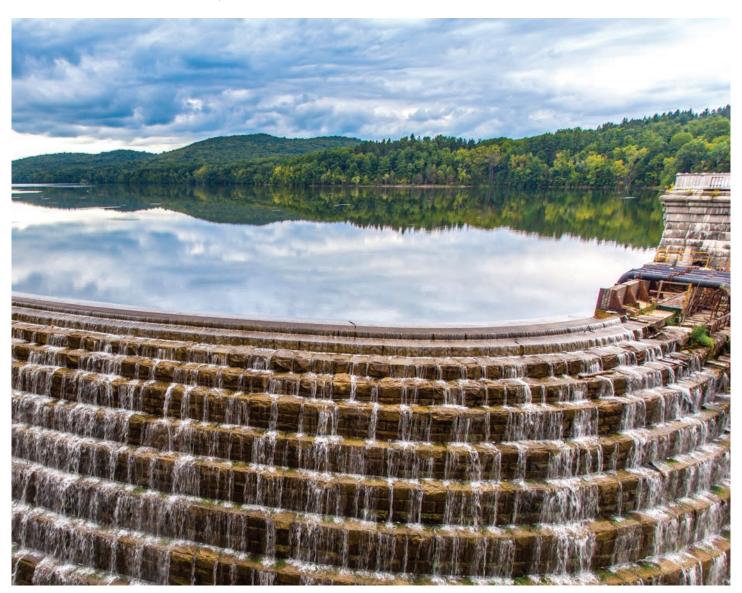


A Turning Tide: Tracking corporate action on water security

CDP Global Water Report 2017

Written on behalf of 639 investors with US\$69 trillion in assets









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To read 2017 water responses in full please go to https://www.cdp.net/en/users/sign in

To find case studies of impacts, risks and actions please go to https://www.cdp.net/en/research/ global-reports/global-water-report-2017.

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Introduction



Our research shows more large corporations rising to the challenge with the number of A List companies nearly tripling in a year and almost 8% using internal accounting to assess the true value of water to their business. Congratulations to those organizations leading the way.

Seventeen years ago, CDP set out to transform capital markets by making environmental disclosure and risk management a new business norm.

The Paris Agreement, Sustainable Development Goals and evolving market forces, from shareholder and customer requirements to the rapidly improving cost curves of clean technology, are moving us towards a tipping point that will help protect us from climate change, water insecurity and the effects of deforestation. To reach that point we need critical shifts in financial capital and policy, as well as strong leadership, innovation, measurement, transparency and accountability.

Our vision is for a thriving economy that works for people and planet in the long term.

Our mission is to focus investors, companies and cities on taking urgent action to build a truly sustainable economy by measuring, understanding and reducing their environmental impact.

The stakes are high as we assess the progress companies have made to date in supporting the realization of a water-secure world.

Paul Simpson

impson

CEO, CDP

About this report

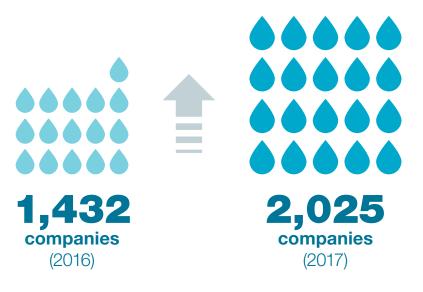
This year we asked 4,653 of the largest global companies to provide data about their efforts to manage and govern freshwater resources. In total 2,025 companies responded, up from 1,432 last year.

This data is used by 639 institutional investors, representing US\$69 trillion in assets, to engage with portfolio companies, inform investment decisions and catalyze change. In addition, 34 purchasing organizations with a combined spend of US\$1 trillion use CDP water data to drive greater insight, accountability and action throughout their global supply chains.

This report is aimed at companies and investors seeking to understand how they can play their part in delivering a water-secure world. It presents analysis of the 2017 CDP water response data from a sample of 742 of the world's largest publicly-listed companies. It sets out what a water-secure world looks like, the private sector actions that will contribute to its achievement, and how companies are overcoming the barriers to water security – most importantly, the failure to properly value our fresh water resources in today's economy.

Key findings

- There is more data than ever before More than 2,000 companies reported water data via CDP in 2017
- Company boards have woken up to water security Water security now has a firm seat at the table of more than 70% of the most significant corporate boards
- Money is now flowing into solutions
 Companies are committing US\$23.4 billion across more than 1,000 water projects



4

Norges Bank Investment Management commentary



With our support, we are pleased to see that CDP reached a significantly greater number of companies regarding water disclosure. We now hope to see more firms disclose targets and metrics addressing water management, rendering disclosure more meaningful for us as shareholders.

Norges Bank Investment Management is responsible for investing the assets of the Norwegian Government Pension Fund Global, currently amounting to more than US\$950 billion.¹ We manage the fund according to a mandate from the Ministry of Finance, which owns the fund on behalf of the Norwegian people. Our mission is to safeguard and build financial wealth for future generations. Our primary objective is to secure the highest possible real return with an acceptable risk.

Responsible investment is an important priority in the management of the fund, and water management has been one of our core focus areas since 2009. We believe that externalities from unsustainable water use may present a risk to our portfolio's long-term value. Water availability can impact economic development and GDP, in turn driving returns for us as a global, long-term investor. Water for industry is rarely priced to reflect scarcity today; however, we do not expect such implicit subsidies to be sustainable longer term.

We expect our investee companies to incorporate water management into their policies and business practices via business strategy and planning, risk management, reporting, and interaction with regulators and stakeholders.

We continue to undertake an annual assessment of companies' water management disclosure. In 2016, we assessed 600 companies in our portfolio, covering the Consumer Goods, Pulp and Paper, Mining, and Utilities sectors, as well as two new sectors – Chemicals and Oil and Gas. With our expanded coverage, we were able to identify strong performers in new sectors, while also following up with those companies lagging in their disclosure.

Norges Bank Investment Management believes that reporting on water issues can become more performance-relevant. Sector-specific questionnaires, such as those developed as part of CDP's Reimagining Disclosure initiative, will elicit a deeper understanding of the operational challenges and risks facing companies. Disclosure must ultimately be industry-driven. We emphasise shared learning and industry input, and in June 2017, we hosted a workshop on disclosure with CDP, companies, and investors.

We integrate water management into our voting decisions for our investee companies. Water is also part of the opportunity set for us within our environmental mandates portfolio. In areas with scarce water resources, it is important to have solutions that allow recycling of water through treatment processes and efficient pumping, measurement and control solutions. We invest in companies providing such solutions. Beyond equities, we invest in green bonds,

an asset class where 14% of the 2016 global issuance was for water-related projects.²

Water management is closely linked to the climate change topic, another one of our focus areas and where we welcomed the arrival of the Task Force on Climate-related Financial Disclosures (TCFD) recommendations in 2017. Climate standards have been quickly evolving, and we have an interest in their alignment and standardization.

Interestingly, TCFD used water as a main criterion in determining its focus on four non-financial industry groups, along with GHG emissions and energy use, and highlighted that physical climate-related scenarios are particularly relevant for organizations and value chains exposed to acute or chronic climate change, including those heavily reliant on the availability of water.

The TCFD recommendations, structured around governance, strategy, risk management, and metrics and targets, are broadly in line with the way we have structured our own expectation documents and company assessments. We believe that such a structure can also improve the consistency of water reporting. Moreover, we believe that qualitative information needs to be supplemented by quantitative metrics illustrating companies' commitment and performance over time.

With our support, we are pleased to see that CDP has reached a significantly greater number of companies regarding water disclosure. Observing the steady increase in the number of reporting companies, we are now hoping to see more firms disclose targets and metrics addressing water management, rendering disclosure more meaningful for us as shareholders. We would like to acknowledge the role that CDP's water program has assumed in providing water-related datasets and welcome the release of the 2017 report. We are looking forward to seeing more in-depth disclosure by companies on the water topic.

Carine Smith Ihenacho

Global Head of Ownership Strategies

¹ As of 30 June 2017

² Climate Bonds Initiative, 'Green Bonds Highlights 2016'. Available at: https://www.climatebonds.net/ green-bonds-highlights-2016

An evolving landscape

CDP launched the concept of water disclosure in 2009, working with shareholders to motivate companies to measure and disclose information on an annual basis. At the time CDP had just 137 investors signing its request for water-related information, and 175 companies responding.

This was the first systemic linkage between water and financial information. The CDP request for water-related information sparked a growth in disclosure around the world, engaging investors, companies, governments, cities, states and regions on the huge benefits of greater transparency.

Now in its ninth year, CDP's water program acts on behalf of 639 institutional investors, representing US\$69 trillion in assets. These investors use CDP water data to engage with portfolio companies, inform investment decisions and catalyze change. In addition, 34 purchasing organizations, with a combined spend of US\$1 trillion, use CDP water data to drive greater insight, accountability and action throughout their global supply chains.

Today, CDP's work drives water action at scale:

2,025 companies

Companies representing nearly US\$20 trillion in market capitalization and 59% of heavily water-dependent companies on the MSCI ACWI publicly disclose their progress in managing water-related risks and impacts through CDP. This represents a near twelve-fold increase on the 175 companies that disclosed in 2010.

US\$1

34 purchasing organizations with a combined annual spend of US\$1 trillion motivate their suppliers to disclose water information, enabling the management of water impacts through global supply chains.

5.6 billion ML

Around 5.6 billion megaliters worth of water withdrawals are reported through CDP – more than the total volume of Lake Michigan. These disclosures enable essential tracking of the progress of the global economy towards a water-secure world.

639

investors

From the original 137 investors, today more than 639 investors, with combined assets under management of US\$69 trillion, drive companies to both disclose their impacts on water security and take action to reduce them.

360

cities

360 cities with a combined population of 634 million people now disclose to CDP to build resilience and protect themselves from water risks.

91

countries

CDP is motivating companies to take ambitious water action in 91 countries, from Afghanistan to Zimbabwe and from Argentina to Zambia.

The case for action

Our ability to cope with current and future stresses on freshwater resources is a core challenge of the 21st century. In 2017, water security is firmly on the agenda.

Severe droughts have caused billions of dollars of damage in Southern Europe and California and threaten almost half of Somalia's population, around six million people, with food shortages. Indeed, research from the World Bank suggests that since 2001, rainfall shocks have caused a loss of food production sufficient to feed about 81 million people every day for an entire year – equivalent to the population of Germany.³

Increasing numbers of companies are waking up to the importance of water, prompted by the myriad risks they face. This year, companies reported a total of 3,770 water risks via CDP – risks that threaten their license to operate, the security of their supply chains, indeed, their ability to grow.

Business-as-usual water management is no longer an option. The next few years are critical to securing long-term global environmental stability for all. Science demands that greenhouse gas emissions must peak around 2020 to avoid catastrophic environmental disruption. Reliable supplies of fresh water underpin all efforts to deliver a more resilient future. Failing to increase water security will likely create systemic risks to the global ecosystem that underpins human prosperity and quality of life.



Water risk is one of the top priorities for our pension fund, as we have considerable exposure to water in respect of policy, availability, quantity and quality. **Comparable, high quality disclosure is essential for us to assess the level of potential financial risk to the fund** and take appropriate action. In 2017, we targeted 160 of our portfolio companies to ask them to disclose water-related information via CDP.

Faith Ward, Chief Responsible Investment and Risk Officer, Environment Agency Pension Fund

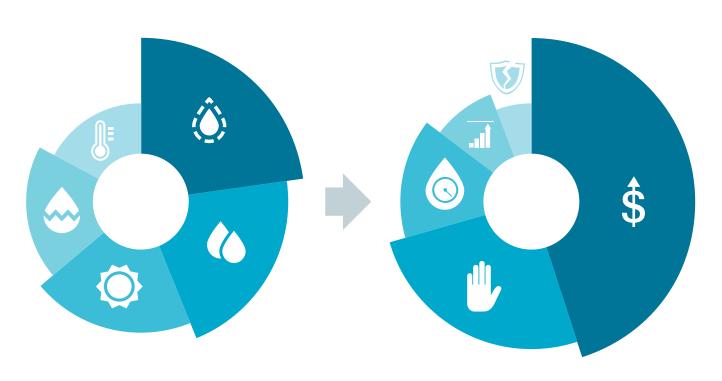


Top 5 risk drivers

No. of risks

Top 5 risks

No. of risks





Increased water scarcity (218)



Flooding (204)



Drought (197)



Increased water stress (184)



Climate change (164)



Higher operating costs (1357)



Supply chain disruption (762)



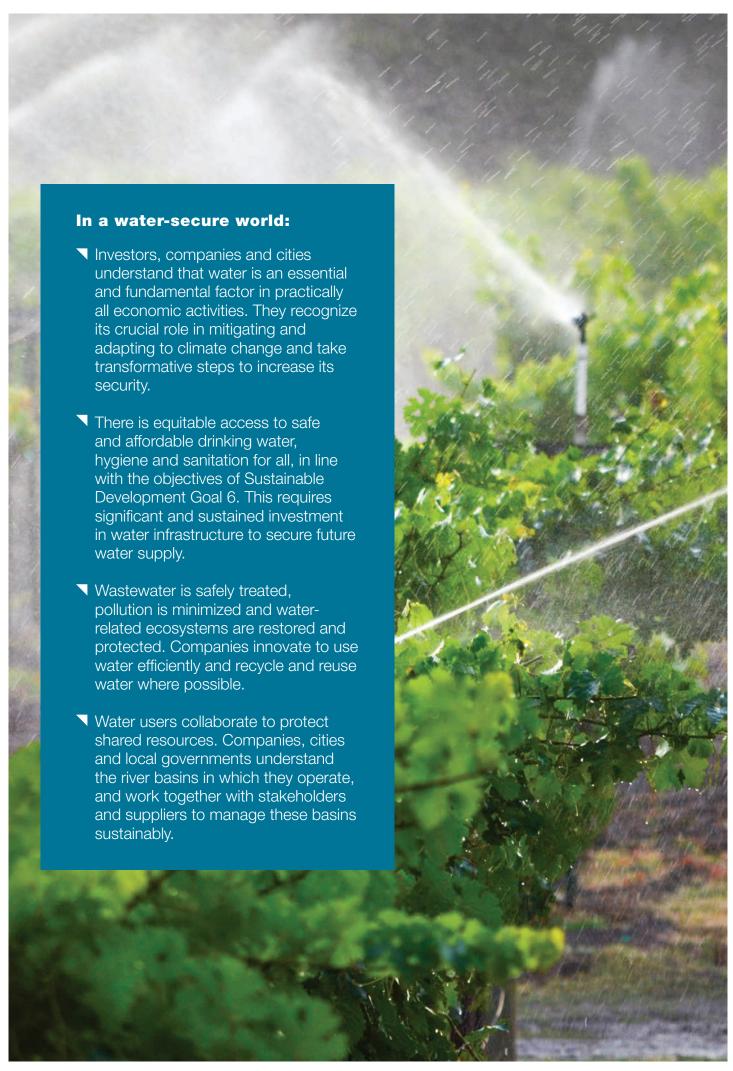
Water supply disruption (443)



Constraint to growth (269)



Brand damage (169)



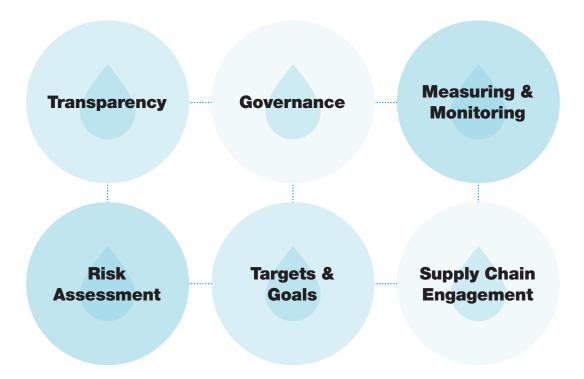
Delivering a water-secure world

A water-secure world is possible. To deliver it, water must be recognized as a fundamental and strategic asset at the highest levels of corporate and city governance.

So what actions do companies need to take? And where are many of the world's largest companies today?

The following analysis focuses on a sample of CDP water response data from 742 of the world's largest publicly listed companies of most interest to investors.

Six key areas help us track progress towards sustainable water management:

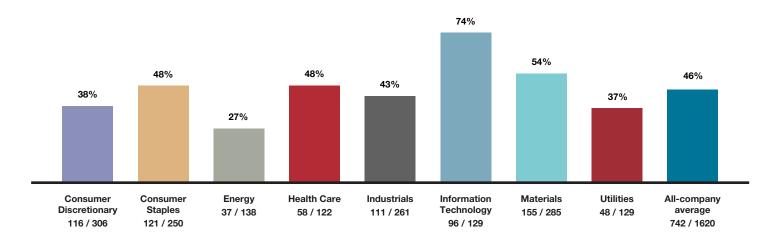


Transparency

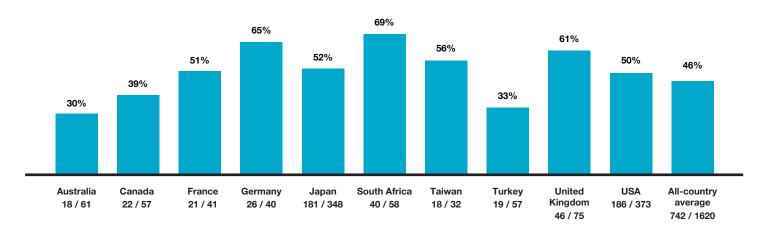
Measurement, transparency and accountability are the essential tools that enable the global community to track and assess the progress being made toward a below 2-degree Celsius, water-secure world.

This year saw a dramatic increase in the total number of companies reporting water data via CDP. However, there remains a large number of companies that are failing to meet investor demands for transparency, particularly those in the Energy sector, which has the lowest disclosure rate for the eighth year running.

Disclosure rate per sector



Disclosure rate in the top ten responding countries



Proportion of companies

Governance

70%

Water governance must be in the boardroom of every major corporation in the world. In 2017, 520 companies (70%) have board-level oversight of water issues and are reaping the rewards, which include market differentiation, shareholder confidence and business resilience.

By providing board members with the information and tools to plan for a transition to a water-secure world and by publicly monitoring their progress, water stewardship can become part of companies' modus operandi.

Measuring & monitoring

63%

Companies must measure and monitor water withdrawals, discharges, quality, consumption, and the provision of Water, Sanitation and Hygiene (WASH) services across their operations. In 2017, 466 companies (63%) have a good grasp of this data.

The old adage of 'you measure what you treasure' is as important today as ever. Robust water accounting data is necessary to inform business planning and forecasting.

Risk assessment

20%

Companies should undertake water risk assessments that account for the regional context in both direct operations and supply chains. In 2017, 148 companies (20%) are developing a comprehensive view of their water risk exposure.

By improving their understanding of the way in which water is managed around them and who else depends on that water, companies are better prepared to respond proactively to challenges.

Targets & goals

56%

Companies must set and achieve ambitious targets to reduce impacts on water availability and quality. Today, 418 companies (56%) have set water targets or goals. However, the majority remain short-term in nature and do not adequately account for the sustainable thresholds of the basins upon which companies rely.

Many companies are already demonstrating the desire to simultaneously reduce their water impacts and increase their growth. By ensuring these transformational goals are aligned with the water-related needs of the basins upon which they rely, companies can ensure they are playing their part in achieving a water-secure future.

Supply chain engagement

41%

Companies must change the way they buy goods and services. Companies that leverage their procurement power are able to drive change at greater pace and scale through supply chains. Today, 297 companies (41%) are engaging with their suppliers, requiring thousands of them around the world to report water management, thereby incentivizing them to behave in a more sustainable way.

Companies are taking ambitious action

A growing number of companies are beginning to invest significant money, time and effort into addressing the risks they face.

In 2017, companies have committed **US\$23.4 billion** across more than **1,000 projects** to tackle water risks in **91 countries** around the world.

Indian diversified conglomerate ITC Limited has invested nearly US\$9 million in water interventions across India, constructing over 10,000 water harvesting units and using demonstration farms to share best practice in efficient irrigation and soil

Taiwanese technology company **AU Optronics** has invested US\$49.7 million in improving its water use efficiency across all sites by increasing water recycling to 90%, aiming for zero discharge of processing water and securing its supply in case of drought.

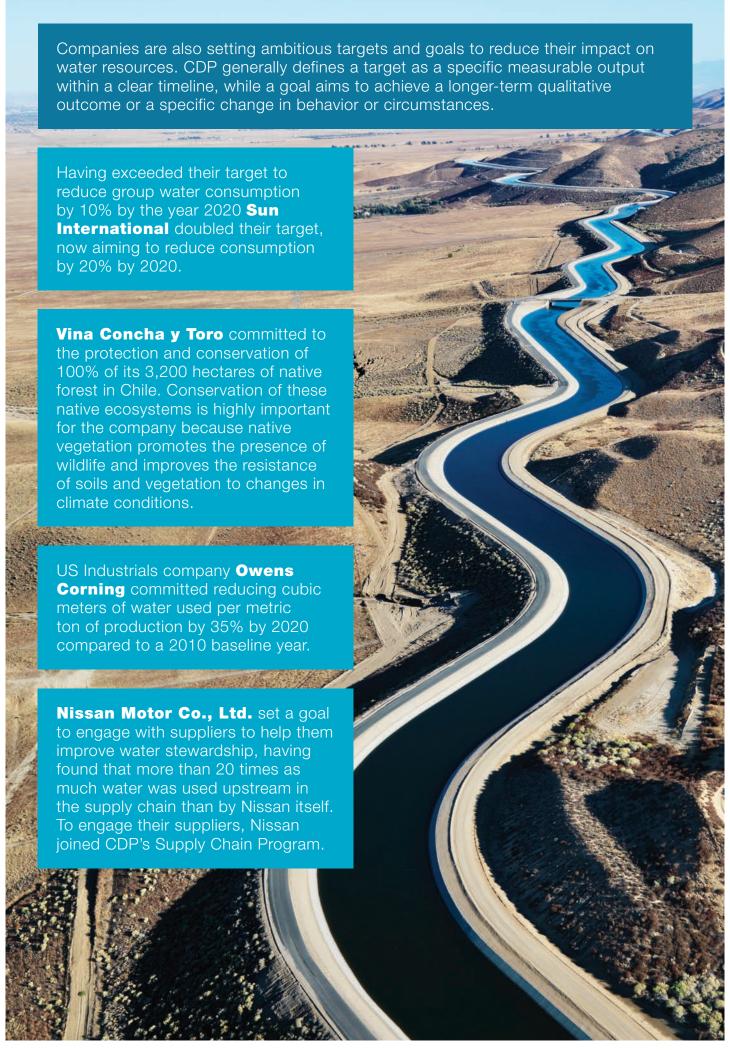
Kimberly-Clark Corporation is investing US\$9 million in a new wastewater treatment system at one of its facilities in Peru. The new system will allow for more water recycling to reduce water usage and significantly improve wastewater discharge quality to meet new quality limits.

US\$23.4 billion

invested US\$115 million in their Australian operations for a filtration system that reduces freshwater use by 317 million gallons annually, simultaneously decreasing discharge.

German flavor and fragrance producer **Symrise AG** is investing in new equipment and technology to increase synthetic menthol production as an alternative to natural mint oils. The company has invested some US\$12 million in recent years, with a further US\$47 million approved before 2020. By meeting the future demand for menthol with synthetic counterparts instead of water-intensive natural mints, Symrise reduces its indirect water footprint and impact on groundwater resources.

and spending US\$59 million on projects to secure sustainable access to key raw materials, such as milk supplies in Sub-Saharan areas and fruit supplies in China. The projects focus on sustainable agriculture and farmer empowerment.



Goal Most common targets and goals Target **Number of companies** Reduction in consumptive 166 volumes Watershed remediation and habitat restoration, ecosystem 157 preservation Reduction of product water 145 intensity Absolute reduction of water 136 withdrawals Water pollution prevention 96 **Engagement with suppliers** 93 to help them improve water stewardship **Engagement with public policy** 90 makers to advance sustainable water policies and management Strengthen links with local 88 community 64 Sustainable agriculture Providing access to WASH in 45

workplace

Companies are waking up to the real value of water

The actions that companies take today to manage water will determine the well-being of citizens across the world.

From the adoption of context-based water targets and water-use monitoring to reducing dependence on freshwater and accelerating collaboration, we know what needs to be done to reach a tipping point that will mainstream environmental action. And yet, water is too often used inefficiently, and the degradation of aquatic ecosystems and disruption of critical freshwater services continue. These damaging practices are caused, among other things, by the chronic undervaluation and poor governance of water.

In most parts of the world, water is cheap, with users often paying below-cost rates for their water supply. But basic economics dictates that increased demand for a scarce resource will force up prices. And yet, only a small number of companies cite higher water prices as a potential risk, either in their direct operations or along their supply chain. This figure rises to 28% in the Consumer Staples sector.

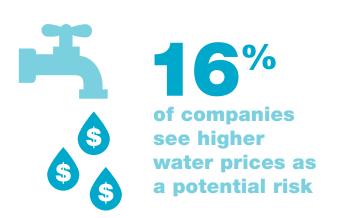
For example, US food group **The Kellogg Company** reports that water prices charged to several of its manufacturing facilities in Mexico have risen 300% since 2012. And South African Consumer Staples company **Tiger Brands Limited** says that increasing water prices have forced it to reconsider strategic opportunities.



Several of our manufacturing facilities in Mexico have experienced water price increases of up to 300% since 2012. This directly impacted our operating costs in these locations. These plants are expected to reduce water consumption through employee engagement, asset care programs, and capital projects.

The Kellogg Company





When water is undervalued, the business case for action is often misunderstood or difficult to see. A small group of 53 companies (7%) are establishing internal values on water that account for the social and environmental costs and benefits that are too often absent from pricing and decision making.

Colombian construction company Cementos Argos SA used KPMG's True Value Methodology to develop a 'Value Added Statement' as a tool to calculate the net value added to society during a given fiscal year. Using this tool, Argos determined that the cost to society derived from water consumption (impacts on water scarcity caused by water consumption) decreased from 2015 to 2016.

US personal care company Kimberly-Clark Corporation has developed a True Cost of Water model to calculate actual costs of water, including procurement, consumption, and wastewater treatment. This True Water Cost will be used to obtain funding for water reduction and recycling projects.

Swiss food giant Nestlé S.A. assigns a theoretical price on water, ranging from around US\$1 to US\$5 per m3, depending on a factory's physical risk score, generated by the Nestlé Combined Water Stress Index. Applying a notional price on water helps the company conduct scenario analysis of regulatory and tariff changes at a local level.

Suncor Energy Inc.

has been working to develop tools that would allow for water valuation, with the aim of including a true price on water for all its projects. The company already assigns a value of water in project development costs, but currently this value is based on professional judgment, not a comprehensive calculation.

Diageo PIc uses an internal total cost of water tool, which estimates the full cost of water to a given plant. This estimate allows the plant to anticipate and plan for the financial impact of price or tariff increases, and supports Diageo's overall goal to improve water use efficiency by 50% by 2020. The company reports that gaining a better understanding of the true cost of water assists its business decisions and CAPEX investments for water conservation.

Colgate Palmolive Company use the True Cost of Water Toolkit, developed with Rutgers University Business School and its Supply Chain Management Program. The tool was designed to help sites quantify some of the hidden costs of water such as pre-treatment, pumping and wastewater treatment, thereby increasing both economic and environmental opportunities for reduction. With broad participation from its global sites, Colgate has found an average "true" cost of water that is 2.5 times more than the purchase cost alone.

Meanwhile, Canadian gold miner **Goldcorp** Inc. has created a Water Valuation Toolbox to compile and analyze water costs and risks. The approach includes both determining operational costs and sustaining capital requirements for the full range of water activities at its operations. The resulting metrics helped the company highlight opportunities and risks, as well as calculate the compiled real costs of supplying, managing, and discharging water which can then be used in financial modelling and business cases.

Investors are tapping the potential in water

Investors, too, recognize the value in water and are increasingly developing ways to better account for this in investment decisions.

In a recent report, YES Bank, an Indian private sector bank, applied the Natural Capital Protocol to calculate the real cost of water for a hypothetical beverage company based in Tamil Nadu.⁴ The findings suggest that the risk-adjusted price for water was about 18 times the current water cost for industries in the region. This real cost of water represented some 10% of the company's net profit for the year and nearly 7% of EBITDA. The study also found that 98% of the company's revenue could potentially be at risk due to inadequate water availability.



With increasing economic activity, natural capital assets such as water are becoming scarce, directly affecting quality of life and business. I believe placing a real value on water which is inclusive of social and environmental externalities, would address the challenges presented by water scarcity and facilitate effective decision making.

Rana Kapoor, CEO, YES Bank



According to a 2015 survey of 35 investors from US NGO Ceres,⁵ many of the investment managers surveyed believe that water is undervalued, and therefore subject to overuse and abuse. In the survey, one manager reported applying a higher shadow price of water to companies operating in water-stressed regions of Brazil. The fund manager used this to establish likely future water costs the company might face as well as the capital expenditure required to become more water-efficient and pollute less under various scenarios. These scenario analyses often found company market capitalization to be significantly affected. When the investor shared this analysis with company management, it turned out to be very effective in starting productive conversations on water risk.



We really capture the attention of corporate management when we show them how much the company's market capitalization may be impacted under a scenario of higher water prices. Given the rapid degradation of water resources and growing competition for water in some of the regions of analysis, we view these prices hikes as becoming more probable.





⁴ https://www.yesbank.in/pdf/valuing_natural_capital_applying_the_natural_capital_protocol

⁵ https://riacanada.ca/vp-content/ uploads/2015/04/Ceres-Investor-Water-Handbook.pdf

The Water A List 2017

This year, CDP is delighted to celebrate the companies that have achieved an 'A' rating in accordance with our publicly available scoring methodology. The Water A list has tripled from just eight companies in the first year of scoring, 2015, to 74 companies in 2017. A CDP score is an indicator of a company's commitment to transparency around their environmental risks, and the sufficiency of their response to them.

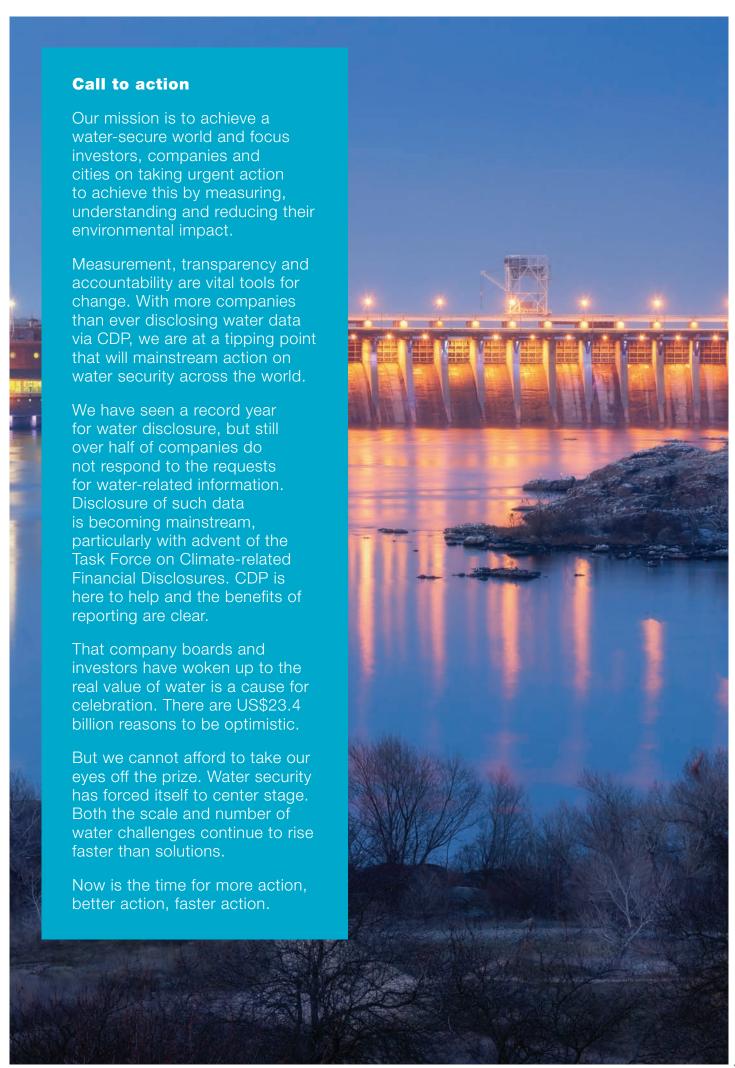
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Bayer AG Germany	Health Care	
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Biogen Inc. USA	Bayer AG	Germany
	Biogen Inc.	USA

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Essilor International	France
GlaxoSmithKline	United Kingdom
Mediclinic International	South Africa
Novartis	Switzerland
Roche Holding AG	Switzerland
SANOFI	France
Industrials	
CNH Industrial NV	United Kingdom
Komatsu Ltd.	Japan
Kubota Corporation	Japan
Mitsubishi Electric Corporation	Japan
Obrascon Huarte Lain (OHL)	Spain
Owens Corning	USA
Information Technology	
FujiFilm Holdings Corporation	Japan
Fujitsu Ltd.	Japan
HP Inc	USA
Intel Corporation	USA
LG Innotek	South Korea
Samsung Electronics	South Korea
STMicroelectronics Nv	Switzerland
Materials	
African Rainbow Minerals	South Africa
BASF SE	Germany
Braskem S/A	Brazil
Ecolab Inc.	USA
FIRMENICH SA	Switzerland
Harmony Gold Mining Co Ltd	South Africa
Koninklijke DSM	Netherlands
Kumba Iron Ore	South Africa
Metsä Board	Finland
Mitsubishi Chemical Holdings Corporation	Japan
Mondi PLC	United Kingdom
OMNIA HOLDINGS LTD	South Africa
Royal Bafokeng Platinum Ltd	South Africa
Symrise AG	Germany
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Utilities	
ACCIONA S.A.	Spain
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Ramakrishnan Mukundan

Tata Chemicals

Sonia Medina

Childrens Investment Fund Foundation

Stephen T. Chow

Takejiro Sueyoshi

Our sincere thanks are extended to the following:

Individuals

Isabelle Julliard Thompson, Basak Yeltekin, Wilhelm Mohn, Magdalena Kettis, Piet Klop, Jason Morrison, Stuart Orr, Alexis Morgan, Jean-Pierre Maugendre, Hélène Valade, Sébastien Pellion, Paul Reig, Naomi Rosenthal, Morgan Gillespy, Madeline Byers, Tom Chellew, Maggie Dennis

Organizations

Alcoa Foundation, Alliance for Water Stewardship, European Water Partnership, Global Reporting Initiative, Institutional Investors Group on Climate Change, Investor Network on Climate Risk, Interfaith Center on Corporate Responsibility, Investor Group on Climate Change, National Business Initiative (South Africa), Norges Bank Investment Management, Stavros Niarchos Foundation, Suez, Turner Foundation, United Nations Global Compact, United Nations-supported Principles for Responsible Investing, World Resources Institute, WWF

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EY Korea, Adec, KOSIF, KPMG Japan, RepRisk, South Pole Group and Quick



