

# PRI-COORDINATED ENGAGEMENT ON WATER RISKS IN AGRICULTURAL SUPPLY CHAINS

## INVESTOR GUIDANCE DOCUMENT

IN COLLABORATION WITH:  
World Wildlife Fund (WWF), PwC Germany and  
the PRI investor steering committee on water risks



# THE SIX PRINCIPLES

- 1** We will incorporate ESG issues into investment analysis and decision-making processes.
- 2** **We will be active owners and incorporate ESG issues into our ownership policies and practices.**
- 3** **We will seek appropriate disclosure on ESG issues by the entities in which we invest.**
- 4** We will promote acceptance and implementation of the Principles within the investment industry.
- 5** **We will work together to enhance our effectiveness in implementing the Principles.**
- 6** We will each report on our activities and progress towards implementing the Principles.



This report focuses on supporting signatories implement Principles 2, 3 and 5 of the Principles for Responsible Investment (PRI). The Principles for Responsible Investment (PRI) Initiative was launched by the United Nations in 2006 after former UN Secretary-General Kofi Annan brought together a group of the world's largest institutional investors, academics and other advisors to draft a set of sustainable investment principles. At the heart of the six Principles for Responsible Investment is the premise that investors have a duty to act in the best long-term interests of their beneficiaries; this means taking into account environmental, social and governance factors.

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The World Wildlife Fund/Worldwide Fund for Nature (WWF) is one of the world's largest and most experienced independent conservation organisations, with over 5 million supporters and a global network active in more than 100 countries. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

WWF's Commodities Finance programme works with banks, investors, voluntary platforms, regulators, and other financial stakeholders in support of making soft commodities finance more sustainable. Our team draws on WWF's global reach to deliver insights, risk management tools, research, and financial innovation. We have supported this project and publication through advisory and technical guidance. [www.panda.org/finance](http://www.panda.org/finance)



PwC helps organisations and individuals create the value they're looking for. PwC is a network of firms in 157 countries with more than 184,000 people who are committed to delivering quality in assurance, tax, sustainability and advisory services.



The independent sustainability rating agency oekom research provides in-depth analyses of the sustainability performance of about 3,500 companies worldwide. The oekom Corporate Ratings are used by institutional investors and asset managers to integrate ESG criteria into their investments and to create sustainable investment products. The work of the nearly 50 specialised analysts is backed by a global network of social and environmental experts as well as by an international Advisory Board.

# EXECUTIVE SUMMARY

The PRI Secretariat coordinates a number of collaborative engagements on areas where long-term investment performance is exposed to environmental, social or governance (ESG) risks. The purpose of this guidance document is to outline the basis for a collaborative engagement on water risks in the agricultural supply chains of investee companies. It offers investors:

- An introduction to the risks and the business case for addressing them
- Findings of topical research conducted by partners World Wildlife Fund (WWF) and PwC Germany<sup>1</sup>
- A set of key questions on the issue for investors to ask companies
- A reference framework for managing risks at the company level

Global fresh water supplies have become increasingly exposed to risk as a result of both growing demand, and pressures on supply, including those linked to climate change. Meanwhile, agriculture remains the heaviest user of fresh water supplies, responsible for approximately 70% of the world's fresh water consumption.<sup>2</sup>

Traditionally, businesses have focused on their direct water consumption, although many have failed to recognise the importance of understanding and managing risks throughout their supply chains. Companies who fail to manage supply chain water risks may see impacts on their performance such as increased input prices, disruptions in supply or reputation damage.

These risks are particularly relevant to companies in the food, beverage, apparel, retail and agricultural products sectors, who are the focus of this research and related collaborative engagement. Despite the risks, little is known about their extent and materiality. This stems from the complexity in agricultural supply chains, the localised and disperse nature of water risks and the limited availability of data, which prevent simple analysis of company exposure.

To improve understanding of the issues, research has been conducted by both the WWF and PwC Germany. WWF focused on “**which crops are at risk and where?**” and found that 25 crop and country pairs are most exposed. PwC was tasked with answering “**who sources what from where?**” and was able to use input-output modelling to provide a best estimate on agricultural supply chain water risks for a selected portfolio of investee companies.

The results of the research show that **companies in the target sectors are indeed reliant on agricultural commodity raw materials from regions facing high levels**

**of water stress**, despite significant differences between the companies, input crops and their sourcing location. These results further highlight the need for a nuanced and localised response. More specifically, results show:

- A strong correlation between individual company revenue and estimated water consumption in water scarce regions
- Significant exposure to some crop-country combinations, but limited exposure to others
- A large difference between the average and median water consumption of the companies in the universe
- Agricultural products, food retail, packaged foods & meats and soft drinks companies are the biggest users of water in scarce regions
- Apparel, luxury goods, brewers and distillers & vintners had lowest average consumption in water scarce regions
- Some well-known consumer facing brands are strong performers on company risk management for both direct and supply chain operations, but overall the general performance across the universe of companies was poor.

Going forward, there is a clear case for increased dialogue between companies and investors around these issues. For companies, a comprehensive and straightforward framework for managing risks is key. This report highlights the WWF water stewardship steps as one tool to guide companies in the move towards best practice. It further offers a set of questions for companies to answer in order to demonstrate their awareness and management of these risks to investors. These ‘asks to companies’ are general in nature but draw on the insights presented in the research. As investor and company sophistication grows, it is expected these focus questions for engagement will be further developed.

<sup>1</sup> PricewaterhouseCoopers Aktiengesellschaft Wirtschaftsprüfungsgesellschaft (PwC Germany). Note that any subsequent reference to PricewaterhouseCoopers or PwC refers solely to PwC Germany.

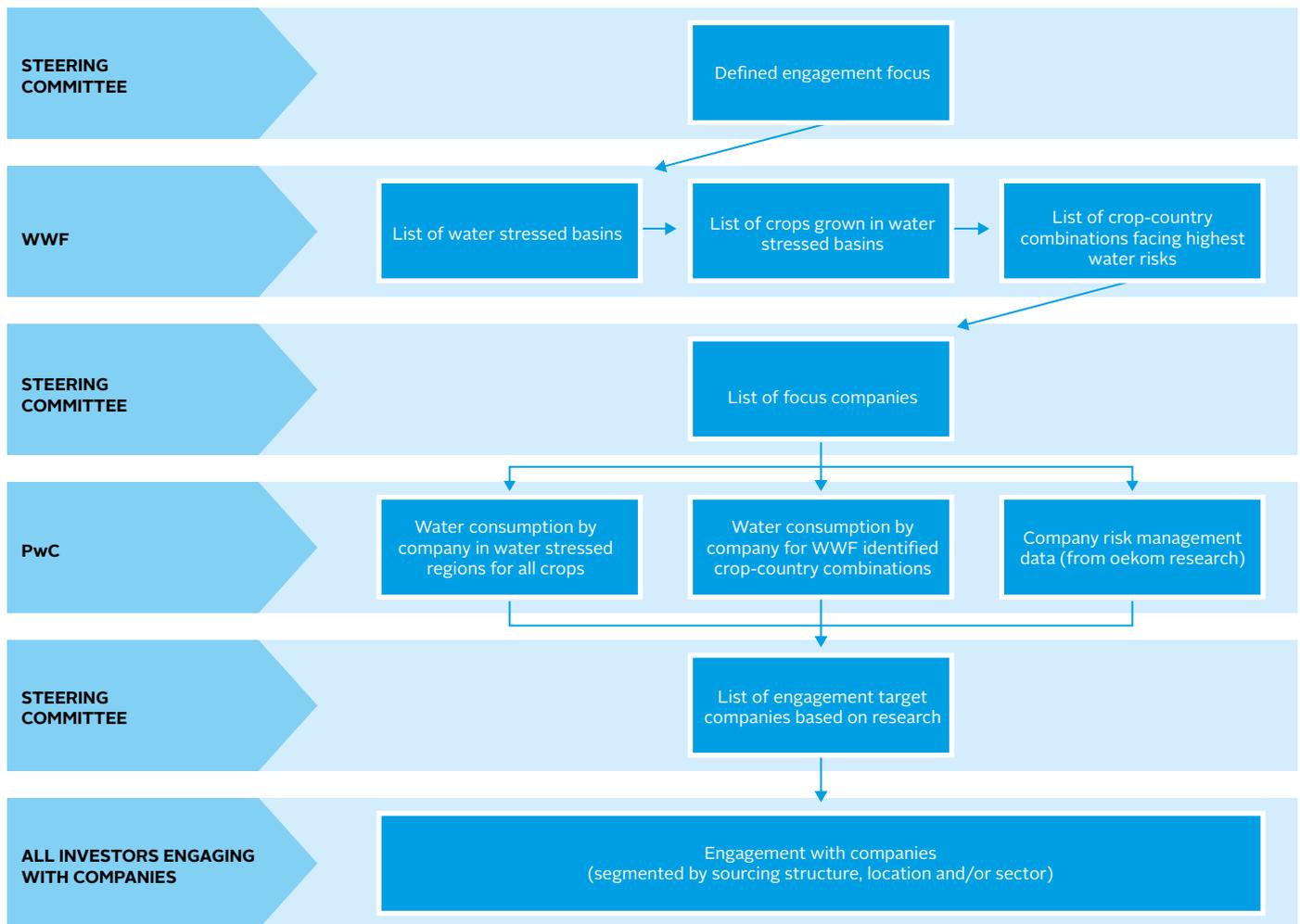
<sup>2</sup> WWAP (United Nations World Water Assessment Program) 2014, The United Nations World Water Development Report 2014: Water and Energy, UNESCO, viewed 21 July 2014, <<http://unesdoc.unesco.org/images/0022/002257/225741E.pdf>>.

# 1. BACKGROUND TO THE ENGAGEMENT AND RESEARCH

In 2012, following a period of consultation with PRI signatories and the Investor Engagement steering committee, water risks were identified as a priority area for the PRI Secretariat's coordinated collaborative engagement programme. This is in addition to three other environmental issues including climate change, hydraulic fracturing and palm oil. Following this process, a group of six PRI signatories came together to form a steering committee tasked with narrowing down the focus of the project with the PRI Secretariat's support. Consisting of representatives from Aberdeen Asset Management (formerly Scottish Widows Investment Partnership), Hermes Fund Managers, MN, Nordea Asset Management, PGGM and Rockefeller & Co., the steering committee commenced its work in December 2012.

After six months of consultation with external experts, including companies, NGOs, research providers, and sustainable commodities certification organisations on water related themes, the group refined the collaborative engagement to focus on water risks in agricultural supply chains. Recognising that agriculture accounts for the majority of human water consumption globally, investors designed the research and established an engagement strategy around listed companies in the agricultural products, food, beverage, apparel, and retail sectors. These sectors were chosen due to their high exposure to water related risks in the sourcing of agricultural commodities within their supply chains.<sup>3</sup>

Figure 1. Flowchart of the project's history and roles of different organisations.



3 The group acknowledges that there are other sectors similarly exposed to water risk, especially in the electricity generation and extractives sectors, but given the relative scale of water demand from the agricultural sector and the regional and government ownership structure of many at-risk electricity generators, the decision was made to focus on agriculture.

Throughout the process it was clear to the group that agricultural supply chain water risks were highly complex and lacked recognition by the business community. Risk assessment requires innovation in order to delve into the issues. Public data, especially on individual company exposure, is scarce.

## COLLABORATION: WWF AND PWC

Through the consultation process, the World Wildlife Fund (WWF) was identified as a key expert organisation on conservation and stewardship of water resources. WWF is a world leader on water risks and their impacts on business. Additionally they are recognised for their expertise on management of water resources, and for the partnerships they have in place with leading companies in the sectors being targeted by the engagement. For this project, the PRI and the steering committee established a formal collaborative partnership with WWF to share data, insights and experience. This aimed to strengthen investor understanding of risks to portfolios, and in turn, to help further WWF's conservation agenda as it aligns with the PRI's Principles. WWF played a key role as expert advisers to the coalition of investors, helping to refine the engagement programme plan, targets and research provider selection. They furthermore provided insights into water risk exposed crops and basins based on their Water Risk Filter. This data factored in a range of water risks across different parameters, including but not limited to water scarcity.

In addition to insights provided by WWF, the steering committee recognised the need for greater understanding on which companies in the targeted sectors were most exposed to water risks.

A target universe of 78 companies in these sectors was developed by the steering committee based on the scope of company reach, investor exposure globally and market capitalisation among other factors. Following a PRI call for proposals, PwC Germany was selected to conduct research on the water risks of these companies due to its experience consulting corporate clients in this area.

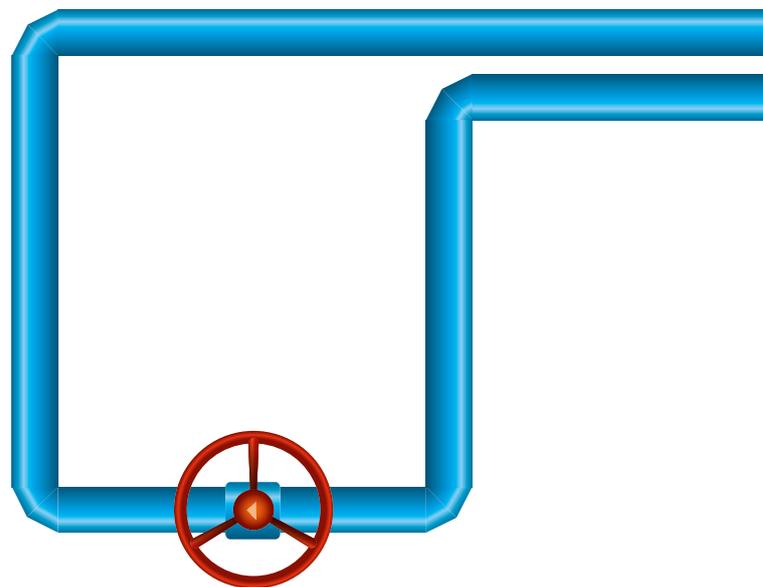
Using an environmentally extended input-output model, PwC estimated water consumption in water scarce regions worldwide for each targeted company, along with some detail on risk management actions by companies using data from oekom research. Further detail on the research and findings from WWF and PwC is provided in section 3 below.

## THE COLLABORATIVE ENGAGEMENT

Building on the findings from WWF and PwC, as well as inputs from other external experts, the steering committee crafted a collaborative engagement strategy targeting 54 companies from the initial universe. Through the process, an enhanced understanding was obtained on the various challenges in managing water risks for food, beverage, retail, agricultural and apparel companies. In response to these

challenges, the steering committee formulated general discussion questions ('asks') to investee companies. These asks are seen as the starting point for investor-company dialogue. Over time, and following initial discussions with companies, it is expected they will be further tailored to individual sectors, different agricultural product sourcing structures, physical locations and other factors.

This document outlines these initial engagement questions and captures the results of work done by the steering committee and collaborating partners. It aims to form the basis of a PRI coordinated engagement on water risks in agricultural supply chains. More generally, this report is intended to be used by investors as a guide to understanding the issues, their financial implications and the possible approaches to dialogue with companies in the sectors covered.



# 2. SUPPLY CHAIN WATER RISKS WHY INVESTORS SHOULD CARE

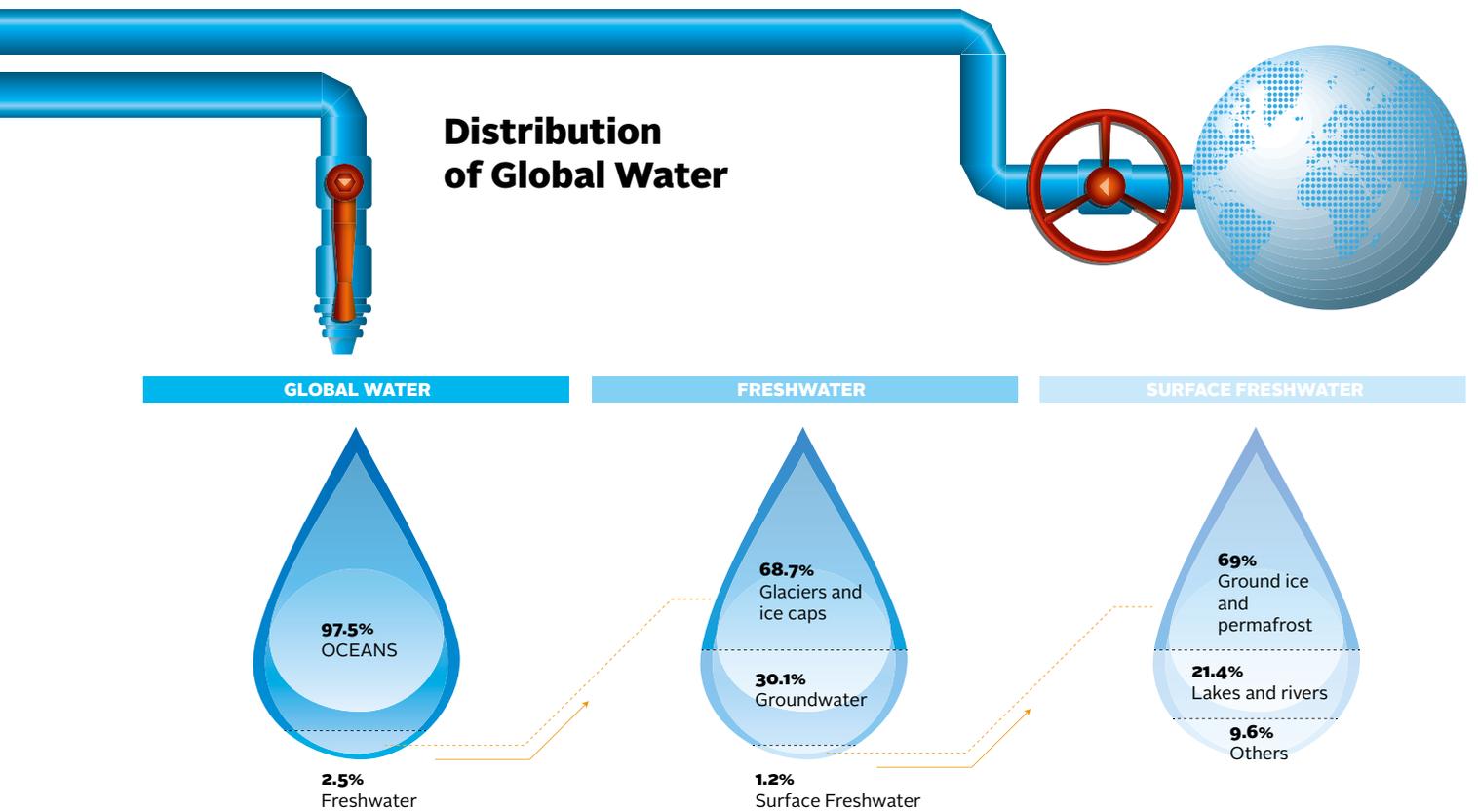
## THE CONTEXT OF WATER RISK

Water is one of the few resources that is needed for almost all transformation processes that foster production activities.<sup>4</sup> It is required for the growth and production of raw materials, the manufacturing of raw goods into consumable products, and the distribution of products to the market. However, the world's fresh water supply is increasingly facing challenges of scarcity and contamination, and the situation is rapidly deteriorating. As a key input to most business sectors, this has led to significant economic disruptions in the recent past, including power station shut downs and agricultural commodity price volatility. As the greatest portion of water withdrawals globally are attributable to the agricultural sector, the effects of scarcity will largely manifest within this domain and in those sectors dependent on it.

While the planet's water supply may appear to be voluminous and renewable, the oceans contain about 97.5% of all water. Furthermore, of the earth's total freshwater, over 68% is locked up in ice and glaciers and an additional 30% exists as groundwater.<sup>5</sup> Although the world's hydrological cycle shifts supply in a constant dynamic exchange, and in spite of extraction and filtration technologies to access and alter this supply, less than 1% of the world's water reserves are both suitable for and accessible to humans.<sup>6</sup>

In recent years, water demand has outpaced population growth two-fold, and is set to grow rapidly with increasing economic development, a growing middle class and further urbanisation. With the current growth rate in water consumption and no further efficiency gains, it is estimated

**Figure 2.** Distribution of the world's water.  
Source: Adapted from USGS.



4 UNEP Finance Initiative 2009, Water-related materiality briefings for financial institutions: Agribusiness, UNEP FI, Geneva, viewed 21 July 2014, <[http://www.unepfi.org/fileadmin/documents/chief\\_liquidity1\\_01.pdf](http://www.unepfi.org/fileadmin/documents/chief_liquidity1_01.pdf)>.  
 5 USGS 2014, How much water is there on, in, and above the Earth?, viewed 21 July 2014, <<http://water.usgs.gov/edu/earthhowmuch.html>>.  
 6 USGS 2014, The World's Water, viewed 21 July 2014, <<http://water.usgs.gov/edu/earthwherewater.html>>.

that global demand for water will grow from 4.5 trillion m<sup>3</sup> today to 6.9 trillion m<sup>3</sup> by 2030. This business as usual scenario means demand which is 40% above the currently accessible and reliable water supply.<sup>7</sup>

Given its importance for life on earth and to sustainable socio-economic development, the importance of water to human well-being cannot be overstated. However, globally, an estimated 884 million people are without access to safe drinking water, despite this being seen as a basic human right.<sup>8</sup> It is also estimated that over 40% of the global population will be living in areas of severe water stress through 2050.<sup>9</sup>

Supported by clear evidence of diminishing groundwater supplies, an estimated 20% of the earth's aquifers are currently being over-exploited, further contributing to scarcity conditions.<sup>10</sup> Additionally, wetland deterioration globally is limiting ecosystem capacity to purify water within the global hydrological cycle.

Human water use continues to be the primary cause of aquifer depletion in many parts of the world, with 70% of all anthropogenic water consumption globally attributable to agriculture.<sup>11</sup> Although rainfed agriculture is the predominant global agricultural production system, its current productivity is only about half of the potential achievable, provided optimal (often irrigated), agricultural management systems are in place. Due to water scarcity and declines in quality, this shift is often not possible.

Impacts of climate change exacerbate the existing water-related risks to global systems. For example, in addition to shifts in precipitation patterns, the likely increase in frequency and/or intensity of extreme weather events such as droughts and floods, disrupts well-established physical systems built upon prevailing water availability conditions.<sup>12,13</sup> As climate change intensifies, the threats posed by water scarcity are expected to increase, while water scarcity conditions may further exacerbate the effects of a changing climate.<sup>14</sup> Alongside this, water quality is in decline in

many regions globally due to agricultural runoff, industrial pollution, poor water management practices and poor governance of water basins.<sup>15</sup>

## INTRICACIES IN AGRICULTURAL SUPPLY CHAINS

Agricultural commodities such as cotton, wheat and sugar are used as raw material inputs in a wide variety of products in the food, beverage, retail and apparel sectors. Supply chains for these products can be notoriously complex, with multiple tiers and a variety of intermediaries across a range of sizes all playing a role and contributing to uncertainties around who is sourcing what from where. For example, a typical food product would pass through a complex, multi-tiered supply chain before it reaches the point of sale, and many food products will have several processes for each agricultural commodity used to produce the final product. Furthermore, many manufacturers do not have clear visibility of their supply chains, including where they are sourcing from and what parties are involved at different steps. This lack of transparency and awareness was demonstrated by the recent European horsemeat scandal in early 2013 and separately, in the Rana Plaza garment factory tragedy in Bangladesh in April 2013. In both cases, many large manufacturers were unaware of their exposure to the risks within their global supply chains.

7 2030 Water Resources Group 2009, Charting Our Water Future: Economic frameworks to inform decision-making, 2030 Water Resources Group, viewed 21 July 2014, <[http://www.2030wrg.org/wp-content/uploads/2012/06/Charting\\_Our\\_Water\\_Future\\_Final.pdf](http://www.2030wrg.org/wp-content/uploads/2012/06/Charting_Our_Water_Future_Final.pdf)>.

8 In July 2010, the United Nations General Assembly acknowledged that clean drinking water and sanitation are essential to the realisation of all human rights, explicitly recognising the human right to water and sanitation. The formal acknowledgement of this right was accompanied by explicit definitions of the following criteria: sufficient, safe, acceptable, physically accessible, and affordable. UN News Centre 2010, General Assembly declares access to clean water and sanitation is a human right, viewed 21 July 2014, <<http://www.un.org/apps/news/story.asp?NewsID=35456#.U81bNfldW5h>>.

9 Leflaive, X, et al 2012, 'Water', in OECD Environmental Outlook to 2050: The Consequences of Inaction, OECD Publishing, Paris, viewed 21 July 2014, <<http://www.oecd.org/environment/indicators-modelling-outlooks/waterchapteroftheocdenvironmentaloutlookto2050theconsequencesofinaction.htm>>.

10 Gleeson, T, Wada, Y, Bierkens, MFP & van Beek, LPH 2012, 'Water balance of global aquifers revealed by groundwater footprint', Nature, vol 488, no. 7410, pp. 197-200.

11 WWAP (United Nations World Water Assessment Program) 2014, The United Nations World Water Development Report 2014: Water and Energy, UNESCO, viewed 21 July 2014, <<http://unesdoc.unesco.org/images/0022/002257/225741E.pdf>>.

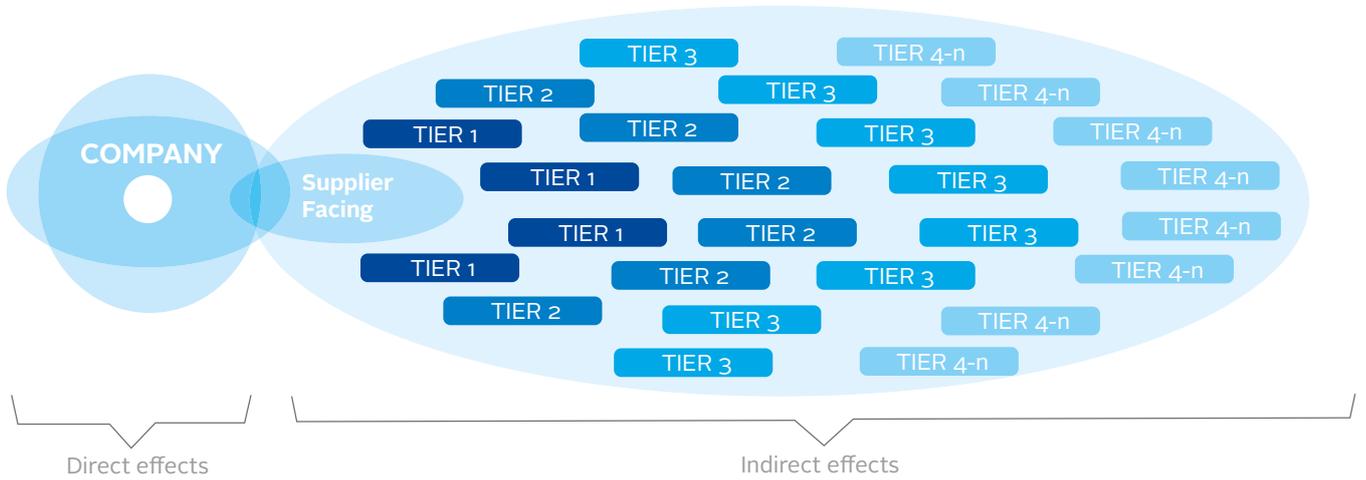
12 CEO Water Mandate 2014, Climate Change, viewed 21 July 2014, <<http://ceowatermandate.org/business-case/global-water-trends/climate-change/>>.

13 IPCC 2012, 'Summary for Policymakers', in Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation, Cambridge University Press, Cambridge and New York, viewed 21 July 2014, <[http://www.ipcc-wg2.gov/SREX/images/uploads/SREX-SPMbrochure\\_FINAL.pdf](http://www.ipcc-wg2.gov/SREX/images/uploads/SREX-SPMbrochure_FINAL.pdf)>.

14 IPCC 2014, 'Summary for policymakers', in Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge and New York, viewed 21 July 2014, <[http://ipcc-wg2.gov/AR5/images/uploads/WG2AR5\\_SPM\\_FINAL.pdf](http://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf)>.

15 CEO Water Mandate 2014, Declining Water Quality, viewed 21 July 2014, <<http://ceowatermandate.org/business-case/global-water-trends/declining-water-quality/>>.

**Figure 3.** A graphical model of a company’s supply chain complexities and influence. Source: adjusted by PwC.



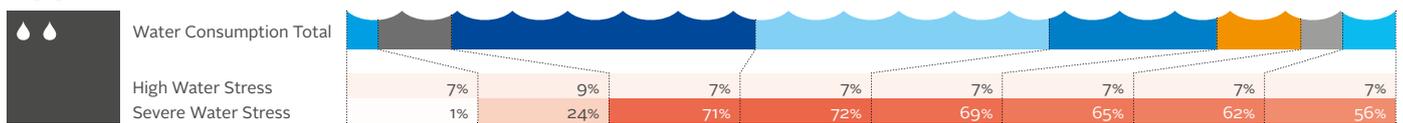
Alongside the inherent complexities and lack of transparency in global supply chains, further challenges arise due to differences in sourcing structures between companies and for different products produced by the same company. While some companies may have direct ownership of farms (vertical integration) or direct contracts with farms where crops are grown, others source from commodities traders and on global commodity markets. This means that one loaf of bread at a supermarket may include wheat purchased at global market prices from an international agricultural trader, while another may consist of wheat from an individual farm or group of farms which is fully traceable at each stage of production. Such differences lead to a wide spectrum of visibility into, and influence over, the supply

chain; the more vertically integrated the greater the visibility and influence, although this may result in increased costs and the loss of benefits from specialisation in operations.

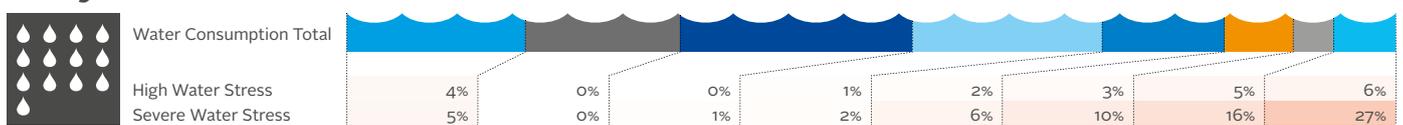
All of the above factors combine to create a complex and opaque global agricultural supply web, making measurement and management of the environmental and social impacts of food, beverage and apparel production difficult. This is especially true of water risks in the supply of agricultural commodities, with the bulk of many products’ water footprint found in lower levels of the supply chain (i.e. in the growing of the raw material inputs rather than in the manufacturing, distribution, consumption, etc.) as shown in the figure 4 below.

**Figure 4.** Water consumption of example sectors across supply chain tiers. Source: PwC analysis (2014) using ESCHER methodology and data from WaterGAP3 by CESR, University of Kassel

### Apparel Sector from France



### Dairy Products Sector from Brazil



#### Legend

**Total Water Consumption (dimension)**  
 1 unit (represented by 14 small squares) 14 x

**Production layer / supplier structure**  
 Direct operation (blue square), Production Layer 1 ("tier 1") (dark blue square), Production Layer 2 ("tier 2") (medium blue square), Production Layer 3 ("tier 3") (light blue square), Production Layer 4-n ("tier 4-n") (orange square)

**Water Scarcity Risk Level**  
 Low (light red) to High (dark red)

## BUSINESS CASE OF RISK AND MANAGEMENT

Water risks faced by suppliers of agricultural commodities and those companies reliant on them can be broadly divided into operational, reputational and regulatory aspects:

### OPERATIONAL

Risks to operations can result from decreased water availability or quality, increased water costs or water treatment costs, and disruptions due to conflicts with other large-scale water users, such as communities, municipalities, and other companies. In these cases, impacts on the operations of primary water users – the growers – can work up the value chain, primarily in the form of increased prices for raw inputs.

Looking forward, a 2012 report commissioned by the United Nations estimated that in the coming decades, yields of the three biggest crops according to caloric production – maize, wheat, and rice – would be significantly reduced in developing nations as a result of climate change.<sup>16</sup> Similar climate and geopolitical impacts discussed above are likely to have operational impacts around the world. Examining the world's water supply, the various pressures exerted on it, and the repercussions of past water shortages, it becomes clear that operational risk to water supply within agricultural supply chains can have significant material impacts on end users.

### REPUTATIONAL

Conflict with local communities can also trigger reputation risks, particularly if the company is seen as competing with the population for access to limited water resources. Such risks may be faced by companies up and down agricultural supply chains.

For instance, in recent months Indian officials closed a major beverage maker's bottling factory in India following community protests centred on its high water use. While this example is a direct impact on a company's operations, it highlights the potential for such risks to also be felt up the supply chain. For example, water scarcity in areas of coffee production could lead to conflict between local food crops and the coffee crops grown for multi-national food and beverage companies. Such a conflict could have reputational impacts further up the supply chain if NGOs or consumers assign blame to the company ultimately purchasing the supply chain.

### REGULATORY

Regulatory impacts, including caps and restrictions, are also a factor. Such risks have started to materialise in countries particularly vulnerable to water stress. For example, China has already implemented water use caps, resulting in a significant increase of operational risk to its top five utilities.<sup>17</sup> Similarly, in the US, water withdrawal allowances in the Susquehanna basin in Pennsylvania and in New York were temporarily suspended in April 2012 due to stream-flow levels dropping well below normal.<sup>18</sup> While those companies with withdrawals suspended were largely energy companies, there is no guarantee that agricultural commodity growers will not face similar restrictions going forward.

Additionally, regulatory risks may materialise in other ways, such as through increased pricing as regulators seek to incorporate externality costs into water charges.

The risks above are particularly relevant to the agricultural supply chains of companies who manufacture food, beverage and apparel products, the traders who supply them and the retailers selling the end products. Disruptions in supply, conflicts with local communities or new water restrictions could all flow through the supply chain and lead to higher input prices, more volatile prices, declining quality, and lack of availability of raw materials.

Conversely, improved and active management of water risks offers companies potential for cost savings, operational benefits, pre-emption of regulatory risk, and enhanced community relations, all of which can contribute to competitive advantage.<sup>19</sup> Manufacturing companies at the end of the supply chain can benefit from the actions taken by their suppliers in the same way, and additionally through greater security and transparency in their production inputs.

<sup>16</sup> Thornton, P 2012, Recalibrating Food Production in the Developing World: Global Warming Will Change More Than Just the Climate, CGIAR, viewed 21 July 2014, <[https://cgspace.cgiar.org/bitstream/handle/10568/24696/CCAFS\\_PBo6-Recalibrating%20Food%20Production.pdf?sequence=6](https://cgspace.cgiar.org/bitstream/handle/10568/24696/CCAFS_PBo6-Recalibrating%20Food%20Production.pdf?sequence=6)>.

<sup>17</sup> Bloomberg 2013, China's Power Utilities Exposed to Water Disruption, viewed 21 July 2014, <<http://about.bnef.com/press-releases/chinas-power-utilities-exposed-to-water-disruption/>>.

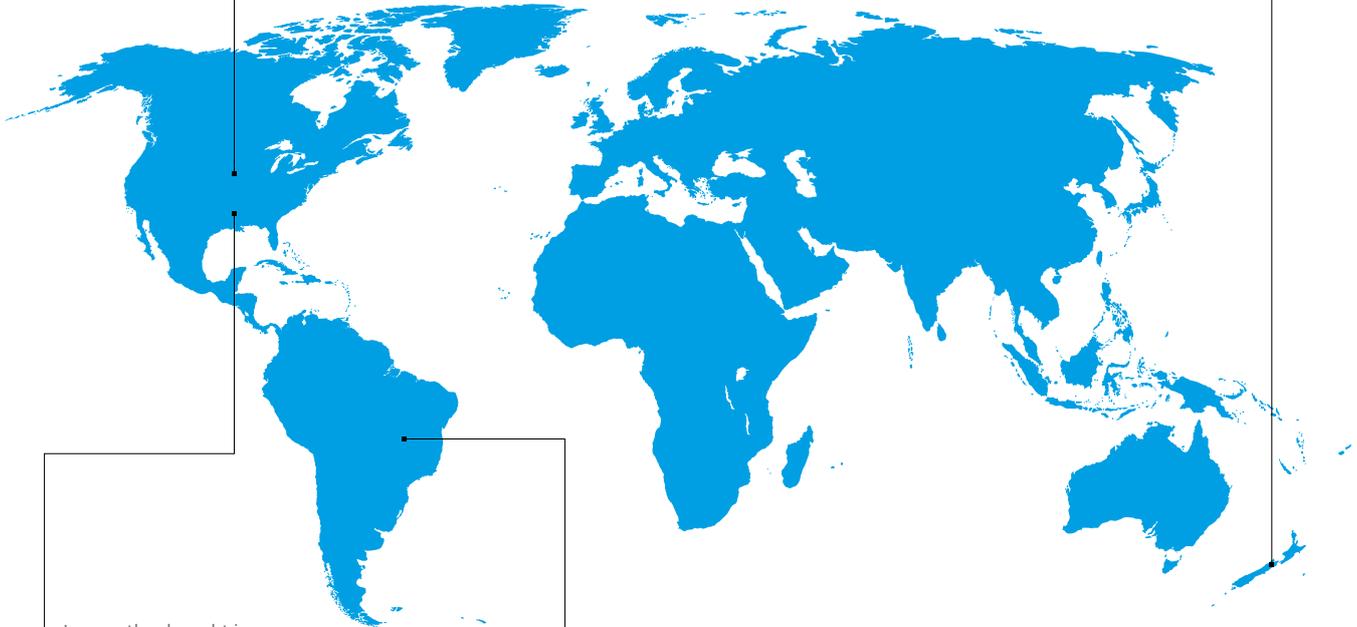
<sup>18</sup> Susquehanna River Basin Commission 2012, Seventeen water withdrawals for natural gas drilling and other uses temporarily on hold to protect streams, viewed 21 July 2014, <<http://www.srb.com/newsroom/NewsRelease.aspx?NewsReleaseID=83>>.

<sup>19</sup> WBCSD 2012, Water valuation: Business case study summaries, World Business Council for Sustainable Development, Geneva, viewed 21 July 2014, <<http://www.wbcd.org/Pages/EDocument/EDocumentDetails.aspx?ID=15098&NoSearchContextKey=true>>.

## RECENT EXAMPLES

In 2012, a major North American grain handler issued a profit warning after drought in the US Midwest hit corn production. The company increased prices, which in turn flowed on to companies including chicken and pork producers in the US who are reliant on corn as animal feed.<sup>20</sup>

Drought in New Zealand in 2013 saw the country's dairy production fall by nine per cent in the last six months of the annual season. This contributed to a 28% decline in operating cash flows at a major New Zealand dairy company compared with the previous year, and was also cited as a reason for a 64% spike in whole milk powder prices between January and April of that year.<sup>21</sup>



In 2011 the drought in Texas resulted in failure of cotton crops in the state, including a forecasted 50% abandonment rate for crops in the High Plains region which normally produces two-thirds of the state's cotton. This was linked to a 22% cut in full year profits for one US apparel chain and a 36% decline in net income for the April quarter in another.<sup>22</sup>

Drought in Brazil in 2014 has caused coffee prices globally to rise by an average of nine per cent, and contributed to volatility in coffee prices. Some coffee retailers have responded by increasing prices however marketing concerns may limit this for key consumer products. The forecast El Niño event for 2014 is likely to lead to reduced rainfall in Vietnam and Indonesia which could flow into global prices for robusta coffee.<sup>23</sup>

20 Berry, I 2012, Drought Ripples to Food Processors, viewed 14 July 2014, <<http://online.wsj.com/news/articles/SB10000872396390444840104577553153496004264>>.

21 NZX 2013, Fonterra Announces 2013 Financial Results, viewed 21 July 2014, <<https://nzx.com/companies/FCG/announcements/241519>>.

22 Roy, D 2011, Texas cotton farmers abandon record acres on drought as Gap's costs rise, viewed 21 July 2014, <<http://www.bloomberg.com/news/2011-06-30/texas-cotton-farmers-may-abandon-record-acres-because-of-drought.html>>.

23 Bond, S 2014, 'Starbucks to raise coffee prices amid Brazil drought', The Financial Times, 20 June 2014, viewed 21 July 2014, <<http://www.ft.com/cms/s/0/6bc3a25e-f888-11e3-815f-00144feabdco.html#axzz38NUfIK7k>>; Terazono, E 2014, 'Coffee drinkers pay price of Brazil drought', The Financial Times, 3 June 2014, viewed 21 July 2014, <<http://www.ft.com/cms/s/0/8d8faof2-eb24-11e3-9c8b-00144feabdco.html#axzz38NUfIK7k>>.

# 3. THE RESEARCH: METHODOLOGY AND FINDINGS

## WWF – MAPPING WATER RISK EXPOSED CROPS AND REGIONS

In addition to the informal sharing of insights on the impacts of water risks to business, WWF applied its technical expertise by identifying those crops and basins facing the most significant water risks globally. To achieve this, WWF assessed the water risks of all crops and river basins included in the Agricultural Water Risk Assessment Add-On to the Water Risk Filter. This includes 405 river basins and 122 crops (over 15,000 crop and basin combinations) and was used to identify and rank which crop-river basin combinations face the highest overall water risks globally. A focus was placed on crops that are irrigation dependent, grown in water stressed areas, and globally traded. The data sets used in the assessment are all from publicly available sources, and include the latest globally comprehensive data on water scarcity, drought, crop water use, production area, and pollution levels, among other factors.

After identifying the crop-river basin combinations exposed to water stress, WWF aggregated these crop-basin combinations into crop-country combinations based on respective crop production percentages per river basin. This was to make the prioritisation of geographies more user-friendly for investors; however, both sets of data have been developed and presented in the final assessment. WWF's final phase in this process involved designing a structure which allowed sorting and filtering the crop-country combinations by crop production volumes, export volumes, and export value. Applying such underlying economic data to the crop-country combinations enabled the narrowing down of the large list of combinations to the most significant global crops in terms of both economic importance and water risk.

The outcome of this process was an indicative list of 25 key crop-country combinations which are both highly exposed to water risks and of high economic importance; these included wheat in Bangladesh as well as grapes in Australia. This list was provided to PwC for alignment with their ESCHER tool, along with the universe of 78 target companies compiled by the steering committee, for their research into the water risk exposure of individual companies.

## PWC – IDENTIFYING COMPANIES EXPOSED TO WATER RISKS

The PRI commissioned PwC Germany to both identify the most appropriate companies for inclusion in the collaborative engagement, and to provide information which will enable the group to hold meaningful dialogue with investee companies on their exposure to water risks in their agricultural supply chains. In particular, PwC was tasked with identifying the most exposed companies according to WWF's crop-country combinations list. Additionally, PwC shared data on the water management practices of

## WWF-DEG WATER RISK FILTER

The [WWF-DEG Water Risk Filter](#): In 2010, WWF partnered with German Investment and Development Corporation (DEG) to create the WWF-DEG Water Risk Filter, which is a water risk assessment tool that maps where water risk is occurring globally, providing insights on water risk both at the basin level as well as company facility level. The Water Risk Filter incorporates the best available scientific data into a highly structured set of risk indicators, which cover all elements of water related risks that can financially impact the water user. Examining approximately 30 water risk indicators based on the location of the assessed facility and around 60 risk indicators based on user input to a questionnaire focusing on the facility's water management, the tool covers the broadest known set of water risk indicators around water quantity (scarcity) as well as water quality (pollution), and further, regulatory and reputational issues surrounding crop production. The Water Risk Filter also includes the largest online available library of management responses to mitigate water risk in a basin and develop a corporate water stewardship strategy. Finally, the tool can map the user's facilities on global, basin level, and down to 10x10km grid level water risk map overlays, providing insights across a spectrum of granularity and comprehensiveness. The Water Risk Filter is supplemented by WWF's recently-developed Agricultural Water Risk Assessment tool, which further enables the comparison of water risks associated with crop production, among the same commodity in different basins, as well as among different commodities in the same basin.

the researched companies, in collaboration with oekom research.

## THE PWC ESCHER APPLIED SUPPLY CHAIN MODEL

For the research, PwC applied its 'ESCHER approach' which estimates water consumption in water stressed regions across the world. The Efficient Supply Chain Economic & Environmental Reporting (ESCHER) model provides a multi-criteria analysis of portfolios covering the complete upstream value chain. ESCHER can be described as an Environmentally Extended Input-Output Model; a state-of-the-art model to assess and estimate direct as well as indirect effects of separate sectors and regions. It is a statistical approach which was developed to shine light into global supply chains and procurement.

ESCHER applies Leontief's Input-Output Theory to assess the worldwide interaction of 57 sectors in 129 regions. The model shows intra and inter-regional linkages between markets and market participants, as well as the resulting feedback effects.

To quantify the supply chain effects of separate sectors and regions across the world, ESCHER is based on an assumption that global foreign trade activities, as registered through the Global Trade Analysis Project (GTAP), estimate individual companies' procurement activities. GTAP includes trade activities at a global and regional / country level, bilateral trade patterns, as well as production, consumption and intermediate use of commodities and services, all of which form the basis for water consumption estimates. These estimates are calculated by the system which are then normalised as water consumption per monetary unit.

To reflect the regional characteristics of water, the input-output approach was extended using data from WaterGAP3 – a global water resource model developed by the University of Kassel.<sup>24</sup> WaterGAP3 simulates hydrologic processes for finite areas of land across the globe (global geographic rasters of 5 arc minutes, i.e. approximately 6 x 9 km in Europe). The water scarcity data from WaterGAP3 is used in ESCHER to model consumption-to-availability ratios for different crops in individual regions around the world. The consumption-to-availability ratio is then used as an indicator of areas under water stress (0 – 0.05 no or low water stress; 0.05 – 0.2 medium water stress; 0.2 – 0.3 high water stress; > 0.3 severe water stress). Such data can then be aggregated for each country to calculate the percentage of that country experiencing water stress for a given crop; which in turn is matched to the consumption of water for individual supply chains being modelled. Note that this step in the ESCHER approach effectively replicates work done by WWF using their Water Risk Filter earlier in the research process. This is because the PwC ESCHER model was already based on WaterGAP3 data and could not be readily modified to factor in WWF's research.

By combining the above data inputs, ESCHER allows calculation of the overall water consumption in water stressed areas, for a given crop for each company. Where these crops were already modelled in ESCHER, PwC was able to model both aggregate water consumption for each crop, and model consumption in water stressed regions for the crop-country combinations previously identified by WWF. Of the 25 crop-country combinations identified by WWF, the ESCHER model covered nine, which were primarily globally traded grain crops such as wheat and sugar.

## LIMITATIONS OF ESCHER AND SUPPLY CHAIN MODELLING

The more detailed information on supplier structures, the higher the granularity of ESCHER outputs. Research

completed for the PRI was based on publically available information on supplier structures. This means that supplier patterns for each company are based on average sourcing structures for the relevant sector, complemented by additional information on company structures and sales information, to calculate water demand globally. With non-public information, such as detailed supplier information from companies' procurement systems, ESCHER produces more detailed and accurate outputs.

It is important to note that modelling through an input-output system such as ESCHER, with limited transparency into the specifics of individual company supply chains, does not provide robust data on actual individual company water risks. Without knowing (confidential) detail on supply chains, it is only possible to estimate, which can be done using relevant but never fully correlated alternative data, such as trade flows and hydrological modelling systems. The output from ESCHER therefore provides investors with a first estimate of risk exposures for the modelled companies, but not empirical data on water consumption and water risk. Instead, the output can be used for prioritisation of engagement and as a tool for improving understanding of supply chain risks for both companies and investors.

## DATA ON MANAGEMENT CONTROL

For the research, PwC also provided data on management control of individual companies from oekom research. This data is based on publicly available company documentation and external sources such as NGOs, government bodies, trade unions and the media.

Oekom data rating risk management was available for 48 companies in the food, beverage and agricultural products sectors and for 10 apparel companies. No data on retailers was available.

Each company with data available was given an overall rating of between 1 and 4 to summarise their performance on water management. Scores of 1 are equivalent to a D- (poor performance), while scores of 4 indicate an A+ (excellent performance). Specific oekom data used for this research included 'policy on sustainable water use in the company and its supply chain' and 'measures to ensure sustainable water use in the company and its supply chain' as indicators of overall company water risk management, including in the supply chain.

In addition to oekom research data, PwC and the investor steering committee also consulted company disclosures to CDP Water.<sup>25</sup> This information, like the oekom research,

<sup>24</sup> Alcamo, J, et al. 2003, 'Development and testing of the WaterGAP 2 Global Model of Water Use and Availability', *Hydrological Science*, vol 48, no. 3, pp. 317-337; Döll, P, Kaspar, F & Lehner, B 2003, 'A Global Hydrological Model for Deriving Water Availability Indicators: Model Tuning and Validation', *Journal of Hydrology*, vol 270, no. 1-2, pp. 105-134. See also CESR 2014, *Global modelling of water availability, water use and water quality*, viewed 21 July 2014, <<http://www.uni-kassel.de/einrichtungen/en/cesr/research/projekte/aktuell/watergap.html>>.

<sup>25</sup> Formerly Carbon Disclosure Project.

was not exhaustive, covering only 19 of the 78 companies in the universe in the 2013 CDP dataset (the most recent at time of writing). There was some limited detail on company sourcing structures available in the CDP reporting but again, this did not include all companies in the target universe.

## KEY FINDINGS OF THE RESEARCH

### COMPANY EXPOSURE: WATER CONSUMPTION IN WATER SCARCE REGIONS

PwC estimated water consumption in water stressed regions around the world for all of the 78 companies that were on the initial focus list. Outputs provided included the following for each company:

- Overall consumption of water in highly and severely water stressed<sup>26</sup> regions for all crops covered by ESCHER
- Water consumption in severely water stressed crop-country combinations:
  - Paddy rice in Bangladesh
  - Paddy rice in India
  - Plant-based fibres (cotton) in India
  - Plant-based fibres (cotton) in Uzbekistan, Tajikistan and Turkmenistan
  - Sugar cane and sugar beet in Bangladesh
  - Sugar cane and sugar beet in India
  - Wheat in China
  - Wheat in India
  - Wheat in Uzbekistan, Tajikistan and Turkmenistan

In both cases, data was available in both absolute terms as well as relative to company revenue (normalised).

The data on water consumption provided by PwC ESCHER allowed the steering committee to rank the universe of companies based on their overall water consumption in highly and severely water stressed regions around the world.

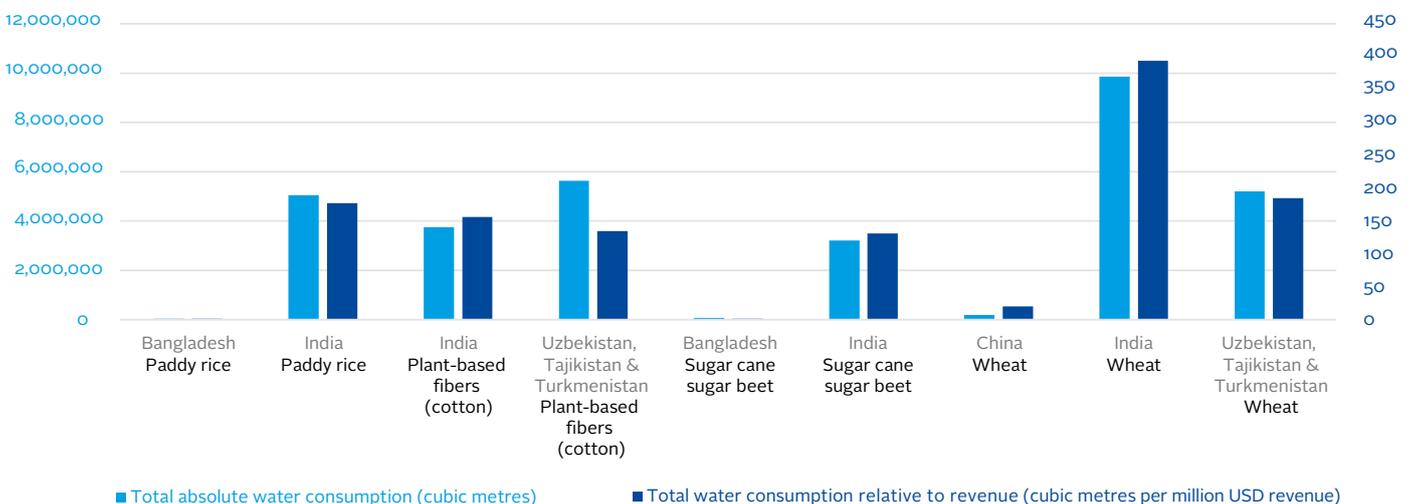
Specific data on individual companies is not provided in this report, rather is only available to PRI signatories who are participating in the coordinated engagement. Despite this, a number of general conclusions on company exposure to water risk within agricultural supply chains can be made from the ESCHER data:

- **Strong association to revenue:** Unsurprisingly, there was a strong correlation between individual company revenue and estimated water consumption in water scarce regions; that is, the higher the revenue, the higher the consumption.
- **Significant exposure to some crop-country combinations;** limited exposure to others:
  - There was very low company exposure to water stressed Bangladeshi sugar and paddy rice, and relatively low exposure to water stressed Chinese wheat.
  - Conversely, the universe was found to be highly exposed to water stressed Indian wheat.

Figure 5 below shows the total water consumption in severely water stressed regions for the whole 78 company universe, both in absolute terms (left axis) and relative to revenue in US dollars (right axis).

**Figure 5.** Total Water Consumption in Identified Crop-Country Combinations.

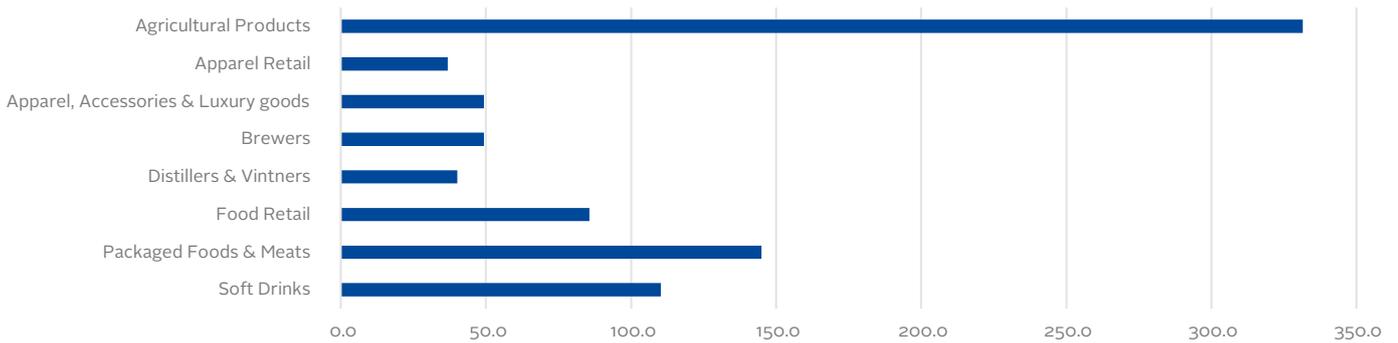
Source: PwC research for PRI; aus der Beek, T. (2012) Dissertation, University of Heidelberg.



<sup>26</sup> Definitions for highly and severely water stressed available in the preceding section.

- Large difference between the average and median water consumption:** Even when normalised to revenue, there was a significant difference between companies in terms of water consumption. Many showed very large or very small consumption figures. The average estimated total water consumption in highly or severely water stressed regions is 127.5m<sup>3</sup> per 1000 USD revenue, whereas the median is 81.1m<sup>3</sup> per 1000 USD revenue.
- Agricultural products, food retail, packaged foods & meats and soft drinks companies the biggest consumers:** The average agricultural products company was found to have the highest water consumption in highly and severely water stressed regions by a significant margin, both in absolute and relative terms. Companies in food retail, packaged foods & meats and soft drinks were also found to be relatively high consumers.
- Apparel, luxury goods, brewers and distillers & vintners had lowest average consumption in water scarce regions:** All had relatively low total consumption, but still around 50m<sup>3</sup> water use per 1000 USD in revenue.

**Figure 6.** Median water consumption in highly and severely water stressed regions (m<sup>3</sup> per US\$ 1000 revenue). Source: PwC research for PRI.

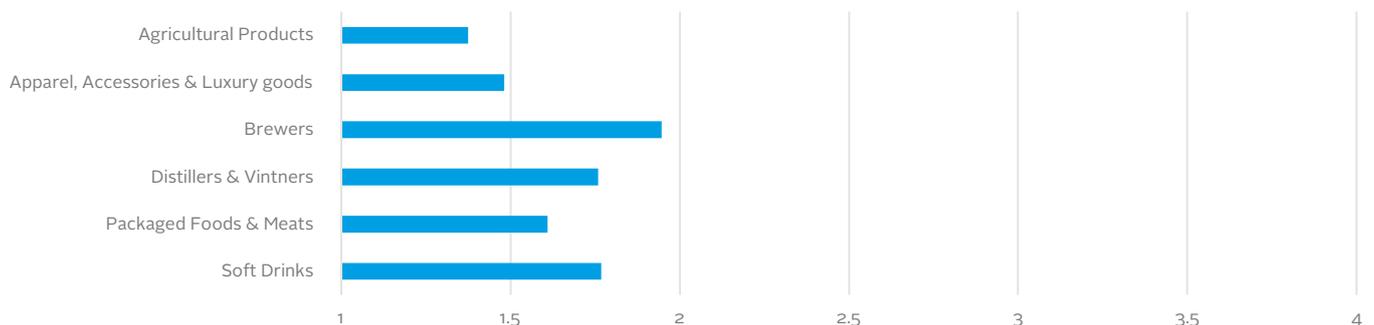


**RISK MANAGEMENT**

Oekom research data on company risk management for both direct and supply chain operations showed that while there were some obvious strong performers, namely well known, consumer facing brands, the general performance across the universe of companies was poor. The average score for food, beverage and agricultural products

companies was 1.68 out of 4 (approximately D+) and 1.43 out of 4 (approximately D) for apparel. Some sectors performed slightly better than others, with agricultural products and apparel scoring poorly and brewers scoring the highest. As mentioned above, data on retailers was not available.

**Figure 7.** Average water use rating from oekom research. Source: PwC/oekom research for PRI.



# 4. COLLABORATIVE ENGAGEMENT

## BRIDGING RESEARCH TO ENGAGEMENT

Drawing upon the collaborations with WWF and PwC and knowledge within the group, the steering committee narrowed the initial universe of 78 target companies down to 54, which will form the initial targets for engagement. These 54 companies were selected based on the model data from PwC, reflecting water risk exposure measured in consumption of water in water stressed areas.

The composition of the final target list for engagement is:

- 50 companies with the highest absolute water consumption in highly and severely water stressed regions across all crops available in the PwC ESCHER model
- 4 additional companies with more than 10m<sup>3</sup> in water consumption per 1000 USD revenue for one individual crop-country combination

The 54 companies are constituted of:

- 39 food and beverage companies
- 8 apparel companies
- 4 retailers
- 3 agricultural products companies

Thirty two of the target companies are located in the Americas, 17 in Europe and 5 in Asia-Pacific.<sup>27</sup>

## ENGAGEMENT QUESTIONS TO INVESTEE COMPANIES

Drawing on both the expertise and recommendations provided by PwC and WWF, and on supply chain related questions from the CDP Water questionnaire to companies, the steering committee has developed a general framework to engage with investee companies.<sup>28</sup> The committee recognises that dialogue is most beneficial for investors and companies where it is appropriately customised to the target sector or, ideally, the company. Despite this, a suite of general questions to companies are seen as a relevant starting point for dialogue, which can later be tailored depending on the company's sector, place in the value chain, agricultural input sourcing methods (i.e. direct, trader or exchange) and/or operational location.

### AWARENESS & RELEVANCE

Does the company know whether it is exposed to water risk through its key agricultural commodity supply chains?

1. Where is the company placed in the value chain? Is it end-customer facing?
2. Does the company know the geographic origin of its key commodity supplies?
3. Does the company source its key commodities from contract farmers, directly from traders, or from open commodity exchanges?
4. Does the company know where its commodity production is at risk of water scarcity and pollution?<sup>29</sup> Does the company know what sectors/activities are prone to water constraints?<sup>30</sup> Does the company know what commodity/region combinations are most critical in terms of water risk?<sup>31</sup>
5. How would the company rate the current and future importance of water risk for the continuity and pricing of its key commodity supplies, and the company's growth strategy?

### WATER RISK ASSESSMENT

Does the company measure or assess water risks in its key commodity supply chains?

1. At what level and at what geographic scale does the company undertake water risk assessments? Across its entire supplier base or at specific locations only? What methods does it use?
  - Ceres Aqua Gauge
  - FAO/AQUASTAT
  - GEMI Local Water Tool
  - Internal company knowledge
  - Life Cycle Assessment
  - Maplecroft Global Water Security Risk Index
  - PwC ESCHER tool
  - Regional government databases
  - UNEP Vital Water Graphics
  - WBCSD Global Water Tool
  - WRI water scarcity definition
  - WRI Aqueduct
  - WWF-DEG Water Risk Filter
  - Other

<sup>27</sup> A full list of target companies is available to PRI signatories.

<sup>28</sup> CDP 2014, Water program, viewed 21 July 2014, <<https://www.cdp.net/water>>.

<sup>29</sup> For example, by consulting WWF or WRI mapping tools

<sup>30</sup> For example, as outlined in PwC research results

<sup>31</sup> For example, as outlined in the WWF crop and basin data

2. What contextual issues does the company factor in its supply chain water risk assessments? Scarcity? Conflicts? Which stakeholders does it engage in this process?

### IMPACT

What is the material value of water risk in key commodity supply chains?

1. What percentage of key commodity spend is exposed to substantive water risk? What has been the physical, regulatory or reputational driver of that substantive water risk?
2. Has the company actually experienced any detrimental impacts due to water use in its supply chain? For example: brand damage, supply chain disruption, higher costs.
3. For water risk leaders: what opportunities present water risk-proof key commodity supply chains?

### RESPONSE

What has been the company's response to emerging water risks and their impact on key commodity supplies?

1. What proportion of key suppliers and key commodity spend does the company require to report on their water use, risks and management? Conversely, why do you not require key suppliers to report this information?
2. Does the company have a water policy that extends to suppliers of key commodities? Does it set and enforce supplier standards and codes for sustainable water use? Who at what level in the company is responsible for the water policy and its implementation?
3. Does the company support its suppliers in reducing their water use and/or support collective efforts at improving local water stewardship? Does the company engage with other stakeholders, including water management authorities, commodity traders and exchanges, to raise and address water risk in commodity production?
4. Does the company measure if supplier responses are effective and support water stewardship strategies?

### DISCLOSURE

Does the company publicly disclose its water risk and management response?

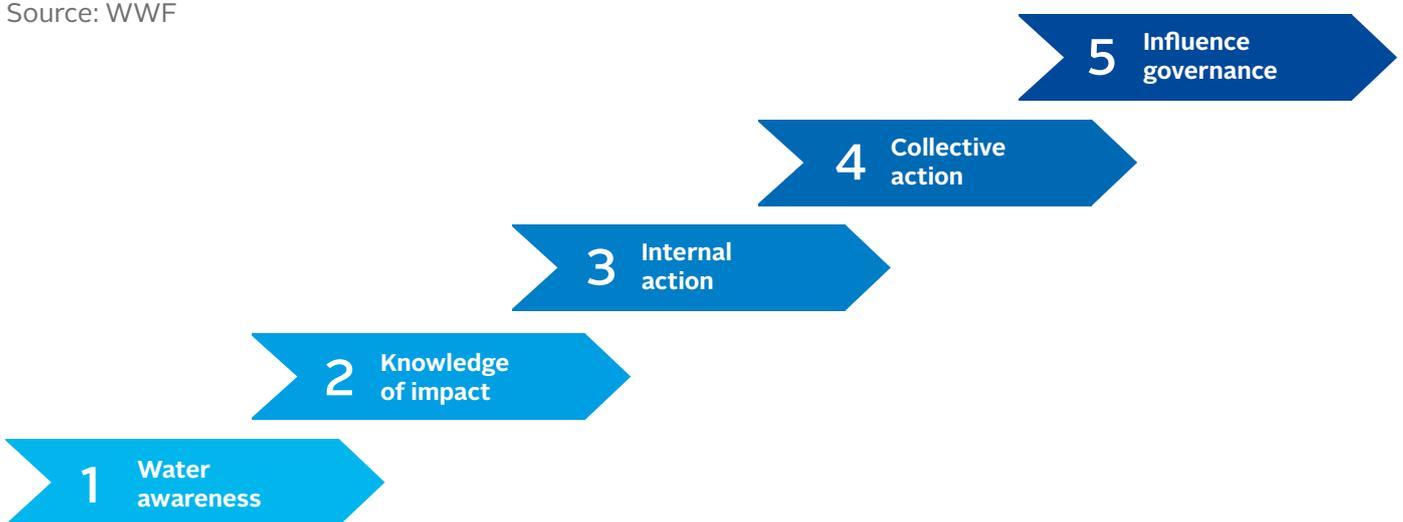
1. Does the company disclose its water risk and management response to CDP Water? Does the company include water risks in its key commodity supply chains in its report?
2. Would the company support a scoring and ranking of its water risk exposure and management vis-à-vis its peers?

# 5. BEST PRACTICE COMPANY RISK MANAGEMENT

The water stewardship framework developed by WWF effectively highlights various examples of best practice water risk management by companies.<sup>32</sup> This framework consists of five steps designed to help companies better understand the water-related actions they can take, noting that the actions are not exhaustive nor necessarily contained within each step. Instead, the steps act as a fluid and iterative guide to business, which can be applied as appropriate to different businesses and areas of water risk.

Water Stewardship for business is defined by WWF as: a progression of increased improvement of water use and a reduction in the water-related impacts of internal and value chain operations. More importantly, it is a commitment to the sustainable management of shared water resources in the public interest through collective action with other businesses, governments, NGOs and communities.<sup>33</sup>

**Figure 8.** WWF Water Stewardship Steps.  
Source: WWF



STEP	IN PRACTICE
<p><b>1. WATER AWARENESS</b></p> <p>This refers to the general awareness and understanding of water issues within companies. It considers knowledge of the relevant water management context, debates and science and also refers to understanding the views of external stakeholders.</p>	<p>At present, the surge of interest in water has fuelled a much greater level of awareness for all sectors. While some are slower than others, agriculturally reliant businesses are leading in this field.</p>
<p><b>2. KNOWLEDGE OF IMPACT</b></p> <p>Understanding a company's footprint is vital to developing better water risk management. Footprinting and risk analysis tools have helped companies to make estimates in the areas of impact, dependence and risk to build coherent strategies.</p>	<p>WWF has partnered with a major multinational beverage company on water footprinting, focusing on the context of agricultural production and allowing the company to better understand their area of concern. Deeper analysis uncovered regulatory, social and environmental issues located in key growing areas which were hidden in the company's supply chains.</p> <p>Additionally, WWF's Water Risk Filter has helped many companies gain a more detailed and robust estimation of their basin and company risk, and similarly, PwC's ESCHER approach has allowed companies, including one major food product manufacturer, to map out their supply chains for water consumption in water stressed regions. This led to a greater understanding of where in the supply chain water consumption by the company was potentially at risk.</p>

<sup>32</sup> WWF 2013, Water Stewardship: Perspectives on business risks and responses to water challenges, viewed 21 July 2014, <[http://awsassets.panda.org/downloads/ws\\_briefing\\_booklet\\_lr\\_spreads.pdf](http://awsassets.panda.org/downloads/ws_briefing_booklet_lr_spreads.pdf)>.

<sup>33</sup> WWF 2013, Water Stewardship: Perspectives on business risks and responses to water challenges, viewed 21 July 2014, <[http://awsassets.panda.org/downloads/ws\\_briefing\\_booklet\\_lr\\_spreads.pdf](http://awsassets.panda.org/downloads/ws_briefing_booklet_lr_spreads.pdf)>.

STEP	IN PRACTICE
<p><b>3. INTERNAL ACTION</b></p> <p>Internal action refers to engagement with employees, buyers and suppliers with the aim of establishing the potential opportunities as well as risks for the company. Internal efficiency targets are the starting point for many companies, and several have set ambitious targets in their factories and within their supply chains. For agricultural products however, efficiency is not always the answer. Risk comes as much from regulatory and planning issues as from scarcity of water. Water stewardship means moving commitments to the outside world, linking crop production beyond the field level.</p>	<p>One major beverage company talks of ‘reducing water risks and improving water management in risk areas’. A European clothing chain seeks to ‘work together with suppliers on collective stakeholder engagement and water management forums in prioritised river basins’, while a North American food manufacturer speaks of ‘implementing changes in high-risk watershed areas’ and ‘developing public commitments, public education and advocacy with watershed neighbours’. Such shifts in commitment pave the way for the ‘mainstreaming’ of water debates.</p>
<p><b>4. COLLECTIVE ACTION</b></p> <p>This step refers to external engagement and working with other organisations at various scales as part of an overall water strategy. While a clear business case can be made for focusing on operational efficiency, businesses must also recognise that internal efforts alone will not fully mediate water risks. Surface water sources and aquifers are connected systems, meaning the availability and use of water in one place will have effects elsewhere. This reality forms the basis for the concept of shared water risks, which can only be effectively addressed by collective action.</p>	<p>Many organisations and companies are coming together through the recently formed Alliance for Water Stewardship (AWS), an organisation aimed at enhancing water stewardship capacity and encouraging responsible water use at the point of use. One early example of collective action through the alliance is a partnership between WWF, the Council for Scientific and Industrial Research (CSIR) and two major retailers, one from the UK and one from South Africa. Using the WWF Water Risk Filter the group identified a key risk area for stone-fruit production in Western Cape, South Africa, and are now working to encourage application of the AWS Standard amongst growers in the catchment area.<sup>34</sup></p>
<p><b>5. INFLUENCE GOVERNANCE</b></p> <p>Ultimately, the impact that water scarcity and pollution issues have on society and business come down to management and governance of resources. For business, this means supporting and influencing governance which helps reduce long-term water risks. Nevertheless, such actions need to be approached carefully and responsibly to avoid creating additional issues including reputational damage. Companies are expected to be transparent and wield their influence judiciously.</p>	<p>The CEO Water Mandate’s Guide to Responsible Business Engagement with Water Policy<sup>35</sup> is one document available to guide companies’ actions in this area. It sets out five principles that should guide any move beyond the fence-line:</p> <ul style="list-style-type: none"> <li>■ Principle 1: Advance sustainable water management</li> <li>■ Principle 2: Respect public and private roles</li> <li>■ Principle 3: Strive for inclusiveness and partnerships</li> <li>■ Principle 4: Be pragmatic and consider integrated engagement</li> <li>■ Principle 5: Be accountable and transparent</li> </ul>

The WWF approach is one approach to effective water stewardship that companies can take. While not exhaustive nor the only option available, the five steps are recognised by the investors involved in the project as comprehensive

in scope and in line with leading thinking on company water risk management. It is expected that implementation of this or similar frameworks will form part of the dialogue between investors and target companies.

<sup>34</sup> AWS 2014, Alliance for Water Stewardship: Africa, viewed 21 July 2014, <<http://www.allianceforwaterstewardship.org/aws-worldwide.html#africa>>.  
<sup>35</sup> CEO Water Mandate 2014, Climate Change, viewed 21 July 2014, <<http://ceowatermandate.org/business-case/global-water-trends/climate-change/>>.

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## 6. NEXT STEPS

The PRI collaborative engagement on water risks in agricultural supply chains is currently open to PRI signatories. Investors are invited to join the project and participate in engagement dialogue with targeted companies.

Given the complexity of the issues being addressed, and the significant differences between companies, crops and locations, the first round of engagement will be exploratory. It will aim to instigate investor-company dialogue on the research insights from WWF and PwC, as well as to gain a greater understanding of company risk awareness and visibility using the discussion questions presented in this document. After initial dialogue and greater understanding company risk management, investors will analyse the issues in more depth and seek better management of risks where material.

More generally, investors will promote improved disclosure of supply chain related water risks by target companies, such as through the CDP Water framework, and will encourage greater collaboration with peers and other stakeholders to address shared risks.

Investors interested in taking part in the engagement and others with questions or queries should contact [Paul Chandler](#), Manager of Investor Engagements for Environmental Issues at the PRI.

# APPENDIX: RESEARCH UNIVERSE

Adidas AG  
 Arca Continental, S. A. B. de C. V.  
 Archer-Daniels-Midland Company  
 ARYZTA AG  
 Associated British Foods plc  
 BRF S.A.  
 Bunge Limited  
 Campbell Soup Company  
 Chocoladefabriken Lindt & Spruengli AG  
 Christian Dior SA  
 Coca-Cola Enterprises, Inc.  
 Companhia de Bebidas das Americas – AmBev  
 ConAgra Foods, Inc.  
 Danone SA  
 Diageo plc  
 Dr Pepper Snapple Group, Inc.  
 Fomento Económico Mexicano, S.A.B de C.V  
 General Mills, Inc.  
 George Weston Limited  
 Grupo Bimbo, S.A.B. de C.V.  
 Grupo Modelo, S.A.B. de C.V.  
 H & M Hennes & Mauritz AB  
 H. J. Heinz Company  
 Heineken NV  
 Hormel Foods Corporation  
 Kellogg Company  
 KERING S.A.  
 Kerry Group plc  
 Kirin Holdings Company, Limited  
 Kraft Foods Group, Inc.  
 Li & Fung Limited  
 LVMH Moët Hennessy Louis Vuitton S.A.  
 McCormick & Company, Incorporated  
 Mead Johnson Nutrition Company  
 Mondelez International, Inc.  
 Nestlé S.A.  
 Orkla ASA  
 Pepsico, Inc.  
 SABMiller plc  
 Saputo, Inc.  
 Sysco Corporation  
 The J. M. Smucker Company  
 The Kroger Co.  
 Tingyi (Cayman Islands) Holding Corp.  
 Tyson Foods, Inc.  
 Under Armour Inc  
 Unilever plc  
 Uni-President Enterprises Corporation  
 V.F. Corporation  
 Wal-Mart Stores Inc.  
 Want Want China Holdings Ltd.  
 Wilmar International Limited  
 Wm. Morrison Supermarkets plc  
 Woolworths Limited

The PRI is an investor initiative in partnership with  
**UNEP Finance Initiative** and the **UN Global Compact**.

#### United Nations Environment Programme Finance Initiative (UNEP FI)

UNEP FI is a unique partnership between the United Nations Environment Programme (UNEP) and the global financial sector. UNEP FI works closely with over 200 financial institutions that are signatories to the UNEP FI Statement on Sustainable Development, and a range of partner organisations, to develop and promote linkages between sustainability and financial performance. Through peer-to-peer networks, research and training, UNEP FI carries out its mission to identify, promote, and realise the adoption of best environmental and sustainability practice at all levels of financial institution operations.

More information: [www.unepfi.org](http://www.unepfi.org)



#### UN Global Compact

Launched in 2000, the United Nations Global Compact is both a policy platform and practical framework for companies that are committed to sustainability and responsible business practices. As a multi-stakeholder leadership initiative, it seeks to align business operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption, and to catalyse actions in support of broader UN goals. With 7,000 corporate signatories in 135 countries, it is the world's largest voluntary corporate sustainability initiative.

More information: [www.unglobalcompact.org](http://www.unglobalcompact.org)

