio. Specifically, it answers questions like:

- How many of our sites are in extremely water-scarce areas? Which are at greatest risk?
- How much of our production is generated at our most water-vulnerable sites?
- How many of our employees live in countries that lack access to improved water and sanitation?

What the GWT does not provide is local, site-level guidance. To plug this gap, WBCSD teamed up with the Global Environmental Management Initiative (GEMI) to develop the Local Water Tool™ (LWT) – see below.

What do I have to do?
Access the free, online tool to input detailed data on your company's site locations and water use. This will generate a water inventory, relevant reporting indicators (e.g. GRI, CDP's Water Disclosure Programme) and other risk and performance metrics. Use an online mapping system to plot your site locations against external water datasets. The tool also links to Google Earth, if you want a spatial view of your sites, showing surface water coverage, population density and other geographic information.

Who uses it?
More than 300 corporations have used the frequently-updated tool.

GEMI Local Water Tool™ (LWT)

www.gemi.org

Helps companies to assess water use-related impacts, risks and opportunities at a specific site. Designed to work with the WBCSD Global Water Tool. An industry specific spin-off is the GEMI Local Water Tool for Oil and Gas.

Who developed it?
The Global Environmental Management Initiative – with WBCSD for the universal tool and with IPIECA, the oil and gas industry trade association, for the custom version for petroleum companies. IPIECA also manages a complementary global tool, GWT for Oil and Gas.

What does it do?
- Analyses corporate water use and discharge information against local water data, identifying potential risks and opportunities at a given facility.
- Helps companies gauge the adequacy of water management plans at individual facilities and identify improvement opportunities.
- Enables companies to connect global and local water risk assessments; takes a uniform approach to assessing sites and focus on high-risk locations.

What do I have to do?
Download the free Excel-based tool and enter site-specific coordinates and detailed data on the facility's production, revenue and water use and discharge. The tool will then run a qualitative assessment of your site. You can transfer specific site data from the WBCSD or IPIECA global tools direct to the GEMI tools to examine water hotspot sites in more depth.

Who uses it?
Global Water Tool users; major companies including Intel, BP, Chevron, AkzoNobel, ExxonMobil and Shell helped road test the LWT.

Water Risk Filter

waterriskfilter.panda.org/

An online tool that provides water risk scores for a company's operations and supply chain based on indicators that cover all industries and countries worldwide.

Who developed it?
WWF International and DEG, a German investment corporation. Peer reviewed during development by water and risk management experts and road tested with a dozen financial institutions and businesses.

What does it do?
Uses a simple, quick-to-use risk methodology to rate water risks to company operations, supply chains and growth plans. Results are supplied along with suggested ideas on where to focus water management efforts and what actions to take. Sheds light for investors on potential risks for their clients. (DEG has access to its own clients' data and results.)

What do I have to do?
Fill in a multiple-choice questionnaire with 1–5 scoring and tailored industry-based weightings. The tool is powered by the best available global data source for each risk indicator. It will screen the information you provide against this database and come up with risk ratings for your facilities or investments. You can also generate maps of your assessed sites with numerous water-related risk factor overlays.

Who uses it?
Beer maker SABMiller, food products company Chiquita, the UNEP Finance Initiative, DEG client companies.

Ceres Aqua Gauge

www.ceres.org

Does what its name suggests, enabling companies to gauge, improve and communicate their water management approach and performance. Geared to help investors understand how well companies are managing water-related risks and opportunities.

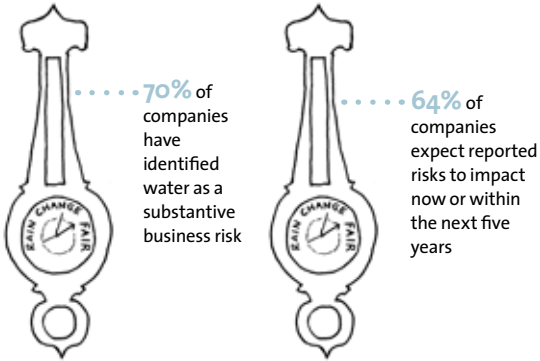
Who developed it?
Ceres, the advocacy organisation, with WBCSD, strategy firm Irbaris and the Investor Responsibility Research Center (IRRC) Institute. Over 50 financial institutions, companies and NGOs also gave input and feedback.

What does it do?
Crunches information and data provided by companies to evaluate their performance against 20 key aspects of water risk management. Factors range from policy development and data gathering to business planning and goal-setting, stakeholder engagement and disclosure. Each is graded on a sliding scale from initial steps to leading practice. The results help companies identify weak spots, prioritise actions and develop effective risk responses.

What do I have to do?
Download the free Excel-based tool and plug in the required information on your company's current policies, practices and data.

Who uses it?
Investors managing over US$2 trillion in assets support and use the tool. Corporate enthusiasts include Coca-Cola, Suncor Energy and Cummins, a global power systems manufacturer.

How to communicate on water



How companies are doing

In general, corporate reporting (and communication generally) on water use, impact and risk lags well behind that on climate change. But this will change. Water is increasingly seen as "the new carbon" by anxious investors and vulnerable sectors. Pressure is also mounting from NGOs, communities and shareholders for more transparency on this sensitive topic. Big business, in other words, needs a water reporting strategy.

The best barometer of where leading companies stand is the CDP's Water Disclosure Index. Every year, CDP sends the survey to all FTSE Global 500 companies operating in water-intensive sectors or with water-vulnerable supply chains.

In 2013, 530 institutional investors representing approximately US$57 trillion in assets and a number of major purchasing organisations called for greater transparency on corporate water issues from 1,036 companies. There was a 59% increase in the 2012 response rate, with 593 participating. This is a snapshot of the findings:

Substantive water-related risks are becoming more immediate
Almost three quarters of respondents (70%) have identified water as a substantive business risk. For some respondents, anticipated financial impacts are as high as US$1 billion, and the majority (64%) of reported risks are expected to impact now or within the next five years. In one year, the number of near-term substantive risks reported by companies has increased by 16% to 614 risks.

Respondents' water stewardship activities are notably lacking, potentially exposing their company and investors to risks that could be mitigated.

The majority of respondents (63%) set concrete targets and goals for their direct operations and, in general, many of these are focused on reducing water use or increasing water recycling/ reuse. Companies that continue with such a narrow focus could be missing potential opportunities and overlooking serious risks.

Investors must encourage a step change within companies to address water-related risks and associated impacts to financial performance.

Through CDP, investor signatories are promoting corporate water stewardship as a risk reduction strategy. They recognise that water stewardship is associated with a forward-looking, resilient company with a sound understanding of its risk profile contributing to the company potentially being viewed as a more attractive investment.

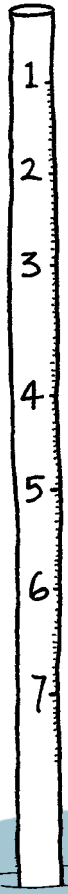
Policies, plans, performance

Whatever kind of company you are, the chances are your customers, shareholders, employees, communities and other key partners will want to know where you stand on water. Put simply, stakeholders want to know what you think about water risk (policy) what you intend to do about it (plans and targets) and how well you are doing (data and performance).

This may seem intimidating if you haven't yet formulated a water strategy or amassed water use data. But it provides a starting point for thinking about water strategically and (a little further down the road) a useful framework for a reporting strategy. Being transparent about where you are on water, even if it's very early days, can also be a powerful tool for motivating change in your company and goodwill among stakeholders.

In the next few pages, we explain in more detail how companies can successfully navigate water risk – and avoid getting in deep water – through a strategic seven-step process.

Navigating water: 7 things successful companies do



Understand
how water use, impacts and risks affect your business

Strategise
analyse, prioritise and plan

Act
move with strategic purpose, tackling challenges and capitalising on opportunities

Report
disclose performance (good and bad)

Communicate
tell your water story

Engage
listen to, learn from, inform and inspire others

Learn
stay ahead of trends, anticipate change

How we can help

Context can help you on every stage of this journey – from first putting your toe in the water to a fully-fledged water reporting and communications strategy.

1: Helping you understand

Just how much does water matter to your business? No idea? Don't worry. We are experts in materiality analysis – helping companies figure out which sustainability issues matter most to their brand and bottom line. We guide companies through a simple, four-step process to determine what is most material to them, including the extent to which water matters to their business:

- An email questionnaire or stakeholder roundtables to produce an issues long list.
- A comparative analysis with other companies in your sector.
- An evaluation of the findings involving all relevant teams including risk management, sourcing, operations and communications. We develop rating criteria to help you come up with a short list.
- An information summary in actionable format such as a materiality chart or matrix.

This approach can be combined with one (or more) of the mapping tools highlighted on pages 20–27 to help you get a handle on your water risk – and present it in usable form.

2: Helping you strategise

Context has a 17-year history of helping some of the world's leading companies craft sustainability strategies – and avoid costly missteps. Clients include such acknowledged trailblazers as Unilever, IKEA, Cisco, Bloomberg and BT. On water, we can use our Triple A strategy model – analysis, approach, action – to help you think through global, national and local water management policies and actions.

3: Helping you act

Once you have water strategies in place you need people to make it happen and a receptive workplace culture. We help companies inform, engage and inspire employees, using everything from intranet sites and social media to games, contests and awareness campaigns.

4: Helping you report

A candid and comprehensive report will help set your water agenda and signal your seriousness on this critical issue. Done well, it can also provide the foundation and credibility for wider communications aimed at your key audiences. We have written over 250 sustainability reports for leading companies, many tailored to the GRI gold standard in reporting guidelines. Our proven methodology will also help you benchmark your strategy and performance so your reporting can evolve year on year.

5: Helping you communicate

Communities, customers, employees, investors, the media – each will require you to tell your water story a different way, often in very different language and outlets. We specialise in communications strategies for diverse audiences, each with clear objectives, key messages, channels (traditional and digital) and tactics. We also know how to write in ways that make people pay attention.

6: Helping you engage

Stakeholder engagement is an increasingly popular sustainability tool, with good reason. Talking to customers, employees, communities, investors, activists and governments can help companies seize opportunities and avoid pitfalls. Given the sensitivity that often surrounds water use, engaging your stakeholders for advice, feedback and to build trust, is obvious. We can use our expertise and considerable contacts to facilitate such dialogue through meetings, surveys and advisory panels.

7: Helping you learn

It's our job to keep ahead of sustainability trends and to advise our clients on how to anticipate change. Proactive businesses will be the winners as we all adjust to a water-scarce, low-carbon world.

In the next few pages, you can read how six recent and present Context clients are successfully navigating today's water rapids. Each is using a conservation mindset, leading practice and/or innovative technology and products to help themselves and others better manage this most precious resource.

Water leaders

Sales: Unilever enlists consumers

Unilever leads the pack among consumer goods companies seeking to make water-light products a selling point with customers.

Its ambitious Sustainable Living Plan includes a commitment to halve by 2020 the amount of water consumers use with its products in seven water-scarce countries. As a baseline, the company assessed the water footprint of over 1,600 of its products in China, India, the United States and four other countries which together house around half the world's people.

Around 85% of all water use associated with Unilever products is by consumers. To persuade them to use less, the company's product developers have come up with innovations like the "One Rinse" fabric conditioner which can save around 30 litres of water per wash. Since people in emerging countries use up to a third of their water supply, and a lot of time, on hand-washing clothes, the product also brings real social benefits.

Other Unilever innovations include dry shampoo, which refreshes hair without water and Lifebuoy foam handwash, which cuts water use by as much as 18%. Dry shampoo sales, under nine brands, grew by over 19% during 2012.

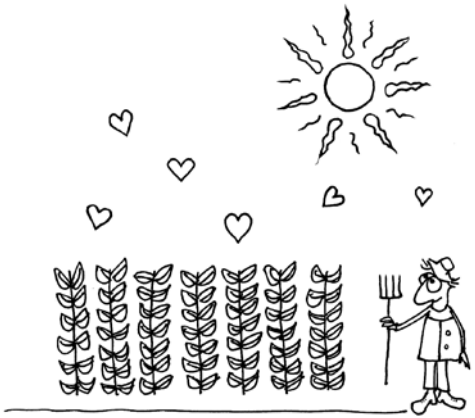
Water-light Unilever products are already being used in around 12.5 million households worldwide. But the company aims much higher. In 2015, it hopes to reach 200 million consumers with water-saving products and tools.

Sources:
www.unilever.com
www.cdproject.net

Products: Syngenta seeds drought-friendly crops

While water supplies are shrinking, the world needs more food. Syngenta, the Swiss-based crop protection and seed producer, has committed to increase the average productivity of the world's major crops by 20% without using more land, water or other inputs.

Syngenta is developing new drought tolerant crops that need less water to grow. One method improves the ability of crops to use available moisture. MODDUS®, Syngenta's plant growth regulator, promotes longer plant roots to find water and nutrients, improving yield in wheat programmes by 15–25% and reducing the need for irrigation by around 15%. The CRUISER® seed treatment also



encourages root growth and resilience under environmental stresses. The AGRISURE ARTESIAN® native trait technology works differently, enhancing the existing ability of corn plants to use the water more efficiently at every growth stage, and to defend against drought. Field trials showed a 17% improvement in average yield for severe and extreme drought conditions.

To complement these new crop varieties, Syngenta is developing innovative water-efficient technologies and optimised irrigation systems, working with farmers from Bangladesh to Colombia to implement them. In 2012, it partnered with equipment manufacturer Lindsay in the United States to develop a new method of irrigation that maximises productivity with minimal water use. Farmers using this method increased yields by 10–20%, compared with existing systems.

Source:
www.syngenta.com

Manufacturing: Cisco saves money and water

Cisco Systems, the technology networking company, keeps close tabs on supply chain–related water issues through its supplier code of conduct, audit process and sustainability metrics for preferred partner companies. This thorough approach encourages innovative thinking and can unearth win–win opportunities.

For example, Cisco worked with its printed circuit board assembly partners to reduce water use in product processes. Up to 20 million gallons of water were being used each year just to wash the boards after soldering. The solution was a new soldering practice that made the washing stage redundant. As a result the amount of wastewater generated in making circuit boards, and requiring treatment and disposal, also fell, increasing assembly efficiency. At a stroke, Cisco Systems saved over US$1 million a year, with no adverse impact on product quality.

Based in dry Southern California, Cisco uses the WBCSD Global Water Tool to identify water-stressed site locations. Operational efforts to reduce water use centre on cooling towers, washrooms and landscaping at its office buildings. They include deploying irrigation controllers, using recycled water for irrigation and fountain displays, and replacing turf and fountains with beds of native, drought-resistant plants. The company has also installed variable-frequency drives in cooling towers and water-saving valves for toilets, sink aerators and kitchen sinks.

Sources:
www.cdproject.net
www.cisco.com

Efficiency: PepsiCo gets more crop per drop

For obvious reasons, combating water risk is a high priority at the world's second-largest food and drink company. Water efficiency measures at PepsiCo's facilities worldwide saved nearly 14 billion litres of water in direct operations in 2012. The company met its goal of improving water-use efficiency by 20% per unit of production by 2015 (over 2006 levels), in 2011, four years ahead of schedule.

Since PepsiCo's products rely on a highly water-dependent supply chain, the company is also working with farmers, scientists and others on innovative technologies to wring risk out of water use. A good example is i-crop™, a breakthrough agricultural technology producing higher yields for less water.

Developed with Cambridge University, the tool combines field measurements of actual soil moisture content with online data modelling to optimise farmers' watering methods. In trials across 46 UK potato farms that supply the company's Walkers crisps subsidiary, water use on fields fell 8% while crop yield rose 13%. PepsiCo is now expanding its i-crop™ use into mainland Europe.

Extreme weather impacts – from too much or too little water – are also on the company's radar. With the Columbia Water Center at the Earth Institute, Columbia University, PepsiCo is working to anticipate extreme weather impacts along its agricultural supply chain so it can take proactive action to minimise disruption.

Sources:
www.pepsico.com
www.cdproject.net

Saving water: IKEA and Nike invest in waterless dyeing

If textile dyeing pollutes the water, why use water?

This is the thinking behind a new way of "dry" dyeing that uses liquid carbon dioxide and pressure instead of water and chemicals. The DyeCoo system, developed in the Netherlands, is backed by two of the world's biggest users of textiles, IKEA and Nike.

"DyeCoo's waterless dyeing technology is a truly innovative system that could bring real environmental and cost benefits for the textile industry by reducing water and chemical use. Through the partnership, IKEA will help to speed up the development and availability of the technology," says Christian Ehrenborg, Managing Director, IKEA GreenTech.

The investment supports the IKEA Group sustainability strategy, People & Planet Positive, which includes a number of challenging commitments for IKEA to make its products, operations and supply chain more sustainable.

The significant potential of the waterless dyeing process has also been recognised by the world's leading apparel and footwear brand, NIKE, which has also invested in DyeCoo.

The textile industry is one of the largest consumers of water and most of the world's textile suppliers are located in Asia.

"IKEA strives to have a positive impact on people and the planet. By helping to scale the DyeCoo system for use with larger production volumes, we could help to make a big difference for the environment as well as workers and communities around textile facilities," says Steve Howard, Chief Sustainability Officer, IKEA Group.

Source:
www.ikea.com

Quality: Brown-Forman protects brand reputation

Brown-Forman's brands have a reputation for quality, partly because of their use of pristine water supplies. Evocatively named products like Canadian Mist and Finlandia Vodka, for example, contain water drawn from northern Canadian bays and Finnish glacial springs respectively. To maintain such purity in sourcing, and conserve water supplies that all its products depend on, the company has made good water management key to its responsibility agenda.

Each Brown-Forman facility worldwide manages its water use by measuring consumption, implementing water efficiency projects, and minimising effluent emissions. The company has set a 2020 goal of reducing wastewater per unit of product by 30% from 2009 levels. At a Mexican facility that produces tequila, an innovative filtration system is showing the way. It makes treated wastewater suitable for reuse to irrigate agave nurseries and lawns. As a result, well water use in the dry season has dropped by around 600m^3 a day.

Several thousand miles north, Brown-Forman partnered with a local public agency to help keep clean Georgian Bay, the source of a key ingredient in Canadian Mist Blended Canadian Whiskey. Distillery employees helped plant cedar and spruce trees to create buffer zones along the rivers leading into Georgian Bay, designed to absorb farm and urban pollution run-off.

Source:
www.brown-forman.com

Glossary

A

Abstraction siphoning of water from underground aquifers. Sustainable only when less is taken out than nature's recharge rate.

Aquifer a convenient geologic formation that stores or transmits water underground to wells and springs, generating supply for human use.

B

Basin an area of land that drains water to a river, lake or reservoir. Large basins, like the Mississippi River basin, contain thousands of smaller cousins. Also known as a watershed.

Biochemical Oxygen Demand (BOD) a measure of organic pollution (bacteria) levels in water. A growing number of companies report on BOD levels in the wastewater they discharge.

Blue water freshwater directly accessible for humans to tap, such as in rivers, lakes and aquifers.

C

CEO water mandate UN initiative, endorsed by CEOs of major global companies, that aims to reduce corporate use of water worldwide. www.ceomandate.org

Ceres US-based coalition of responsible investment funds, environmental organisations and public interest groups working with companies on sustainability issues; manages the Aqua Gauge water risk tool (see page 27). www.ceres.org

D

Desalination process to remove the salt from seawater; becoming an increasingly popular (though still very expensive) way of providing freshwater for people living in dry climes.

E

Environmental flows water flows in streams and rivers vital to maintaining ecosystem services such as fish habitat.

F

Flood the temporary inundation of land, triggered when a river, stream, lake or ocean overflows; affects around 500 million people worldwide a year, says Swiss Re.

Flood, 100-year extreme flooding with a 1% chance of being equalled or exceeded in any given year; alarmingly, these floods are beginning to occur more often. Hurricane Irene and Superstorm Sandy were both "100-year events" that struck the north-east US in consecutive years.

Fracking (or hydraulic fracturing) a controversial method of extracting previously inaccessible natural gas from shale deposits, accounting for a rapidly growing percentage of US energy supply. Uses large volumes of water; critics claim the process risks water contamination.

Freshwater water that contains less than 1,000 milligrams per litre of salt or other dissolved solids. Also called blue water.

G

Global Environmental Management Initiative a collaborative member organisation that has co-developed the GEMI Local Water Tool (see page 24). www.gemi.org

Green water water stored in soils that plants draw on; difficult for people to access.

Grey water relatively clean household, commercial or industrial wastewater; think washing machines, bathtubs, sinks (not toilets). Spurred by global water shortages, and green building best practices, grey water recycling is increasingly common.

Groundwater water held in underground aquifers or in saturated soil and rock that supply springs and wells; makes up more than 95% of global, unfrozen freshwater.

H

H_2O the chemical formula for the colourless, odourless and transparent liquid that provides the basis for life on earth.

Hydrologic cycle the age-old cyclical transfer of water vapour from the Earth's surface into the atmosphere, then back to earth via precipitation and through run-off into streams, rivers, lakes and oceans.

I

Imported water water that countries or cities transport from beyond their borders.

Integrated Water Resource Management (IWRM) as the name implies, a catch-all approach to water security and management that seeks to achieve economic, environmental, and social goals.

Irrigation

– **deficit** not giving crops all the water they can use; can be inadvertent or done deliberately when water availability is restricted.

– **drip** a low-pressure method where pipes or tubes drip water slowly onto crops; increasingly common, it loses less water to evaporation than high-pressure spray irrigation.

– **spray** traditional and still common method where water is shot high into the air onto crops. Attracts the ire of environmentalists as wasteful.

N

Nitrates pollutants from cropland, wastewater treatment plants and lawns; the most common chemical contaminant found in global groundwater.

P

Parts per million (ppm) commonly used unit to measure pollutant concentrations in water; used by regulators to set contamination limits.

Peak water a term coined by MacArthur Fellow Peter Gleick of the Pacific Institute to characterise areas around the world where sustainable supply (peak water limits) is being exceeded.

Precipitation the many ways in which water falls to earth, including rain, snow, hail and sleet.

R

Rainfall deficit a period of below average rainfall or drought; classed as serious when rainfall is within the lowest 5–10% on record and severe when it drops below the lowest 5% on record.

Reclaimed wastewater treated wastewater that can be used for beneficial purposes,

such as irrigating certain plants, cooling towers, etc. See also wastewater.

Recycled water water used more than once before it passes back into the natural hydrologic cycle.

Reservoir a pond, lake or basin, either natural or artificial, used to store, regulate and control water.

Reverse osmosis removal of salts from water using a membrane; a commonly used method of desalination.

T

Transboundary in the context of water, a river, lake or aquifer that crosses one or more political border; the world boasts 276 transboundary river basins alone.

U

UN-Water initiative that coordinates efforts by United Nations entities to address freshwater issues and challenges; promotes integrated water resources management. www.unwater.org

V

Virtual water the amount of "hidden" water used to create consumer products; the world consumes trillions of virtual gallons a year through food and other commodities. Calculating virtual water is complicated but gives companies, countries and individuals a clearer measure of their water footprint.

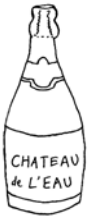
W

Wastewater water used in homes, industries and businesses that can't be reused unless it is treated.

Water consumption confusingly, differs from water use; measures all water not returned to its original source after being withdrawn, including water that evaporates or transpires through plant leaves. Almost 50% of farm irrigation water is lost in this way.

Water Disclosure Programme a not-for-profit organisation managed, confusingly, by the Carbon Disclosure Project (CDP); encourages the world's largest companies in water-vulnerable sectors to disclose their water use and management. www.cdproject.net

Water footprint the total amount of freshwater use by an organisation, individual, community or country. In the case of companies, tallies the lifecycle volume of freshwater consumed in producing goods and services.



Water quality a measure of whether a volume of water is fit for purpose based on chemical, physical and biological characteristics.

Water risk water scarcity that creates physical, regulatory and reputational risks for companies, especially those in water-vulnerable sectors or operating in water-stressed regions.

Water scarcity water supply that is inadequate or inaccessible for human and environmental uses. Measured by both physical shortages and unsustain-able demand; already affects more than 1.2 billion people.

Water security the holy grail of ensuring access to adequate, safe and sustainable quantities of water to meet human and environmental needs.

Watershed See Basin.



Water stress the circumstances created when water is over-exploited or when poor quality restricts water use; symptoms include dried-out rivers and plains, saltwater intrusion and toxic algal blooms.

Water table the water surface of an aquifer.

Water use water tapped for a specific purpose, such as in homes, farms and industrial processing. Includes water released after treatment and used in-situ – for example to produce hydroelectric power.

World Business Council for Sustainable Development (WBCSD) global organisation with 200+ corporate members; invented the first water risk assessment method widely used by companies, the Global Water Tool (see page 23).
www.wbcsd.org

World Resources Institute (WRI) environmental think tank that partners with business on sustainability issues; manages the Aqueduct water risk management tool (see page 22).
www.wri.org

World Water Assessment Programme (WWAP) Part of UNESCO; produces a three-yearly water-watchers bible on global freshwater resources – the UN World Water Development Report.
www.unesco.org/water/wwap/

WWF global environmental group that works with business on water issues and manages the Water Risk Filter tool (see page 26).
www.wwf.org

X

Xeriscaping an impressively named method of water-light landscaping; popular among eco-conscious gardeners and increasingly among companies. Uses native, drought-resistant plants.

References

1 http://www3.weforum.org/docs/WEF_GlobalRisks_ExecutiveSummary_2013.pdf
2 http://www.veoliawaterna.com
3 http://www.unwater.org
4 http://awsassets.panda.org/downloads/deg_wwf_water_risk_final.pdf
5 http://www.unwater.org/statistics_use.html
6 http://www.worldresourcesreport.org/files/wrr/papers/wrr_2010_2011_chapter_1.pdfA changing climate
7 http://www.reuters.com/article/2011/10/21/us-thailand-floods-tech-idUSTRE79K76Z20111021]
8 http://www.enn.com/pollution/article/46037
9 http://insights.wri.org/news/2013/06/10-ways-cut-global-food-loss-and-waste

Credits

Writing: Polly Ghazi
Design: www.theayres.co.uk
Illustrations: Michèle Noach
Printing: www.synergygroup.uk.com

Context in context

Context is a consultancy specialising in corporate sustainability strategy and communications.

We are experts in three core areas:

- Corporate sustainability
- Communications and writing
- Business strategy and consultancy.

This unique combination enables us to advise clients on strategic sustainability issues and to craft compelling sustainability communications.

We work with proven long-term partners to provide digital media and design.

What we do

Strategy
Our Triple A Model will help you Analyse your sustainability challenges, define the best Approach to tackling them, and create an effective Action plan for success.

Communications
We create compelling communications to inform and influence your key audiences – from senior opinion leaders to your entire workforce – across all media platforms.

Reporting
A candid report provides the solid foundation to support all your communications and build your credibility. We have written over 250 sustainability reports for leading companies.

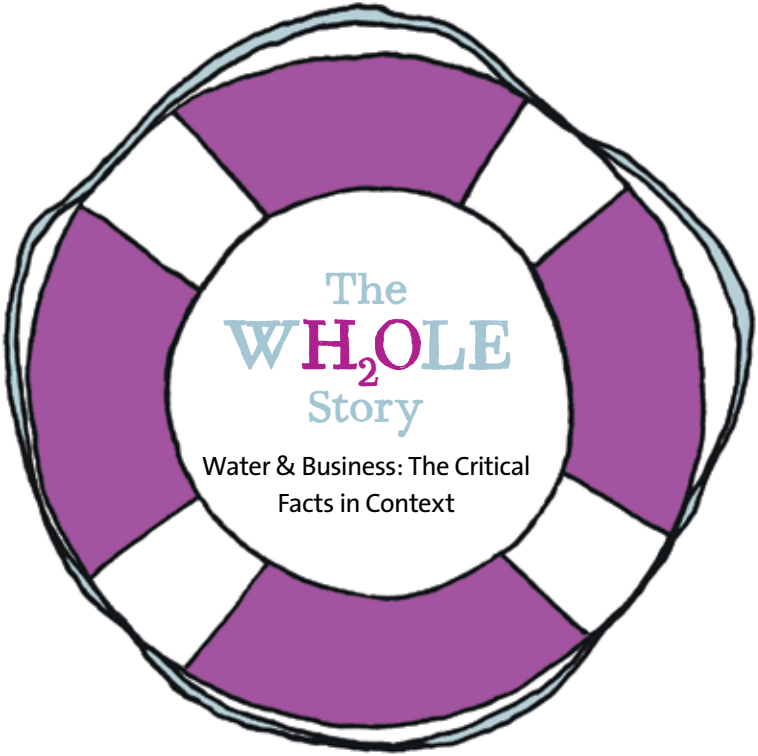
Brands
We help you ensure that your sustainability actions bolster brand equity.

Benchmarking, research and analysis
Our proven methodology will help you benchmark your sustainability strategy and performance, and act on the results.

Stakeholder engagement
Talking to customers, employees, activists and other stakeholders is good for business. We use our considerable contacts to facilitate this dialogue through meetings, surveys and advisory panels.

Employee engagement and training
We help you communicate with employees about sustainability in ways that inform, engage, excite and inspire.

Digital and Design
We provide the total package, working with proven long-term partners in digital media and design.



www.contexteurope.com
www.contextamerica.com
Twitter: @context_group

social
environmental
context

LONDON LOS ANGELES NEW YORK