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Clearing the Waters: **A Review of Corporate** **Water Risk Disclosure** **in SEC Filings**

A Ceres Report

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Authored by

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Ceres is an advocate for sustainability leadership. It mobilizes a powerful coalition of investors, companies and public interest groups to accelerate and expand the adoption of sustainable business practices and solutions to build a healthy global economy. Ceres also directs the Investor Network on Climate Risk (INCR), a network of 100 institutional investors with collective assets totaling more than \$10 trillion.

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TABLE OF CONTENTS

5 EXECUTIVE SUMMARY

6 INTRODUCTION

10 METHODOLOGY

11 COMPANIES ASSESSED

12 KEY FINDINGS

17 RECOMMENDATIONS

EXECUTIVE SUMMARY



The global economy depends on water resources to feed growing populations, generate electricity, fuel industrial processes or transport goods. In short, the world runs on water. As populations expand and industrialization and urbanization accelerate, global water supplies are feeling the pinch and companies are more vulnerable to disruptions in their operations, supply chains and logistics.

Water is often the primary vector of climate change. Climate impacts further exacerbate water risks by increasing variability in precipitation patterns and the occurrence and severity of extreme weather events.¹ In the last two years alone, Russia and the United Kingdom have grappled with unprecedented drought, Pakistan and Thailand faced catastrophic flooding, and parts of China, Australia and the United States suffered through both.

Consider the following:

- Texas is the leading beef producer and third largest producer of all agricultural products in the United States. In 2011, prolonged drought, triple-digit temperatures and high winds combined to cause an estimated US\$7.62 billion in crop and livestock damage, triggering nationwide price increases. The state's cotton producers suffered about US\$2.2 billion in losses, while apparel companies faced limited supplies, elevated prices and reduced earnings. At the end of 2011, 98 percent of the state remained in drought conditions.²
- Catastrophic flooding in Thailand in fall 2011 caused massive disruptions for the nation's manufacturers. Leading semiconductor companies shipped 27.7 percent fewer hard drives,³ and the sustained flooding also crimped supply chains for automakers Toyota and Honda. Honda expected the flooding to decrease sales in Thailand by 30 percent. In December 2011, Thai Prime Minister Yingluck Shinawatra estimated flood-related damages at US\$42 billion.⁴
- For the second time in six months, the Peruvian government declared a state of emergency in June 2012 to quell protests against mining operations accused of watershed destruction and groundwater contamination. Newmont's

\$5 billion Minas Conga project has been delayed and protests near Xstrata's Tintaya mine killed two and left dozens injured.⁵

CORPORATE ASSESSMENT & DISCLOSURE OF WATER RISK

With the physical and financial impacts of water issues on the rise, corporations need to do more to assess, disclose and address potential risks. New and better tools and datasets for identifying and managing water risks have emerged in recent years that fill key data gaps and advance corporate risk analysis and water management on a global scale, including the Ceres *Aqua Gauge*, the United Nations' *CEO Water Mandate*, the World Resources Institute's *Aqueduct* and the World Business Council for Sustainable Development's *Global Water Tool*.⁶

Investors exposed to these growing risks through their global investment portfolios are increasingly looking to companies to assess, manage and disclose financially material sustainability risks—including water-related risks. Water-focused reporting is on the rise through corporate sustainability reporting and the Carbon Disclosure Project's water survey; however, voluntary reporting alone is not sufficient. In growing numbers, investors are clamoring for more robust information that is standardized, comparable and easily accessible to inform their investment decisions. Investors are especially interested in seeing such disclosure in companies' financial filings.

Climate-related risks can be financially material. As a result, the U.S. Securities and Exchange Commission (SEC) issued

1 IPCC, "Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation," IPCC Special Report, 2012, <http://www.ipcc-wg2.gov/SREX/>

2 Blair Fannin, "Updated 2011 Texas Agricultural Drought Losses Total \$7.62 billion," *AgriLife Today*, March 21 2012, <http://today.agrilife.org/2012/03/21/updated-2011-texas-agricultural-drought-losses-total-7-62-billion/>

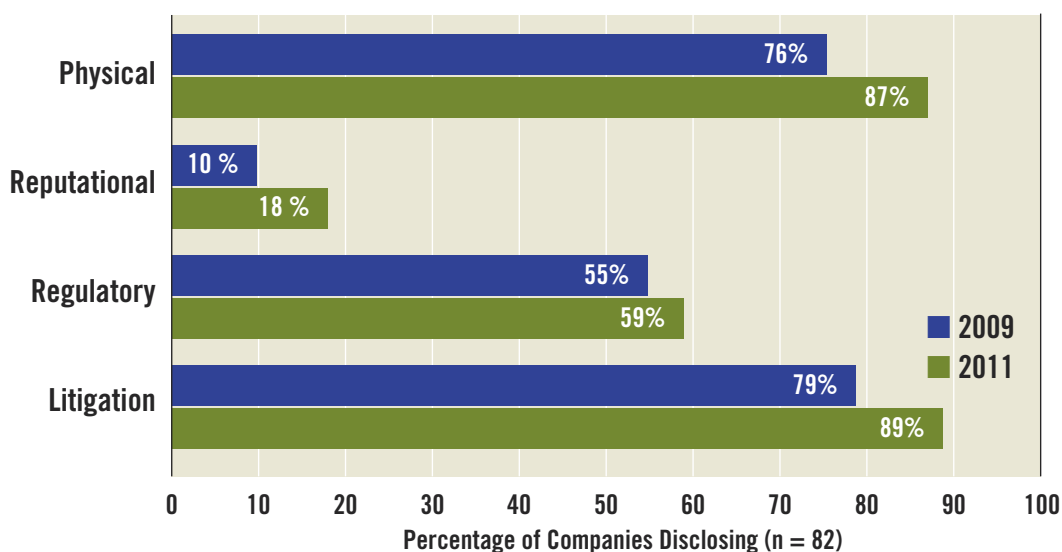
3 Len Jelinek, "Thailand Flood Impacts Semiconductor Test And Assembly Operations Of Multiple Suppliers," *iSuppli*, November 3 2011, <http://www.isuppli.com/Semiconductor-Value-Chain/News/Pages/Thailand-Flood-Impacts-Semiconductor-Test-and-Assembly-Operations-of-Multiple-Suppliers.aspx>

4 Reuters, "Thailand's Flood Crisis And The Economy," *AlertNet*, December 20 2011, <http://www.trust.org/alertnet/news/factbox-thailands-flood-crisis-and-the-economy>

5 Keith Slack, "Peru's Mining Conflicts Explode Again: Protests And Violence In Espinar," *Oxfam America*, June 6 2012.

6 See: The Ceres Aqua Gauge: <http://www.ceres.org/aquagauge>; The CEO Water Mandate: <http://ceowatermandate.org>; WRI's Aqueduct Water Risk Atlas: <http://insights.wri.org/aqueduct/atlas>; WBCSD's Global Water Tool: <http://www.wbcd.org/work-program/sector-projects/water/global-water-tool.aspx>

Figure 1: Disclosure of Water-Related Risks in SEC Filings



specific guidance in 2010⁷ outlining the types of climate change information companies should be providing to investors, including material water impacts. The SEC identified a variety of water-related risks that corporate issuers may need to disclose in their financial filings, including “significant physical effects of climate change, such as effects on the severity of weather (for example, floods or hurricanes), sea levels, the arability of farmland, and water availability and quality.”⁸

CHANGES IN CORPORATE WATER RISK DISCLOSURE SINCE 2009

This study identifies how corporate disclosure of water risk in financial filings has evolved since the release of the SEC’s guidance in 2010. It compares the water risk disclosure of 82 companies, building on baseline data gathered and analyzed by Ceres, Bloomberg and UBS as part of the 2010 report *Murky Waters: Corporate Reporting on Water Risk*.⁹

This report updates the *Murky Waters* analysis, comparing trends in water-related disclosures made in annual mandatory financial reports filed with the SEC in 2009 and 2011 (Forms 10-K, 20-F, or 40-F covering FY2008 and FY2010). Like *Murky Waters*, it looks at how the largest companies in eight water-dependent sectors—beverage, chemicals, electric power, food, homebuilding, mining, oil and gas and semiconductors—are disclosing their exposure to water-related physical, regulatory, reputational and litigation risks, as well as actions they are taking to mitigate those risks.

KEY FINDINGS

This report finds that though overall corporate disclosures of water-related risks in financial filings have increased since 2009, much reporting remains weak and inconsistent especially in regard to data on overall water use, financial exposure and potential supply chain risks. The following is a summary of high-level findings:

1 Disclosure of water risks has increased across the board.

Overall, company disclosures of water-related physical, regulatory, litigation and reputational risks increased between 2009 and 2011 (**Figure 1**). The biggest change over the three-year span was the percentage of companies disclosing water-related physical risks, which increased from 76 percent to 87 percent. The percentage of companies in the oil and gas and chemicals sectors reporting exposure to physical water risks increased 31 percent and 45 percent respectively. There was also a large jump in the number of food companies reporting exposure to water-related regulatory risks, from three companies to eight (a 46 percent increase).

2 More companies are making the connection to climate change.

In 2009, only eight of the 82 companies assessed (10 percent) disclosed that climate change posed growing physical risks in the form of water scarcity, flooding or quality issues to their operations and supply chains. In 2011, that number jumped to 22 (27 percent).

7 U.S. SEC, “Commission Guidance Regarding Disclosure Related to Climate Change,” February 8 2010, <http://www.sec.gov/rules/interp/2010/33-9106.pdf>

8 Ibid, p. 26

9 Ceres, “Murky Waters: Corporate Reporting on Water Risk,” 2010, <http://www.ceres.org/resources/reports/corporate-reporting-on-water-risk-2011/view>

3 Disclosure on water management systems and performance is growing, but still limited.

Multiple companies in the oil and gas, mining, beverage and homebuilding sectors disclose information on water management systems. For instance, **Royal Dutch Shell** discloses setting variable remuneration measures for its executives based on achieving internal sustainability indicators, including fresh water use. Alcoholic beverage company **Brown-Forman** discloses an environmental strategy that includes a process for assessing risks related to water availability and quality, and **Rio Tinto** reports on investments it is making to improve water quality monitoring near its mines in Australia.

4 There is a lack of quantitative data and performance targets.

Despite improvements in overall disclosure, data on company water use and the financial impacts of water-related risks remains infrequent in financial filings. Water use and discharge data and associated performance targets, particularly when provided at the site level, help investors understand the exposure of their portfolio companies to current and future water stress, as well as potential regulatory developments. Although company water use data was scant, some strong examples of disclosure include: **Anheuser-Busch InBev's** work to reduce water use in beer and soft drink production to 3.5 hectoliters of water per hectoliter of product; **BHP Billiton's** five-year target to improve the ratio of water the company recycles relative to the high-quality water it consumes by 10 percent; and **Suncor's** goal to reduce total water intake by 12 percent by 2015.

5 There is limited discussion of supply chain risk.

While many of the companies analyzed disclose exposure to water risks, much of this discussion is limited to risks in their direct operations. For many industries, water risks are most prominent in their supply chains. For example, weather disruptions (e.g. droughts or floods) in major agricultural sourcing areas can pose risks to food companies headquartered thousands of miles away. Despite this, most food companies disclose only very general, standardized language concerning potential supply chain disruptions caused by severe weather. Of the 11 evaluated, **Archer Daniels Midland, Bunge, PepsiCo** and **Smithfield** were the only food companies with water-related supply chain risk disclosure that mentioned specific agricultural commodities or regions facing water risk, or that discussed the impacts of climate change on their supply chains.

RECOMMENDATIONS

In light of these findings, the report recommends that companies:

Undertake more rigorous analysis of potential water-related risks.

Floods, droughts, water quality degradation, increased competition for water resources, new regulations, weak water infrastructure, increased water tariffs, water rights disputes and severe weather can all pose financial risks to a company's operations and supply chains. Companies should continually identify and disclose the full range of material water-related risks and opportunities they face, as well as potential financial impacts.

Augment qualitative disclosure with relevant quantitative data.

SEC disclosure should, wherever possible, focus on providing quantitative information (e.g., water use data, the percentage of operations impacted by a new regulation, the extent of financial losses due to drought, or the cost reductions achieved via innovations or efficiency improvements) as well as qualitative discussion.

Ensure compliance with the SEC's guidance on climate change disclosure.

Overall disclosure of water-related risks has increased since the SEC issued its 2010 guidance on disclosing physical risks related to climate change. However, many corporate issuers are still silent on how climate change may impact their exposure to water-related risks when based on their industry and operations it seems likely that these risks exist.

Provide investors with risk management information.

Given the trajectory of global megatrends, many companies are likely to face new or increasing water risks in the near future. Companies facing significant water risks should use their SEC filings to disclose information related to relevant risk management strategies (e.g. policies, standards, goals and progress toward targets). Such disclosure helps investors understand how companies are positioning themselves for strong financial performance in a water-constrained world.

INTRODUCTION

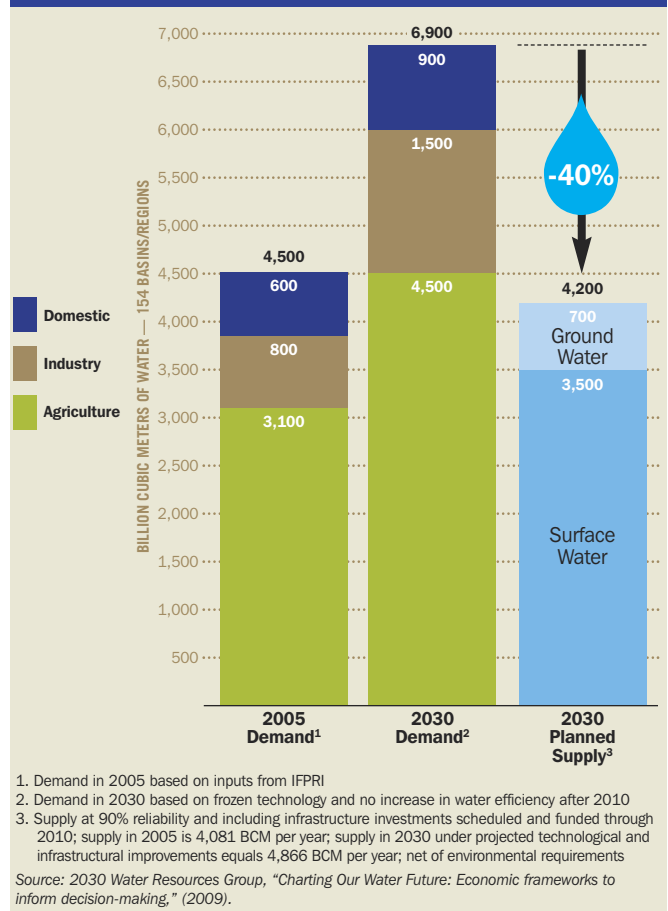


Water risks are intensifying globally. Access to water of sufficient quality and quantity to support local communities, ecosystems and economies is a major concern in many parts of the world.

Drivers like population growth, urbanization and industrialization are combining to exacerbate demand pressures and threaten water quality in some of the most economically important regions in the world. Overlaying all of these drivers are the growing impacts from climate change, including changes in water supply patterns, an uptick in the number and severity of extreme weather events and more severe and frequent cycles of drought and floods.¹ As a result of these trends, many regions of the world are on course to suffer major fresh water deficits in the next 20 years. According to demand projections in a recent study led by McKinsey, the world may face a 40 percent global water shortfall by 2030 (Figure 1).²

There is growing evidence that these water trends are having serious financial impacts on various business sectors (Box 1, p. 9). A 2011 survey sent to the Global 500 companies found that 38 percent of 190 respondents have already suffered water-related business impacts, with associated financial costs as high as US\$200 million (per company).³ Water-related impacts cited in the survey ranged from operational disruptions caused by droughts or floods and the costs to increases in the price of water itself and costs to comply with increased wastewater regulation. Physical water risks (the lack or overabundance of water in a particular place and the resulting impacts on water access and quality) are often the most obvious water challenges, but regulatory, litigation and reputational risks are also growing in many sectors.

FIGURE 1: Global Fresh Water Demand Gap Projected by 2030



1 For example, in 2011, the National Oceanic and Atmospheric Administration reported a record-breaking 14 weather disasters that caused at least a billion dollars of damage each in the United States alone—six of which involved droughts or flooding.
 2 2030 Water Resources Group, "Charting Our Water Future: Economic Frameworks To Inform Decision-Making," 2009, http://www.2030waterresourcesgroup.com/water_full/Charting_Our_Water_Future_Final.pdf
 3 Carbon Disclosure Project, "CDP Water Disclosure Global Report 2011," <https://www.cdproject.net/CDPResults/CDP-Water-Disclosure-Global-Report-2011.pdf>

BOX 1: Recent Financial Impacts From Water-Related Events

- In summer 2011, **Texas and Oklahoma suffered through the worst drought since the Dust Bowl.** Estimates put the cost of drought and associated wildfires at **US\$7.62 billion**, with impacts centered on the cotton and beef industries.⁴
- In November 2011, **catastrophic flooding in Thailand** impacted production, testing and assembly operations for at least eight semiconductor companies with facilities in the region. As a result, hard drive shipments declined 27.7 percent in the fourth quarter of 2011.⁵ Lloyd's of London estimated the disaster cost them **US\$2.2 billion**, and will cost the industry as a whole **US\$15-20 billion**.⁶
- In the summer of 2010, the **worst drought in 50 years hit Russia** and decreased wheat production 33 percent, leading the country to ban exports of the crop. The share prices of several multi-national food and beverage companies were adversely affected, and Russia's growth was impaired an estimated **US\$12 billion**.⁷
- **Drought in China** in the spring of 2012 left 3.5 million people with limited or no access to drinking water, and cost the affected provinces an estimated **US\$2.3 billion**.⁸

INVESTOR REQUESTS FOR IMPROVED DISCLOSURE ON WATER RISKS

To ensure companies are adequately identifying and addressing water-related risks and that investors are receiving robust information about water risk in their portfolios, these issues need to be included with other business metrics in financial filings. In 2010, the Ceres report *Murky Waters: Corporate Reporting on Water Risk*⁹ set out to baseline the water-related risk disclosures of 100 of the world's largest and most water-intensive companies. *Murky Waters* found that while many companies were addressing water issues in voluntary disclosures (e.g. sustainability or corporate social responsibility reports), few were providing information on water risks in their financial filings.

Since that time, water-related risks have become a topic of growing interest and concern among institutional investors. This increasing awareness is evidenced by strong investor support for the Carbon Disclosure Project's (CDP) water survey, an annual questionnaire sent to more than 500 of the world's largest companies in water-intensive sectors asking for a range of water-related information. As of May 2012, over 470 institutional investors representing US\$50 trillion in assets were signatories to the water survey.¹⁰

While voluntary reporting by companies on water issues is increasing through vehicles like the CDP survey and the Global Reporting Initiative's water indicators, voluntary reporting alone is not sufficient. Investors need information that is standardized and regulated, and are seeking stronger water-related disclosure in companies' financial filings.

In 2010, in response to multiple petitions from investors seeking improved disclosure, the U.S. Securities and Exchange Commission (SEC) formally recognized the potential materiality of water-related risks stemming from climate change.¹¹ The SEC's *Commission Guidance Regarding Disclosure Relating to Climate Change* outlines public companies' obligations under securities laws and SEC regulations to disclose material information concerning climate-related risks and opportunities, including relevant water risks.¹² The guidance identifies a variety of water-related risks that corporate issuers may need to disclose in their financial filings, including "significant physical effects of climate change, such as effects on the severity of weather (for example, floods or hurricanes), sea levels, the arability of farmland and water availability and quality."¹³

In light of these developments, this study analyzes how corporate disclosure of water risks in financial filings has changed since the 2010 report, identifies key risks and trends reported by companies in water-exposed sectors and highlights specific examples of strong water disclosure by companies.

4 Blair Fannin, "Updated 2011 Texas Agricultural Drought Losses Total \$7.62 Billion."

5 Len Jelinek, "Thailand Flood Impacts Semiconductor Test And Assembly Operations Of Multiple Suppliers."

6 Juliette Garside, "Thailand Flooding Costs Lloyd's Of London \$2.2bn," *The Guardian*, February 14 2012, <http://www.guardian.co.uk/business/2012/feb/14/lloyds-thailand-flooding-2bn-dollars>

7 BBC News, "Wheat Price Fears Hit Shares In Brewers And Food Firms," *BBC News Business*, August 6 2010, <http://www.bbc.co.uk/news/business-10892637>

8 Nadya Ivanova, "Rains Bring Relief For Six-Month China Drought, But Chronic Water Problems Loom," *CSR Wire*, June 15 2011, http://www.csrwire.com/csrlive/commentary_detail/4706-Rains-Bring-Relief-for-Six-month-China-Drought-But-Chronic-Water-Problems-Loom

9 Ceres, *Murky Waters: Corporate Reporting on Water Risk*, 2010, <http://www.ceres.org/resources/reports/corporate-reporting-on-water-risk-2010/view>

10 For a full list of signatories, see: <https://www.cdproject.net/en-US/Programmes/Pages/cdp-water-disclosure-signatories.aspx>

11 For more information and to view the petition, see: <http://www.ceres.org/press/press-releases/investors-environmental-groups-push-the-sec-to-require-full-corporate-climate-risk-disclosure>

12 U.S. SEC, "Commission Guidance Regarding Disclosure Related to Climate Change," February 8 2010, <http://www.sec.gov/rules/interp/2010/33-9106.pdf>

13 Ibid., p. 26

METHODOLOGY



This new study assesses the water risk disclosure of 82 publicly traded companies in eight sectors: beverage, chemicals, electric power, food, homebuilding, mining, oil and gas and semiconductors.¹⁴

These eight sectors either require large quantities of water or have substantial wastewater discharges associated with their direct operations, supply chains and/or products. The 82 companies assessed represent all of the companies analyzed in *Murky Waters: Corporate Reporting on Water Risk* that also file annual financial reports (i.e. Forms 10-K, 20-F, or 40-F) with the SEC.¹⁵ The study looks at the water-related disclosures made by these companies in the annual financial reports they filed with the SEC in 2009 and in 2011 (covering fiscal years 2008 and 2010). Ceres and Bloomberg collected the data for the 2009 filings as part of the original dataset analyzed for *Murky Waters*.¹⁶ The data from the 2011 filings was collected by Ceres using the same methodology to provide comparable data points.

Filings were reviewed for statements about water-related risk exposure. The statements were then analyzed and categorized according to the following definitions of water-related risk:

- 1. Physical Risks:** Physical water risks are defined as current or predicted changes in water quantity (e.g. droughts or floods) or quality that may impact a company's direct operations, supply chains and/or logistics. Physical water risks also include disruption of needed electric power due to water issues as many electricity sources require water for cooling (e.g. nuclear or coal plants) or for generation (hydropower).
- 2. Reputational Risks:** Reputational risks are defined as current or potential conflicts with the public regarding water issues that can damage a company's brand image or result in a loss of the company's license to operate in a certain community. Reputational risks are particularly

common in developing countries where infrastructure and/or regulation may not be sufficient to provide all users with access to safe and reliable drinking water supplies. The United Nations formally recognized access to safe water as a fundamental human right in 2010, and the human right to water is gaining visibility globally.¹⁷

- 3. Regulatory Risks:** Regulatory risks are defined as the impacts of current and/or anticipated water-related regulations on a given company. As physical and reputational pressures increase, many local and national governments are responding with more stringent water policies. If unanticipated, these regulatory changes can prove costly to companies and, in some cases, limit industrial activities in particular geographies. The United States, EU and China have all instituted stricter water-related regulations in recent years.¹⁸ As demand for and stress on water resources accelerate, this regulatory trend is likely to continue.
- 4. Litigation Risks:** Litigation risks refer to the consequences of lawsuits or other legal actions related to the company's impacts on water levels and water quality. As water challenges continue to gain more attention and water-related physical, reputational and regulatory risks increase, companies face increased litigation risks.

In addition to the four risk categories defined above, company disclosures related to corporate water policies, management practices, performance data and targets and water-related opportunities were analyzed to identify examples of strong disclosure.

14 For the purposes of this study and *Murky Waters*, the sectors reviewed were defined using the Industry Classification Benchmark (ICB) codes, a classification structure maintained by the Dow Jones Indexes and the FTSE Group. See: <http://www.icbenchmark.com>

15 *Murky Waters* analyzed 100 companies. Those that do not file with the SEC and those that underwent major changes (e.g. mergers) were omitted from this analysis.

16 *Murky Waters* used a systematic method for evaluating the quality, depth and clarity of water risk disclosure in both voluntary and mandatory corporate reporting by 100 large companies in eight water-intensive sectors (see *Murky Waters* p. 25). Reviewers analyzed the companies' FY2009 voluntary (e.g. sustainability or CSR reports, company websites) and mandatory (e.g. 10-K filings) disclosures.

17 For more information on the human right to water and UN Resolution 64/292, see: http://www.un.org/waterforlifedecade/human_right_to_water.shtml

18 Summary of key water regulations in China: <http://chinawaterrisk.org/regulations/water-regulation/>, the EU: http://europa.eu/legislation_summaries/environment/water_protection_management/index_en.htm, and the US: <http://water.epa.gov/lawsregs/>

COMPANIES ASSESSED



Beverage Sector	Chemicals Sector	Electric Power Sector	Food Sector
Anheuser-Busch InBev	Dow	American Electric Power	Archer Daniels Midland
Brown-Forman Corporation	DuPont	AES Corporation	Bunge
Constellation Brands	Mitsui	Constellation Energy	ConAgra
Diageo PLC	Monsanto	Dominion Resources	Dean Foods
Dr. Pepper Snapple Group	Mosaic	Duke Energy	General Mills
The Coca-Cola Company	PotashCorp	Entergy	Kellogg Co.
	PPG Industries	Exelon Corporation	Kraft Foods
	Praxair	NextEra Energy ¹⁹	PepsiCo
Homebuilding Sector	Syngenta	NRG Energy	Sara Lee
Beazer Homes		PG&E Corp	Smithfield Foods
DR Horton Inc.	Mining Sector	Pinnacle West ²⁰	Tyson Foods
Hovnanian	Alcoa	Southern Company	
KB Home	Anglo American	Xcel	Semiconductors Sector
Lennar	Barrick Gold Corp		AMD
NVR	BHP Billiton	Oil & Gas Sector	Analog Devices
PulteGroup ²¹	Consol Energy	BP	Infineon Technologies
Ryland	Freeport-McMoRan	Canadian Natural Resources	Intel
Toll Brothers	Massey Energy ²²	Chesapeake Energy	Micron
	Newmont	Chevron	ST Microelectronics
	Peabody Energy	ConocoPhillips	Taiwan Semiconductors
	Rio Tinto	Devon	Texas Instruments
	Teck	Encana	UMC (United MicroElectronics)
	Vale	Exxon-Mobil	
		Nexen	
		Range Natural Resources	
		Royal Dutch Shell	
		Suncor Energy	
		Total	

19 Florida Power & Light Group was renamed NextEra Energy in 2009.

20 The Pinnacle West Corporation and Arizona Public Service Company are now collectively known as Pinnacle West.

21 In 2009, Pulte acquired Centex Homes and the merged company became PulteGroup. Centex and Pulte were both analyzed in *Murky Waters*; PulteGroup is analyzed in this report.

22 In June 2011, Alpha Resources and Massey Energy merged to form Alpha Appalachia. This report and *Murky Waters* reviewed filings made by Massey Energy before the merger.

KEY FINDINGS

Analysis of the four categories of water risk (physical, reputational, regulatory, and litigation) revealed a number of trends:



- 1. Disclosure of water risks has increased across the board*
- 2. More companies are making the connection to climate change*
- 3. Data on water use and performance goals are lacking*
- 4. Supply chain risks are underreported*
- 5. Information on how companies are mitigating water risks and engaging stakeholders is limited, but growing.*

1 Disclosure of water risks has increased across the board.

Disclosure of water-related physical, regulatory, litigation and reputational risks in SEC filings increased from 2009 to 2011 (**Figure 1**). The biggest change over the three-year span was seen in the percentage of companies disclosing water-related physical risks, which increased from 76 percent to 87 percent. Changes in physical water risk disclosure within four sectors analyzed (chemicals, electric power, homebuilding, and oil and gas) account for this increase, while disclosure in the remaining sectors (beverage, food, mining and semiconductors) stayed the same (**Figure 2**).

The depth and specificity of water risk disclosures has improved somewhat, with some companies providing more detailed discussions of physical, regulatory, reputational and litigation risk (**Table 1, p. 14**). Despite these improvements, however, most companies still fall short on identifying key geographies or specific operations where they are more exposed to physical water risk. As water is a highly local issue, this context is crucial in allowing investors to assess the potential severity or significance of the risk exposure.

FIGURE 1: Percentage of Companies Reporting Exposure to Water Risks by Category

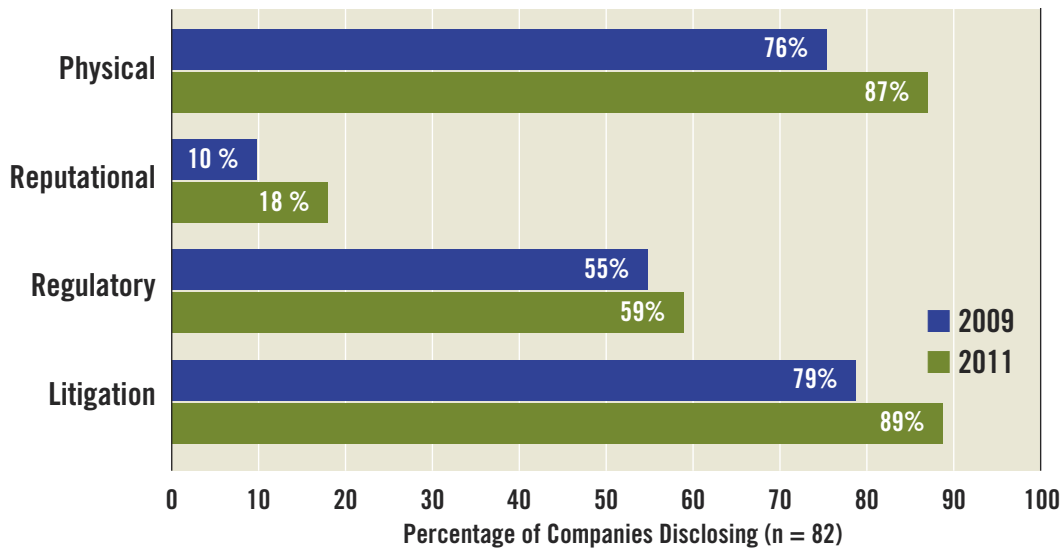


FIGURE 2: Percentage of Companies Disclosing Water-Related Physical Risks by Sector

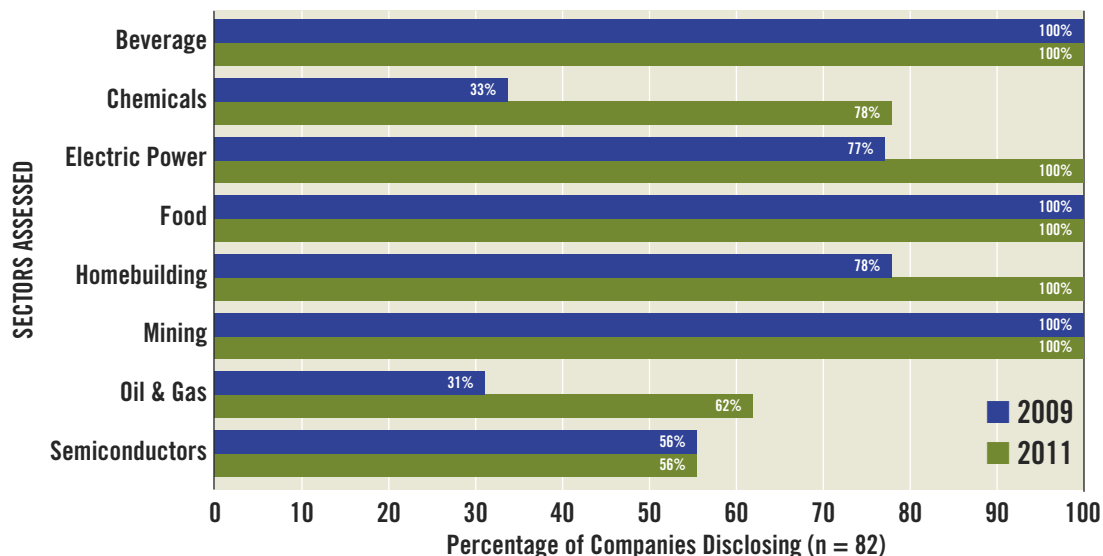


TABLE 1: Examples of Water-Related Disclosures by Risk Category (2011 Filings)

Type of Risk	Company	Statement
Physical: Water scarcity	The Coca-Cola Company	“Water scarcity and poor quality could negatively impact the Coca-Cola system’s production costs and capacity. Water is the main ingredient in substantially all of our products. It is also a limited resource in many parts of the world, facing unprecedented challenges from overexploitation, increasing pollution, poor management and climate change. As demand for water continues to increase around the world, and as water becomes scarcer and the quality of available water deteriorates, our system may incur increasing production costs or face capacity constraints which could adversely affect our profitability or net operating revenues in the long run.” (10-K, p. 13)
Physical: Water quality & quantity	Brown-Forman	“As water is one of the major components of our products, the quality and quantity of the water available for use is important to our ability to operate our business. If hydrologic cycle patterns change and droughts become more common and severe, there may be a scarcity of water in some of our key production regions including California and Mexico.” (10-K, p. 8)
Physical: Extreme weather and changes in precipitation patterns	Exelon Corporation	“The physical risks of climate change, such as more frequent or more extreme weather events, changes in temperature and precipitation patterns, changes to ground and surface water availability, sea level rise and other related phenomena, could affect some, or all, of the Registrant’s operations...Finally, climate change could affect the availability of a secure and economical supply of water in some locations, which is essential for Exelon’s and Generation’s continued operation, particularly the cooling of generating units.” (10-K, p. 45)
Regulatory: Changes in water prices, permits, and water quality standards	Anheuser-Busch InBev	“Water may also be subject to price increases in certain areas and changes in water taxation and regulation in certain geographies may result in a negative effect on operating income which could potentially challenge our profitability in certain markets. There is no guarantee that we will be able to pass along increased water costs to our customers in every case.” (10-K, p. 5)
Regulatory: Changes in environmental regulation	Suncor	“Changes in environmental regulation could have a material adverse effect on us from the standpoint of product demand, product reformulation and quality, methods of production, distribution costs and financial results... Some of the issues that are or may in future be subject to environmental regulation include: the possible cumulative regional impacts of oil sands development; the manufacture, import, storage, treatment and disposal of hazardous or industrial waste and substances; the need to reduce or stabilize various emissions to air; withdrawals, use of, and discharges to water; issues relating to land reclamation, restoration and wildlife habitat protection.” (40-F, pp. 57 & 61)
Reputational: Project interruptions due to negative public perception of water use	Nexen	“Public perceptions of greenhouse gas emissions, and water and land use practices in oil sands developments may directly or indirectly impair the profitability of our current oil sands projects and the viability of future oil sands projects in a number of ways...These perceptions may also impair our corporate reputation and limit our ability to access land and joint venture opportunities in other jurisdictions throughout the world.” (10-K, pp. 42 & 46)
Litigation: Competition & water rights	Freeport-McMoRan	“Our operations in North and South America are in areas where water is scarce and competition among users for continuing access to water is significant. Continuous production at our mines depends on our ability to maintain our water rights and claims.” (20-F, p. 44)
Litigation: Groundwater contamination	Royal Dutch Shell	“Shell Oil Company, along with numerous other defendants, have been sued by public and quasi-public water purveyors, as well as governmental entities, alleging responsibility for groundwater contamination caused by releases of gasoline-containing oxygenate additives. Most of these suits assert various theories of liability, including product liability, and seek to recover actual damages, including clean-up costs. Some assert claims for punitive damages.” (10-K, p. 137)

2 More companies are making the connection to climate change.

The SEC climate guidance issued in 2010 requires companies to disclose financially material risks from climate change, including “significant physical effects of climate change, such as effects on the severity of weather (for example, floods or hurricanes), sea levels, the arability of farmland, and water availability and quality.” In their 2011 filings, 22 of the 82 companies analyzed explicitly link climate change to water risks, compared to only eight companies in 2009 (*Table 2*). The types of climate change-related impacts disclosed include flooding, droughts, changes in precipitation and increased frequency and severity of extreme weather events. In many cases, the specificity of these disclosures has also improved since 2009.

3 Data on water use and performance goals are lacking.

Despite improvements in disclosure overall, data on company water use and quantitative targets for improving performance remain infrequently disclosed in financial filings. Water use and discharge data, particularly when provided at the site level, helps investors understand the exposure of their portfolio companies to current and future water stress, as well as potential regulatory developments. Although company water use data was scant, **Anheuser-Busch InBev**, **BHP Billiton**, **Suncor** and **United MicroElectronics** provide strong examples (*Table 3*).

TABLE 2: Making the Climate Connection: Companies Identifying Growing Water Risks Linked to Climate Change

Sector	2009	Percent	2011	Percent
Beverage	Coca-Cola Company	10%	Anheuser Busch InBev, Brown-Forman, Coca-Cola Company, Constellation Brands, Diageo	83%
Chemicals	Mosaic	7%	Mosaic, Mitsui, Syngenta	33%
Electric Power	Exelon Corp, Pinnacle West	15%	Exelon Corporation, Pinnacle West	15%
Food	—	0%	Bunge, PepsiCo, Smithfield Foods	27%
Homebuilding	—	0%	KB Home	11%
Mining	Alcoa, BHP Billiton, Freeport McMoRan	23%	Alcoa, BHP Billiton, Freeport McMoRan, Newmont	33%
Oil & Gas	—	0%	Nexen	8%
Semiconductors	Intel	9%	Intel, Taiwan Semiconductors	22%

TABLE 3: Water Data & Performance Targets (2011 Filings)

Anheuser-Busch InBev	“Reduce water use for beer and soft drinks plants to an industry-leading 3.5 hectoliters of water per hectoliter of product (hl/hl).” (10-K, p. 49)
BHP Billiton	“We have a five-year target of a 10 percent improvement in the ratio of water recycled to high-quality water consumed by 30 June 2012.” (20-F, p. 122)
Suncor	“Suncor has set four key environmental performance goals it intends to reach by 2015 (the base year for planned improvements is 2007): reduce total water intake by 12 percent, increase land area reclaimed by 100 percent, improve energy efficiency by 10 percent and reduce air emissions by 10 percent.” (40-F, p. 18)
United Micro-Electronics	“In 2010, UMC completed water footprint verification for our 200 mm and 300 mm wafers. These verifications provide scientific and reliable statistics on the carbon and water information of products manufactured in our fabs as well as self-reviews of environmental impact.” (20-F, p. 38)

4 Supply chain risks are underreported.

While many of the companies analyzed disclose exposure to water risks, much of this discussion is confined to risks facing their direct operations. For many industries, water risks are most prominent in the supply chain. For example, weather disruptions (e.g. droughts or floods) in major agricultural sourcing areas can pose risks to food companies headquartered thousands of miles away. Despite this, most of the food companies disclose only very limited, standardized language around potential supply chain disruptions caused by severe weather. **Archer Daniels Midland, Bunge, PepsiCo** and **Smithfield** were the only food companies (of the 11 evaluated) with water-related supply chain risk disclosure that mentioned specific agricultural commodities or regions facing water risk, or that discussed the impacts of climate change on their supply chains.

5 Information on how companies are mitigating water risks and engaging stakeholders is limited, but growing.

Multiple companies in the oil and gas, mining, beverage and homebuilding sectors disclose information on systems in place to manage water (**Table 4**). Notably, all 13 oil and gas companies analyzed disclose information on water-related management systems and/or efforts to improve efficiency or wastewater discharge. As water is a complex and highly local issue, good management strategies require engagements with stakeholders like local communities, governments, environmental groups, peer companies and/or other industries in the region. Some companies in the oil and gas and mining sectors also include discussion of ways they engage relevant stakeholders on water issues.

TABLE 4: Water Risk Management & Stakeholder Engagement

Beverage Sector	In 2009, Coca-Cola was the only beverage company to disclose management responses to mitigate the potential impacts of water risks on direct operations. In 2011, all six beverage companies reviewed cite management responses. For example, Diageo's disclosures focus on company operations in water-stressed areas, water conservation efforts at individual facilities and the creation of a new water strategy.
Homebuilding Sector	Beazer Homes' 2011 filing includes discussion of their "eSMART Initiative," a home-building program focused on energy and water efficiency and improved indoor air quality. The eSMART Initiative was cited throughout the company's 10-K and described as a comprehensive environmental stewardship program which seeks to make water conservation standard in all of its homes.
Mining Sector	Rio Tinto's subsidiary Energy Resources Australia has invested A\$11.2 million toward water management improvements across its entire uranium mining operation. The company has also installed water quality sensors in local waterways to improve its ability to detect and respond to changes in water quality.
Oil & Gas Sector	To manage its water use, Shell has set remuneration measures for its executives based on the company achieving internal sustainability indicators, including fresh water use. Their annual bonus scorecard measures performance on fresh water use (alongside safety, spills and energy efficiency). Nexen conducts community consultations prior to siting new projects and Suncor and Encana discuss efforts to work with peers, trade associations, suppliers and regulators to improve environmental and social performance.
Semiconductor Sector	Intel discusses working proactively with governments, environmental groups and the industry at large to promote sustainability on a global scale.

RECOMMENDATIONS



While disclosure of water-related risks in SEC filings has increased from 2009 to 2011, substantial gaps remain. It is important to recognize that an increase in the number of companies disclosing water-related information does not necessarily speak to the quality of the information disclosed.

Based on the findings of this analysis, the report recommends that companies:

✓ Undertake ongoing analysis of potential water-related risks.

Floods, droughts, water quality degradation, increased competition for water resources, new regulations, weak water infrastructure, increased water tariffs, water rights disputes and severe weather can all pose financial risks to company operations and supply chains. Companies should continually identify and disclose the full range of material water-related risks and opportunities they face, as well as their respective financial impacts.

✓ Augment qualitative disclosure with relevant quantitative data.

SEC disclosure should, wherever possible, focus on providing quantitative information (e.g., the percentage of operations impacted by a new regulation, the extent of financial losses due to drought, or the cost reductions achieved via innovations or efficiency improvements) as well as qualitative discussion. Relevant quantitative disclosures provide investors with a better understanding of where water hits a company's value chain and how the company is positioning to manage water-related risks and seize opportunities in the future.

✓ Ensure compliance with the SEC's guidance on climate change disclosure.

Overall disclosure of water-related risks has increased since the SEC issued its 2010 guidance on disclosing physical risks related to climate change. However, many corporate issuers are still silent on how climate change may impact their exposure to water-related risks when, based on their industry and operations, it seems likely that these risks exist. Companies looking for additional resources on compliance with the SEC guidance with respect to water risks should see the May 2012 report released by Ceres, Oxfam America and Calvert Investments entitled *Physical Risks From Climate Change: A Guide for Companies and Investors on Disclosure and Management of Climate Impacts*.¹

✓ Provide investors with risk management information.

Given the trajectory of global megatrends, many companies are likely to face new or increasing water risks in the near future. Companies facing significant water risks should use their SEC filings to disclose information related to relevant risk management strategies (e.g. policies, standards, goals and progress toward targets). Such disclosure helps investors understand how companies are positioning themselves for strong financial performance in a water-constrained world. Companies seeking to develop more robust management responses to water risk should see the 2011 Ceres report, *The Ceres Aqua Gauge: A Framework for 21st Century Water Risk Management*.²

1 Oxfam America, Calvert Investments & Ceres, *Physical Risks From Climate Change: A guide for companies and investors on disclosure and management of climate impacts*, May 2012, <http://www.ceres.org/resources/reports/physical-risks-from-climate-change/view>

2 See: www.ceres.org/aquagauge



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