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# Enhancing water security in China

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The business case for corporate water reporting in China

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Written on behalf of 617 investors with US\$63 trillion in assets

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To read 2014 company responses in full please go to  
[www.cdp.net/en-US/Results/Pages/responses.aspx](http://www.cdp.net/en-US/Results/Pages/responses.aspx)

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## CEO foreword



Corporate water stewardship is emerging as the most effective approach for improving water security. Companies engaging in this approach are set to be the winners in an increasingly water insecure world.

**Paul Simpson**  
CEO, CDP

China is home to 20% of the global population but only 7% of the global fresh water supply<sup>1</sup> and pressure on water is mounting due to the country's explosive growth. China has lost 27,000 rivers to diversion and over-extraction since the 1950s<sup>2</sup>. In 1999, former People's Republic of China deputy Prime Minister, Wen Jibao, warned that water shortages threaten "the very survival of the Chinese nation"<sup>3</sup>. Total water reserves in China dropped 13% from 2000-2009. Today, water scarcity is particularly evident in the northern and western provinces<sup>4</sup>.

The situation is of strategic importance to business. A growing population and increasing economic activity, coupled with declining water quality in many regions within China, has resulted in increased competition for water in the public and private sectors; the economic effects are becoming increasingly apparent. In April 2015, a potato supplier of McDonalds was fined 3.9 million yuan (US\$629,000) for polluting local water supplies.

The response to this situation is multifold. The Chinese government increased its water investment budget by 7% in 2014 and is undergoing regulatory reform to improve the governance of water resources<sup>5</sup>.

Business too is responding. A large and growing number of institutional investors and businesses are devising and implementing strategies to enhance water security and are often partnering with others to reduce costs and increase credibility. For example,

leading international brands, with supply chains in the heavily polluted Yangtze River basin, have successfully partnered together with NGOs to drive better water standards and increase water efficiency in textile manufacturing and cotton growing<sup>6</sup>.

This form of corporate water stewardship is emerging as the most effective approach for improving water security. Companies engaging in this approach are set to be the winners in an increasingly water insecure world.

CDP's proven and trusted water disclosure platform provides the only global system for companies to effectively and meaningfully respond to water challenges and capitalize on profitable business opportunities. The initiative provides the added value of delivering confidence to key stakeholders including 617 investors and 18 global multinational corporations' procurement departments.

The launch of our work on water in China will make a significant contribution to improving water security both within China and beyond. We look forward to catalyzing the shift in practice required to secure a vibrant and prosperous China.

**Paul Simpson**  
CEO CDP

1 UN WATER Water and Energy Sustainability Available from: [http://www.un.org/waterforlifedecade/pdf/01\\_2014\\_sustainability\\_eng.pdf](http://www.un.org/waterforlifedecade/pdf/01_2014_sustainability_eng.pdf)  
2 FOUNDATION FOR NON-VIOLENT ALTERNATIVES (2014) Publication, Commentary and Analysis South-North Water Transfer Project Available from: <http://fnvaworld.org/research-and-publications>  
3 Roy D. Return of The Dragon. New York: Columbia University Press; 2013  
4 CIRCLE OF BLUE (2011) China responds to explosive growth, pollution and water scarcity in latest five-year plan Available from: <http://www.circleofblue.org/waternews/2011/world/china-responds-to-explosive-growth-pollution-and-water-scarcity-in-latest-five-year-plan>  
5 CHINA WATER RISK (2015) China's 12th five year plan Available from: <http://chinawaterisk.org/regulations/water-policy/>  
6 BETTER COTTON INITIATIVE (2013) China Available from: <http://bettercotton.org/about-better-cotton/regions/china/>

## Foreword - WWF China



Water stewardship engages those who do not hold a government mandate to manage water resources or water infrastructure and enables them to contribute positively to water security<sup>6</sup>. As international businesses continue to realize the business risks associated with water stress they will also uncover the economic and social benefits of water stewardship and their role in preserving and improving social and environmental impacts in the communities in which they operate.

**Lo Sze Ping,**  
CEO, WWF China

In 2012, China had the third largest water footprint in the world<sup>1</sup>. Today, as a result of over extraction, and pollution, water levels are declining. Decades of waste poured from factories and cities into China's rivers have turned many of them into open sewers<sup>2</sup>. 40% of the water in the country's river systems is unfit for human consumption challenging the numerous local communities that rely on rivers for drinking water, farming, fishery, and transportation<sup>3</sup>. Additionally, according to the Ministry of Land and Resources, 60% of its groundwater is polluted<sup>4</sup>. Growing concerns about water security are compounded by climate change, population growth, and the rising water footprint that accompanies growing affluence<sup>5</sup>. The implications are clear: meeting the needs of Chinese society and the environment in the future will be heavily constrained by the availability of fresh water. This collectively implies that social and environmental objectives will have to be met within absolute water constraints.

Today, the business world is awakening to this reality and beginning to ask tough questions about their ability to grow under such pressures. Corporate risk related to water is therefore an emerging issue and is likely to become more significant, due to the aforementioned issues, but also because of investor perceptions, public and media awareness.

Companies are already assessing the risks and uncertainties they face throughout their supply chains in producing and marketing their goods and services. However, while there is widespread recognition and acceptance of the issue, there is less clarity over how to best measure, report and respond to water risks in the company profile.

However, by acknowledging the problem and through understanding the drivers of decline, we can find the insights, and more importantly, the determination to put things right. Water stewardship engages those who do not hold a government mandate to manage water resources or water infrastructure and enables them to contribute positively to water security<sup>6</sup>. As international businesses continue to realize the business risks associated with water stress they will also uncover the economic and social benefits of water stewardship and their role in preserving and improving social and environmental impacts in the communities in which they operate. To this end, the "golden triangle"—partnerships between public, private and NGO entities—are particularly valuable for skills, resources and networks. CDP's unique water reporting system helps put ecosystems at the center of planning and managing activities that depend on natural resources, which ultimately brings economic and social benefits.

Water reporting will be essential in a water constrained world, and we need to begin now in defining the barriers to 'good' disclosure. This is achievable and will require collaborative and shared efforts to reducing impacts and showing responsibility for the water that we all require.

**Lo Sze Ping,**  
CEO, WWF China

1 Hoekstra A, Mekonnen M. The water footprint of humanity. Proceedings of the National Academy of Sciences. 2012;109(9):3232-3237. doi:10.1073/pnas.1109936109.  
2 <https://www.worldwildlife.org/places/yangtze>  
3 [http://wwf.panda.org/about\\_our\\_earth/all\\_publications/living\\_planet\\_report/](http://wwf.panda.org/about_our_earth/all_publications/living_planet_report/)  
4 <http://www.wsj.com/articles/china-cracks-down-on-water-polluting-industries-1429267822>  
5 [http://wwf.panda.org/about\\_our\\_earth/all\\_publications/living\\_planet\\_report/](http://wwf.panda.org/about_our_earth/all_publications/living_planet_report/)  
6 [http://awsassets.panda.org/downloads/ws\\_briefing\\_booklet\\_lr\\_spreads.pdf](http://awsassets.panda.org/downloads/ws_briefing_booklet_lr_spreads.pdf)

## Executive summary

Water insecurity is already presenting the world's largest industrial water users with serious challenges. Corporations operating in and buying from China are no exception. Growing demand for water, driven by rapid urbanization, industrialization and economic growth, coupled with impacts on water supply caused by increasing pollution and exacerbated by climate change will only compound these challenges.

CDP's water program is designed to guide corporates through these challenges while helping investors and companies with large supply chains better understand how their portfolio companies and suppliers are addressing their water impacts and associated risks and opportunities. It is used by investors collectively managing more than US\$63 trillion and by multinational companies with a combined procurement spend of US\$214 billion.

CDP provides a corporate water reporting framework through which companies can engage strategically with water throughout their value chain. With its annual water questionnaire, which forms a central pillar of its work on water, CDP poses insightful questions aimed to stimulate understanding of the issues and opportunities for the businesses and their key stakeholders.

In 2014, more than 2,200 companies were asked to respond to CDP's water questionnaire. Responses were received from 1,064, up 79% compared with 2013, generating an unrivalled database of self-reported corporate water risk, management and governance data.

CDP has found that while water can be a significant driver for innovative and sustainable economic prosperity, its mismanagement can result in significant business failure. Pressure is growing for companies to build long-term resilience to water challenges into their business. Corporate water stewardship is increasingly being recognized by investors, policy makers and NGOs as an effective way to meaningfully manage water-related risks.

This report presents the case for corporate water reporting in China alongside analysis of the 2014 disclosures from 29 companies with headquarters in China, and 70 companies with facilities and/or supply chains exposed to risk in China. These companies are from the most water dependent sectors. Its key findings are:

### **The business case for action is clear and compelling, bringing with it opportunities for greater resilience**

Analysis for this report found that not only is business already impacted by worsening water security in China, almost a third (31%) of respondents headquartered in China report opportunities relating to water; the majority of which result in cost savings, business continuity or enhanced brand value.

### **Accounting for, valuing and protecting freshwater resources is fundamental to economic stability and wellbeing**

An increasing number of stakeholders are recognising that reporting can uncover risks and opportunities otherwise unnoticed by companies and lead to timely action. Analysis for this report found potentially inadequate water risk assessment processes and procedures by Chinese companies; identified areas of improvement in corporate governance; and highlighted how some companies are realising opportunities relating to water.

### **The global economy will favour businesses that take a pro-active approach to water stewardship**

The significance of corporate water issues is now being widely recognized by a large and growing number of institutional investors. These key stakeholders are increasingly holding companies accountable for the economic, environmental and social consequences of their water use and management. The public and the private sector need to work in coherence with a spirit of shared responsibility that can be capitalized by both for a sustainable future.

### **Measurement, transparency and accountability drive positive change in the world of business and investment**

Greater transparency and access to corporate water data, robust governance of corporate issues, long-term thinking and business planning are some of the major areas that business can explore in terms of improving the management of water resources. CDP's water reporting program provides the only global standardized platform for companies to measure, manage and report vital water information. This platform can be used by companies and investors to improve corporate performance, manage risk and contribute to greater water security in China.



## Introduction

CDP is an international, not-for-profit organization providing the only global system for companies and cities to report, measure, manage and act on vital environmental information. The number of institutional investors using data collected by CDP's water program has more than quadrupled since it began in 2010. These signatories are requesting companies to disclose business critical water-related information, to enable informed decision-making and drive strategic alignment of investments. CDP's objective related to water is to eliminate the negative effects of water use and catalyse meaningful action to improve water security.

CDP's water program has quickly established itself as the pre-eminent platform for corporate water reporting and holds the world's largest database of self-reported corporate water information. Such data sits at the heart of strategic business, investment and policy decisions enabling these critical stakeholders to better understand and take action to address the risks and opportunities associated with worsening water security.

In 2014, CDP issued its water questionnaire to 2,200 of the world's largest publicly quoted companies on behalf of 617 investors with more than \$63 trillion in assets. Additionally, through CDP's supply chain program, 18 global purchasing organizations, which collectively command an annual procurement spend of US\$216 billion<sup>7</sup> and includes **Dell**, **L'Oréal** and **Unilever**, are using CDP's water program to engage more than 1,150 of their suppliers. Through CDP's supply chain program, purchasing organizations are able to catalyse water stewardship amongst their suppliers, providing them with an opportunity to increase their knowledge of indirect water impacts, promote actions to reduce risks and increase supply chain resilience.

Investor growth of the program 2010 – 2015.



It is easy to imagine that water is cheap and plentiful. In reality, its availability depends on a range of environmental, social and economic factors and in many cases it is too often scarce, undervalued and wasted. Worsening water security is a growing problem that affects governments, businesses and individuals in many parts of the world including China. Water's role in economic development can be overlooked, however its role in contributing to growth makes it as precious a commodity as any fossil fuel. The actions of business have a significant role to play, both in terms of scale and impact, in ensuring water security and in the development and implementation of solutions.

Corporate awareness and understanding of the water challenges in China – including challenges with accessibility, quality and supply- has grown and matured steadily in recent years. According to water availability standards set by the UN<sup>8</sup>, 300 of 657 major Chinese cities now face water shortages<sup>9</sup>. Pollution of freshwater resources has further complicated the situation. According to data from the Chinese Ministry of Environmental Protection.

**70%** of the country's inland lakes and water reserves are considered heavily polluted;

**25%** of underground aquifers are deemed polluted;

**50%** of urban aquifers heavily polluted<sup>10</sup>.

The introduction of CDP's water program in China aims to support companies and investors to improve corporate performance, manage risk and drive meaningful and efficient action to address these challenges, ultimately improving water security for all.

This report, prepared by CDP and funded by **The Coca Cola Foundation** and **Swire Beverages**, summarises the case for corporate water reporting and includes key findings and conclusions from the experiences and data collected by CDP to date. This report is intended to be a call to action to all stakeholders in the water debate and lays out what CDP intends to do in relation to this critical issue in China.

Analysis for this report is based off the responses of 29 companies with headquarters in China, and 70 companies with facilities and/or supply chains located within the region that responded to CDP's 2014 water questionnaire<sup>11</sup>.



Emerging and frontier economies are expected to have an increased portion of global GDP and GDP growth. Companies located or active in these jurisdictions have an increased importance in many investors' portfolios. We would therefore welcome increased geographical coverage of the CDP Water Survey.

**Norges Bank  
Investment Management**



<sup>8</sup> Water per capita must be at a minimum of 500 cubic meters annually

<sup>9</sup> BLOOMBERG (2014) Think air pollution is bad? China faces a water contamination crisis Available from: <http://www.bloomberg.com/bw/articles/2014-11-19/chinas-water-supply-is-contaminated-and-shrinking>

<sup>10</sup> WOLRDWATCH (2013) China's water challenges Available from: <http://www.worldwatch.org/system/files/The-Broker-China-Water.pdf>

<sup>11</sup> Please see Appendix I for full list of companies

## The water challenge in China

Water forms the lifeblood of the global economy, and companies and investors are increasingly aware that no water means no business. The challenges facing China are not unique, but in addition to its increasing role in the global economy, the challenges are exacerbated by its significant population, the industrialization and urbanization of its cities, rising energy and food requirements and the pollution of its water resources.

China's population is currently estimated at 1.36 billion, equivalent to approximately 20% of the total world population.<sup>12</sup> China's growing cities are industrializing at an unprecedented rate, fueled by rural workers migrating towards cities in search of work. 57% of the population are now urbanised and this is forecast to increase to 70% by 2030. Urban populations consume 3 times as much water and energy as rural residents leading to increased stress on water supplies.<sup>13</sup>

China ranks first in the world in terms of its farm output, producing a variety of crops, seeds and livestock including rice, wheat, sorghum, millet, barley, cotton, oilseed, pork and fish. While still the largest producer of agricultural products, reports suggest that production has dropped since 2000, due primarily to the depletion of China's main aquifers<sup>14</sup>. As a result, China has turned into a net importer of some crops, including grain and this trend is expected to increase as water shortages continue<sup>15</sup>. Lin Erda, of the Agrometeorology Institute of the Chinese Academy of Agricultural Sciences, projected a fall in agricultural production of between 14% to 23% by 2050 due to water shortages and other impacts by climate change<sup>16</sup>.

Pollution of water resources has also started to garner attention. Recent reports show that up to 60% of China's groundwater is polluted and unfit for drinking and up to 70% of China's water sources are polluted and unfit for human contact.<sup>17</sup>

There is increasing recognition by the Chinese government that water security is a critical issue, both from an economic and environmental perspective. The Chinese government recently announced plans to start construction on 172 major water works by 2020, worth US\$98 billion in investment.<sup>18</sup> Further, it reports plans to spend US\$850 billion to improve the quality of water supplies over the next ten years.<sup>19</sup>

The current state of water resources has resulted in businesses facing significant competition for this finite resource. A lack of water, or insufficient water of the right quality, can cut or even halt production. CDP's 2014 global water report found that 22% of the world's largest companies anticipate that water insecurity was likely to constrain corporate growth. China is set to become the world's lead manufacturing nation, and therefore a significant price setter, hence accounting for and valuing water has become fundamental to building economic stability and prosperity both within China and beyond.



Much of the impact of climate change will be felt through changing patterns of water availability, both in the quantity and quality of resources. If climate change is the shark, then water is its teeth and it is an issue on which businesses need far greater levels of awareness and understanding. Reporting to CDP's water program will raise this awareness and drive companies to take action to mitigate risks and seize opportunities.

**Paul Simpson, CEO, CDP**



<sup>12</sup> WORLDOMETERS (2015) Available from: <http://www.worldometers.info/world-population/china-population/>

<sup>13</sup> THE EARTH INSTITUTE (2011) How China is dealing with its water crisis Available from: <http://blogs.ei.columbia.edu/2011/05/05/how-china-is-dealing-with-its-water-crisis/>

<sup>14</sup> O'LAUGHLIN, PEG (2011) China's consumption of agricultural products increasing sustainability as incomes rise, says USITC Available from: [http://www.usitc.gov/press\\_room/news\\_release/2011/er0322j1.htm](http://www.usitc.gov/press_room/news_release/2011/er0322j1.htm)

<sup>15</sup> ENCYCLOPEDIA OF EARTH (2013) Aquifer depletion Available from: <http://www.eoearth.org/view/article/150159/>

<sup>16</sup> NEW AGRICULTURALIST (2005) Climate change: China's capacity to cope Available from: <http://www.new-ag.info/en/focus/focusItem.php?a=1229>

<sup>17</sup> NATIONAL ACADEMY OF SCIENCES (2007) Pollution in China Available from: <https://www.koshland-science-museum.org/water/html/en/Treatment/Agricultural-and-Industrial-Pollution-in-China.html>

<sup>18</sup> BLOOMBERG BUSINESS (2014) China to encourage private investment in major water projects Available from: <http://www.bloomberg.com/news/articles/2014-10-14/china-to-encourage-private-investment-in-major-water-projects>

<sup>19</sup> REUTERS (2013) After China's multibillion dollar clean-up, water still unfit to drink Available from: <http://www.reuters.com/article/2013/02/20/us-china-pollution-water-idUSBRE91J19N20130220>

## Business in China is already impacted by water related challenges

This year's Global Risk report, produced by the World Economic Forum highlighted the water crises as the highest risk to global society<sup>20</sup>. This is the fourth consecutive year in which the water crisis has emerged in the top ten risks. The UN warned in March 2015 of up to a 40% shortfall in water supply versus demand by 2030<sup>21</sup>. And analysis by CDP demonstrated that 30% of the world's largest companies had experienced detrimental impacts resulting from water challenges in one year alone<sup>22</sup>.

CDP's analysis indicates that while none of the 29 companies with headquarters in China report having experienced water-related detrimental impacts in the reporting period (2013-2014), 7 companies with facilities located within China did.

Of these companies:

**43%** report higher operating costs, including one of Britain's largest manufacturing and engineering companies, **Morgan Advanced Materials** that reports increased costs, constraints to production and disruption to production schedules due to increased water stress;

**25%** report property damage, such as French construction giant, **Saint-Gobain**, who reports damage to an industrial facility in Shanghai in the aftermath of the October 2013 typhoon, with financial damages of up to €5 million over the last five years; and

**50%** report brand damage, including Spanish clothing conglomerate, **Inditex**, who reports brand damage resulting from a Greenpeace ongoing 'Detox' campaign, which looks to expose direct links between global clothing brands, their suppliers and water pollution resulting from chemical discharge around the world.

Water insecurity can affect businesses in a variety of ways. Companies commonly report exposure to water related risk in three categories:

- ▶ **Physical risks** including changes in the quantity or quality of water. These risks are driven by increased water scarcity or stress, declining water quality or changing global/local hydrological conditions, all of which may well be exacerbated by climate change;
- ▶ **Regulatory risks** arising from existence or a lack of current or future national or global policies that could place additional financial burdens on the users of water. Regulation may relate to pricing, use or efficiency, pollution, withdrawal rights, reuse or recycling, process or product standards or licenses to operate. In some cases the absence or poor enforcement of effective regulation may be more of a threat than stricter regulation; and
- ▶ **Reputational risks** resulting from increasing competition between users, typically arising from (actual or perceived) abuse of abstraction rights, or the pollution of groundwater sources, particularly prevalent in the developing world. Reputational issues can be shaped by a complex combination of events, information, media, stakeholder needs, public opinion, NGOs and policies, and can have severe implications for business performance and competitiveness.

The most significant water-related issues for businesses are often not the most visible. While many companies have effective programs to manage water within their direct operations (often motivated by license to operate concerns), they may have minimal understanding of the threats to their business from worsening water security in different parts of their supply or value chain. CDP's water program provides a framework that positions companies to better understand and address water challenges thus enabling an effective response.

<sup>20</sup> WORLD ECONOMIC FORUM (2015) Global risks report Available from: <http://www.weforum.org/reports/global-risks-report-2015>

<sup>21</sup> UN (2015) The United Nations World Water Development Report 2015 Available from: <http://unesdoc.unesco.org/images/0023/002318/231823E.pdf>

<sup>22</sup> CDP (2014) CDP global water report Available from: <https://www.cdp.net/CDPResults/CDP-Global-Water-Report-2014.pdf>

## What gets measured gets managed

### Water as both a global and local issue

Water presents a unique set of measurement and reporting challenges. A common business adage states “what gets measured gets managed;” but even companies working to understand water risks and opportunities are struggling with the fundamental questions of determining the scope of their exposure to water risk, quantifying their water use, and identifying the opportunities that water presents.

First and foremost, water is a local or regional issue. Challenges and opportunities depend on patterns of local precipitation, watersheds and aquifers, as well as the degree and nature of local use. The spatial and temporal nature of water use is critical to understanding water management. A cubic meter of water used in Shanghai has very different consequences from a cubic meter used in Stockholm. This creates complexities for businesses trying to understand and disclose meaningful corporate water indicators, as well as managing their water use and water risks.

Compounding this complexity, the global nature of business and supply chains means that water use is linked across multiple geographies. Even when their own operations or assets are not affected, many businesses may be exposed to and significantly affected by changing patterns of water availability. For large companies with complex supply chains containing potentially thousands of suppliers, assessing water use and related product or supply chain issues can be highly complex.

Developments in corporate water stewardship and reporting show that there is increasing convergence from diverse interests over how to frame and discuss water resource issues, while harmonization of water terminology and standards for reporting are progressing. For example, there is now general agreement on two broad points:

- ▶ There are material, economic advantages to pursuing water stewardship for companies; and
- ▶ The water disclosure process is often as much benefit to respondents as it is for analysts.

CDP’s objective is to support, contribute to and reflect advanced corporate reporting practices that are transparent, incentivize better corporate water stewardship and promote a comprehensive understanding of water risk and opportunity.

### Emerging water reporting standards

Standards for water reporting are not as consistently established as those for GHG emissions. However, groups including the **Global Reporting Initiative (GRI)**, which has developed standards for many sustainability indicators, and the UN Global Compact’s **CEO Water Mandate**, which in 2014 released guidelines on corporate water reporting, are developing such standards (methods, guidelines and criteria), accounting tools (inputs, outputs, and quality), and other tools or methodologies to account for water impacts. CDP works in close collaboration with these and other organizations to ensure the CDP water questionnaire is in alignment with international standards.

CDP believes that establishing standards and improving reporting must develop in parallel. CDP works closely with the **Alliance for Water Stewardship (AWS)**, the **CEO Water Mandate**, **GRI**, the **World Resources Institute (WRI)**, **WWF**, **World Business Council for Sustainable Development (WBCSD)**, and similar organizations and strongly supports the development of effective standards. For example, AWS launched its international water stewardship standard in the fall of 2014 which defines a set of water stewardship criteria and indicators for how water should be managed at the catchment level. This is an area where we particularly wish to engage stakeholders and help accelerate movement towards a standard which companies are comfortable reporting against and through which investors can gain meaningful information.

CDP provides extensive, free guidance to all companies that respond to the water program, including a detailed water guidance document, publicly available scoring methodology, annual webinar series including reporting support and thought leadership sessions, as well as opportunities for companies to gather best practice information from CDP’s open data portal, associated analysis and network of international experts.

## A rising tide of awareness and action

Accounting for and valuing the world’s natural capital is fundamental to building economic stability and wellbeing. The global economy will favour businesses that take a pro-active approach to water stewardship. The significance of corporate water issues is now being widely recognized in investment terms. An understanding of corporate risk and opportunity is critical when making investment decisions and must now include a knowledge of the role water plays within a business. Therefore, an increasing number of institutional investors and buyers are calling for transparent and comparable disclosure of water related information for consideration in their investment and purchasing decision-making.



Corporate disclosure of water-related risk is seriously inadequate ...The financial impact of water shortages on sectors and companies is unclear, because information on water use data and impacts is spotty and partial.

JP Morgan



Water shortages and poor water quality can cause production shortfalls, price volatility, higher energy costs, regulatory action, competition and social unrest. Because of these material risks, Calvert expects companies we own to measure, mitigate and disclose information about their water risks and water management strategies. Corporate water disclosure allows Calvert to assess how well a potential investment is positioned for sustainable growth and responsible business and in turn, aides Calvert in offering our investors responsible investment opportunities.

Calvert Investments



## A rising tide of awareness and action

Investors have significant influence on the economy, and as a result they can drive positive change. Investors have the ability to conduct shareholder resolutions or even divest from companies that they perceive to be managing water issues poorly. Investment bank **Morgan Stanley**, recently used CDP's water data to produce a report exploring water risk in the power generation and food production sectors, providing investors with deep insights as to the water risks and mitigation strategies companies within the sector employ.

Investors are now holding companies accountable for the economic, environmental and human consequences of their water use and management practices. While an increasing number of institutions are recognising the importance of water in determining the success of their portfolio companies, they also recognise that there is a challenge in making informed decisions. As Piet Klop of Dutch asset and pension fund **PGGM**, explains, "the business value at water risk remains unclear because company information on water is rarely comparable and meaningful".

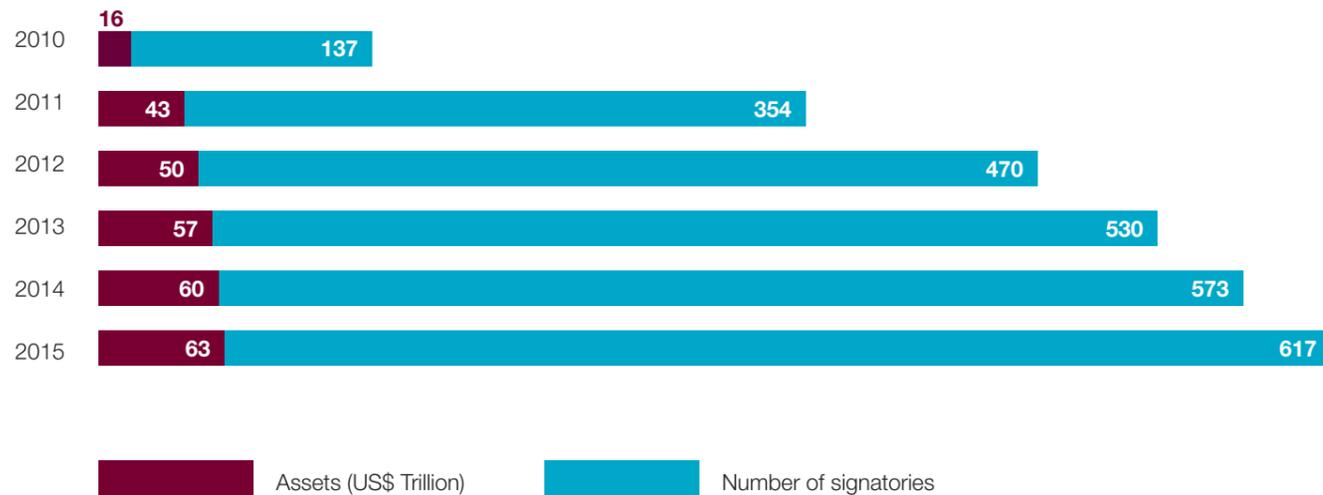


Transparent water reporting will help investors understand the specific risk exposures of different companies, as well as sectorial or regional challenges. Granularity of information reported at company and site levels is essential to understand the operational business resilience of companies to local water challenges and relevance of risk mitigation strategies. This is a necessary step towards assisting investors in managing and mitigating risks across their investment portfolio and a valuable process to support sustainable water management.

### Norges Bank Investment Management



Figure 1: Investor signatories, 2010 – 2015.



## Why water reporting?

Meaningful and relevant information on a company's impact on, and impact by, water resources is an essential first step to understanding risk. Many of the businesses operating in, or sourcing from areas facing worsening water security are unaware of the risks driven by their dependence on a depleting resource and the business benefits of improving management of water throughout the value chain.

Companies with robust water stewardship strategies are characterized by having comprehensive knowledge of water use across their value chain, the impact that water related issues have on their business and the impact their business has on water resources. Most importantly, they have meaningful plans and processes in place to mitigate risks and impacts that give adequate consideration to priorities of the local water basin in which they operate, buy from or sell to.

CDP's water questionnaire asks companies for information regarding the processes and procedures followed to assess water-related risks. These questions not only capture business critical information but importantly, spark reactions within companies and promote changes in corporate behaviour. Analysis of the responses to these questions from Chinese respondents indicates that, in many cases, water risk assessments may be inadequate. Without an accurate understanding of the water risk they face, companies are in danger of misdirecting risk mitigation strategies, or of setting targets that fail to address their key risk exposures. While 55% of companies with headquarters in China undertake a water risk assessment:

24%

conduct a review that includes risks to both direct operations and supply chains;

0%

conduct assessments at the river basin level – the crucial geographical area to consider when assessing water risk; and

0%

require key suppliers to disclose water risks they may face.



As the manager of about €140 billion of pension assets, water risk is affecting PGGM investments in a variety of ways. The problem however, is that the business value at water risk remains unclear because company information on water is rarely comparable and meaningful. CDP's work on improving and standardizing water risk disclosure is therefore vital in helping PGGM assess the water risk in our portfolios. Beyond that, we want companies to reduce their water use and increase collective water security.

PGGM Investments



Water disclosure is a powerful tool. By knowing and disclosing water use, it helps us drive better water management practices internally as well as develop collaborations with other stakeholders to move the industry toward better water stewardship.

Anna Gedda,  
Head of Sustainability, H&M



### The role of reporting in improving water security

The success of CDP has shown that disclosure of carbon and climate-related risk has a key role to play in accelerating action on such complex issues; this is also true for water security. Disclosure of water related risk has a number of valuable benefits:

### Enhancing business awareness and understanding

The process of responding to CDP's water questionnaire helps businesses and institutional investors to better understand the risks and opportunities associated with water insecurity whilst promoting water stewardship and delivering insight that enables companies to take intelligent action to manage this critical resource.

CDP analysis shows that 31% of companies' headquartered in China report opportunities relating to water, the majority of which result in cost savings for the business, including Technology hardware and equipment companies **Cooler Masterco** and **EMI Stop**.

A further 18 companies with supply chains in China, including Australian materials giant **Amcor**, Taiwanese IT company **Gold Circuit Electronics**, and Japanese personal products company **KAO**, identified opportunities relating to increased brand value, improved water efficiency and opportunities relating to regulatory changes. 87% of reported opportunities are estimated to be realized within the next three years.

Belgium brewers, **Anheuser Busch InBev** conducted large-scale trials in China, in partnership with the state supported Gansu Academy of Agricultural Sciences, to identify optimal irrigation practices for barley. A benchmarking tool was introduced, allowing growers in China to improve crop management practices through advanced productivity and environmental key performance indicators including water related parameters.

### Developing standard measures

The absence of effective standards has limited the number of companies reporting meaningful and comparable information and has resulted in some companies reporting only minimal information on water use in their direct operations. There has been much debate on standards and a consensus is now emerging on how to address some of the key questions. CDP has been operating its corporate water reporting program for 6 years and is currently used by more than 1,000 companies worldwide. The **CEO Water Mandate's** disclosure guidelines and the **AWS** international water stewardship standard are two further examples of growing consensus within the space. CDP believes that a 'learning by doing' approach driven by corporate reporting will contribute greatly to developing effective, workable and accepted standards, along with providing pragmatic examples of the most suitable data or initiatives that deliver most value to different stakeholders across different sectors.

## Why water reporting?

### Providing relevant information for companies, investors and other key stakeholders

New policies and regulatory environments will inevitably be needed to ensure sustainable water resource management. Greater transparency and corporate debate will help provide valuable information in shaping the regulatory environment and stimulating new measures including market-based structures. Making the data for such decisions widely available is a key goal of CDP.

Further, continued reporting and progress towards corporate water stewardship promotes business continuity, secures social license to operate and enhances brand value. For example, **Marriott International Inc.**, the American hospitality company seeks to mitigate both the direct and indirect environmental impacts of its business beyond their hotels by investing in conservation initiatives. One such initiative, Nobility of Nature, supports Southeast Asia's fresh water conservation, particularly the Yangtze River, and assists rural communities with building sustainable livelihoods.

### Action and dialogue

Raising awareness and creating better metrics for benchmarking performance will eventually lead to the most important outcome of all – action. Challenging businesses to report their performance and targets and

raising water as a strategic business issue will incentivize them to take demonstrable action. Reporting allows progress to be tracked, ensuring companies move rapidly and meaningfully towards sustainable water stewardship.

Although 55% companies headquartered in China have quantitative goals or targets for water resource management, there is significant opportunity for improvement.

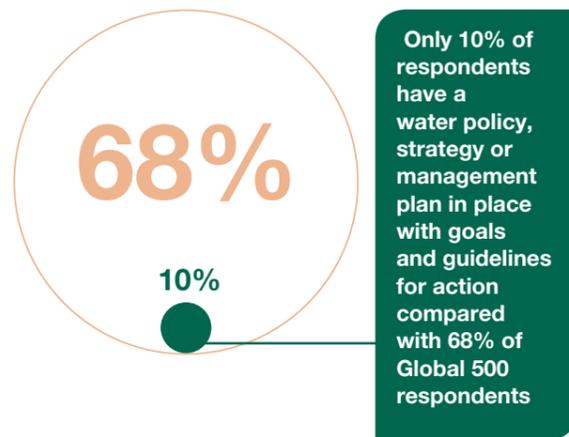


Figure 2: Motivation for target setting

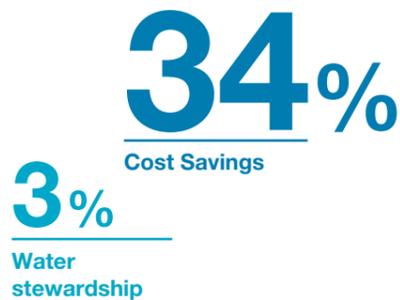
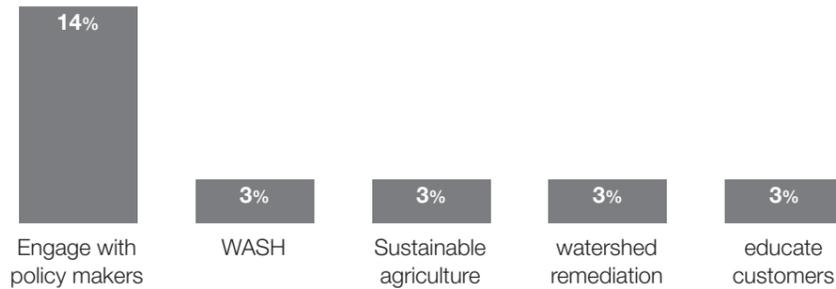


Figure 3 Top reported goals:

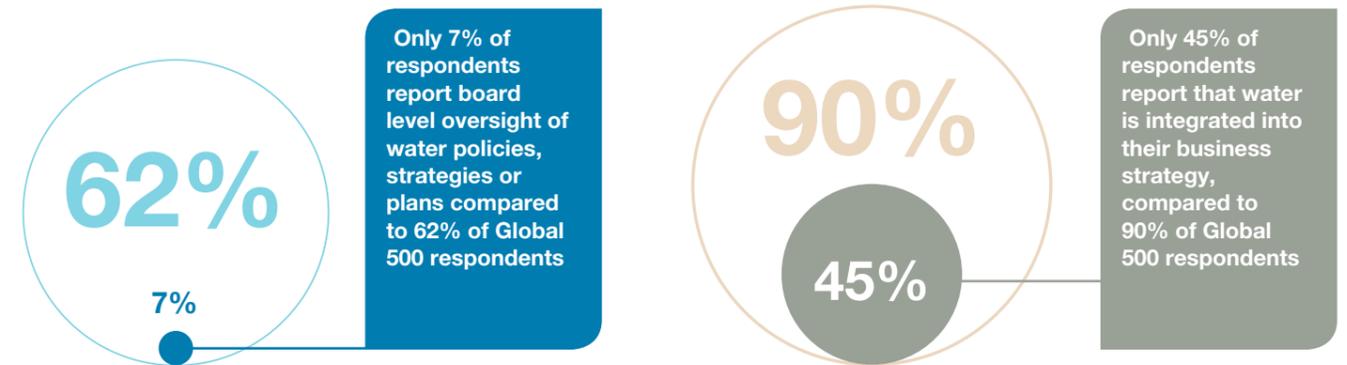


Using CDP to report information to key stakeholders provides companies with a framework that enables improved corporate performance, better risk management and contributes to greater water security in China.

Paul Simpson, CEO, CDP

## What needs to be done now?

Developing an effective program of reporting in China will not be straightforward, but will provide significant benefits and is essential to businesses ultimately managing their risks and opportunities. Much needs to be done in order for Chinese business to address water-related issues. In addition to improvements to water risk assessments, analysis shows that the governance reported by Chinese companies could be strengthened:



## CASE STUDY

### The Coca-Cola Company

Coca-Cola cares about every drop of water being put to its best use as water is one of our most important ingredients. We strive to improve water efficiency, reduce water consumption and ensure waste water is treated properly; protecting water resources while maintaining growth.

We have improved water efficiency by 1.5% per one liter of product from 2012. We have been and continue to be in full compliance with wastewater treatment and sewage discharge standards in China. We have piloted new ways to use reclaimed water, including providing reclaimed water to nourish a wetland park in Zhengzhou; providing factories with treated wastewater in Shanghai; and using treated wastewater to wash streets and irrigate landscapes in Nanning.

A reliable supply of clean and safe water is essential not only to our business, but also to the survival and sustainable development of communities. At Coca-Cola, "Replenish" is the centerpiece of our water stewardship strategy. Our strategy aims to protect source water, provide access to clean drinking water, conserve rain water, use reclaimed water where possible and promote trickle irrigation systems. Through these programs, in 2014 we had replenished 17 billion liters of water in China, a quantity equal to the annual drinking water requirements for 2.1 million people.

## What needs to be done now?

Through CDP's water program, companies are provided with a clear framework that allows for effective reporting and action. The water questionnaire, which forms a central pillar of CDP's water program supports companies to:

- ▶ Develop agreed upon internal reporting standards and helps identify measurement tools that can be applied meaningfully to a wide range of circumstances;
- ▶ Secure commitment from key stakeholders both internally and externally, ensuring disclosure happens and taking action on the results of such disclosure; and
- ▶ Utilize its practical framework to manage the collection, analysis and dissemination of data in a format accessible to businesses, investors, policy makers and other stakeholders.

However, reporting itself is not sufficient – the ultimate goal of CDP's work on water is for reporting to result in positive and proactive action to address the underlying issues.

### Launching CDP's water program in China

As a result of increasing interest from the investment and corporate communities, CDP will launch its water program in China in 2017. CDP's work on water follows a similar format to CDP's climate change program and invites investors to become signatories to an annual questionnaire issued to large publicly listed Chinese companies, asking them to report the impacts of water on their business. This information is reported via a dedicated online reporting platform.

The questionnaire covers:

- ▶ **Current state** - the dependency of a company on an adequate supply of good quality water;
- ▶ **Water risk assessment** - the processes and procedures that have been implemented at the corporate level to identify water related risks;
- ▶ **Implications** - water risks and opportunities in companies' own operations and supply chains (physical, regulatory and reputational);
- ▶ **Facility level water accounting** - facility level water accounting data for 'at risk' facilities; and
- ▶ **Response** - the corporate response to water insecurity.

CDP is ideally placed to lead a Chinese water reporting initiative. Its network of relationships with investors, corporations, governments and other NGOs, and its experience and expertise in managing a global disclosure program make it the natural choice to lead on water reporting in China and to secure the support of business.

# Conclusion

Water may well be the defining environmental issue of the 21st century. The potential impact is huge, the challenges posed are significant and the solutions will require coordinated action from businesses, individuals and governments. Climate change will exacerbate many of the issues relating to water and any adaptation strategy must include consideration of water related issues. Reporting is increasingly recognised as having a key role to play in the management of any business issue, but in particular those relating to the environment. CDP has started a movement and the benefits of increased reporting on water issues are clear to investors, regulators and businesses alike.

Greater transparency, access to corporate water data, robust governance of corporate issues, long-term thinking and business planning are some of the major areas that business can explore in terms of improving the management of water resources. CDP's water reporting program provides a global standardized platform for companies to measure, manage and disclose vital water information that helps critical stakeholders.

A growing number of stakeholders have recognized that reporting can uncover risks and opportunities otherwise unnoticed by companies and lead to timely action. Analysis for this report found potentially inadequate water risk assessment processes and procedures by Chinese companies; identified areas of improvement in corporate governance; and highlighted how some companies are realising opportunities relating to water.

The significance of corporate water issues are now being widely recognized by portfolio managers. Investors are increasingly holding companies responsible for economic, environmental and human consequences of portfolio companies' water use and management. The public and the private sector need to work in coherence with a spirit of shared responsibility that can be capitalized by both for a sustainable future.

Given the increasing calls for a transparent water reporting initiative, CDP is looking to secure funding that will enable it to launch its water program in China in 2017. This initiative will build on the significant success of CDP's work on water globally and will aim to strengthen and accelerate the debate on water related issues amongst all stakeholders. CDP will work alongside all of the key stakeholders in the debate and believes that a water disclosure program in China will be the most effective way to stimulate a rational and coherent business response to the issues of water availability.



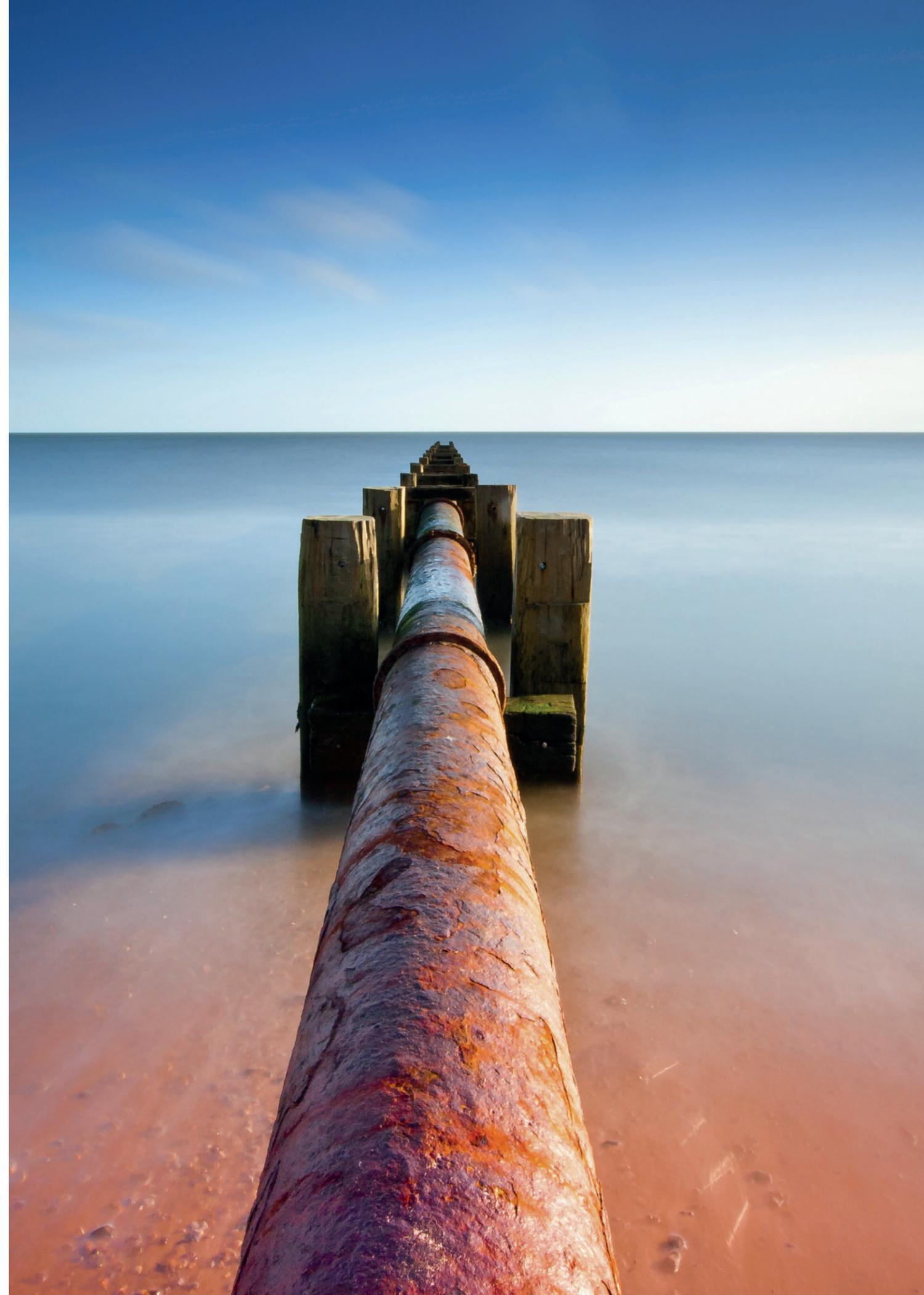
A key question today for governmental policymakers, corporate leaders and investors is whether inadequate and unevenly distributed water resources will limit economic growth, especially in emerging countries. In some instances, business can play a constructive role in addressing water problems. In many developed nations, the natural supply of water is not problematic and there has been increased attention to water stewardship through reduced waste and care in maintaining the cleanliness of supplies. However, this is not the case in much of the emerging world and could pose problems to economic growth and public health. Fortunately, the new political leadership in populous nations such as China and India have signaled their desire for significant reforms in this area.

Goldman Sachs



## Appendix I - Summary of key indicators

Key Indicators	2014 Global 500	China
Total respondents	174	29
Public respondents	135	26
Non-public respondents	39	3
Response rate	58%	N/A
<b>Current State</b>		
Respondents who have evaluated how water quality and quantity affects their organizations growth strategy over the next year or more	74%	48%
Respondents who have experienced detrimental impacts related to water in the reporting period	30%	0%
<b>Water risk assessment</b>		
Respondents that undertake water risk assessments at the river basin scale	25%	0%
Respondents that require key suppliers to report water use, risks and management	40%	0%
<b>Water risks &amp; opportunities</b>		
Respondents exposed to risks in either direct operations or supply chain	68%	24%
Respondents exposed to risks in direct operations only	66%	14%
Respondents exposed to risks in supply chain only	44%	3%
Respondents exposed to risks in both direct operations and supply chain	41%	7%
Respondents that identify opportunity	75%	31%
<b>Accounting</b>		
Respondents that report water withdrawals	91%	90%
Respondents that report water discharge	79%	93%
Respondents that monitor all water aspects for more than 50% of facilities at risk	35%	7%
Respondents able to verify (>1%) total volume of water withdrawal data by source for those facilities determined to be at risk	34%	21%
Respondents able to verify (>1%) water discharge quality data by destination	21%	21%
<b>Governance &amp; Strategy</b>		
Respondents with water integrated into their business strategy	90%	45%
Respondents with board level oversight of water policy, strategy or plan	62%	7%
Respondents with a water policy with goals and guidelines for action	68%	10%
<b>Compliance</b>		
Respondents that were subject to significant penalties and/or fines	29%	0%
<b>Targets and initiatives</b>		
Respondents with goals or targets in place	48%	55%
Respondents reporting targets with quantitative actions to manage water resources	64%	38%
Respondents reporting qualitative goals leading towards improved corporate water stewardship	66%	38%
Respondents that align public policy position with water stewardship	18%	7%



## Appendix II - Companies analyzed

### Responders Key to response status:

NP = Not public response (company response is private)

P = Public response (company response is available to the public)

Company name	Sector	Country HQ	Access
Air Products & Chemicals, Inc.	Materials	USA	NP
AkzoNobel	Materials	Netherlands	P
Allied Electronics Corporation Ltd (Altron)	Industrials	South Africa	P
Amcors	Materials	Australia	P
Anheuser Busch InBev	Consumer Staples	Belgium	P
Ascent/Mitac	Information Technology	China	P
Asia Vital Components Co., LTD	Information Technology	China	P
Associated British Foods	Consumer Staples	United Kingdom	P
AU Optronics	Information Technology	Taiwan	NP
Ball Corporation	Materials	USA	NP
BASF SE	Materials	Germany	P
Bayer AG	Health Care	Germany	P
Bridgestone Corporation	Consumer Discretionary	Japan	NP
BWI Group	Consumer Discretionary	China	P
BYD	Consumer Discretionary	China	P
Carli Electronics co., LTD.	Information Technology	China	P
Chicony Power Technology Co.,Ltd.	Information Technology	China	P
China Agri-Industries Holdings Ltd	Consumer Staples	China	P
Cooler Masterco.,Ltd.	Information Technology	China	P
Cummins Inc.	Industrials	USA	P
Danone	Consumer Staples	France	NP
Dell Inc.	Information Technology	USA	P
DONGGUAN PRIMAX ELECTRONIC & TELECOMMUNICATION PRODUCTS LTD	Information Technology	China	P
EMC Corporation	Information Technology	USA	P
EMI Stop	Information Technology	China	P
Feng Chuan Electronics Co. Ltd	Information Technology	China	P
FIRMENICH SA	Materials	Switzerland	P
Ford Motor Company	Consumer Discretionary	USA	P
General Mills Inc.	Consumer Staples	USA	P
Giant Food Int'l Co	Consumer Staples	China	P
GOLD CIRCUIT ELECTRONICS LTD	Information Technology	Taiwan	NP
Goodyear Tire & Rubber Company	Consumer Discretionary	USA	P
H&M Hennes & Mauritz AB	Consumer Discretionary	Sweden	P
HannStar Board Tech. (Jiangyin) Corp	Information Technology	China	P
HI-P INTERNATIONAL LIMITED	Industrials	China	P
Hitachi, Ltd.	Information Technology	Japan	P
HMA INC.	Consumer Discretionary	China	P
Hotron Precision Electronic(SUZHOU)CO.,LTD	Consumer Discretionary	China	P
Hung Hing Packaging (Wuxi) Co Ltd	Materials	China	P
Ibiden Co., Ltd.	Information Technology	Japan	NP
Imerys	Materials	France	NP
Imperial Tobacco Group	Consumer Staples	United Kingdom	P
Inditex	Consumer Discretionary	Spain	P
IRIS	Information Technology	China	P
JIANGYIN CHENGXING HOUSEHOLD CHEMIC	Materials	China	P
Jintung	Energy	China	P
Johnson & Johnson	Health Care	USA	P

Company name	Sector	Country HQ	Access
Juniper Networks, Inc.	Information Technology	USA	NP
KAO Corporation	Consumer Staples	Japan	P
Kering	Consumer Discretionary	France	P
KIM PRINTING (XIAMEN) CO., LTD	Industrials	China	P
Kobe Steel., Ltd.	Materials	Japan	NP
Komatsu Ltd.	Industrials	Japan	P
Konica Minolta, Inc.	Information Technology	Japan	P
Kyocera Corporation	Information Technology	Japan	NP
Lafarge S.A.	Materials	France	P
Marriott International, Inc.	Consumer Discretionary	USA	P
Meihua	Consumer Staples	China	P
Morgan Advanced Materials	Industrials	United Kingdom	P
NEC Corporation	Information Technology	Japan	NP
Nestlé	Consumer Staples	Switzerland	P
NetApp Inc.	Information Technology	USA	P
NSK Ltd.	Industrials	Japan	NP
OMRON Corporation	Information Technology	Japan	P
Oplink Communications Inc.	Information Technology	China	P
Owens Corning	Industrials	USA	P
Parker-Hannifin Corporation	Industrials	USA	P
Pfizer Inc.	Health Care	USA	P
Porton	Materials	China	P
Quanta Computer	Information Technology	Taiwan	P
Ricoh Co., Ltd.	Information Technology	Japan	P
Rockwell Automation	Industrials	USA	P
RONG HUA(QING YUAN) OFFSET PRINTING	Materials	China	P
Royal Philips	Industrials	Netherlands	P
Saint-Gobain	Industrials	France	P
SANOFI	Health Care	France	P
Sekisui Chemical Co., Ltd.	Consumer Discretionary	Japan	P
Seven & I Holdings Co., Ltd.	Consumer Staples	Japan	P
Shin-Etsu Chemical Co., Ltd.	Materials	Japan	NP
Stanley Black & Decker, Inc.	Industrials	USA	P
Stora Enso Oyj	Materials	Finland	NP
Suzhou Fulfil Electronics Co., Ltd	Information Technology	China	P
Taitwun	Information Technology	China	P
Taiwan Semiconductor Manufacturing	Information Technology	Taiwan	NP
Takeda Pharmaceutical Company Limited	Health Care	Japan	P
Texas Instruments Incorporated	Information Technology	USA	P
Top Victory Electronics(Fujian) Co. Ltd	Consumer Discretionary	China	P
Vale	Materials	Brazil	P
Volkswagen AG	Consumer Discretionary	Germany	P
Waychein	Consumer Staples	China	P
Wus	Information Technology	China	P
WuXi AppTec	Health Care	China	P
Xerox Corporation	Information Technology	USA	NP
Yangzhou Fuping Living Supplies Factory	Consumer Discretionary	China	P
Yuan Deng Metal Industrial (Kunshan) Co.Ltd	Materials	China	P



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For access to a database of public responses for analysis, benchmarking and learning best practices, please contact [reporterservices@cdp.net](mailto:reporterservices@cdp.net).

This report is available for download from [www.cdp.net](http://www.cdp.net).

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