Rising water risks – businesses facing a new reality

CDP South Africa Water Report 2013

Written on behalf of 530 investors with US$57 trillion in assets

Lead Partner
National Business Initiative

Report written by Irbaris and Incite

The evolution of CDP

With great pleasure, CDP announced an exciting change this year.

Over ten years ago CDP pioneered the only global disclosure system for companies to report their environmental impacts and strategies to investors. In that time, and with your support, CDP has accelerated climate change and natural resource issues to the boardroom and has moved beyond the corporate world to engage with cities and governments.

The CDP platform has evolved significantly, supporting multinational purchasers to build more sustainable supply chains. It enables cities around the world to exchange information, take best practice action and build climate resilience. We assess the climate performance of companies and drive improvements through shareholder engagement.

Our offering to the global marketplace has expanded to cover a wider spectrum of the earth's natural capital, specifically water and forests, alongside carbon, energy and climate.

For these reasons, we have outgrown our former name of the Carbon Disclosure Project and rebranded to CDP. Many of you already know and refer to us in this way. Our rebrand denotes our progress as we continue to catalyse action and respond to business, finance, investment and environmental needs globally. We now have a bolder, more dynamic look and logo that reflects the scale of the work we must undertake in the coming years to move the markets ahead of where they would otherwise be on these issues and realise truly sustainable economies.

- Over 1 000 companies from all over the world have been asked to report vital water-related information to CDP this year;
- More than 593 of the world's largest companies engage with CDP to enable effective measurement and management of water-related issues, including reduction of risks and detrimental impacts;
- This is a 59% increase in the number of companies using CDP to communicate their water management efforts to investors since last year, making the primary corporate water information now available at www.cdp.net the largest and most comprehensive set in the world.

CDP is a not-for-profit organisation. If you would like to support our vital work to safeguard water resources through donations or sponsorship opportunities, please email the Head of Water, cate.lamb@cdp.net.

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CDP Foreword

> As countries around the world seek economic growth, strong employment and safe environments, corporations have a unique responsibility to deliver that growth in a way that uses natural resources wisely. The opportunity is enormous and it is the only growth worth having.

The economic effects of mismanaging water resources are becoming increasingly apparent. The newly released Intergovernmental Panel on Climate Change (IPCC) report forecasts longer periods of drought and heavier extreme rainfall. The United Nations has reported that several countries are close to their water limits but that food output must increase by up to 100% by 2050 if current population growth is to be sustained.

These factors will limit economic development and greatly exacerbate rural poverty, particularly in emerging and developing economies. Already countries such as China and India are realising they have to solve water problems if they are to sustain growth or improve quality of life. The Indian Planning Commission last year established that the country's existing approach to water jeopardises its economic growth and political stability. In China, home to 20% of the global population but only 7% of its fresh water, former premier Wen Jibao said water shortages threaten "the very survival of the Chinese nation".

In Peru, violent protest from communities fearing for their own water supply has led to the suspension of a US$4.8 billion gold and copper mining project. This was Peru's largest such investment and clearly demonstrates companies face a licence to operate risk if they are unable to effectively manage complex demands on water resources.

It is therefore no surprise that investors are filing record numbers of environmental and social policy resolutions, particularly in the United States[1]. Investors and companies that understand the complexities of water and devise and implement a strategy that drives water stewardship will be the long term winners in an increasingly water stressed world. A report released earlier this year by CDP and Eurizon Capital analysing the metals & mining sector, revealed that companies acting to manage water strategically, perform better financially.

Companies that are responding to water challenges and are using CDP's unique system are able to identify profitable business opportunities as a result. General Motors, for example, forecast that recognised brand value in areas of water stress where it has demonstrated leadership in water efficiency and conservation, could have a direct impact on revenue. A 10% rise of vehicle sales in Mexico would yield an additional US$301 million in revenue. General Electric has established that reducing projected water use at a Texan site by 52% would save an estimated US$230,000 per year.

While some companies are realising water-related gains, a significant disparity between investor expectations and company actions exists. The number of investors requesting corporate water data through CDP has quadrupled in just three years, yet the number of Global 500 companies taking action and disclosing this has not matched this pace. A shift in practice is required if companies are to realise the true benefits of water stewardship, achieve business resilience and competitive advantage. Using the insights from standardised company disclosures, investors can enhance risk management of this critical issue.

Paul Simpson
CEO
CDP

1 Sustainable Investments Institute (Si2), 20th August 2013

NBI Foreword

> As a society we need to improve our management of water and we believe business can and should take the lead.

Many of the recent service delivery protests appear to have water related grievances at their core. Increasingly, the supply of water in South Africa cannot be taken for granted. The provision of water of an appropriate quality, at an affordable price and in a way that respects the ecological integrity of catchments is a major challenge for Government and all users. Solutions are also complex with the nuts and bolts of water infrastructure provision being only one part of the solution; sound catchment level stakeholder relations, robust institutions and good governance are equally important elements of the solution. Finally we know that substantial investment in infrastructure will be needed in the near future and this may result in water price increases over the next five years.

All of these observations are reflected in the examples provided in this year's CDP Water report. Corporate water users are grappling with water challenges and are finding innovative although sometimes costly ways of intervening. The corporate water challenge is exasperated by potential labour disruptions related to the knock on effect of communities protesting over water access and service delivery. Furthermore, in certain rural locations, some companies experience serious challenges through the irregular and unpredictable supply of electricity. While the interruption of electricity supply has its own impacts it can also disrupt or increase the cost of water treatment and pumping. Water in South Africa is clearly a complicated issue and one that has a web of connections to other social, economic and environmental issues.

It is clear that water is a significant issue for South African businesses. Once again companies in this year's CDP Water report identify risk to be a more immediate and more severe risk to business than they do for climate change. The majority of risks identified have timelines of within 5 years. Once again examples are identified where water has had a financial impact on their business over the last year. Once again they are investing significant amounts of money in water use and management.

The CDP Water report is a good place to start when considering the depth and breadth of the South African water response. The NBI is proud of the responses described in this report. In addition to the sobering analysis of the response data the report also provides excellent examples of South African companies demonstrating global leadership in the management of water. We are particularly pleased with the significant increase in companies with board oversight of water risks as we firmly believe that water is a strategic issue worthy of board attention.

Of concern to us however is the lack of change. The results of this year (2013) closely correlate with the results from the year before. While the leaders are making incremental progress we question whether this is enough to adequately address the risk. More disturbing is the potential lack of progress being made by other companies. While an improved response rate to 56% indicates progress it means that nearly half of a sample of companies specifically selected because of their relationship with water are not responding. Finally, the CDP is an investor driven initiative but in South Africa we are not certain the bulk of investors are giving water the attention it needs.

Of most concern however is the insufficient attention given to the collaborative work needed to address water issues and the conclusion that companies are not working enough with entities outside their operating boundaries, including suppliers, government and communities. We challenge South African business to review this report and take a long, hard look at their water risk. As a society we need to improve our management of water and we believe business can and should take the lead.

Joanne Yawitch
CEO
National Business Initiative

Executive Summary

This is the fourth successive year in which the CDP's water information request has been sent to the chairpersons of South Africa's top listed companies by market cap, asking them to disclose their company's response to water-related risks and opportunities throughout their value chain. This year, the questionnaire was sent on behalf of 530 global institutional investors, representing US$57 trillion in assets, to 59 companies on the JSE 100 that have the greatest potential to impact upon, or be impacted by, water resources.

South African business continues to participate in CDP's water program, reflecting a growing appreciation of the strategic importance of water. South Africa is one of the driest countries in the world, with low rainfall and limited underground aquifers contributing to the need for significant water transfers from neighbouring countries. Much of the country's economic activity occurs in areas with reduced water availability, there are concerns regarding declining water quality and increasing infrastructure challenges, and there is a continuing legacy of unequal access to water in the country. Individually, each of these issues is enough to drive private sector action to ensure sustainable use of water; together, they make such action imperative.

South African companies are already experiencing substantive water-related risks, with water scarcity identified as the most significant risk.

Key Findings

The response rate to CDP's water program is increasing, but remains low compared to that of CDP's climate change program.

This year, 33 companies (out of 59) disclosed responses to CDP's water program, compared with 30 (of 61) in 2012. This gives a response rate of 56%, up from 49% in 2012. This response rate is slightly lower than the 60% response rate for Global 500 respondents, but is higher than the most recent response rates in Australia and the US, which were both little more than 40%. 26 companies responded publicly, the same as last year. Once again, there is considerable variation in the response rate between the sectors, with the Materials & Energy sector having the highest response rate. While there has been a consistent increase in the South African response rate each year, the response rate is markedly lower than the 83% South African response rate to CDP's climate change program.

South African companies are already experiencing substantive water-related risks, with water scarcity identified as the most significant risk.

86% of respondents report exposure to substantive water-related risks, noticeably more than the 66% of respondents in the Global 500. Significantly, 72% of respondents report having already experienced water-related impacts in the last five years, as compared with 53% of respondents in the Global 500. Water stress or scarcity continues to be the most reported anticipated risk, followed by declining water quality, flooding and higher water prices. Almost half of respondents (48%) reported that almost all (over 90%) of their operations are situated in water-stressed areas. Two-thirds of all the anticipated risks are seen to have the potential to impact the business's direct operations or their supply chains within the next five years.

Despite high risk exposure, South African responses are not showing comparatively better disclosure on management and response measures than the Global 500.

Although the South African respondents perform very similarly to their global peers in certain disclosure areas – such as reporting water withdrawals and recycling, reporting water bodies affected by withdrawals or discharges, and paying penalties – they report inadequately on several key indicators, including most notably on identifying risks to the supply chain, requiring suppliers to report on water issues, and having a water policy in place. Even though they report greater exposure to risks, there are only a few areas where South African companies disclose better than the Global 500 average: having Board oversight of water strategy, identifying linkages between carbon and water, and recognising water-related opportunities.

South Africa has shown little improvement in reported performance across most key measures since 2012.

In contrast to the Global 500, South African responses show very little improvement in their disclosures since 2012, with performance levelling off across most measures. This is concerning, particularly given the marked improvement that was reported between 2011 and 2012. A particular area of concern relates to the poor understanding of risks in the supply chain, with 28% of respondents unable to identify whether their supply chain is at risk, as compared with 21% in 2012. Only 20% of respondents require key suppliers to report on water risks, barely half the 37% in the Global 500.

Most companies treat water as a Board-level issue, and companies are setting more targets to manage water.

All but five companies (83%) report having a water policy or strategy in place (compared with 75% in 2012), and 72% of respondents report Board oversight of water (compared with 58% in the Global 500). This year a total of 66 different targets were reported (44% quantitative and 56% qualitative), 80% of which relate to managing impacts at companies' direct operations, 6% relate to transparency, and 4% each to supply chain and community engagement issues. 62% of companies have quantitative targets – as compared with 57% in 2012, and marginally less than the Global 500 (66%). 29 quantitative targets are reported; 10 of these are intensity targets, 17 are absolute targets, and two relate to reporting accuracy. Most of the quantitative targets relate to reducing water consumption (57%), followed by water efficiency (21%) and the quality of wastewater discharges (14%).

The reported water-related opportunities relate mainly to cost savings, and less to increased brand value or the sales of new products and services.

Although 83% of respondents identified water-related opportunities with the potential to generate a substantive change in their business (as compared with 89% in 2012, and 77% in the Global 500), most of these opportunities (44%) relate to risk mitigation and cost savings activities, rather than to genuine new business opportunities. The reported opportunities resulting in business or enhanced revenue (including increased brand value and the sales of new products or services), together make up 30% of identified opportunities.

While some positive initiatives are being implemented, there is a need for more collective action to manage this shared resource beyond the factory fence.

This year the responding companies reported 104 specific initiatives that are being implemented, 53% of which relate to their direct operations, 19% to community engagement issues, 9% to public policy and transparency, 6% to the supply chain and 5% to watershed management. Recognising the concerns relating to the state of water infrastructure in the country, it is encouraging to see that several companies have reported significant capital investments in water infrastructure, and that some have established effective partnerships with national and local government. While it is encouraging that respondents are beginning to consider community engagement, and that there are some exciting examples of partnership-based initiatives, there is nevertheless seen to be scope for more organisations to act beyond their operations, particularly given the context of South Africa's social development needs and constraints.

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1. Introduction

Globally, the combination of a growing population and increasing demand for resources is resulting in greater pressure on local and regional water supplies that are required for irrigation, energy production, industry and domestic purposes. While world population grew fourfold in the 20th century, freshwater withdrawals grew by a factor of nine[1]. Demand-side pressures are changing rapidly and in some cases unpredictably, creating new uncertainties for water managers and increasing risks to all sectors. At the same time, climate change is creating additional uncertainties around freshwater supplies, and is anticipated to result in too much water in some locations and too little water in others, impacting especially high water-use sectors such as agriculture and energy. This in turn exacerbates uncertainties regarding future demands for water. In summary, the determinants of change in water demand and supply are becoming increasingly volatile, creating challenges and risks for governments, local communities and the private sector.

There is growing global awareness of these water-related challenges. In November, the Intergovernmental Panel on Climate Change (IPCC) published the *Fifth Assessment Report: Summary for Policymakers* in which they highlighted that "water and its availability and quality will be one of the main pressures on, and issues for, societies and the environment because of climate change".[2] 2013 was the UN International Year of Water Cooperation, which focused on a watershed approach and highlighted some of the associated socio-political issues. The World Economic Forum's *2014 Global Risk Report*[3] places four water-related risks within the top 10 risks[4], with "water crises" as the third most significant risk.

In South Africa, water is rising up the business agenda as its relevance to economic growth and development becomes more prominent. A recent report by the African Centre for Water Research[5] highlights concerns regarding the increasing level of water insecurity in the country, and identifies a direct correlation between water scarcity and social unrest. Lack of water service delivery, attributed in large part to a lack of infrastructure maintenance, has led to legal action against municipalities[6] and has contributed to increasing instances of community protest[7]. With the growing awareness of water insecurity in the country, more work is being undertaken to improve understanding of the issues. In April 2012, the Water Research Commission began a four year integrated *Water Resource of South Africa 2012* study that seeks to include groundwater and water quality into the assessment of water resources. The *Long-Term Adaptation Scenario Phase 1*, completed in June 2013[8], also includes significant work on water and water modelling, as does the work carried out by South Africa Risk and Vulnerability Assessment[9].

This report aims to increase understanding of the strategic value of water, highlighting the impacts of water on the private sector and on the actions that business is taking in response. For a country such as South Africa – that has a water-intensive economy, and is facing serious challenges associated with poverty, income inequality and a changing climate – the manner in which companies use and manage water is extremely important to the economic and social development of the country. This report seeks to drive transparency around the use of water by major companies, to raise strategic awareness of water issues, and to highlight opportunities for improvements in performance.

1 http://www3.weforum.org/docs/WEF_GlobalRisks_Report_2014.pdf

2 IPCC *Summary for Policymakers of the Working Group I contribution to the Fifth Assessment Report;* the various documents making up the full IPCC Fifth Assessment Report will be made available throughout the course of 2014 (http://www.ipcc.ch)

3 http://www3.weforum.org/docs/WEF_GlobalRisks_Report_2014.pdf

4 The others are "failure of climate change mitigation and adaptation" at number 5, "greater incidence of extreme weather events (e.g. floods, storms, fires)" at number 6 and "food crises" at number 8.

5 Report to the Water Research Commission by Barbara Nompumelelo Tapela, African Centre for Water Research (ACWR), Social Water Scarcity and Water Use, February 2012

6 For example: http://www.lhr.org.za/news/2012/press-release-judgment-carolina-water-pollution-case and http://www.dailymaverick.co.za/article/2012-08-17-south-africas-ultimate-problem-water-delivery-failure/#.UtkGE9KKV8F.

7 For example: http://mg.co.za/article/2014-01-16-00-mothutlung-much-more-than-one-broken-water-pipe and http://news.sky.com/story/1194450/south-africa-water-protesters-shot-by-police

8 The Long-Term Adaptation Scenarios (LTAS) Flagship Research Programme (2012–2014) is a multi-sectoral research programme, mandated by the South African National Climate Change Response White Paper (NCCRP, para 8.8) that aims to develop national and sub-national adaptation scenarios for South Africa under plausible future climate conditions and development pathways. Six individual technical reports have been developed to summarise the findings from Phase 1, including one technical report on climate trends and scenarios for South Africa and five summarising the climate change implications for primary sectors, water, agriculture and forestry, human health, marine fisheries, and biodiversity.

9 South Africa Risk Vulnerability Assessment http://www.sarva.org.za/

For a country such as South Africa – that has a water-intensive economy, and that is facing serious challenges associated with poverty, income inequality and a changing climate – the manner in which companies use and manage water is extremely important to the economic and social development of the country.

The water policy and governance context in South Africa

> Compliance with licence conditions should not be considered as an adequate demonstration that reasonable measures are being undertaken, or that the user is demonstrating best practice or responsible corporate management.

The promulgation of the National Water Act 36 of 1998 (NWA) and the Water Services Act 108 of 1997 heralded a fundamental reform in the management of, and access to, South Africa's water resources. These laws sought to recognise and give effect to the right of access to water as a fundamental human right, and to rectify the historical inequitable access to water that had previously been determined on a racially discriminatory basis. The NWA also sought to recognise and provide for the growing demand for water, the increasing threat of pollution, and the need for conservation.

As part of this reform process, the NWA introduced several new principles relating to the governance of water. These principles were predicated on a fundamentally new approach to water governance based on the achievement of developmental water management and on the reallocation of resources aligned with the goals of equity and transformation. With the State as custodian, the private right to water no longer exists, with water now used at the behest of the Minister of Water Affairs and her delegates through a licensing and authorisation process.

It is this aspect of allocation and licensing that has been a particular challenge to water users over the past few years. The compulsory licensing mechanisms envisaged by the NWA were introduced as a means of ensuring equitable and beneficial allocation between existing and new water uses in specific catchments. Unfortunately, 16 years since the NWA's promulgation, this mechanism is rarely implemented. As a result, many businesses and users are still operating on what is commonly referred to as an "existing lawful water use". This type of authorisation was only ever intended to operate as a temporary authorisation under the NWA, pending the award of a water use licence, and/or the implementation of compulsory licensing by the Department of Water Affairs (DWA).

In the absence of such a licence, many users are exercising "existing lawful water uses" with minimal regulatory oversight and without the need to comply with the more detailed and comprehensive provisions that a water use licence would ordinarily contain. Given this context, asserting that a user complies with their licence may not necessarily demonstrate that they are engaging in best practice management. Similarly, the continued exercise of these historic uses arguably delays the equitable allocation of water resources in stressed catchments. One example is the use of water for agricultural purposes, where agriculture remains the largest single use of water in the country at some 60%.

In an attempt to address this challenge, the DWA has recently proposed introducing "use it or lose it" as part of the draft water policy review process. The financial, legal and constitutional rights implications of introducing such an approach will need to be carefully considered, as this issue is publicly deliberated in the water policy review process. In this context we also note that the NWA provides for a carefully structured pricing strategy, as a result of which all water uses will be subject to a water use charge (such as an abstraction charge). The implementation of additional charges is currently being piloted before being rolled out. This is anticipated to have significant financial implications for water users, particularly those who have wastewater discharges. Operational entities will be well acquainted with the ongoing administrative delays associated with obtaining a water use licence. This backlog has resulted in some uses taking place without proper regulation, with associated environmental and social impacts. Another concern is the degree to which users are complying with water use licences, many of which contain detailed and innovative mechanisms to ensure resource quality protection and equitable distribution. The increase in enforcement action

An interesting proposal recently expressed by the Department of Water Affairs (DWA), is the development of a framework to engage in innovative mechanisms to facilitate a process of redirecting investment to where 'maximum impact would be achieved'. The DWA has stated that it intends to 'refine and operationalise' the mechanisms within the National Water Act that could possibly play a role in this process, such as water offsetting and water trading.

and criminal prosecutions for failing to comply with the NWA has been well publicised. Over the past few years there have been increasing examples of enforcement action taken against non-complying users, with courts developing the law in these areas, particularly on the issue of water-related liabilities. In this context, there is a growing burden on the corporate sector to ensure that appropriate management practices and ongoing remediation becomes a performance management tool in the course of responsible corporate governance.

Compliance with licence conditions should not, however, be considered as an adequate demonstration that reasonable measures are being undertaken, or that the user is demonstrating best practice or responsible corporate management. For example, several water use licences now include a requirement for users to make a separate financial provision for water resource rehabilitation and/or protection. In determining the adequacy of the financial provision, responsible corporate governance should motivate for all necessary measures to be undertaken, so as to ensure that adequate provision is made for all associated water impacts in the short, medium and long term. The motivation behind such provisioning should not only be to satisfy the DWA's requirements, but also as part of a user's responsible corporate citizenship and environmental management practices. Similarly, climate change issues will need to be proactively addressed by users, and the NWA will need to be amended to take account of the anticipated impacts and regulatory responses required to respond to climate change. As this CDP report will demonstrate, such financial planning is crucial for the sustainability of any business.

Water users will also be aware of the widening gap between demand for and supply of water nationally, and its associated operational and financial impacts. As this CDP report highlights, some businesses and consumers are employing innovative measures to address this concern. An interesting proposal recently expressed by the DWA (for example in the 2013 National Water Resources Strategy), is the development of a framework to engage in innovative ways and means to facilitate a process of redirecting investment to where "maximum impact would be achieved". The DWA has stated that it intends to "refine and operationalize" the mechanisms within the NWA that could possibly play a role in this process, such as water offsetting and water trading. In view of the contentiousness regarding water trading, and its potential to undermine allocative reform, this issue will undoubtedly be a source of considerable debate during the policy review process.

Similarly, the DWA is considering the development of a quantitative framework for a water-neutral scheme that allows a private or public water user to balance its water account through both demand and supply-side interventions. One example suggested by the DWA is to promote the measurement of water consumption, pollution and use impacts over the complete production and supply chain. Users are encouraged to proactively engage with the DWA during this policy review process and the development of this framework, in order to maximise the potential of these proposed developments.

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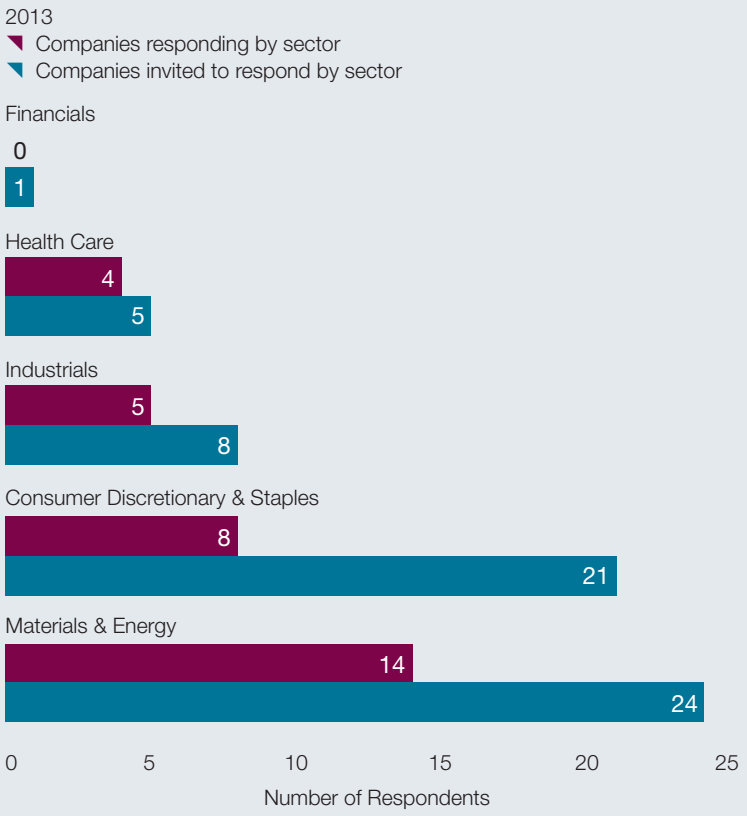
2. CDP water program South Africa 2013: An overview

This is the fourth annual CDP Water Report for the South African business sector. In South Africa, CDP is run through a partnership between CDP headquartered in London and the National Business Initiative (NBI) in Johannesburg. The NBI manages the partnership with CDP and all other stakeholders in South Africa, including businesses, government, investors, sponsors and the JSE.

As with the 2012 report, Irbaris and Incite undertook the background analysis and wrote this report. They are grateful to the NBI and CDP for their comments and input. The report seeks to present an objective account of the corporate responses, allowing readers to make their own informed assessment of companies' understanding of, and strategic response to, water-related risks and opportunities. It provides the information in a manner that will assist investors, policy-makers and other interested parties to undertake further analysis. The report strives to provide a broad indication of companies' performance on water-related issues, explaining the context for their activities, and providing a critical commentary on the quality and nature of their performance. The publicly available responses can be downloaded from the CDP website for further analysis by interested stakeholders[10].

Figure 1: Response rates by sector



10 To read 2013 company responses in full please go to https://www.cdp.net/en-US/Results/Pages/responses.aspx

The JSE 100: 2013 Sample

In 2010, CDP launched its water program to help the business and investor community better understand the risks and opportunities associated with water scarcity and other water-related issues. The initiative reflects a growing awareness within the corporate sector and broader investment community of the critical importance of water to business continuity.

The 2013 target sample in South Africa consists of 59 companies from the JSE 100 (as listed at 30 November 2012) that are deemed to have the greatest potential to impact on, or be impacted by, water resources (Table 1). This sample compares with a sample size of 61 companies in 2012. Three of the 59 companies (*African Oxygen Limited*, *Arcelor Mittal* and *BHP Billiton*) engaged in the process via parent companies, who had been invited separately through the Global 500 process and not as part of the JSE 100 sample. Their responses have not been included in this analysis[11] as they did not submit a questionnaire as part of CDP South Africa.

The 2013 target sample does not include parastatals (such as *Eskom* or *Transnet*), nor does it include large water users from non-listed private companies. In addition to the 59 companies that were approached, six organisations chose to participate voluntarily in the 2013 *CDP water report* (*Grindrod Limited*, *Eskom*, *Industrial Development Corporation*, *Sun International*, *South African Post Office*, and *Scaw South Africa*; see Table 4).[12]

To facilitate sectoral analysis and to maintain comparability with previous years' reporting and with the *CDP Climate Change South Africa Report 2013*, the 2013 sample has been clustered into four sectors, namely Industrials, Health Care, Materials & Energy and Consumer Discretionary & Staples (Figure 1)[13]. The sectors vary in terms of size, and have also changed in their composition between 2012 and 2013 (Figure 2). As in 2012, Consumer Discretionary Staples have been combined into one sector; this is due to the very limited response from the Consumer Discretionary Sector, with only two public responses from nine invited companies.

11 Except when referring to overall disclosure rates, the total number of direct/unique companies in the sample that are AQ (not including SA) is used as a denominator for calculating "% of responding companies". This is in line with the CDP methodology.

12 Eskom and South African Post Office were also included as "other responding companies" in the Global 500 Water Report 2013.

13 Figure 1 includes the Financials sector; one company was asked to respond, but declined to respond. Figure 1 excludes the IT sector; no companies were asked to respond to the 2013 survey and no responses were received in 2011 or 2012.

Table 1: Responses to the CDP water program (2013 and 2012) and CDP climate program (2013)
Note: Companies invited in 2012 (but not in 2013) are included here.

Organisation	GICS Sector	2013 CDP water program response	2012 CDP water program response	2013 CDP climate program response
Adcock Ingram	Health Care	AQ	AQ	AQ
AECI Ltd Ord	Materials	AQ	AQ	AQ
African Oxygen Ltd Ord	Materials	AQ global	/	AQ sa
African Rainbow Minerals	Materials	DP	DP	AQ
Allied Electronics Corporation Ltd (Altron)	Industrials	AQ	AQ	AQ
Anglo American	Materials	AQ	AQ	AQ
Anglo American Platinum	Materials	AQ	AQ	AQ
AngloGold Ashanti	Materials	AQ	AQ	AQ
Arcelor Mittal South Africa Ltd	Materials	AQ global	AQ global	AQ
Aspen Pharmacare Holdings	Health Care	AQ np	DP	AQ
Assore Ltd	Materials	DP	DP	AQ np
Aveng Ltd	Industrials	AQ np	DP	AQ
Avi Ltd	Consumer Staples	DP	DP	DP
Barloworld	Industrials	AQ	AQ	AQ
BHP Billiton	Materials	AQ global	AQ	AQ
Bidvest Group Ltd	Industrials	AQ	DP	AQ
British American Tobacco	Consumer Staples	AQ	AQ	AQ
Clicks Group Ltd	Consumer Discretionary	DP	DP	AQ
Compagnie Financière Richemont SA	Consumer Discretionary	AQ	DP	AQ
Datatec	IT	/	DP	DP
Exxaro Resources Ltd	Materials	AQ	AQ	AQ
Famous Brands Limited	Consumer Discretionary	NR	/	NR
Foschini Group Ltd	Consumer Discretionary	AQ np	AQ np	AQ np
Gold Fields Limited	Materials	AQ	AQ	AQ
Harmony Gold Mining Co Ltd	Materials	DP	DP	AQ
Hosken Consolidated Investments	Financials	DP	/	AQ
Illovo Sugar Ltd	Consumer Staples	AQ	AQ	AQ
Impala Platinum Holdings	Materials	AQ	AQ	AQ
JD Group Ltd	Consumer Discretionary	DP	DP	AQ
KAP Industrial Holdings Ltd	Industrials	DP	/	AQ
Kumba Iron Ore	Materials	AQ	AQ	AQ
Lewis Group	Consumer Discretionary	/	DP	/
Life Healthcare Group Holdings Ltd	Health Care	DP	NR	AQ
Lonmin	Materials	DP	AQ	AQ
Massmart Holdings Ltd	Consumer Staples	DP	DP	AQ
Mediclinic International	Health Care	AQ	AQ	AQ
Metorex Ltd	Materials	/	NR	/
Mondi Limited	Materials	AQ sa	AQ sa	AQ sa
Mondi PLC	Materials	AQ	AQ	AQ
Mr Price Group Ltd	Consumer Discretionary	DP	DP	DP
Murray & Roberts Holdings Limited	Industrials	DP	DP	AQ
Nampak Ltd	Materials	DP	DP	AQ
Naspers	Consumer Discretionary	/	DP	AQ np
Netcare Limited	Health Care	AQ	AQ	AQ
Northam Platinum Ltd	Materials	AQ	AQ	AQ
Oceana	Consumer Staples	DP	DP	AQ
Omnia Holdings Ltd	Materials	NR	NR	NR
Optimum Coal Holdings	Materials	/	NR	/
Palabora Mining Co Ltd	Materials	/	NR	/
Pick 'n Pay Stores Ltd	Consumer Staples	AQ	AQ	AQ
Pioneer Foods	Consumer Staples	DP	AQ np	AQ np
Pretoria Portland Cement Co Ltd	Materials	DP	DP	AQ
Reunert	Industrials	AQ	AQ	AQ
Royal Bafokeng Platinum Ltd	Materials	AQ	AQ	AQ
SABMiller	Consumer Staples	AQ	AQ	AQ
Sappi	Materials	DP	DP	AQ
Sasol Limited	Energy	AQ	AQ	AQ
Shoprite Holdings Ltd	Consumer Staples	DP	DP	AQ np
Steinhoff International Holdings	Consumer Discretionary	DP	DP	AQ
The Spar Group Ltd	Consumer Staples	DP	DP	AQ
Tiger Brands	Consumer Staples	DP	DP	AQ
Tongaat Hulett Ltd	Consumer Staples	AQ	AQ	AQ
Truworths International	Consumer Discretionary	DP	DP	AQ
Wilson Bayly Holmes-Ovcon Ltd	Industrials	DP	DP	AQ
Woolworths Holdings Ltd	Consumer Discretionary	AQ	AQ	AQ

Key

AQ	Answered questionnaire (public)
AQ np	Answered questionnaire, but declined permission to make this public
AQ (Global)	Answered questionnaire via parent company not in the JSE sample
AQ sa	Answered questionnaire via parent company also in sample
DP	Declined to participate
NR	No response
/	Not in sample for that year

Water and Investment

> Significantly, 72% of respondents report having already experienced financially-material water-related impacts in the last five years

Element Investment Managers (Element) is an independent active investment manager with a long-term value approach. Our focus on responsible investing helps create wealth and preserve capital for our clients. Our inclusive investment philosophy requires an investment process that includes bottom up, detailed analysis of the business model, revenue, expenses, risks, opportunities and capital requirements. Expected future earnings are discounted to establish a fair value for investment decision making purposes.

Investors are becoming increasingly aware that environmental and social issues can have a material impact on valuation in the same way that poor governance destroys value.

Under the environment category, water is a material issue for South African companies. In the 2013 South Africa CDP water report, 86% of the respondents report material exposure to water-related risks, noticeably more than the 66% of respondents in the CDP Global 500. Significantly, 72% of respondents report having already experienced financially-material water-related impacts in the last five years, as compared with 53% of respondents in the CDP Global 500. Water stress or scarcity continues to be the most reported future risk, followed by declining water quality, flooding and higher water prices.

Water costs will rise as the resource becomes increasingly scarce but at the moment the cost issue does 'not move the needle' for valuation purposes. The greatest risk for investors is companies that don't recognise water risks and opportunities, or take action to manage and take advantage of them. A hospital cannot operate without quality water. Sasol requires approximately 20 tons of water for each ton of product and SA Breweries requires 155 litres of water for a litre of beer.

We want to establish that companies understand water use in their value chain, and that they are taking appropriate action to secure water availability. For example food retailers recognise water as a material sustainability risk but unfortunately the majority focus on water use in their operations and not the supply chain where the greatest percentage of water use takes place.

Companies should plan for their own water self-sufficiency. The lessons learnt from electricity provision in South Africa should be clear – the State is unlikely to provide a reliable source of water in the future as its infrastructure is old and in need of material upgrading. Companies that are proactive in securing water availability and factor necessary costs into future budgets will be those that will have a competitive advantage over their peers.

CDP's water program, together with specific research and engagement questions to management, positions Element to differentiate between companies in the same industry and adjust valuations if capital is required to secure water availability. The program helps us identify companies where further engagement with management or the Board is necessary to improve water risk management.

Element and global institutional investors will increase the pressure on companies to provide information that enables investors to make long-term investment decisions on behalf of their clients. Instead of merely the past statutory information, investors are looking for integrated information that helps them make better decisions about companies' future earnings and fair value.

David Couldridge
Senior Investment Analyst
Element Investment Managers

3. The South African response: Disclosure analysis

South Africa in context

Response rates are catching up with the Global 500 response rates, but remain much lower than responses to CDP's climate change program.

This year, 33 companies (out of 59) officially gave responses, compared with 30 (of 61) in 2012, resulting in a response rate of 56%, slightly up from 49% in 2012 (Table 1). This remains lower than the 59% response rate of the Global 500 in 2013. Although not an overwhelming response rate, the South African rate is higher than the 2011[14] response rate in Australia of 41% (of the 54 ASX 100 companies invited to respond) and the 2012 response rate in the US of 41% (141 companies of the 345 invited).

The number of companies that declined to participate reduced to 24 (as compared with 26 companies in 2011 and 2012). There are four new respondents (each of whom declined to participate in 2012): *Aveng Ltd*, *Aspen Pharmacare Holdings*, *Compagnie Financiere Richemont SA*, and *Bidvest Group Ltd*. Notwithstanding this welcome increase in new respondents, two companies that responded in 2012 declined to participate this year (*Lonmin* and *Pioneer Foods*). Three responses were not public, compared with two in 2012.

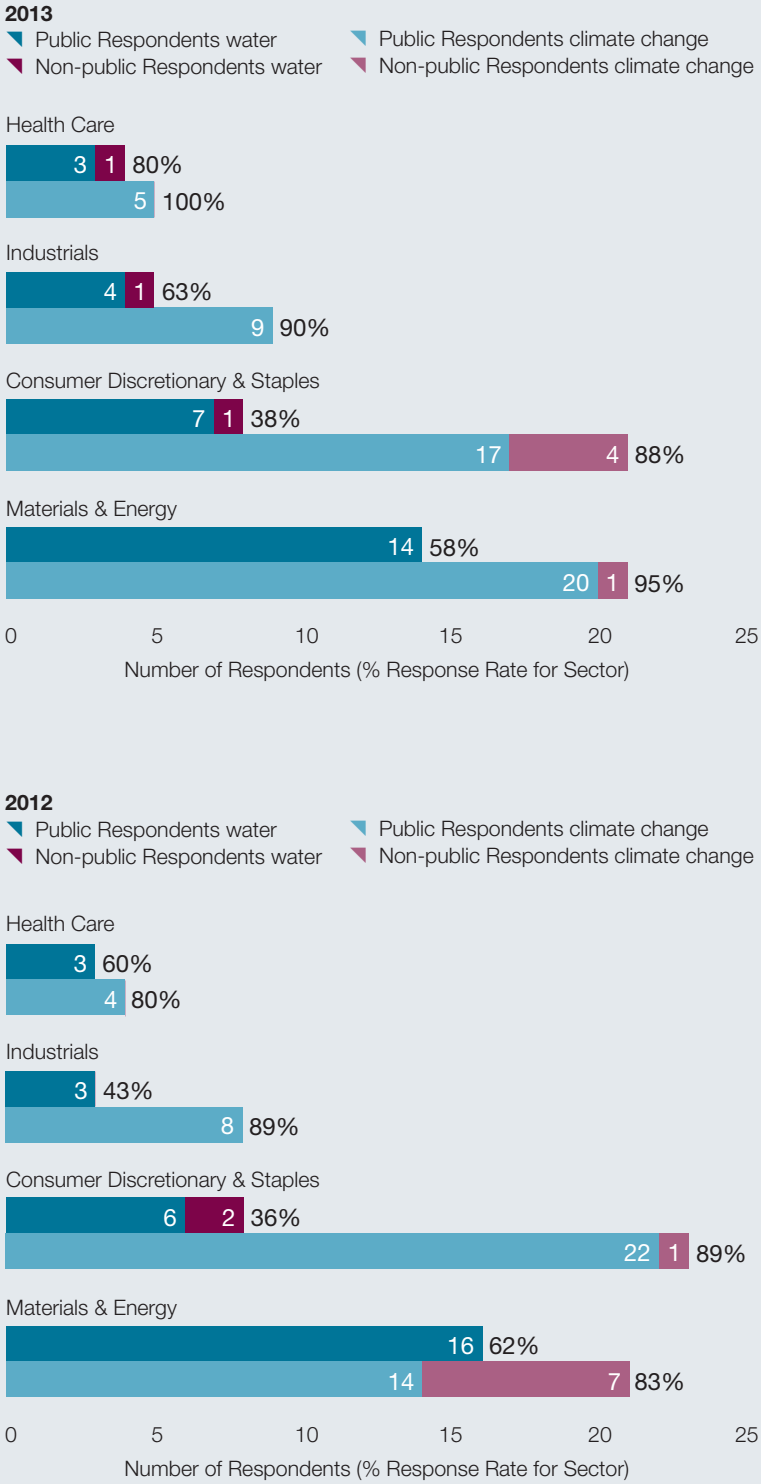
While there has been a consistent increase in the South African response rate each year – from 46% in 2011 to 49% in 2012 and 53% in 2013 – these increases are low compared to the 83% South African response rate to CDP's climate change program in 2013. Considering the widely-recognised importance of water issues in South Africa, and the consistently high response rate that South African companies provide on climate change disclosure, the response rate on water issues is seen to be disappointingly low. The Health Care sector had the highest response rate of 80% followed by Industrials (63%), the Materials & Energy sector (60%), and Consumer Discretionary & Staples (38%) (Figure 1 and Figure 2).

South African management responses do not reflect the higher level of risks in the country compared to Global 500 responses.

While South African companies' responses compare well with the global average, their reported risk exposure is much greater than the Global 500, both at direct operations and in the supply chain. In addition, 27 respondents have the majority of their operations in regions at risk, and 72% of South African respondents have experienced detrimental impacts, compared with 53% of the Global 500. It is not surprising that the figure is higher than the Global 500, as South Africa is a water-scarce country, with a resource-intensive and resource-inefficient economy[15].

Figure 2: JSE 100 Response rate by sector and by year for water and climate change

Note: In 2012 the Information Technology Sector had a zero response rate, in 2013 the Financials sector had a zero response rate. Both are thus excluded from Figure 2.



14 No Australian data is available for 2012 or 2013. The next questionnaire will go out in 2014.

15 http://www.npconline.co.za/pebble.asp?relid=106

While risk exposure is much higher than the Global 500, the management of risks is not reported as being greater than the Global 500. In fact, South African companies perform very similarly on reporting water withdrawals and recycling, reporting water bodies affected by withdrawals or discharges, and paying penalties. Collectively, South African companies report less well on several key indicators, such as identifying risks to the supply chain, requiring suppliers to report on water issues, having a water policy, setting quantitative targets and their overall response rate.

There are only a few areas where South African companies report more activity than the Global 500: having Board oversight of water strategy; identifying linkages between carbon and water; and recognising water-related opportunities. Encouragingly, these particular areas are indicative of a more strategic appreciation of water issues among South African companies than among the Global 500 average, as water is more often treated at a senior governance level where some of the systemic issues are recognised.

South Africa has shown little improvement in disclosure performance across most questions since 2012.

Global 500 respondents showed improvement in reported actions between 2012 and 2013, as evidenced, for example, by the 15% increase in the proportion of companies setting targets, the 39% increase in the proportion requiring suppliers to report on water use management, and the 39% increase in those identifying opportunities. In contrast, South African respondents have shown very little improvement in reported actions since 2012. This is disappointing, particularly given the definite improvement between 2011 and 2012 (Table 2); across most measures it appears that performance has levelled off.

Table 2 summarises the key trends in South African responses between 2011 and 2013.

Table 2: Comparing key indicators between CDP water program 2013, 2012 and 2011 with the Global 500 for the same periods

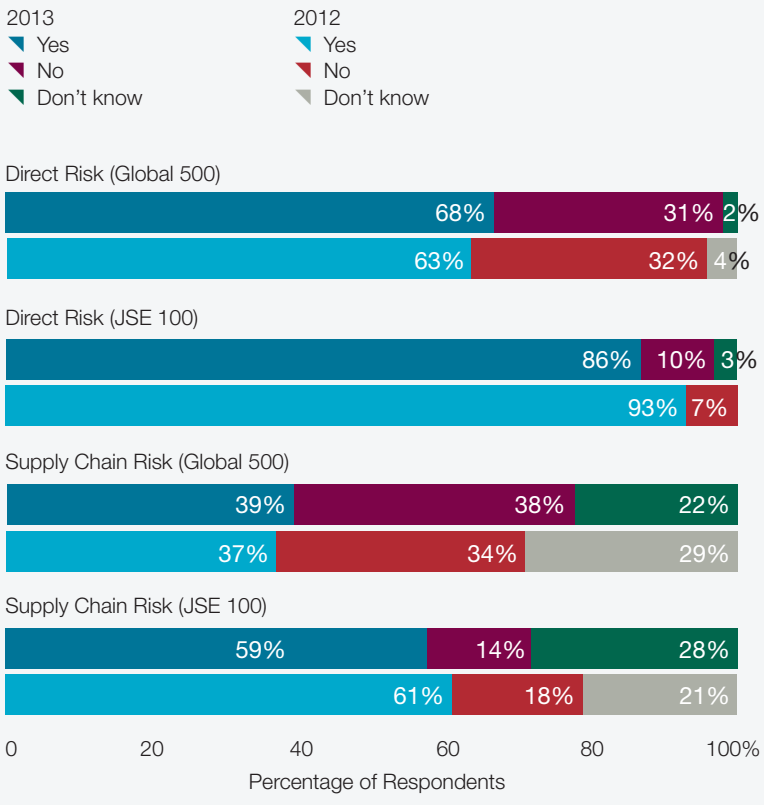
Key indicator	CDP water program SA 2013	CDP water program SA 2012	CDP water program SA 2011	CDP water program Global 500 2013	CDP water program Global 500 2012	CDP water program Global 500 2011
RISK AWARENESS						
Experienced detrimental impacts	**72%**	71%	58%	53%	53%	20%
Exposure to risk (direct operations)	**86%**	**93%**	85%	66%	63%	49%
Able to identify risks in supply chain	72%	**79%**	62%	**77%**	71%	33%
Exposure to risk in supply chain within five years	**59%**	61%	39%	39%	37%	33%
Risks within five years	**83%**	66%	69% direct, 51% supply chain	64%		
Recognises opportunities	**83%**	89%	77%	77%	71%	33%
DATA AVAILABILITY						
Report water withdrawals	97%	93%	92%	**99%**	97%	50%
Report recycling	**69%**	71%	62%	66%	63%	31%
Report water sources significantly affected by withdrawals	**14%**	14%	n/a	12%	9%	4%
Report water bodies or habitats affected by discharges	7%	14%	n/a	**8%**	10%	4%
MANAGEMENT AND GOVERNANCE						
Response rate	56%	49%	46%	**59%**	60%	60%
Water policy or strategy	83%	75%	69%	**93%**	92%	49%
Board-level oversight	**72%**	71%	65%	58%	58%	36%
Requires suppliers to report on water risk	21%	25%	19%	**37%**	39%	14%
Identify linkages between water and carbon	**86%**	82%	65%	79%	80%	38%
Quantitative goals or targets	59%	57%	58%	**66%**	55%	30%
Taking actions (beyond the policy) to manage water	**100%**	86%	n/a	96%	97%	49%
Paid penalties/fines for breach of discharge regs	14%	18%	n/a	**15%**	17%	8%

Key:
% - lower score than against previous year
% - higher score than against previous year
% - higher score between Global 500 2013 and SA 2013

> High variability in rainfall events and flooding disrupts mining and mineral processing activities. It also has local community and stakeholder impacts that affect our employees and their families.
>
> **Anglo American**

> The effect of climate change on water has far reaching consequences and is a major cost item for mining companies, as fresh water supplies are increasingly constrained.
>
> **Impala**

Figure 3: Exposure to water risks in direct operations and supply chain: JSE 100 versus Global 500



Understanding risks and opportunities

Most companies are exposed to water risks, although the understanding of supply chain risk is still inadequate.

In 2013, 86% of respondents report that their direct operations are exposed to water risks, down from 93% in 2012, but higher than the 66% in the Global 500 (Figure 3). 62% of respondents report that the majority of their operations are in regions of water-related risk. 28% of respondents did not know if they were at risk in their supply chain. This seems a particularly high proportion, and is higher than the 21% in 2012.

Although water scarcity is still the greatest risk to companies, water quality issues are reported more than for Global 500 respondents.

While South African and Global 500 respondents both have water scarcity as the most frequently reported risk, there are differences between these samples on the other risks (Table 3). In South Africa, companies appear more concerned about the declining quality and increasing cost of the water that those in the Global 500. The majority of the risks to direct operations are physical in nature (54%), with half of these relating to water stress/scarcity (Figure 4). This is followed by declining water quality (11% of risks, reported by 15 companies) and flooding (6% of risks, reported by 15 companies). Regulatory risks are also important, comprising 31% of risks to direct operations, with key concerns including increasing water prices, and regulation of discharge quality/volumes leading to higher compliance costs. Ten companies cite reputational damage as a risk. These results are very similar to those in 2012, suggesting that little has changed in companies' perception of risk, although this year, 22% of risks to direct operations relate to countries other than South Africa.

> Declining water quality may result in higher input water treatment costs, increased water discharge quality regulation and therefore discharge water treatment costs, a reluctance on the part of regulators to grant water-use permits, and social stigma and pressure on business due to declining water qualities.
>
> **Anglo American**

Table 3: Comparison of the risks at direct operations reported by most respondents for CDP water program South Africa 2013, 2012 and Global 500 2013

Type of risk	No of respondents CDP water program SA 2013	% CDP water program SA 2013	% CDP water program SA 2012	% CDP water program Global 500 2013	Variance CDP water program SA 2013 vs Global 500
Increased water stress or scarcity	24	83%	89%	67%	16%
Declining water quality	15	52%	57%	35%	17%
Flooding	15	52%	54%	48%	4%
Higher water prices	13	45%	46%	32%	13%
Reputational damage	10	34%	39%	31%	3%
Rising discharge compliance costs	9	31%	32%	35%	-4%
Tightening water withdrawal limits	8	28%	29%	30%	-2%

Figure 4: Numbers of reported water-related risks (direct operations and supply chain) and their timeframes

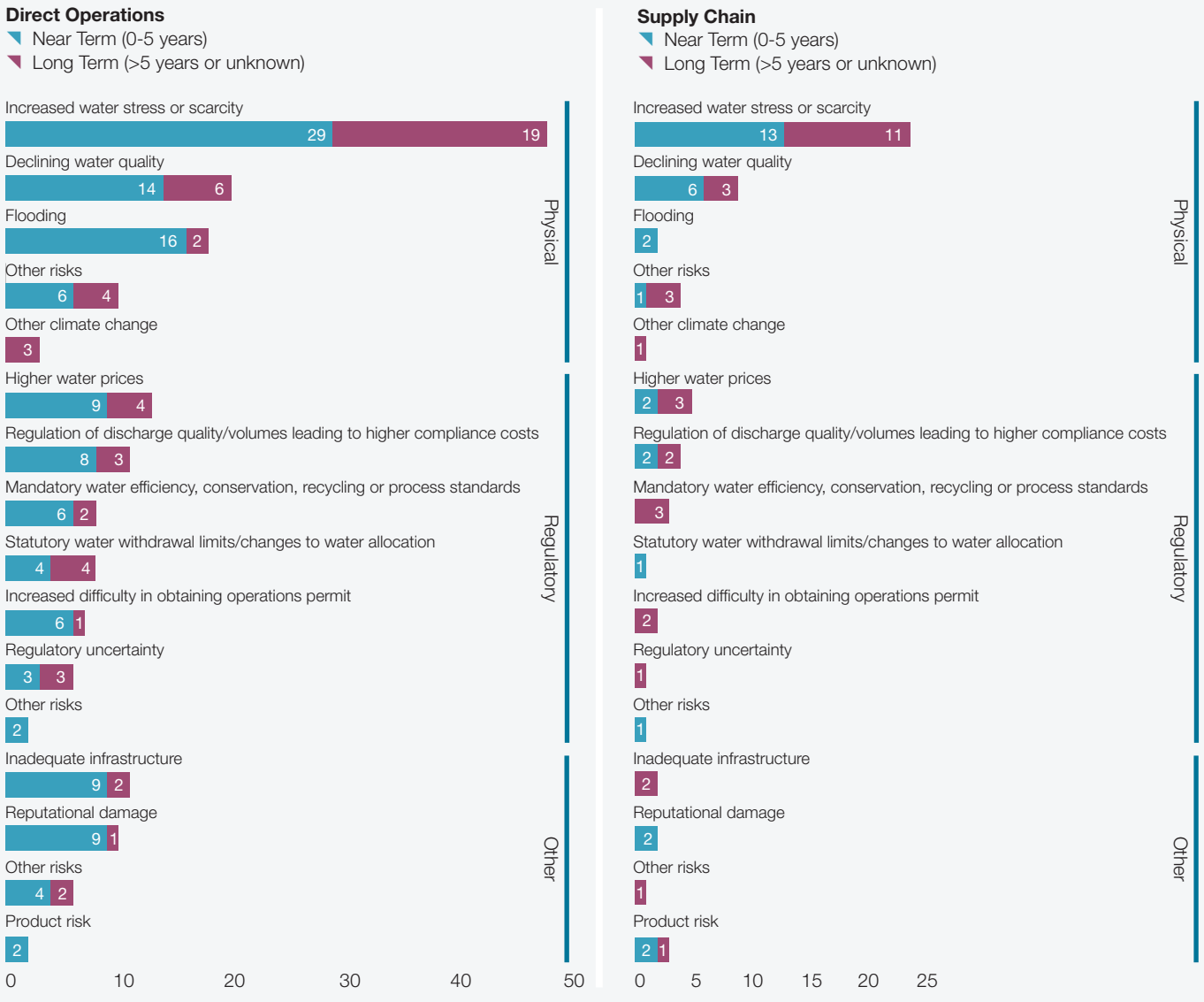
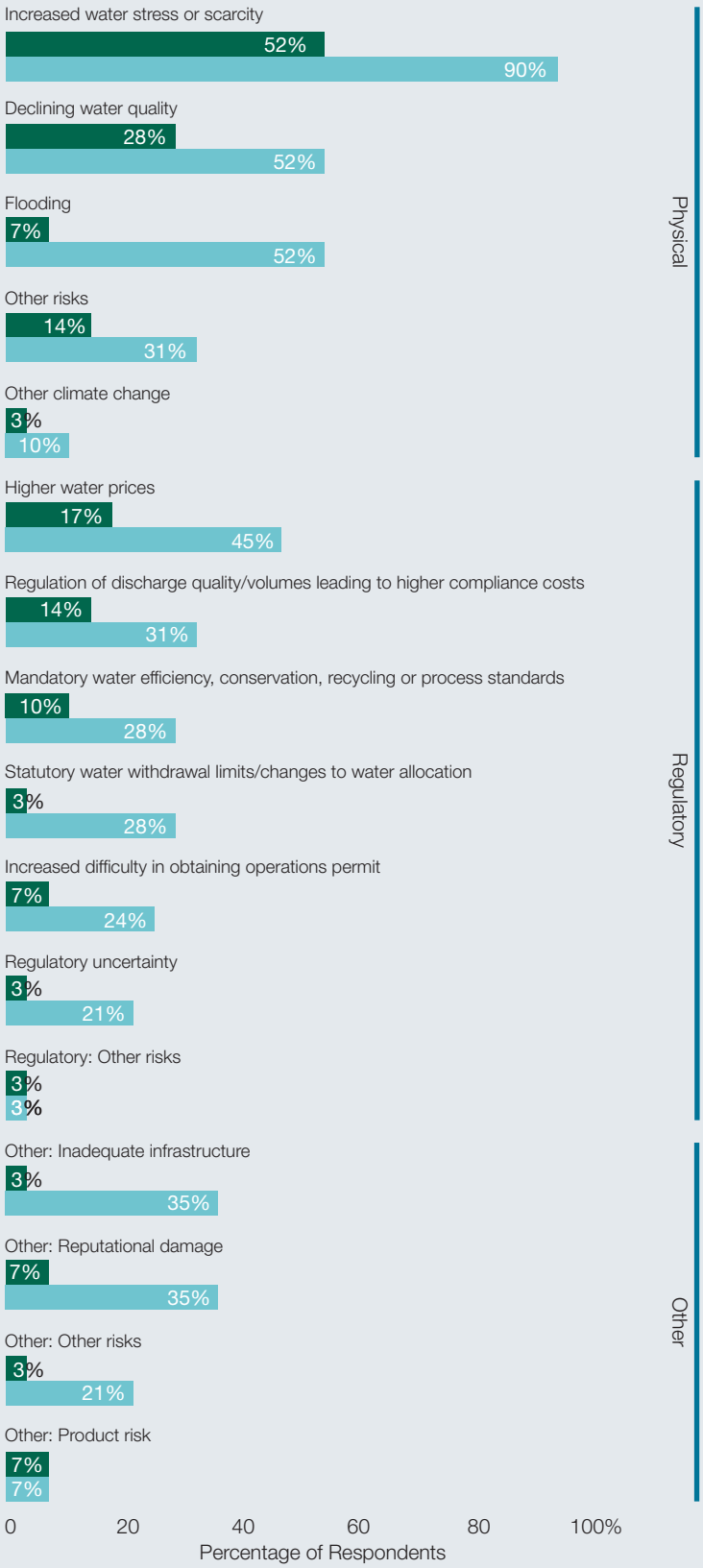


Figure 5: Percentage of respondents reporting types of water-related risks in direct operations and supply chain



Understanding of risks to the supply chain is still far behind where it should be.

Given the level of risk exposure to their direct operations and the findings of those companies that investigate their supply chain, it would appear that too few companies currently track their supply chain risks. This has not changed over the year, with 28% of respondents unable to identify whether their supply chain is at risk, as compared with 21% in 2012. Seventeen companies (59%) report that their supply chain is exposed, while only four found that it was not**.** Only 20% of respondents require key suppliers to report on water risks, lower than the 37% in the Global 500. The lack of ability to identify risks in the supply chain and lack of respondents requesting suppliers to report, suggests that there is a lack of understanding of supply chain risk and management. Currently, supply chain risks are likely to be significantly under-reported and inadequately managed.

Eighteen companies (62%) report that they use raw materials from regions subject to water-related risk, while 21% do not know where their raw materials come from, and 17% said that their raw materials do not come from regions at risk. Interestingly, while many of the inputs at risk were commodities (such as sugarcane or metals), six respondents mentioned electricity or energy, highlighting the growing awareness of the links between energy and water.

The most frequently reported risks to the supply chain are also physical (62% of risks), with water stress the most common (52% of risks), followed by declining water quality (28% of risks) and flooding (7% of risks). Flooding is apparently considered a much lower risk to the supply chain than to companies' direct operations, where it makes up 52% of risks (Figure 5).

> We have completed a study on water usage and costs in the supply chain and we are in the process of mapping our suppliers according to water scarcity. We are especially looking at ways of targeting small suppliers through our mentoring programmes.
>
> **Pick n Pay**

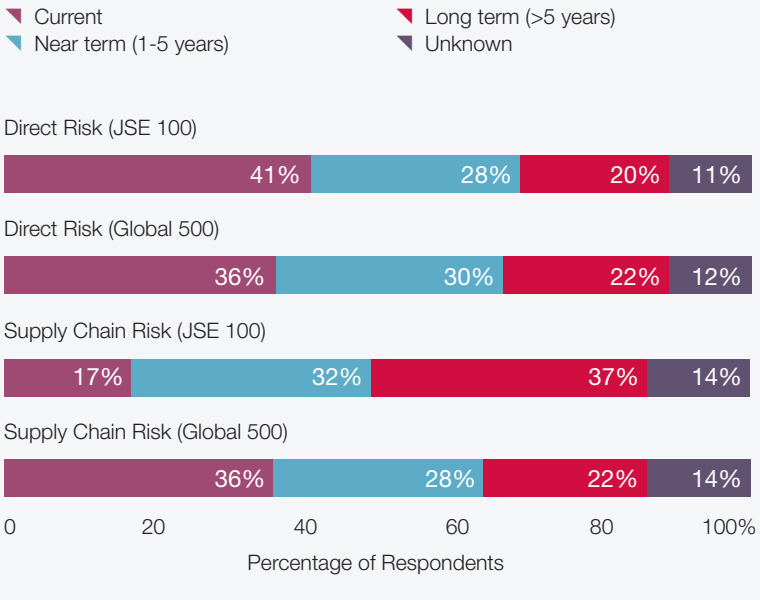
Water risks are seen to be short-term with the majority of reported risks expected to materialise within five years.

The majority of reported direct and supply chain risks are perceived as short-term (within five years), as was the case in 2012 (Figure 6). 35% of all risks are perceived as current, and 29% are perceived as being within one to five years; only 24% are perceived as occurring in the next six to 20 years. The risks facing direct operations are perceived to be much more short-term than those facing the supply chain. In direct operations, 41% of risks are current, while 59% will be faced within five years. In the supply chain, only 17% are current, while 49% will be faced within five years. This difference may reflect real differences in risk profile (such as the potential to substitute suppliers to avoid risks), as well as inadequacies in the understanding and management of supply chain risks. The fact that South African companies report much lower near-term supply chain risks than the Global 500, but similar levels of direct risk, should be a cause for concern as it suggests that there could be a range of near-term risks in the South African supply chain that are not being recognised or managed.

> Working with our agricultural suppliers on water management also has the ability to bring medium to long-term advantages in that we are both able to secure supply of raw materials and explore new crop varieties / alternative crops which may have better quality / yields benefiting both the company and the farming communities.
>
> **SABMiller**

> Water availability / scarcity and management have the potential to elevate pressures from neighbouring struggling communities and government for corporate involvement in managing the challenges of water scarcity. Competition for the limited resource with other consumers (including domestic) could result in water restrictions.
>
> **Impala Platinum**

Figure 6: Timeframes for water risks: JSE 100 vs. Global 500

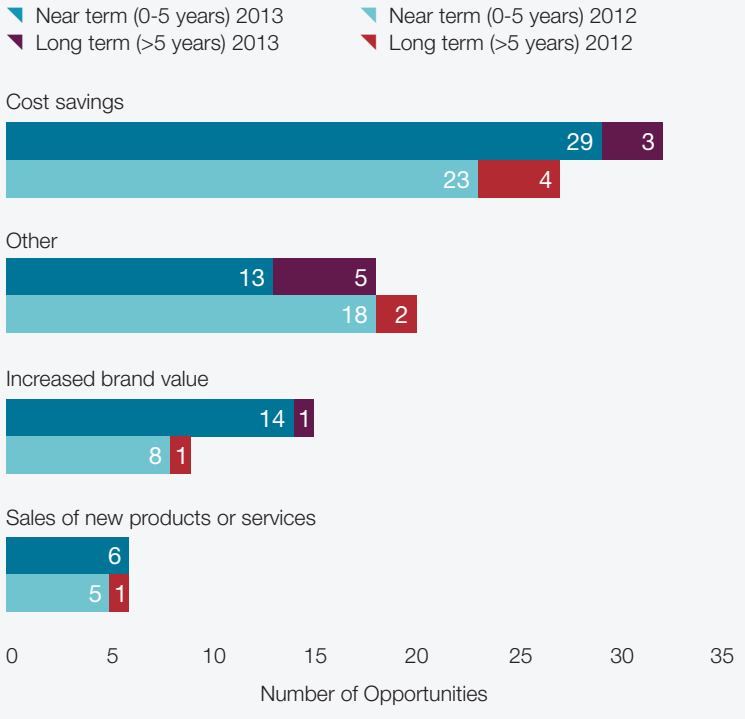


CASE STUDY

SABMiller – Identifying opportunities

SABMiller have launched an internal project linked to identifying opportunities, in line with the company's 2015 water target to reduce water consumption in its breweries. They have produced a water cost curve that identifies cost-positive activities. This means they have considered the full costs of water (raw water cost, water treatment costs, energy usage to pump, heat or cool water within the process, and final effluent treatment costs); this enables them to evaluate the full cost benefits of each cubic metre of water saved.

Figure 7: Reported water-related opportunities and their timeframes



Although 73 opportunities were identified by respondents, only 71 of these were categorised.

Although more 'opportunities' have been recognised this year, they are largely focused on incremental reduction in water consumption, rather than enhancing revenue.

83% of respondents identified water-related opportunities that have the potential to generate a substantive change in their business (Figure 7). This is higher than the 77% figure in the Global 500, but lower than the 89% reported in 2012. The number of opportunities identified this year (73) is greater than it was in 2012 (62). Companies should be acting now to gain competitive advantage and cost advantages, as the majority (56%) of the opportunities recognised have the potential to be realised currently and 87% within five years.

The most commonly reported opportunities tended to relate to risk mitigation and cost savings (44% of identified opportunities). The reported opportunities resulting in business or enhanced revenue (including increased brand value and the sales of new products or services), together make up 30% of identified opportunities. Other reported opportunities include capacity building (*AngloGold Ashanti*), social licence to operate (*Gold Fields*), corporate social investment (*Impala Platinum Holdings*), reducing the company's carbon footprint (*Impala Platinum Holdings*) and CDM/ renewable energy projects (*Exxaro Resources)*.

Most South African companies are already suffering water-related impacts; flooding is the most commonly felt impact this year.

The proportion of South African companies that have experienced detrimental impacts (72%) is roughly the same as it was in 2012 (71%), but noticeably more than the 53% in the Global 500. This corresponds to the higher proportion of South African respondents that report risk exposure of their direct operations in the next five years (86%), as compared with 64% of Global 500 respondents.

Flooding is the most commonly-reported impact, reported by 48% of companies in 2013. *Illovo Sugar*, for example, reported R3 million worth of damage due to floods in December 2012. Water stress is reported by 34% companies, with *Mediclinic*, for example, experiencing no water for over a week at three different sites. Poor water quality accounts for just 5% of reported impacts.

The figures for companies experiencing impacts do not align with how companies perceive the risks: while flooding is responsible for 37% of reported impacts, it accounts for only 8% of reported risks faced; similarly, while water scarcity is responsible for 19% of impacts, it accounts for 29% of reported risks faced. It is unclear why this difference exists. It may be that the perception of risk lags behind the impacts that are suffered, and that in 2014 the impacts of recent floods will

> A new range of water efficient products or products from water efficient suppliers in foods (such as farming for the future), home and clothing will create new sales opportunities.
>
> **Woolworths**

correspond to an increase in the perception of flood risk. Alternatively, it may be that water scarcity is justifiably the longer-term risk, and that flooding is typically more one-off and unpredictable and often very site-specific. Weather events in different parts of South Africa show extremes of both drought and flooding. For example, in early January 2013 the Limpopo region suffered from drought[16], yet a few weeks later it burst its banks and severe flooding hit the area[17]. In August and November 2013[18] and January 2014[19] the Cape suffered flooding, while in September 2013 there was drought in the North West Province[20]. It is clear that there is extreme temporal and geographic variation in water supply, which makes planning for water risks difficult.

The areas of greatest water demand tend to be in areas of particular water stress.

Companies appear to be well aware of where the risks are. Almost half of the companies (48%) reported that more than 90% of their operations are situated in water-stressed areas, while nine companies reported that less than 50% of their operations are in water-stressed areas. The risks within these areas varied between scarcity, quality, infrastructure, flooding and access.

The Limpopo and Orange River basins are the most commonly reported water-stressed regions in which companies have operations. 41% of companies have operations in either the Limpopo or the Orange River basins or both; the majority of these companies are from the Materials sector. Water availability is not consistent across the country, and there are concentrated areas of water demand. Often, the greatest demand is in areas with low supply. This means that operations in some parts of the country are more at risk than others.

> Flooding can result in short-term disruption of operations and significant short-term production losses.
>
> **Sasol**

The Southern Cape region in South Africa suffered its worst drought in 150 years recently putting severe pressure on some of the hop growers in the area. SAB hop farms are now looking for alternate supply, which requires extra investments. Some growers who did not have this alternate supply lost up to half of their normal production tonnage. Compounding this loss was the financial outlay (such as on electricity and maintenance) required to increase irrigation to compensate for the lack of rain.

SABMiller

> The Rustenburg mines ... have a continuous risk of water scarcity due to the increase in demand for potable water in the area by other users.
>
> **Anglo American Platinum**

16 http://www.iol.co.za/news/south-africa/limpopo/drought-cripples-limpopo-farmers-1.1448228#.Uud04NJFBdg

17 http://www.citypress.co.za/news/no-end-in-sight-to-the-rains/

18 http://ewn.co.za/2013/11/16/CT-mops-up-after-major-flooding

19 http://www.sabc.co.za/news/a/41bd6300427dc476bd88ff56d5ffbd92/W-Cape-highway-re-opened-following-floods-20140901

20 http://www.bloomberg.com/news/2013-09-18/south-africa-s-north-west-province-is-drought-stricken-.html

Water is at the heart of South Africa's development goals: Reflections on the WWF's Food Energy Water research

> The WWF's research findings suggest that both the insufficient quality and quantity of water is at the apex of factors threatening water security, and food and energy production in the region.

Increasing resource price inflation and volatility in recent years has highlighted the interconnected and interdependent nature of energy, water and food resources, and has increased the risk of resource-related shocks. The challenge of managing this is complicated by the steady degradation of the environment resulting largely from the extraction and production of these resources. WWF's food, energy and water nexus (FEW) research project focuses on information gathering and awareness raising for this key sustainability challenge for the region, as well as on identifying the opportunities.

The project findings suggest that both the insufficient quality and quantity of water is at the apex of factors threatening water security, and food and energy production. South Africa is a water scarce country with 98% of available water already allocated. Water-intensive energy production and an increase in agricultural production, in response to growing demand and to support job creation, will challenge the existing balance. Water could be the critical limiting local resource for the sustained supply of both energy and food. The challenges of climate variability and changes in rainfall patterns add to the uncertainty, particularly for vulnerable farmers who lack the resilience to survive even short-term crises. These risks are exacerbated by changing consumption patterns and demographic pressures.

South Africa's commercial agriculture production is heavily dependent on irrigation, with only 12% of the land considered suitable for growing rain-fed crops and less than 3% considered truly fertile. Irrigation accounts for 90% of vegetable, fruit and wine production, while 12% of the total area under wheat is irrigated. As there is limited arable land, the only feasible way to grow the agriculture sector is through irrigation. The *National Development Plan Vision 2030* proposes an increase of more than 50% of irrigated land. But the Department of Water Affairs estimates a 1.7% water shortfall in the country as early as 2025, suggesting that available water could be the single biggest impediment to this development goal.

Of significant concern is declining water quality, with 40% of SA's freshwater ecosystems in a critical condition and 80% threatened. This situation could compromise food production and agricultural export markets. As there is no spare dilution capacity, increased requirements for water purification would increase dependency on energy. The FEW research confirmed the high degree of wasted water, not just from poor supply management, but also through embedded water and energy in wasted food. The rand value of embedded water is thought to be in the region of R1 billion, with the wasted water seen to be the equivalent of 600 000 Olympic-sized pools per year.

Water is also a key strategic resource in energy production; the country's impending water scarcity poses a challenge for future power generation plans and electricity supply.

Effectively averting a crisis requires clear water risk data, coordinated planning and incisive action. A response from government is required to ensure better enforcement of existing water regulations and the 'polluter pays' principle with respect to water pollution. Integrated planning and policies are required to create supportive and sustainable agricultural policies for both commercial and smallholder farmers. Functional catchment management institutions are critical to enable better integration in our landscapes.

Recasting business strategy to include a nexus approach will aid in the domestic management of the links between water, energy and food, and will increase the resilience of the South African economy. The first step is to go beyond mere 'good housekeeping' and operational efficiency. Certainly, an understanding of operational water footprints is important, but the real reduction opportunities are beyond factory walls and are

purpose-designed to address areas of greatest impact: at the production and consumption stages of a given value chain.

Assessing risk and the potential for efficiency and waste reductions in the supply chain is an immediate opportunity for the private sector. However, in the long term, businesses need to collaborate at a local level, particularly where there is shared risk in a catchment, to improve water management and reduce risk. Water stewardship offers a clear process for private sector players to move beyond the farm fence and engage in catchment management. Companies can also join a global dialogue – the UN CEO Water Mandate and Alliance for Water Stewardship being two examples of collaborative initiatives aimed at strengthening water governance and stewardship.

Eventually, businesses interested in lasting water security will work with government to address the risk. Public-private collaborations will aid in unlocking the long-term investment required to promote agriculture research and development, build the necessary associated capacity and infrastructure, enable the shift to less water-intensive renewable energy sources, and develop the associated enabling environment critical for increasing productivity and building physical and economic security.

Right now the challenges posed by resource constraints point towards a coming crisis in the provision of clean water, electricity and nutritious food, which are at the heart of our national security and welfare. The response needed to ward off this eventuality must be at a scale that allows for national and regional integration. Local competence is an essential precondition to enable integrated roll-out. It must focus on effective management of resources, enabled by wider technology use and greater governance underpinned by an integrated approach to policy, planning, management and development as well as appropriate institutional capacity.

Tatjana von Bormann
Manager: Market Transformation
WWF-SA

Recasting business strategy to include a nexus approach will aid in the domestic management of the links between water, energy and food, and will increase the resilience of the South African economy. The first step is to go beyond mere ‘good housekeeping’ and operational efficiency. Certainly, an understanding of operational water footprints is important, but the real reduction opportunities are beyond factory walls and are purpose-designed to address areas of greatest impact: at the production and consumption stages of a given value chain.

> We recognise the inherent link between carbon emissions and water use and this is recognised in the completion of our annual carbon footprint where carbon emissions associated with water are included and continuously monitored.
>
> **Royal Bafokeng Platinum**

> Most water saving initiatives require some type of modification from a simple new pump to a complex water treatment plant that requires energy input – up to 70% of the operating cost of water treatment is electricity. Reducing the amount of water requiring treatment or management in the first instance is ideal, as it saves on infrastructure and maintenance costs. Potential trade-offs between water and energy are now being considered more systematically when new initiatives are proposed. We are seeking ... to encourage a breakdown of 'silo' thinking when managing these two areas.
>
> **Anglo American**

Case Study

Mondi – Recognising opportunities to reduce water and energy use together

Mondi has three steps to reducing water and energy use. Firstly, it reduces fresh water consumption, especially potable water, by optimising the sequence of water recycling as a function of the required water quality. Secondly, it cooperates with nearby companies and/or communities to optimise energy and treatment costs. Thirdly, it has begun a project to increase water recycling to improve resource and energy efficiency of production.

Synergies and trade-offs: energy, food, water and land

Companies are increasingly recognising the linkages between water, energy and carbon. Only four companies report that they have not identified any linkages between these issues. The majority report positive synergies between saving water and saving energy (and vice versa). *AECI*, for example, states that energy assessments at various sites have presented opportunities in terms of energy and emissions savings initiatives, most of which will also result in water savings. However, other companies highlight the need for trade-offs. *Anglo American*, for example, reports that most water saving initiatives require some type of modification (from a simple new pump to a complex water treatment plant) that requires additional energy inputs.

In most cases, companies describe the relationship between carbon and water relatively simply, noting for example that enhanced water efficiency is likely to save energy. Few companies appear to be going further to understand the relationships and to integrate these considerations into decision making.

Although companies are only asked to respond to the relationships between water and carbon emissions, some companies are beginning to recognise other critical connections, such as that between biodiversity and ecosystems: *Anglo American* and *SABMiller* both mention the food energy water nexus; *Mondi* reports that the protection of our freshwater ecosystems is going to become increasingly important; *Kumba Iron Ore* has initiated studies concerning the impact of mining on biodiversity; and *Exxaro* has a Water Treatment Technology framework that includes passive water treatment in the form of constructed wetlands that require very little energy inputs. Some companies mention the consequences of climate change as it can affect water (*Anglo American*) and water and biodiversity (*Kumba Iron Ore*). This is encouraging, suggesting an increasing appreciation of the systemic importance of water.

Addressing water governance

Most companies are treating water as a Board-level issue.

All but five companies (83%) report having a water policy or strategy in place, while 72% report Board oversight of water. These are small increases since 2012 (75% and 71% respectively), yet are different to the Global 500 average, where 93% have policies in place, yet only 58% have Board oversight. Water appears to be more of a Board-room issue in South Africa than it is globally; arguably this is either due to the levels of water scarcity and increased risk exposure in South Africa, or to the regulatory requirements relating to the establishment of Social, Ethics and Transformation Committees designated to address such issues.

Companies are setting more quantitative targets to manage water.

Companies reported a total of 66 different targets (44% quantitative and 56% qualitative), of which 80% relate to managing impacts at their direct operations, 6% relate to transparency, and 4% each to supply chain and community engagement (see Appendix 2).

62% of companies have quantitative targets – as compared with 57% in 2012, and marginally less than the Global 500 (66%). There are 29 quantitative targets reported; ten of these are intensity targets, 17 are absolute targets, and two relate to percentage accuracy of measurement requirements. Seven companies have more than one quantitative target. Most of the quantitative targets relate to reducing water consumption (57%), followed by water efficiency (21%) and the quality of wastewater discharges (14%), with one company having a target on recycling.

The remainder of quantitative targets are split over different issues, such as water accounting (*AngloGold Ashanti*), water metering (*Mediclinic*), water investment (*Anglo American*), and education (*Tongaat Hulett*). *Woolworths* is the only company with a quantitative target (on water consumption) relating specifically to its supply chain; all the other quantitative targets relate to direct operations only. *Exxaro* has taken its targets into employee incentive structures; a target for potable water use reduction has been incorporated into each manager's short-term incentive as a modifier that will determine the eventual incentive pay-out.

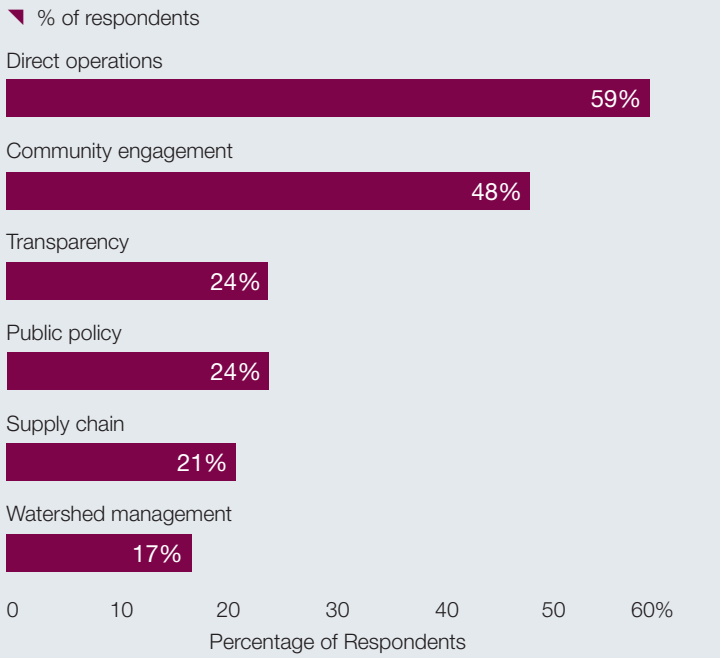
Case Study

Exxaro – A comprehensive strategy

The Exxaro Water Management Strategy is informed by the Exxaro Water Management Programme, regional business inputs, the overall Exxaro strategy, the Exxaro Sustainability Framework and external inputs from industry experts. The Exxaro Water Management Strategy has matured from seeing water as an enabler through control, compliance and management of risk, to water management as an external focus and opportunity to reach other objectives and higher ideals. Exxaro identified sixteen strategic initiatives to reach a specific three to five year goal in water management, as well as some aspirational goals that include becoming self-sufficient in their operational water requirements and becoming a leader in water technology solutions.

> We are targeting a 30% relative reduction in water usage for all Farming for the Future suppliers by 2015. Woolworths has committed to a 50% relative reduction for water usage by 2015 and is making good progress against these targets.
>
> **Woolworths**

Figure 8: Proportion of respondents taking specific action



Companies are doing more on community engagement, but there is a need to do more, especially in terms of watershed management.

When asked to report actions being taken beyond the water policy or management plan, the responding companies reported 104 actions, of which 53% related to the direct operations, 19% related to community engagement, 9% to both public policy and transparency, 6% to the supply chain and 5% to watershed management. Figure 8 illustrates the proportion of respondents reporting the actions.

While it is encouraging that these companies are taking actions to manage water, it is of concern that so few of the targets relate to risks outside the fence line. In a country such as South Africa, there is seen to be scope for more attention to be paid to community engagement or stakeholder management issues, and for an increased focus on watershed management (see also WWF commentary on page 22).

Case Study

Illovo – Investing in irrigation

Illovo successfully completed a phased irrigation upgrade project over four years, to improve financial and economic viability, utilising land, water and energy on a sustainable basis. A total of R84 million was invested to install a water and energy efficient irrigation system on land previously irrigated with a sprinkler system with high energy requirements. Since the completion of the project, water use per season has reduced by about 23%, energy use has reduced by about 20%, and yields have increased by approximately 14 tons of cane per hectare, resulting in sugarcane production increasing by 72 000 tonnes. The water saving enabled the development of an additional 700ha which will produce about 70 000 tonnes of cane.

Sasol, through an Operations Excellence Management System, concluded three water conservation partnerships with municipalities located on the Vaal to save water to the benefit of all catchment users.

Sasol

Taking proactive action to address water-related issues outside of the factory fence line can be very beneficial in not only securing long-term water supply but also improve water quality (thus reducing water treatment costs) and bringing about win-win opportunities for the surrounding communities and environment.

SABMiller

Exploring the potential for water offset mechanisms

Several companies in South Africa are exploring the potential for water 'offsets' or similar mechanisms as part of their water management strategy. The use of such offsets is new and there is still much debate about their role and value.

Although offsets are a well-established mechanism for managing environmental impacts, particularly in carbon markets, the idea of water offsets is generally less well developed. Given the shared nature of the resource, the site-specific complexities of water, and the issues of water quality and quantity, water offsets arguably have more in common with biodiversity offsets than with carbon offsets.

Offset projects could be valuable in South Africa. A significant proportion of South Africa's water (especially for Gauteng) originates in Lesotho, and there may be offset projects to promote better management in the Lesotho uplands. The National Water Policy Review [a] sets out key policy positions to address gaps in the current water policy and their unintended consequences. It also suggests a few issues that require further investigation in order to recommend a policy position, one of which includes 'Mechanisms for Partnerships'. This is defined as "mechanisms to encourage water use efficiencies within and between the various water use sectors of the country. One such mechanism is that of water-offsetting."

While WWF has its Water Balance programme and *Sasol* is actively working on an offset mechanism for its work with municipalities, water offsets are at an early stage of development in South Africa. Examples of how offsets could benefit South Africa include:

- *WWF Water Balance Program* [b]. Corporates commit to 3R steps (Review – accurately measure water usage; Reduce – implement a water reduction strategy; and Replenish – invest in projects that will make 'new' water available into freshwater ecosystems) over five-year agreements. Currently, the programme focuses on replenishing water through alien clearing projects as this has been identified as one of the most important water supply side interventions that can be made at national scale. Investments are channelled to responsible landowners (mainly farmers) who will commit to clearing.

- *Providing funds for cost-effective infrastructure investment.* This is the core of *Sasol*'s approach. It is seen to be more cost effective in terms of water savings for them to invest in local municipalities' water systems than to further improve the efficiency of their own facilities. Not only does this approach make more water available for *Sasol*, it also provides critical improvements in water security and sanitation for the local population.

- *Encouraging investment in upstream management and agriculture.* Given that agriculture accounts for 60% of water use in South Africa, some companies operating downstream that require water may find a greater return on their investment to invest in agriculture upstream (for example through drip irrigation) than in their own systems or in different parts of their value chain. This already happens successfully in other countries as the following example from Toronto, Canada [c] illustrates:
  To reduce water usage by 30%, a large construction firm owning a block of 400 condominiums had an option to replace all the toilets cisterns throughout the whole building at a cost of $8 million and taking six months. The company approached a large farmer who was using 100 million gallons of water per day through an old irrigation system. Only 10% of the water was used by the crops, with 90% lost by run-off and evaporation. The construction company invested US$4 million to upgrade the farmer to a high tech drip irrigation system, leading to a saving of 90 million gallons per day, as well as power savings and reduced carbon emissions. The construction company saved US$4 million, and had a water credit of 90 million gallons of water. The company traded the water credits to recover the full US$4 million investment.

- *Incentivising the use of lower quality water.* Declining water quality is a critical issue in some areas of the country. In certain cases, companies are using higher quality water than they need because there is no incentive to incur the costs of treating lower quality water. Offsets could provide a mechanism to recompense companies for using low quality water that would otherwise be wasted and freeing up valuable high quality water for other uses.

Water offsets can have a role to play in making more effective use of scarce resources in South Africa. Although by no means a panacea, well planned and well managed use of offsets has the potential to result in more effective use of scarce financial resources, as well as benefits for a range of stakeholders and for the environment.

a DWA (2013) *National Water Policy Review: Updated policy positions to overcome the water challenges of our developmental state to provide for improved access to water, equity and sustainability*. Notice 888 of 2013

b WWF (2012) Water Balance Programme http://awsassets.wwf.org.za/downloads/water_balance_2012_e_booklet_1.pdf

c http://www.greenearthafrica.com/water-offsets-credits.html

> Actively supporting the development of a national water offsetting mechanism will enable Sasol to direct appropriate effort and funds to initiatives (in the catchments) that will have a bigger impact on reducing the water-scarcity risk than applying the effort/funds internally.
>
> **Sasol**

Case Study

Anglo American Platinum – Investing in water treatment

Anglo American Platinum is involved in various public-private partnerships to manage water supply. For example, it has initiated a pre-feasibility study to increase the supply of water to Rustenburg, involving 100 Ml/d originating from Hartebeespoort Dam, of which 50% would be provided to the municipality. A R15 million water treatment plant was commissioned in 2011 to treat the sewage effluent up to operational standards, and Anglo American Platinum has an off-take agreement with the Municipality to use up to 15 Ml/day treated sewage effluent, thereby reducing their uptake of potable water. In addition, Anglo American Platinum is actively involved in the Joint Water Forum (JWF), a public-private partnership initiative that is working to manage water supply issues of the Olifants River Resources Development Project. This development includes the construction of the De Hoop Dam and associated distribution components. Anglo American Platinum is evaluating options in Thabazimbi for the local municipality to improve the bulk water supply to all stakeholders and has assisted with the development of a sewage treatment plant for Northam Sewage Works, enabling Union Mine to secure a further 2 Ml/d of treated sewage water which will reduce its need for potable water.

> In 2012 Anglo American Platinum developed an integrated data-display system (IDDS) that makes it possible for us to collate all the water-quality data for our operations into a single database. The water quality data covers ... various water sources ... such as groundwater, surface water, potable receiving water bodies such as rivers, process water such as return-water dams, mine service water, treated sewage water and cooling water.
>
> **Anglo American Platinum**

Companies are beginning to make capital investments in water infrastructure and technology.

There is a lack of adequate water infrastructure, mainly due to poor maintenance in South Africa[21]. While the DWA is able to budget for an estimated R38 billion / year, on current estimates this is only just over 50% of what is needed, leaving a funding gap of R34 billion / year.[22] Given the critical importance of water, some companies are stepping into the gap and investing in water infrastructure through private-public partnerships (such as *SABMiller* with WWF and GIZ, and *Sasol*'s VRESAP pipeline investment). Water prices are also expected to rise to provide some of the necessary additional funding.

This year's responses have seen several companies reporting capital investments in their own water infrastructure. For example: *Anglo American* reports a 6.8% saving against project water use as a result of a $66 million investment in water saving projects; *Gold Fields* commissioned the construction of two water treatment plants; and *Exxaro* has developed the New Exxaro Tomorrow (NEXT) concept 2030 future mine, where the principles of sustainable mining are built in, encompassing zero waste, zero carbon footprint, sustainable energy, sustainable communities and closed loop water use.

Companies need a better understanding of their water discharges and recycling/re-use.

Even though almost all of the respondents (97%) are able to report on quantitative water withdrawals, only 72% of respondents are able to report water discharges (compared with 79% in 2012), and only 69% can report data for recycling or re-use of water (compared with 71% in 2012). Accurate monitoring and measuring of data is key for good management. Companies need a much better understanding of their use of water, which can only happen when it is measured. The importance of water metering for understanding water use is illustrated by *Anglo American Platinum* – they found that the water they used for primary activities decreased, while water used for non-primary activities was more than they had previously measured as a result of improvements in water metering at one of their mines.

21 Water for Growth and Development in South Africa version 7 http://www.dwa.gov.za/WFGD/documents/WfGDv6Nov21.pdf

22 Pegasys (2012) Review of Financing Mechanisms for Infrastructure: Project to Revise the Pricing Strategy for Water Use Charges and Develop a Funding Model for Water Infrastructure Development and Use and a Model for the Establishment of an Economic Regulator, 29 June 2012.

Self-selected respondents

In addition to the 59 companies from the JSE 100 invited by CDP to participate in the Water Program, six organisations from outside the target sample chose to participate, the same as last year (and five in 2011). This year's self-selected respondents were *Eskom*, *Grindrod Ltd*, *Industrial Development Corporation*, *Scaw Metals Group*, *South African Post Office* and *Sun International Ltd*. Three of these responses were public, the same number as last year (Table 4). The number of responses is low in comparison with the voluntary respondents to CDP's climate change request, which has grown to 13 companies in 2013 from only three in 2011.

Although voluntary responses are not included in the aggregate analysis, they are nonetheless interesting, adding further context to those companies that were invited to respond to CDP's water program. Hopefully this inspires other companies to consider the strategic value of water in South Africa.

> Eskom has formed partnerships with mining houses operating close to power stations, building water treatment plants that will treat mine water in order to be reused at power stations. The power stations will therefore reduce the raw water consumption or abstraction.
>
> **Eskom**

Table 4: Self-selected respondents to the CDP water program in 2013 and their status in 2012 and CDP climate change program in 2013

Company	GICS Sector	CDP water program response status 2013	CDP water program response status 2012	CDP climate change program response status 2013
Eskom	Utilities	AQ v	AQ v	-
Grindrod	Industrials	AQ v	AQ v	AQ
Industrial Development Corporation	Financials	AQ v np	AQ v np	AQ v np
Scaw Metals Group	Materials	AQ v np	-	AQ v
South African Post Office	Industrials	AQ v	-	AQ v
Sun International Ltd	Consumer Discretionary	AQ v np	AQ v np	AQ

KEY

AQ	Answered questionnaire
AQ v	Voluntary response
AQ v np	Voluntary response, not public
-	No voluntary response

Disclosure driving action on shared water challenges

> We have long come to the conclusion that a more meaningful contribution to catchment security is achievable by working beyond the factory fence.

Disclosure is a critical pillar of any public or corporate water stewardship initiative since it brings credibility to actions in response to a shared water challenge. The National Department of Water Affairs hosts the biannual Vaal River Strategy Steering Committee. The ninth meeting took place in January 2014. As a large user of water from the Vaal, Sasol is highly dependent on these meetings to obtain firsthand the latest update of the situation facing water users in the region. These sessions provide a very useful platform from which to gauge how well the actions from this sector are being implemented to address shortcomings in the Vaal. The disclosure of relevant and credible information is critical to the success of these meetings. I left this year's session with a clear and credible message confirming that the demand from the Vaal continues to exceed its sustainable supply capability. Actions required to bring the Vaal into balance are known and understood. Interventions include the eradication of unlawful irrigation, the aggressive implementation of water conservation by reducing leakages from municipal water supply infrastructure, the treatment and recovery of legacy acid mine drainage, and implementing the already delayed further phase of the Lesotho Highlands Water Project to urgently augment water supply to the system.

With Sasol using about 3.5% of the available yield of the Vaal River System why should it matter how Sasol responds to its water security risk? The water supply shortfalls experienced during the 1990s resulted in Sasol having to make costly emergency infrastructure investments. These investments in achieving water security remind us about the consequences of water deficits, even during this unusually prolonged wet period that is masking the current net deficit of the system. But the answer goes beyond past fears. We have long come to the conclusion that a more meaningful contribution to catchment security is achievable by working beyond the factory fence to advance water security for all users of the Vaal. With water losses from municipal water supply infrastructure in the Vaal catchment being well over 40%, Sasol has partnered with three municipalities reliant on the Vaal to repair household water leaks and launch community awareness programs. The focus has been on fixing leaking taps and leaking toilets in residential areas in an innovative approach to enhance water security for all users reliant on the Vaal catchment. The water savings achieved to date with the flagship Sasol/ GIZ/ Emfuleni water conservation partnership equates to 'offsetting' approximately 2% of Sasol's total annual water use from the Vaal River System.

A small start perhaps, and with several more low-hanging opportunities available for collective partnering, the role of the private sector is yet to be fully exploited. As elaborated above, corporate water users rely on water resource planners to disclose information on the situation of the catchment for decision making. In turn a corporate response on water – a public good – needs to be underpinned by a commitment to transparent disclosure. CDP water continues to assist companies to perform the right level of disclosure and bring credibility to corporate action responding to a shared water challenge.

Martin Ginster
Water and Environmental Advisor
Sasol

Water as a shared resource

> As a major supplier of fresh produce, Woolworths has a significant role to play in water conservation, since the bulk of South Africa's water is used for agriculture, specifically irrigation.

South Africa is a water-scarce country. In addition, the quality of our water is increasingly threatened by industrial and agricultural activity as well as under-investment in infrastructure. As a major supplier of fresh produce, Woolworths has a significant role to play in water conservation, since the bulk of South Africa's water is used for agriculture, specifically irrigation.

We have taken a value chain approach from supplier to customer to managing sustainability risks and opportunities. Through this approach we have influenced our suppliers and customers to join us on our sustainability journey. This is particularly important since most water is used in the foods supply chain or production process, rather than in stores while customers, naturally, use water in the preparation of food and care of clothing.

Woolworths is committed to reducing water use, and responsibly managing waste and effluent water across our own operations. We have installed water measuring systems (pulse metres linked to our metering online system) in our stores and head office. Our head office has also installed a water treatment facility to purify water which flows from Table Mountain, under the building and into Cape Town's storm water system. The water was previously discharged into the sea without being used, conserving an estimated 75 000 litres a day.

In clothing we focus on fabrics that require less water in their production, that can be washed at lower temperatures, and that don't require ironing or tumble-drying. All our fabric suppliers adhere to very strict standards. No materials, dyes or chemicals used in the production of Woolworths clothing or textiles pose what we believe to be an unacceptable risk to health or the environment during their manufacture or disposal.

One of the largest areas of water conservation in the supply chain is through the Woolworths Farming for the Future program. The program helps farmers grow quality produce while protecting the environment, preserving natural resources and reducing dependence on chemical fertilisers, herbicides and pesticides. We also focus on water efficiency and the management of waste water. Farming for the Future measures the water required for the plant and irrigation is used only if and when required. Recent audits show significant water savings of 16% across top supplier farms. The conservative use of chemicals also prevents possible fresh water contamination from pesticides and fertilisers.

Woolworths is the only retailer in the World Wide Fund for Nature's (WWF) Water Balance Program. The scheme focuses on reducing the impact of invasive alien plants on water supplies, restoring biodiversity and ecosystems function as well as creating jobs and economic empowerment. Water balance ensures that enough water is released into South Africa's water system to offset the water used by Woolworths' operations each year. In addition, we have a three-year transformational partnership with WWF-SA dealing with broader issues of sustainability.

Woolworths is also a member of the CEO Water Mandate – a unique public-private initiative designed to assist companies in the development, implementation and disclosure of water sustainability policies and practices. We have worked with technical partners such as Pegasys, the Greenhouse and WWF on water footprint and life cycle analysis to understand water dependencies and their implications in the Woolworths supply chain.

Woolworths is committed to water education by providing resources through its 'Making the Difference' program which helps to raise awareness on water issues amongst learners, customers and employees. Woolworths is conscious that we have a collective responsibility to protect our most precious resource and is working to incorporate this belief in all that we do.

Justin Smith
Head of Sustainability
Woolworths

4. Sector Summaries

The sample

Understanding the sector context in which each company operates enhances the assessment of company disclosure and performance, and facilitates more meaningful comparison between companies. This section reviews the 2013 water results in the context of the following four sectors and associated sub-sectors:

- **Consumer Discretionary and Staples** – comprising Multiline Retail; Speciality Retail; Food Products; Food & Staples Retail; Beverages; and Tobacco
- **Health Care** – comprising Pharmaceuticals; and Health Care Providers & Services
- **Materials & Energy** – comprising Metals & Mining; Oil, Gas & Consumable Fuels; Chemicals; and Paper & Forest Products
- **Industrials** – comprising Construction & Engineering; Electrical Components & Equipment; and Industrial Conglomerates

Due to the small number of respondents from the Consumer Discretionary sector (three), this sector has been combined with Consumer Staples. Only one company was invited and responded from the Energy sector, so it has been combined with Materials. As the only company in the Financial Services sector that was approached did not respond, the sector has not been included. No companies in the IT sector were approached this year.

Overview

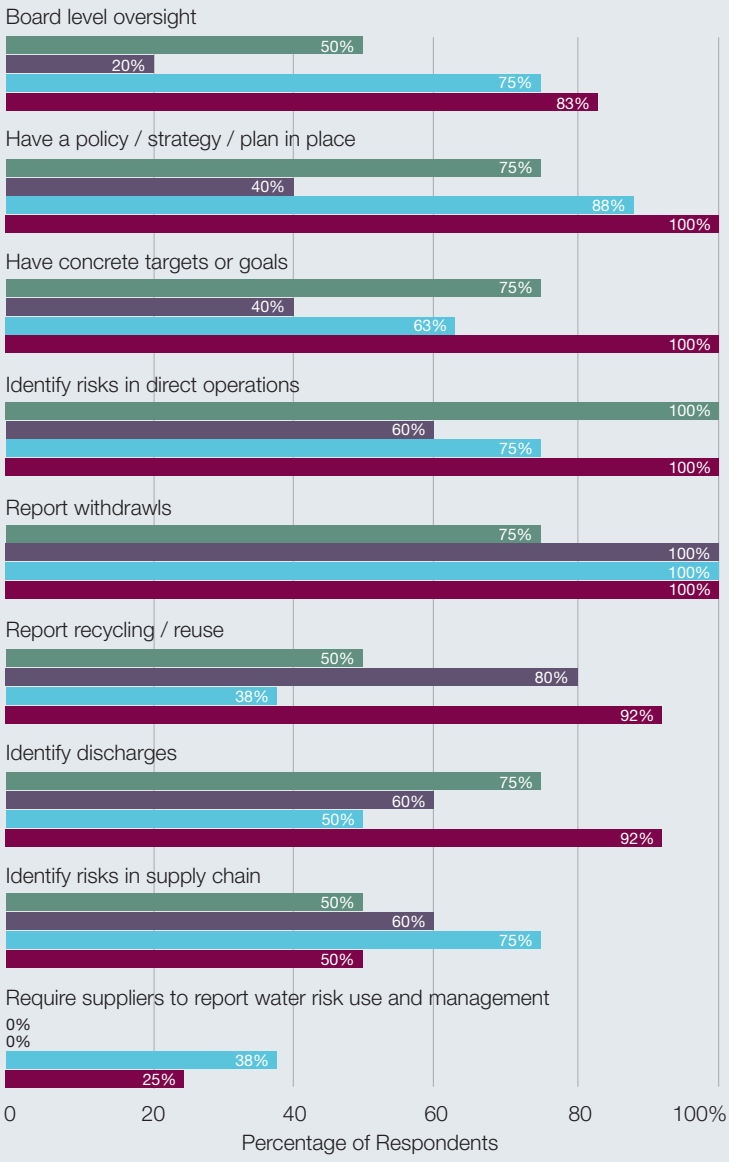
There is considerable variation in the response rate between the sectors (Table 5). This is in large part due to sample size variation. It is interesting to note that the Consumer Discretionary and Staples sectors in South Africa show a significantly lower response rate than the Global 500 average. The Materials sector (without Energy) also shows a much lower response rate, while Industrials and Health Care are much higher than the Global 500 average.

In terms of sector response, the Materials & Energy sector performs the best overall (Figure 9). While Materials & Energy perform best in almost all the indicators, they lag behind in terms of identifying supply chain risks. Consumer Discretionary and Staples perform well in terms of having a water policy with Board oversight.

Table 5: Response rate of the sectors from CDP SA 2013, 2012, 2011 and Global 500 2013

SECTOR	SA 2013	SA 2012	SA 2011	Global 2013
Consumer discretionary	38% (8/21)	36% (8/22)	(11%, 1 NP)	48% (21/44)
Consumer staples			46%	76% (37/49)
Financials	0% (0/1)			
Health care	80% (4/5)	60% (3/5)	60%	74% (24/31)
Industrials	63% 5/8)	43% (3/7)	n/a	47% (18/38)
IT	0% (0/0)	n/a		54% (14/26)
Materials	60% (12/20)	62% (16/26)	55% (11/20)	75% (29/39)
Energy			100% (1/1)	47% (26/55)
Utilities	n/a	n/a		70% (16/23)

Figure 9: Management and Governance responses compared between sectors



Consumer Discretionary and Staples

RESPONSE RATE

38%

(8/21)

◥ 2012: 36% (8/22)

Response of industries within the sector:

Consumer Discretionary

Hotels, Restaurants & Leisure *(0 of 1)* ◹
Household Durables *(0 of 1)* ◹
Multiline Retail *(1 of 2)* ◥◹
Specialty Retail *(1 of 4)* ◥▽▽▽
Textiles, Apparel & Luxury Goods *(1 of 1)* ◥

Consumer Staples

Beverages *(1 of 1)* ◥
Food & Staples Retailing *(1 of 5)* ◥▽▽▽▽
Food Products *(2 of 5)* ◥◥▽▽▽
Tobacco *(1 of 1)* ◥

Key findings

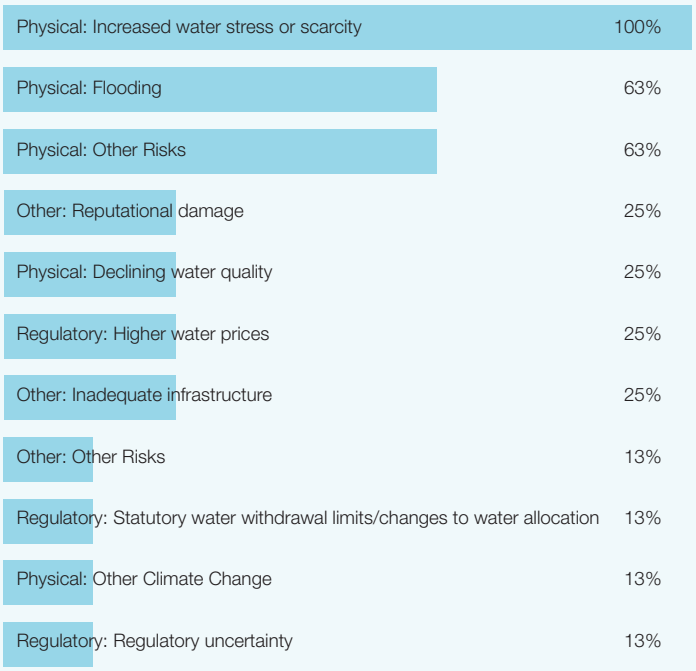
- The response rate was the lowest of all the sectors, with only eight companies out of 21 responding. One of these responses was non-public. It is concerning that the response rate is declining across Consumer Staples, with the 42% response rate in 2013 down from 50% in 2012. One company that responded last year, declined to do so this year (*Pioneer Foods*). The combined response rate of the Global 500 (62%) continues to be much higher.
- Those companies that respond are making progress with some aspects of water stewardship; all companies are able to report water withdrawals, and the majority of companies have a policy / strategy / plan in place supported by Board-level oversight.
- There seems to be growing awareness in the sector of risks in the supply chain: the same number of respondents identify risks in their direct operations as in their supply chains, with all companies within the Consumer Staples sub-sector reporting risk to their supply chains.
- During the reporting period, two of the responding companies paid penalties or fines for significant breaches of discharge agreements or regulations.

Overall risk exposure

- 75% of respondents report exposure to risks in direct operations and in their supply chains. The majority of the risks in direct operations are seen to be near-term (less than five years), whereas in supply chain the risks are more evenly split, with 56% being considered near term. Although 75% of respondents report that they have risks in their supply chains, only 38% require their key suppliers to report on their water use, risks and management. The sector has the greatest recognition of supply chain risks – as would be expected for companies that rely on agricultural produce.
- 63% of respondents have experienced water-related impacts in the past five years (less than the 72% South African average), with water stress and flooding being cited most often (five times each). For some respondents these impacts have had significant consequences. *SABMiller* reports that recent droughts in the Southern Cape of South Africa have resulted in reduction of hop supplies with some farmers only recording half their normal production tonnage. In addition, two municipalities in South Africa have cut water supplies to two breweries due to the unavailability of raw water supplies.

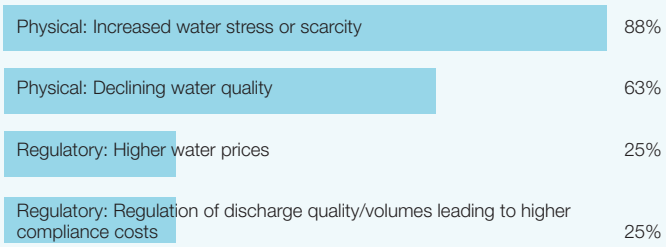
Risks in Direct Operations

% of sector respondents identifying the risk



Risks in Supply Chain

% of sector respondents identifying the risk



Management and governance:

- Although most respondents have a strategy or policy in place, only 63% have water-related concrete targets or goals. The majority of these are focused on direct operations despite exposure to risk in supply chain being rated highly. *Woolworths Holdings Ltd* through its Farming for the Future programme is targeting a 30% reduction in water use across these suppliers by 2015, whilst *Pick n Pay* is aiming to engage with suppliers on their water use issues.

Seizing opportunities:

- 75% of respondents identify various opportunities, most commonly cost savings and increased brand value, with some limited recognition of new products and services. For example, *Tongaat Hulett Ltd* has started recovering water from sugar cane, which is purified and sold back to the local municipality.

Case Study

SABMiller – Analysing potential water risks

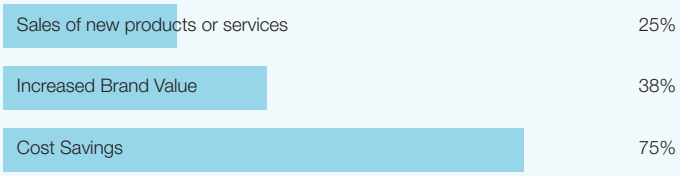
SABMiller established a public-private partnership with WWF and GIZ in order to undertake a robust analysis of the potential water risks to its facilities. The partnership carried out a water footprint assessment, which identified potential water risks, two of which were agreed as priority areas to be addressed. These are (i) the vulnerabilities in SAB Ltd's agricultural supply chain, particularly the availability of water to hop farms located in the Gouritz water catchment in the Southern Cape; and (ii) identifying local and catchment-level actions to protect SAB Ltd's brewery at Polokwane against the risks relating to potential water scarcity and water quality arising from its water-stressed location in the north of the country. Work programmes are now active in both projects in collaboration with local authorities and other relevant stakeholders.

Management and Governance

% of sector respondents identifying the risk

Opportunities

% of sector respondents identifying the risk



> Price inflation of water due to scarcity will most likely affect our fresh produce and butchery suppliers in the future. We completed a study on the business impacts of this type of risk and water price inflation was estimated at R1.2 billion for our total supply chain.
>
> **Pick n Pay**

Health Care

RESPONSE RATE

80%

(4/5)

- 2012: 60% (3/5)

Response of industries within the sector:

Health Care

Health Care Providers & Services *(2 of 3)*

Pharmaceuticals *(2 of 2)*

Key findings

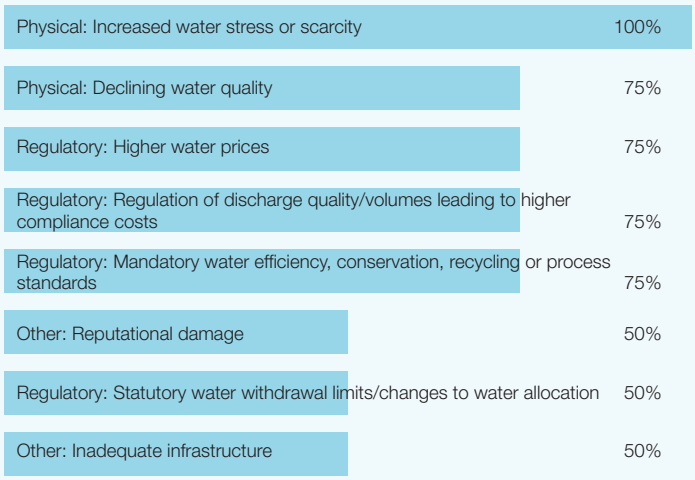
- The sector had the highest response rate (higher than the 74% Global 500 sector, and the 60% in 2012), albeit from a small sample size. The same three companies that responded in 2012 did so again, with one new respondent.
- The sector has experienced significant water related detrimental impacts, more than the Global 500 Health Care sector.
- The sector is aware of new opportunities in relation to water, and is particularly aware of potential cost savings as a result of improved water use; only one company noted the opportunities of new products.
- The sector is aware of reducing its water consumption, with 75% having quantitative targets in place to do so.

Overall risk exposure

- Awareness of risks in direct operations is positive: all respondents in the sector identified water as a substantive risk to their direct operations, reporting 26 risks. Just under half of these are expected to materialise within the next five years, with an unspecified time frame for the rest. Declining water quality was the most reported risk (19%), perhaps due to the sector's reliance on high quality water for manufacturing processes.
- Risk exposure in the supply chain is less well reported. While two companies are at risk, and identify water scarcity impacting on services and declining water quality requiring expensive water treatment, the other two do not know if they are at risk. *Adcock Ingram* is currently undertaking a process of reassessing preferred suppliers and this will include obtaining information about water-related concerns.
- Three of the four companies in the sector have experienced water-related impacts in the past five years. This is substantially more than the low 27% in the Global 500 Health Care sector. For example, *Mediclinic* suffered no water at three sites for seven to 10 days, and *Netcare* suffered from inadequate water infrastructure, which impacted on available drinking water and meant tankered water was brought in for bulk services.

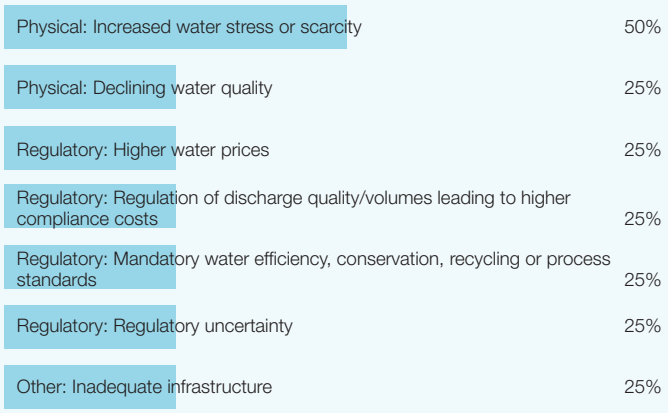
Risks in Direct Operations

% of sector respondents identifying the risk



Risks in Supply Chain

% of sector respondents identifying the risk



Management and governance

- All but one company in the sector has a water policy, and two of those policies have Board oversight. Three quarters of the sector have quantitative targets to reduce water consumption (two absolute and one intensity).
- All four of the companies are taking actions beyond their water policy. *Adcock Ingram* has a goal to improve employee awareness on water. *Netcare* is setting 2013 as a new base year for future targets that will have a commitment for a 10% reduction in water usage. *Mediclinic* is focused on improving transparency and has installed its own water meters. Contingency planning is key for hospitals – and both *Mediclinic* and *Netcare* are conscious of actions that allow a facility to operate during conditions of low water supply.
- One company reports having paid a penalty for breach of discharge regulations, compared with no penalties being paid by this sector in 2012.

Seizing opportunities

- All the respondents in this sector identify water-related opportunities, all of which are expected to materialise within five years. All of the identified opportunities relate to cost savings, apart from one that relates to new product or services (in particular, selling effluent on to other industries to use in their manufacturing process).
- Three companies identify linkages or trade-offs between carbon and water. For example, *Netcare* notes that increasing water efficiency will result in less water being pumped, which in turn will result in lower carbon emissions associated with electricity usage to pump water to and from reservoirs.

Case Study

Adcock Ingram – Dealing with wastewater

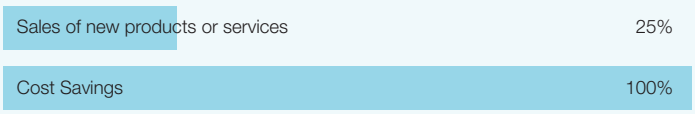
At the Aeroton plant Adcock has changed the water purification process to ensure better efficiency and recovery of waste for use in effluent. At the Wadeville factory, effluent is tested and monitored for compliance to municipal specifications. At the Clayville operations the recovery of 10 000 lt per hour reverse osmosis water generated by the site was implemented and operational since July 2012. Recovered water is used for domestic and garden consumption. Runoff (effluent) is tested and monitored for compliance to municipal specifications.

Management and Governance

% of sector respondents identifying the risk

Opportunities

% of sector respondents identifying the risk



> Currently there are investigations into options of reuse of effluent for other purposes in the manufacturing plant. Adcock Ingram is also looking at the possibility of using effluent to green the sites or sell this on to other industries that can use it in their manufacturing process due to the quality of the effluent. These initiatives will help reduce operating costs.
>
> **Adcock Ingram**

Industrials

RESPONSE RATE

63%

(5/8)

◥ 2012: 43% (3/7)

Response of industries within the sector:

Industrials

Construction & Engineering *(1 of 3)* ◥▽▽

Industrial Conglomerates *(3 of 4)* ◥◥◥▽

Trading Companies & Distributors *(1 of 1)* ◥

Key findings

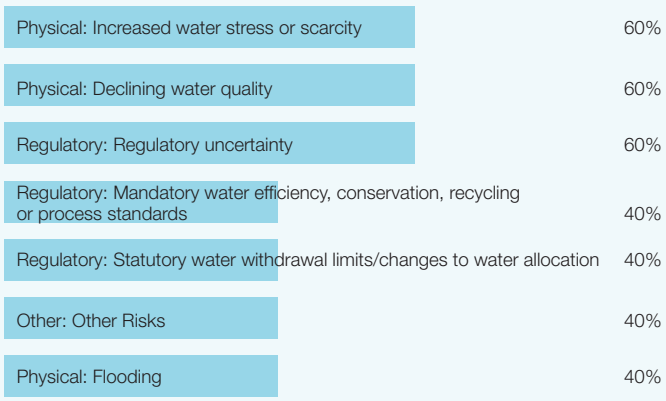
- The response rate for the sector improved to 53% from 43% in 2012, which compares favourably with the Global 500 response rate of 47%.
- The sector has a relatively poor understanding of its supply chain. The global nature of supply chains for input materials in this sector needs consideration.
- Two companies are now reporting a water response strategy and two also have targets in place. The sector lags behind its global peers with respect to the existence of a strategy / policy / plans.
- No respondents paid penalties or fines for significant breaches of discharge agreements or regulations.

Overall risk exposure

- 60% of respondents reported that they are exposed to risk in their direct operations and in their supply chains. These are not the same companies – oddly, *Bidvest* identified risks in their supply chain but not direct operations, while *Barloworld* identified risks in their direct operations but not supply chain. The majority of direct risks are identified as near term (92%). The sector has a poor understanding of its supply chain. Although respondents identified supply chain risk, only three risks were identified in total, two of which are considered to be long term. No respondents required suppliers to report on their water use, management and risk profile. This is surprising given recent examples of significant water impacts in this sector's global supply chain from around the world (for example the flooding impacts from the Japanese tsunami).
- One respondent (*Reunert*) suggests that water-related risks do not pose a material risk to their operations and one respondent is still investigating whether they do.
- This sector relies heavily on water for some of its processes. Declining water quality and increased water stress are perceived as major risk factors as well as uncertainty regarding the regulation of water. *Altron* considers its operations to be in locations of water scarcity and is looking to become an active participant in water management issues in the areas in which it operates.
- 60% of respondents have experienced water-related impacts on their business in the last five years. Flooding was the

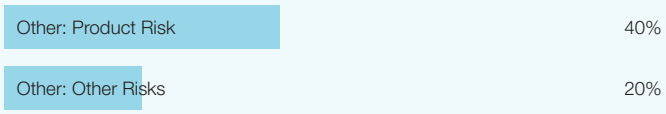
Risks in Direct Operations

% of sector respondents identifying the risk



Risks in Supply Chain

% of sector respondents identifying the risk



most commonly cited impact, with both direct operations and supply chains seeing the consequences of lost production time and consequently decreased revenue. *Altron* suffered detrimental impacts as a result of a significant delay in meeting orders due to the flooding of Japanese factories following the tsunami in 2011. Subsequently supply chain continuity has been built into their sustainability strategy.

Management and governance

- Only one respondent (*Bidvest*) reports that the Board (or equivalent) has oversight of the water policy, strategy or plan. This is the lowest of all sectors and compares unfavourably with the Global 500 Industrials sector (61%). Two respondents (40%) cite that quantitative goals and targets are in place, an indicator that again performs badly compared with the Global 500 sample and the 2013 South African average (66% and 59% of respondents respectively). Although *Barloworld* considers its impacts on water to be relatively small it has a target in its equipment division to improve water-use efficiency by 30% by 2014.
- All respondents are able to report water withdrawals and 80% of respondents report on water recycling / reuse faring better than the Global 500 sample with a response rate of 44%.

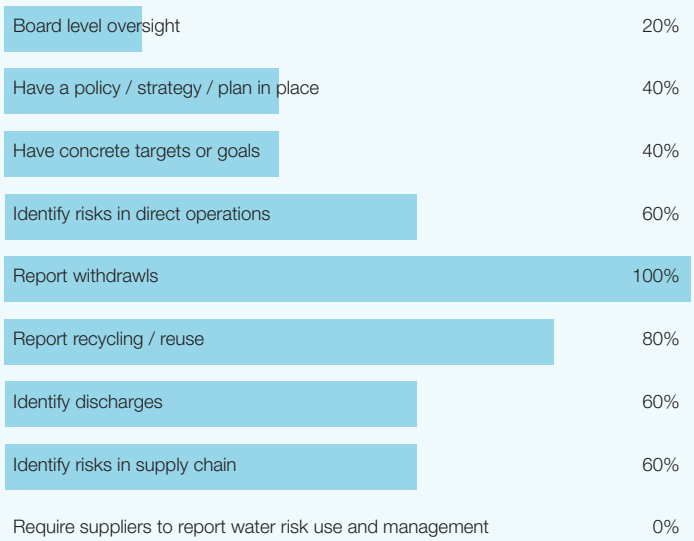
Seizing opportunities

- The sector identified nine opportunities, with the most commonly cited opportunity being cost savings. Three opportunities were identified for new products or services. This sector should be much more focused on this area of enhanced revenue from new products. For example, *Barloworld* has the opportunity of developing new products and services in conjunction with its supply chain partners. In turn these products could assist customers in meeting their sustainable development objectives and enhance their resilience in the face of water-related risks.

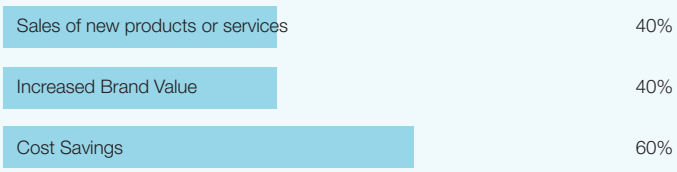
Case Study
Barloworld – Reducing water use in key operations

Barloworld is not a significant water consumer relative to other industry sectors. Nonetheless, Barloworld has adopted a MAR (Measure, Avoid and Reduce) approach to managing water consumption. Water monitoring systems are in place at most major sites to allow monitoring of consumption trends, identification of anomalies and mitigation against excessive and/or unnecessary use. The use of MAR as a water management approach has reduced the impact of water shortages, reduced quality and increased water prices by reducing water consumption in group operations. Barloworld Equipment South Africa has an aspirational target of 30% improvement in water-use efficiency by 2014 (2009 baseline). Water usage increased by only 4% against significantly increased activity levels (18% increase in year-on-year group revenue). Barloworld also recycled 15% of its total water usage in FY2012 up from 10.6% in FY2011.

Management and Governance
% of sector respondents identifying the risk



Opportunities
% of sector respondents identifying the risk



> Altron recognises that water availability may in future be constrained as a result of increasing industrial and community pressure on water supply and therefore needs to be conserved.
>
> **Altron**

Materials & Energy

RESPONSE RATE

60%

(12/20)

2012: 42% (16/26)

Response of industries within the sector:

Materials

Chemicals *(1 of 2)*

Construction Materials *(0 of 1)*

Containers & Packaging *(0 of 1)*

Metals & Mining *(9 of 13)*

Paper & Forest Products *(1 of 2)*

Energy

Oil, Gas & Consumable Fuels *(1 of 1)*

Key findings

- This sector had a slightly lower response rate than in 2012, and it was lower than the Global 500 rate (74%). The sample size was also smaller this year.
- The vast majority of responses are from mining companies, with one paper and forest products company, one chemicals, and one energy company.
- The sector has the highest response rate on many indicators; only in relation to the supply chain does it lag behind. It is very aware of the risks to its direct operations – and is responsible for identifying half the total risks.
- The sector is doing well in managing its water risk. All the respondents have a water policy in place, and all but one have Board oversight. It performs well on having quantitative targets (75%) and is responsible for half the total of all actions being taken on water beyond the water policy.

Overall risk exposure

- This sector faces considerable water-related risks and shows impressive awareness of those risks. All the companies in the sector are exposed to risk. The most commonly cited risk by the sector is increased water stress (26%), followed by declining water quality (12%) and flooding (11%). Almost three-quarters (74%) of the risks are likely to arise within the next five years.
- Seven companies in the sector have operations in the Limpopo or Orange River basins and are at risk in these areas. Eight of the responding companies believe that their raw materials/inputs come from regions at risk.
- As is the general trend with the JSE responses, the supply chain is less well understood than direct operations. Half the respondents said that they are at risk in their supply chain, two are not at risk in their supply chain, and one third of companies do not know. The companies that do face risks identified just 13 risks, significantly fewer than to the direct operations. The most reported risk was water stress (62%), and five risks relate to electricity shortages. The vast majority (85%) of

Risks in Direct Operations

% of sector respondents identifying the risk

Physical: Increased water stress or scarcity	92%
Physical: Declining water quality	58%
Physical: Flooding	58%
Regulatory: Higher water prices	58%
Regulatory: Increased difficulty in obtaining operations permit	50%
Regulatory: Regulation of discharge quality/volumes leading to higher compliance costs	42%
Other: Inadequate infrastructure	42%
Other: Reputational damage	42%

Risks in Supply Chain

% of sector respondents identifying the risk

Physical: Increased water stress or scarcity	50%
Physical: Declining water quality	17%
Regulatory: Higher water prices	17%
Regulatory: Increased difficulty in obtaining operations permit	17%

the risks are faced within five years. Three companies require suppliers to report on water risks.

- There is little acknowledgement of risks downstream in the supply chain. Only one company paid a penalty for breach of discharge regulations. All the companies apart from *Northam* and *Royal Bafokeng Platinum* suffered impacts from water-related issues. Of the 26 impacts that were suffered, exactly half related to flooding, the same as the average responses.

Management and governance

- All the companies in the sector have a water policy in place, and all but one have Board oversight of it. This compares very favourably with the Global 500 Materials sector (66%), illustrating the greater than average awareness of water at Board level in South Africa, and particularly in mining companies that make up the majority of this sector.
- Three-quarters of the sector have quantitative targets, which is the same as last year, and compares favourably with the Global 500 (66%). Forty targets are reported overall, fifteen of which are quantitative (eleven absolute, two intensity and two accuracy requirements). This is a significant improvement on the seven quantitative targets in 2012. In addition, the sector is responsible for almost half the actions taken beyond the water policy (45 of 109 actions). Seven companies in the sector have specific targets regarding community engagement, illustrating the importance placed on having a social licence to operate.
- All the companies identified linkages between carbon and water.

Seizing opportunities

- All the companies in the sector, apart from *Northam*, identified water-related business opportunities, a similar result to the Global 500 (93%) and the same as 2012. Additionally, 49% of those are expected to materialise in the next five years. Cost savings (67%) and increased brand value (50%) are the most commonly reported opportunities.

Case Study
Kumba Iron Ore – Public private partnerships for water

Kumba is participating in a water infrastructure project with the Thabazimbi municipality in the Limpopo. This forms part of a larger infrastructure initiative being rolled out by the municipality to upgrade and rehabilitate existing infrastructure. Thabazimbi mine has established links with the local town, which bears its name. Kumba will fund part of the phase to build a chlorination system to dose all water supplied to the town. Water from five boreholes will be treated to potable standard. Kumba has committed funding of R24 million to this project.

Management and Governance

% of sector respondents identifying the risk

Opportunities

% of sector respondents identifying the risk

Note: Many opportunities labelled "other" were reported for this sector, but none of these was statistically important.

> Anglo American requires that all operations comply with local legislation and with the requirements of the Anglo American Water Standard. We actively participate in water catchment forums with peers, engage with local and national regulators, and locally with communities on key risk areas.
>
> **Anglo American**

5. Closing Commentary: Irbaris and Incite

> Major challenges lie ahead if the business community is to make a real contribution in avoiding an economic, social and environmental water crisis in the country within the foreseeable future.

There is much for the South African business community to be proud of in its efforts on water. While there are many challenges to be overcome, the majority of companies that responded to the CDP recognise the water-related risks that they are facing and are taking some form of action to address the risks they have identified. Moreover, there continue to be several companies that are pursuing important and innovative approaches, and that are recognised internationally as leaders in managing water risks.

Despite this, there are some serious shortfalls. Major challenges lie ahead if the business community is to make a real contribution towards avoiding an economic, social and environmental water crisis in the country within the foreseeable future.

What the responses tell us

Many companies recognise the risk and the need for shared solutions.

As a whole, South African businesses appear to be ahead of other countries in recognising the need to take action on water (even compared to other water-stressed countries such as Australia). Almost three-quarters of companies are facing, or expect to face, water issues within five years. This is reflected in the Board-level attention to water and the importance attached to establishing effective policies. Critically, companies and other stakeholders increasingly recognise the need for shared solutions involving business and both national and local government. This is reflected for example in the significant investment in water treatment plants and water programmes with municipalities.

The level of non-response remains unduly high.

Despite the high level of risk recognition amongst responding companies, over 40% of South African companies that were considered to have the potential to impact or be impacted by water resources still do not respond to the CDP.

The South African water response rate is much lower than that of *CDP's climate change program*. The results raise the question of why – in the face of a locally and internationally recognised threat and obvious international investor interest – do many South African companies eschew this particular opportunity for transparency, particularly given that the companies are a sample selected for high water-risk exposure. It may be that they are unprepared and do not have data to report, it could be that the reporting process is seen to have a high administrative burden, or perhaps it reflects a concern about sharing potentially poor results in the public domain. Not responding not only represents a missed opportunity for these companies to consider their risks around water, but it also creates a risk for other companies, investors and stakeholders as it maintains the critical gaps in the information available on the shared risks.

There is scope for further improvement, with the rate of improvement across the responding companies having slowed.

While the *CDP's water program: South Africa Report 2012* noted a significant improvement over 2011, this year's report shows limited overall improvement over 2012. There is some evidence, however, that certain companies are starting the journey from analysing the issues to managing the issues.

Very few companies are achieving leading or best practice on all dimensions. In particular, there is still a lack of action that reaches beyond the fence line. Specifically there is still a lack of watershed management, even though a consistent theme of many studies on managing corporate water risks is that the risks are best addressed collaboratively. Even more strikingly, there is a marked lack of consideration of supply chain risks. 20% of respondents are unable to identify whether they are exposed to risk in their supply chain, and only one company reports a quantitative target for its supply chain.

> More than ever, investors need to understand the water-related risks that they face in South Africa and to encourage companies to take the necessary actions to protect their investments.

The actions being taken are probably inadequate to manage the longer-term risks.

Very few companies have a clear vision or strategy to address the long-term challenges. Addressing the longer-term (post-2020) challenges for the country will require many companies (especially in the extractives industries) to create a blueprint for their water needs and impacts in 2025, and to develop a business case for action to be ready for the challenges.

What the process tells us

Lack of comparability is still undermining the value of the information disclosed.

Water is a complex issue – particularly in a country as geographically diverse as South Africa. Such complexity makes it difficult to create consistent data, especially with changes in the sample set. As a result, it can be difficult to make accurate comparisons, especially when the changes are small. Companies use a wide variety of methodologies and have very different approaches to measuring, reporting and responding to risks. This makes disclosure difficult and interpretation challenging, and can obscure some of the patterns and trends in action.

As more companies begin to take action, disclosure needs to ask more finely tuned questions.

Arguably the challenge of comparability is increasing, as some companies are now beginning to take action and are reporting progress, while other leading companies are actually way ahead in their progress and action on the same topic. There is a wide disparity in the quality of responses between companies: some companies demonstrate a mature understanding of the range of water-related risks and are taking considerable action, while others have not engaged much at all. There are clear differences in the reporting between companies that have addressed water risks and management in their core strategy, and those that tend to see it as a peripheral issue.

What does this mean for investors

Investors around the world are increasingly asking for information about companies' exposure to water risks. While the current state of disclosure in South Africa provides much information for investors, there are still some significant gaps that could obscure long-term risks and undermine actions to address these risks. More than ever, investors need to understand the risks that they face in South Africa and to encourage companies both to disclose the water (and other environmental) risks that they face, and to take the necessary short and long-term actions to protect their investments.

Concluding remarks

The CDP responses in South Africa and internationally have been essential catalysts for companies and investors to recognise and respond to the challenges of water and climate change. This report shows that there is a lot of activity in South African companies focused around managing water risk. It also shows some critical gaps (not least in the level of non-response) and a worrying levelling-off of reported progress in many companies. We hope that the publication of this report will catalyse companies to reassess whether they are doing enough to address the challenges that South Africa faces and that it will encourage investors to engage with both responding and non-responding companies to stress the importance of effective management of water risks and opportunities for the companies, their shareholders and society as a whole in South Africa.

David Hampton
Managing Partner
Irbaris

Jonathon Hanks
Director
Incite

Appendix 1 – Summary of key indicators

Key Indicators	2013 Respondents (%)	2013 Respondents Absolute	2012 Respondents (%)	2012 Respondents Absolute
Total companies invited to respond		59		61
Total respondents (includes companies responding via parent company)		33		30
Response rate	56%		49%	
Total public respondents (includes companies responding via parent company)		30		28
Total non-public respondents		3		2
Total declined to participate		24		26
Total no response		3		5
Responses analysed (excludes companies responding via parent company)		29		28
Water Management & Governance	**2013 Respondents (%)**	**2013 Respondents Absolute**	**2012 Respondents (%)**	**2012 Respondents Absolute**
Respondents with a water policy, strategy or plan	83%	24	75%	21
Respondents with Board-level oversight of their policy, strategy or plan	72%	21	71%	20
Respondents with quantitative goals or targets	62%	18	57%	16
Respondents reporting targets or goals to manage water	76%	22	86%	24
Respondents that require key suppliers to report water use, risks and management	21%	6	25%	7
Risks & Opportunities	**2013 Respondents (%)**	**2013 Respondents Absolute**	**2012 Respondents (%)**	**2012 Respondents Absolute**
Respondents able to identify whether their operations are located in water stressed regions	93%	27	89%	25
Respondents with the majority of operations located in regions at risk	62%	18	57%	16
Respondents with key inputs or raw materials from regions subject to water-related risk	62%	18	68%	19
Respondents able to identify whether or not they are exposed to risk in direct operations	97%	28	100%	28
Respondents exposed to risks in direct operations	86%	25	93%	26
Respondents able to identify whether or not they are exposed to risk in supply chain	72%	21	79%	22
Respondents exposed to risks in supply chain	59%	17	61%	17
Respondents exposed to risks in either direct operations or supply chain	90%	26	93%	26
Respondents that have experienced water-related business impacts in the last five years	72%	21	71%	20
Respondents that identify opportunity	83%	24	89%	25
Respondents able to identify linkages or trade-offs between water and carbon	86%	25	82%	23

Water Accounting	2013 Respondents (%)	2013 Respondents Absolute	2012 Respondents (%)	2012 Respondents Absolute
Respondents that report water withdrawals	97%	28	93%	26
Respondents that verify the majority of water withdrawal data	76%	22	79%	22
Respondents that report water recycling/reuse	69%	20	68%	19
Respondents that report water sources significantly affected by their withdrawals	14%	4	14%	4
Respondents able to identify discharges by destination, treatment type and quality	72%	21	79%	22
Respondents that paid penalties/fines for significant breaches of discharge regulations	14%	4	18%	5
Respondents that report water bodies/ habitats significantly affected by their discharges or runoff	7%	2	14%	4

Appendix 2: Company targets by sector

Consumer Discretionary & Consumer Staples			
Organisation	GICS Industry	Target	Progress
British American Tobacco	Tobacco	Our target is to reduce our water use towards our 2012 target of 4.2 cubic metres per million cigarettes equivalent produced, 13.4% lower than our 2007 baseline. This target is Group wide, covering water consumption at all business units where we have 50% or more ownership. It excludes water consumed by the Company's suppliers.	In 2012, our water use performance result was 3.77 cubic metres per million cigarettes equivalent produced. We therefore exceeded our 2012 target by 13.4%, and our water use is currently 22% lower than our 2007 baseline of 4.85 cubic metres per million cigarettes equivalent. The Group water use in 2012 was down by 3.1% from 2011 to 3.77 cubic metres per million cigarettes equivalent produced. The increase in water efficiency was largely due to a reduction in leaf and production volumes, which in turn led to a reduction in water used. In 2012 a new target for 2017 to achieve a target of 3.6 cubic metres per million cigarettes equivalent, 26% lower than our 2007 baseline. Our water management plan commits to the adoption of water–efficient technology in all new sites and where feasible when sites, equipment and processes are modified or replaced. Although our target does not relate to water consumed by our suppliers, we are actively engaged with our key suppliers on the subject of water management, particularly the leaf growing suppliers.
		In 2012, we strengthened our Sustainable Water Management Strategy to include a methodology for evaluating the long-term water supply and demand requirements in 'high-risk' locations (manufacturing and leaf processing).	We are using an external consultancy to help define what a 'high-risk' location is within the context of our key manufacturing sites and combined with our site specific production volume and our future expansion/ development plans, have identified a priority list of 10 sites. Our aim is to ensure we understand whether supply and demand is in balance, today and in the mid to long term whilst taking into account key variables such as a growing population, changing rain patterns, etc. This approach will help us understand how such factors may impact our operations, and more importantly what we can do to ensure we can reduce our water footprint, helping to avoid any impacts upon local communities. Our plan is to build our understanding and capabilities by conducting a pilot at one of our 'high-risk' sites in 2013. We have now set a target to complete assessments of long-term water supply and demand requirements in 10 strategic operational sites identified as 'high-risk' by end 2015.
Pick n Pay Stores Ltd	Food & Staples Retailing	We aim to reduce our water intensity by 20% by 2020.	This year was the base year for our water target. As a first step we are working on improving measuring and monitoring capabilities in our own operations.
		We aim to begin engaging with our agricultural products suppliers on environmental issues, including water management and conservation practices.	For nine years, our corporate suppliers of fresh produce have been audited against the GLOBAL GAP standard. Sixty-nine of Pick n Pay's 78 fresh produce suppliers audited against this standard were accredited in 2012. The accreditation covers environmental issues and food safety.
SABMiller	Beverages	Reduction in water consumption, on an intensity basis, by 25% by 2015 against a 2008 baseline.	Our water efficiency has improved by 20% since 2008 to 3.7 hectolitres of water per hectolitres of lager this year.
Tongaat Hulett Ltd	Food Products	Build better relations with communities around our operations especially in Xinavane.	Ongoing.
		Reduction of demand through the use of recycled water.	Ongoing.
		Most of the sugarcane is rain fed (90%), the goal is to educate staff and management on Water Resource Management.	Ongoing.
		Conserve water, by repairing the purpose built canals	Ongoing.
		Monthly measurement.	Good progress has been made over the past year, the plan is to continue to build on it.
		Monthly measurement.	Good progress has been made over the past year, the plan is to continue to build on it.
		Efficient management of water resources. The operation uses telemetry and rain sensors in its irrigation to ensure sufficient water is supplied to the sugarcane crop.	Extend this to cover the entire 3 850 hectares.
Woolworths Holdings Ltd	Multiline Retail	50% relative reduction in water usage for store operations by 2015 (2007 benchmark).	Over 30% relative reduction achieved to date.
		70% reduction in municipal water usage for head office operations by 2015 (2007 benchmark).	Over 35% reduction achieved to date.
		Our farming for the future program has helped suppliers establish baselines for water usage, optimise their use of irrigation and improve their waste water management processes, as part of a sustainable agriculture approach. We are targeting a 30% relative reduction in water usage for all Farming for the Future suppliers by 2015.	On track -16% relative reduction achieved to date.

Materials & Energy			
Organisation	Industry Group	Target	Progress
AECI Ltd Ord	Chemicals	AECI has set an interim target for 2013 based on the resource efficiency assessments which were conducted at 15 prioritised sites. The interim target is to reduce water consumption by 14% across the Group based on the 2010 baseline.	Nine businesses within the Group have set business based targets for water reductions which will contribute towards the achievement of the Group target.
Anglo American	Metals & Mining	Operational excellence.	In 2011, we finalised and approved a new Group management standard for water, and updated our Group water guideline. This mandatory standard includes detailed requirements on target setting, water monitoring, site management and water action plans (WAPs). In response to these requirements, we have established water targets and a WAP for every site. As a consequence of this and other efficiency projects, we delivered a 6.8% year-on-year water saving against the business-as-usual baseline. In addition, 72% of our water needs were met by recycled/reused water. We are also able to report accurately on the sources of new water consumed.
		Investing in technology.	A water technology roadmap has been defined for the Group and the 'now' and 'next' horizon technologies have been identified. The aim has been to identify appropriate technology solutions and to agree the timeframes within which to achieve our proposed strategic objective of 'zero net water consumption' by 2030. We have been and continue to work with universities, research bodies, technology suppliers and other stakeholders to clarify the full implications of this commitment, and to identify appropriate partnership opportunities to assist in delivery of these solutions. Collectively, we are exploring technology options relating to water efficiency, water recovery, pollution prevention and water security. Examples of current research already under way include by-product recovery from water treatment processes, high efficiency slurry pumping, AMIRA projects on water efficiency and high density thickening to improve water recovery from mine tailings.
		Engaging and partnering with our stakeholders.	We are being more structured and purposeful in our advocacy and stakeholder engagement activities. During the year we held discussions through South Africa's Chamber of Mines on important proposed developments such as: the national water resources strategy, water pricing structures, demand-side management targets for the sector, and the development of a system to charge for waste contained in water discharges. These will have significant implications in shaping industry developments and for our future performance. We also have longstanding partnerships with international bodies – such as the International Council on Mining and Metals (ICMM) and the World Business Council for Sustainable Development (WBCSD) – as well as with national industry associations, collaborative forums and NGOs such as the South Africa Water and Energy Forum, and the Integrated Water Task Team for South Africa (IWTTSA). At an operational level, we engage with local communities to build trust through effectively managing water expectations and our impacts. We follow an 'avoid, minimise, mitigate' management hierarchy.
		In 2011 we implemented our water efficiency target tool (WETT), which forecasts the projected business-as-usual (BAU) water demand of individual operations and establishes a register of water-saving projects. As a result of this a Group target was set to achieve a 14% reduction in total water consumed against our 2020 BAU projected water demand.	The implementation of WETT across the Group during 2012 led to tangible water savings. During 2012 60 water-saving projects achieved a saving of 6.8% against our projected water usage. This included a USD $66 million investment in projects specifically designed to save water.
Anglo American Platinum	Metals & Mining	Our goal is to be a "responsible water steward" and this entails actively engaging with communities close to operations to ensure mutually beneficial outcomes.	AMPLATS is committed to working with local stakeholders, including the Department of Water Affairs, at our operations to manage water to ensure mutually beneficial outcomes. For example: • AMPLATS initiated a pre-feasibility study to increase the supply of water to Rustenburg. This would involve 100 Ml/d originating from Hartebeespoort Dam, of which 50% would be provided to the municipality. • AMPLATS is engaging with the Rustenburg Municipality to manage the continued increase in the demand of potable water in the area. A R15-million water treatment plant was commissioned in 2011 to treat the sewage effluent up to operational standards. To reduce our uptake of potable water, we signed an off-take agreement with the Municipality to use up to 15Ml/d treated sewage effluent. • AMPLATS is actively involved in the Joint Water Forum (JWF), a public-private partnership initiative that is working to manage water supply issues of the Olifants River Resources Development Project. This development includes the construction of the De Hoop Dam and associated distribution components. • To secure water in the Thabazimbi area, AMPLATS commissioned a study in 2011 to evaluate options for the local municipality to improve the bulk water supply to all stakeholders. In 2012, the Municipality contributed funds to improving the infrastructure. AMPLATS has committed to contribute funding in the next financial year. • AMPLATS has assisted with the development of a sewage treatment plant for Northam Sewage Works to replace the current system. The final contract to use the water will be concluded in 2013 but will enable Union Mine to secure a further 2 Ml/d of treated sewage water which will reduce its need for potable water.

		Our key operational targets are set for water consumption and efficiency. Our 2012 water consumption target was 41,200 Ml which was then restated to 39,900 Ml. Our 2013 water target is to achieve a 5% reduction from our 2012 water consumption of 34,900 Ml (calculated to be 33,100 Ml).	An important focus by Anglo American in 2012 was on embedding operational water targets through the implementation of the water-efficiency target tool (WETT). The tool forecasts the projected business-as-usual (BAU) water demand of individual operations and establishes a register of water-saving projects, linking the two in order to deliver future performance targets. AMPLATS was instrumental in the initial development of WETT and in 2012, AMPLATS aligned to the WETT program. WETT Targets are now included in business unit CEO performance contracts and those of relevant operational personnel. In 2012, we consumed 34,900 Ml of new water, against a total usage of 36,300Ml in 2011, a decrease of 4%. This also shows a 14% reduction against the restated 2012 water consumption target of 39,900Ml. The main factors contributing to the savings were the successful implementation of two water-saving projects and reduced production as a result of the labour unrest. Water used for primary activities decreased by 8%, to 28,800 Ml, while water used for non-primary activities increased by 21% to 6,200 Ml. The increase in water used for non-primary activities is a result of the improvement in water metering at the Union Mine.
		Our new water intensity target for 2012 was 10,600 Ml per refined ounce of platinum group metals (PGMs) and gold from managed operations Our 2013 water intensity target is 0.0187 Ml per refined ounce of PGMs and gold.	Actual new water intensity per refined ounce of PGMs and gold from managed operations was 10,500 Ml in 2012 compared to the target of 10,600 Ml per refined ounce of PGMs and gold, a 1% improvement. However, a 3% increase in the intensity was observed from the 2011 intensity of 10,300 Ml per refined ounce of PGMs and gold. This intensity was calculated using the actual production of 3.32 million ounces of PGMs and gold in 2012 from managed operations, a 6% decrease in production compared to the 2011 production of 3.54 million ounces. When compared to the 2012 forecast production of 3.93 million ounces from managed operations, the decrease in production was 16%. The poor intensity observed was a result of the lower production output and operational disruptions during the industrial strike action. While the new water consumption and intensity trends for our mining, smelting and refining operations showed an upward trend, our concentrator operations showed a consistent decrease in water consumption and intensity. Water used for primary activities per refined ounce of PGMs and gold from managed operations improved by 2%, from 8,800 Ml in 2011 to 8,700 Ml in 2012. The potable water-use intensity per refined ounce of PGMs and gold from managed operations increased by 4% to 5,500 Ml (compared with 5,400 Ml in 2011).
		Improve water balances per operation to support performance tracking against targets. In 2013: Commence with aligned water balance reporting to support Anglo American parameters and water target tracking.	Water balances at all managed operations have been reviewed to align with new Anglo American parameters. We are piloting water balancing methodologies and GoldSim® at our test sites, namely Rustenburg Base Metal Refinery and the Mogalakwena Mine. GoldSim® is a water use optimisation software package used to simulate and evaluate integrated water management scenarios. This enables operators to optimize water inputs into operations and has led to significant savings.
		To have zero/minimal impact regarding water discharges at mine sites.	Total excess water discharged decreased by 57%, from 1,760 Ml in 2011 to 770 Ml - in 2012. The bulk of the water discharged (68%) in 2012 was authorised discharge at the Amandelbult operation while the remaining discharges were incidental. The excess water discharge from Amandelbult has been reduced by 80%, from 2,500 Ml in 2009 to 520 Ml in 2012. To manage the excess water ingress at the operation, the mine continues with measures to reduce groundwater ingress and will explore opportunities to reuse excess water. Impacts from incidental discharges are minimized due to the strict protocol we have set in place to responsibly and effectively manage the discharge. Our protocol includes a thorough investigation of the potential impacts and communication with the appropriate government authority. A contributing factor to reduced discharge was our water-management programs and in particular the implementation of our integrated water and waste management plans (IWWMPs) at several operations.
		All operations to have approved water-use licences (WULs).	Six operations have approved Water Use Licenses (WULs). The only mine lacking an approved WUL license is Amandelbult, although the application was submitted in 2004. This operation is still managed under the original permit conditions of the National Water Act (36 of 1998). AMPLATS continues to engage with and support the regulator. It is anticipated that this matter will be resolved in 2013.

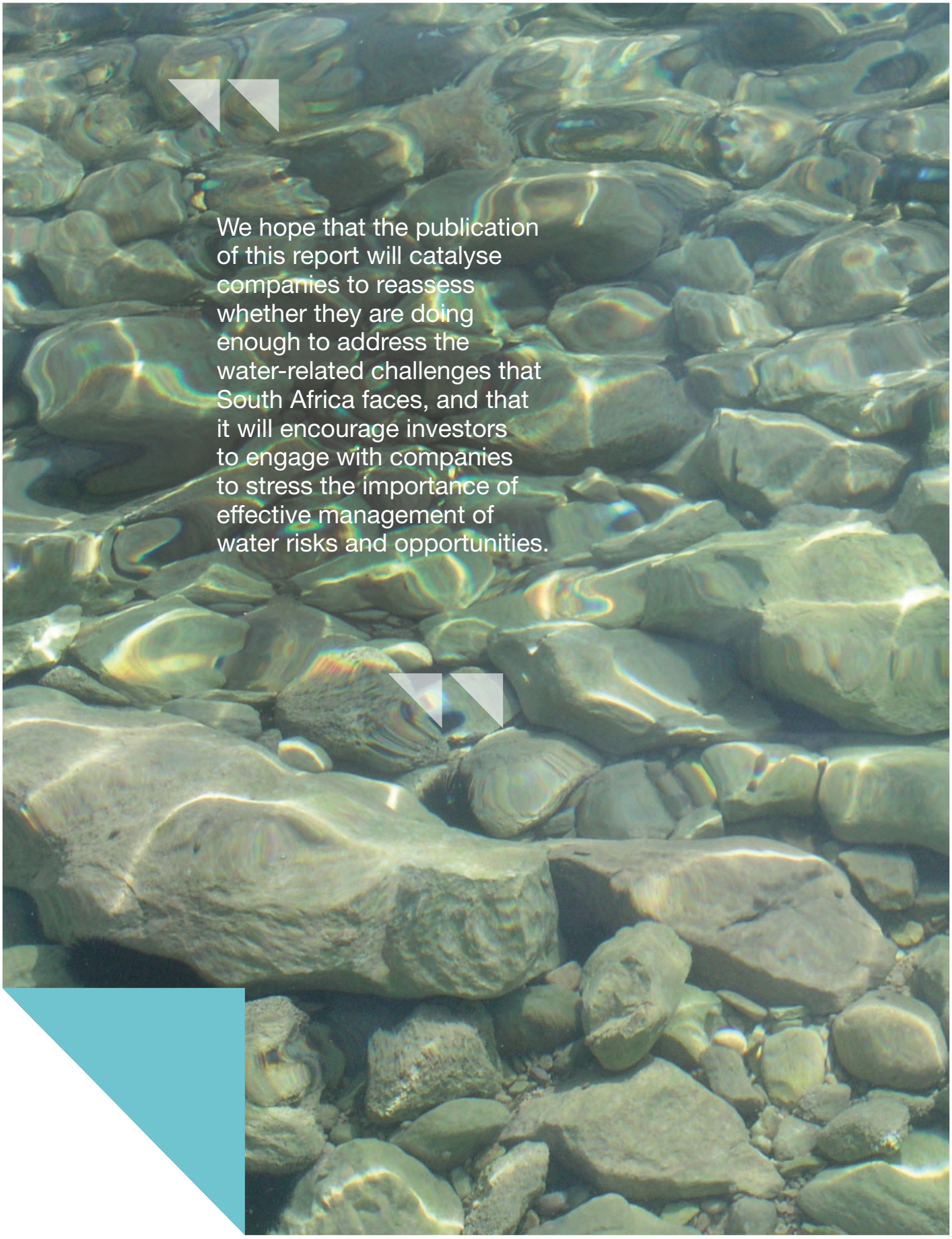
		AMPLATS aims to continuously report on its sustainable development program to be 100% transparent for all our water-related policies and actions.	In 2012, AMPLATS developed an integrated data-display system (IDDS) that makes it possible to collate all the water-quality data for our operations into a single database. This covers the various water sources that AMPLATS interacts with. In addition the database allows for the reporting of discharge volumes, recycled and re-used volumes per operation. The result is that AMPLATS has been visualising monthly results for all its operations on a common interface. Annually we report on our water position and key actions through our Integrated Annual Report and Sustainability Report. Water quality information is made publically available to stakeholders at open days at the individual mines and we provide water quality and quantity information to the DWA as required in the Water Use License. As part of our corporate water management strategy, we have developed a strict protocol to manage water discharge incidents due to emergency situations. This multistep process includes both internal and external communication. First, the incident is reported immediately to management and the severity is estimated. Next, an initial investigation takes place to determine the cause and the incident is reported to the relevant Government Department. Another full investigation is undertaken by a team that includes subject specialists and key personnel within the business unit or group, if necessary. After the full investigation a follow-up letter is submitted to the applicable Government Department that will address the final significance rating of the impact of the incident and corrective and preventative actions.
AngloGold Ashanti	Metals & Mining	A target to maintain water accounting accuracy of 90% or better.	Key water data is being collected on a monthly basis at all operations. Teething difficulties are being ironed out.
		Maintain effluent discharge compliance within applicable parameters.	No exceedances of regulatory effluent discharge limits were reported during 2012.
Exxaro Resources Ltd	Metals & Mining	Absolute reduction: • A 5% reduction in potable water use across all business units from baseline year 2010: This target was written into each manager's Short Term Incentive (STI) as a modifier that would determine the eventual incentive pay-out.	Absolute reduction The target is applicable to all Exxaro business units. Specific targets in Megalitres (MLs) for each business unit was calculated to quantify the required reduction in the use of potable water.
		Quality of discharges: • The baseline year for measurement of quality of discharges is 2010 which is when the management standard was introduced and the various units of measurement are contained in the water policy and standards • The quality standard of discharges is determined by the permit conditions of the Integrated Water Use Licence. Therefore each operation will have individual targets and timelines based on the issuing of their Integrated Water Use Licence (IWUL) • Environmental Performance Indicators (EPI)'s are included in each Business Units plan to ensure adherence to quality targets. The quality measures and goals are central to operational performance assessment and reporting • The Exxaro Water Management Standard stipulates that all operations must have a water and salt balance target as described under the Best Practice Guidelines (BPG). The water standard stipulates accuracy levels of 1-5% of the total water flow and operations are measured against these accuracy requirements.	Quality of discharges: • The G2 series Guideline (DWA 2006) under the BPG provides guidance on this matter and Business Units capture water EPI's and manage against this. An initiative is underway for the 3d party service providers contracted to perform water quality testing to report against predetermined levels as an independent check.
		Efficiency: Efficiency projects and goals by individual operations include: Grootegeluk Opencast mine; The efficiency projects and goals are the following; • In pit storage of storm water • Run-off for plant utilisation (after pH neutralisation at plant to avoid corrosion) • Dewatering of the Basalt aquifer and re-use as process water • Beneficiation plant at the Grootegeluk Medupi Expansion Project (GMEP) has been designed for zero-effluent Leeuwpan mine; The efficiency projects and goals are the following; • Water recovery from the slimes disposal facility and sewage treatment • Storm water run-off recycled and re-used via the process water dams Namakwa Sands; The efficiency projects and goals are the following; • Seawater is used as process water in the mining operation • Process water is recycled from the disposal facilities and re-used in the plant.	Efficiency: A Water Efficiency Manager has been appointed at Head Office level and two further Water Efficiency positions at Business Unit level have been approved. Water Intensity measures have been implemented for each Business Unit and 2012 was dedicated to implementation and improvement of water accounting to set accurate baselines and targets. This already resulted in the said reduction of potable water use.

Gold Fields Limited	Metals & Mining	Quality of discharges - Reduced risk of AMD – improved quality of discharge.	In 2012, approval was given to proceed with the Liquid Gold Project feasibility study (R31.5 million). This project will determine both the short and long-term water management strategy at the South African deep mine operations. The project is investigating the provision of treated potable and industrial water pumped from closed operations as one of several possible options. Should this option be deemed feasible, the revenue from sales could be used to finance AMD avoidance measures, such as separate pumping and treatment of AMD affected water and clean fissure water, thereby improving both the short and long-term quality of discharges. Another avoidance measure investigated during the feasibility study will be the sealing of underground contact points between AMD affected water and clean fissure water, thereby minimising potential mixing.
		Absolute reduction - The goal is to reduce the volume of water that is required in the operational processes.	At the South African operations, absolute water use reduction, through increased recycling and implementation of water efficiency measures, have received considerable attention over the past few years.
		Quality of discharges - Reduce conductivity to below a level of 1500 mS/cm.	Two new clarification and two new water treatment plants have been installed at Tarkwa in 2012 to comply with national water quality targets.
		Absolute reduction - Reduction of water usage in the operational processes through increased water recycling and water efficiency measures.	Over the last few years, the Australian operations have consistently reduced total water consumption. In 2012, 7% less water was used compared to 2011.
		Quality of discharges - Compliance with current discharge regulations. Additionally, more stringent water quality discharge regulations are to be implemented in 2014 (regulation related to water quality discharge) and 2015 (standard related to the quality of the receiving water body). Cerro Corona is preparing to ensure compliance with these new regulations.	Cerro Corona is being strictly monitored by local communities and national authorities with regard to its water discharge quality due to mining legacy issues in the Hualgayoc region. A new water treatment plant was installed in 2012 to allow for additional tailing water treatment as well as to improve the quality of discharge to ensure compliance with the new regulations.
		Absolute reduction - Minimised usage of water is another target identified in Cerro Corona's water management strategy.	Though ground water withdrawals increased between 2011 and 2012, Cerro Corona still only utilises approximately 20% of the amount of water allocated to it under its water use licence.
Impala Platinum Holdings	Metals & Mining	Development and implementation of a Group Water Conservation Strategy.	The Group's Water Conservation Strategy defines a water consumption baseline for the period 2001 to 2020, to be extended to 2030. The strategy identifies overall indicative water consumption reduction targets and these have been communicated to all operations, where site specific implementation plans are being developed and implemented. The first step in the implementation phase is quantification of water consumed. All operations have reviewed their water balances and some of the operations have improved the quantification by means of additional flow monitoring and improved water balances. Total Group water consumption in FY2012 was 40 114 megalitres, a decrease of 4% on FY2011. This decrease is mainly as a result of lower production rates and increased water use efficiencies.
		Reducing potable water consumption, optimising industrial water use and increasing the recycling of water.	The main emphasis of water reduction and efficiency projects is the reduction of potable water consumption, optimisation of industrial water use and the recycling of water. As an overall approach the focus is on increasing effluent recycling capacity. The refineries operation is a zero effluent site with some of the process water streams treated to boiler quality and re-used with no effluent released into natural water courses. In total, 14 839 megalitres of water was recycled in FY2012, which equates to 37% of all the water consumed in Implats' operations (FY2011: 35%).This is an improvement in recycling of 4.5% from the prior year, with all operations having contributed to this improvement.
		Implementation and maintenance of operational water balances.	Operational water balances are updated regularly to monitor water use at the various operations. All water balances have been reviewed in the year under review and some of them have been expanded.
Kumba Iron Ore	Metals & Mining	Kumba's overall water savings target is 10% to 15% of Business As Usual by 2020.	In July 2012, compliance against the GTS 21 water standard for all operations had progressed to 'substantial achievement' (75-100%). The Kumba 2020 BAU is now forecasting a water demand of 10.1 million m3 (previously 5.7 million m3, before Kolomela mine was commissioned and also joined the WETT initiative in 2012). Water savings projects continued in 2012. Verifications were successfully completed at Kolomela mine, which achieved 1,183,280m3 litres of water savings, at Sishen mine, which achieved 215,018 m3 of water savings and at Thabazimbi mine which achieved a total of 12,500 m3 of water savings.
		Target an annual water efficiency metric per operation.	Kumba aims to manage the water efficiency at each operation on a continuous basis. Management track the water efficiency of each operation in combination with mine plans and specific metallurgical properties of the ore being mined. The water efficiency targets are adjusted to account for changes in geology and metallurgical properties to ensure that targets are realistic and comparable.
Mondi PLC	Paper & Forest Products	We will promote conservation, reuse and recycling practices to reduce specific contact water consumption by 10% by 2015, against a 2010 base year.	In 2012, 211.5 million m^3 of contact water was used resulting in a specific figure of 33.9 m^3/t saleable production (2010:33.2). Total water input amounted to 306.7 million m^3 (2010: 315.2 m^3).
		We will reduce our effluent load into the environment, either directly or indirectly discharged, by 10% in 2015 against a 2010 base year.	Good progress was made in reducing COD emissions by 5.7% between 2010 and 2012. In 2012 COD tracked at 47,049 tonnes (2010: 49,923 tonnes). The Group's volume of COD lies within the Best Available Technique (BAT) range.

		We will carry out a water impact assessment (WIA) of our forestry operations and mills.	In 2011, Mondi carried out detailed water impact assessments (WIAs) for our South African forestry operations to assess any medium- or long-term threats to the business. Mondi's South African plantations were of greatest concern with regard to water availability. South Africa is a water stressed country and the impact of climate change could exacerbate the water shortage in the country and increase the water supply risk to the business. However, the WIAs established that there is no significant threat due mainly to the plantations' location on the wetter, eastern side of the country. The conclusions of the WIAs have been discussed with third parties, including global NGOs, to ensure they are comprehensive and appropriately benchmarked to assess materiality. By end of 2013 WIAs in all material mills as well as of our Russian forests will have been carried out. Currently the water impact assessments of 5 out of 14 material operations have been completed.
		Continue to work with our stakeholders to identify areas of HCV in Komi, Russia and South Africa.	We minimise the impact of our plantation and forestry activities on the environment by helping to protect vulnerable ecosystems such as indigenous forests, wetlands and grasslands, and we limit the use of our natural resources. We do not convert natural forests, wetlands or protected areas into plantations and the conversion of grasslands or degraded agricultural lands is subject to an environmental impact assessment and a national multi-stakeholder licence application procedure which ensures adequate protection of water resources and biodiversity, including High Conservation Value (HCV) grasslands. We set aside land under management for conservation purposes. In 2012, we set aside approximately 600,000 hectares of land for conservation in South Africa and Russia, most of which is designated as HCV areas.
		We will continue to work with our partners WWF and WESSA to support the Mondi Wetlands Program (MWP) in South Africa and will involve local communities in educational, restoration and conservation activities where reasonable.	Our sponsorship of the Mondi Wetlands Program (MWP) and the Mondi Ecological Network Program (MENP) continues to support sound science and practical solutions for wetland conservation and ecological networks to maintain or enhance biodiversity and functioning freshwater ecosystems. The Mondi Wetlands Program (MWP) has been working tirelessly for over 20 years to protect one of South Africa's most endangered ecosystems, and has succeeded in: - initiating the rehabilitation of degraded wetlands in South Africa, investing many millions of Rands in the process; - assessing the condition of over 19,500 hectares of wetlands and initiating rehabilitation in many of these; - starting wetland conservation activities in 21 core areas around South Africa outside declared reserves; - training over 1,050 people from 60 organisations in wetland assessment and functioning; and -sparking interest and enthusiasm in wetland preservation throughout the country. In 2008, Mondi renewed its five-year sponsorship agreement to support the MWP.
Northam Platinum Ltd	Metals & Mining	Northam's target is to maintain water consumption per ounce of platinum produced at current levels. Further, the company is committed to optimising the level of recycling at its operations and has a recycling target of between 85 and 90% of total water usage.	On 2 May 2012 the Zondereinde mine was allocated its IWUL. There are however a few requirements which the mine will continue to address, these include: •monitoring the stringent water quality requirements for industrial water circuits; •frequency of groundwater monitoring; •construction and operation of dirty water infrastructure; •calibration of flow metres every two years; •additional groundwater monitoring; and •timeframes for the submission of initial reports. Zondereinde mine engages with the DWA and the Department of Environmental Affairs and Tourism (DEAT) regarding these water use issues on a regular basis. In F2012, Northam compiled a storm water management report and upgraded a number of stormwater channels to comply with the requirements of GN704. In addition, Zondereinde also improved the pumping capacity of the return water dam to ensure that no discharge from the tailings dam can access the nearby Crocodile River. Water allocation is of critical importance at Booysendal too and Northam continues to manage water use at this operation according to the requirements of its water use licence. Sampling of underground and surface water at Booysendal was finalised during F2010 and the data provided base line information on the original water quality – before mining operations started – in the area. Water quality at Booysendal is monitored on a continuous basis and the findings compared with base line information.
Royal Bafokeng Platinum Ltd	Metals & Mining	Reducing the quantity of water use.	We have achieved a 4.3% year on year reduction in potable water use, this equates to a reduction of 94.3 Ml from 2011 to 2012.
Sasol Limited	Oil, Gas & Consumable Fuels	Support and actively engage with communities to address water sustainability issues.	Progress in implementing three water conservation partnerships with municipalities located on the Vaal to save water beyond the factory fence-line to the benefit of all catchment users.
		Undertake water-use assessments, set targets, implement new technologies, raise awareness on water issues within the corporation and include water considerations in business decision making: 1. Constructively contribute to the formation of government policy and regulations. 2. Work on water issues in a transparent way which includes complying with GRI reporting. 3. Support catchment management initiatives (due to the recognition that many water impacts occur beyond Sasol's direct control).	Set water intensity targets for the most intensive water using business units provided significant contribution to the review of the National Water Resource Strategy (NWRS 2) and active engagement in the process initiated by Department of Water Affairs to develop a Waste Discharge Charge System continued disclosure and reporting on water issues in the annual sustainable development report, CDP water and SAM DJSI continued active participation in the Vaal River strategy steering committee.

Health Care			
Organisation	Industry Group	Target	Progress
Mediclinic International	Health Care Providers & Services	Consumption figure for water in litres at an intensity per bed day sold.	The majority of the 52 hospitals are within 10% margin of the consumption intensity figure.
		Water quality.	Compliance by all 52 hospitals for 6-monthly testing procedures according to SANS 241.
		Water supply contingency plans.	Contingency plans are in place at all 39 ISO 14001 certified hospitals.
		Installation of own calibrated and verified water meters.	Process started with the installation of own meters in series with local authority meter on the premises of the hospital.
Netcare Limited	Health Care Providers & Services	This reporting year 2013 is intended to be the base year for water usage and Netcare is busy correcting and purifying the data collection process to establish FY 2012 data integrity. The base year will be used to redefine future targets. From a strategic level the board confirmed that a 10% reduction in water usage is a realistic target. Re-use and recycling: while always ensuring the safety and quality of our products, we endeavour to re-use water and recycle as much as possible. Wastewater is treated and returned to the environment at all our sites, according to local legislation; where none exist, internal standards are applied. We recognise access to clean water readily available to the community is a basic human need and right and as such respect the finite form of the resource.	The target is still a future target and in FY 2013 direct progress against the target can be reported against the intended base year of FY 2012. A strategy should still be formulated to state anticipated target dates with fixed savings associated with it. The figure reported in now in 2012 is much higher than the 2011 quantities due to a wider source or inventory including more of the South Africa Business as well as a much more accurate and comprehensive data collection process. The inventory growth added 9,8% to the previous reported quantities.

Industrials			
Organisation	Industry Group	Target	Progress
Barloworld	Trading Companies & Distributors	Although not at a group level as mentioned in our response to 1.1a above, BAW Equipment South Africa has an aspirational target of a 30% efficiency improvement in water use by 2014 (2009 baseline).	As at September 2012, an efficiency improvement of 26% had been achieved against the 2009 baseline, measured per R'm intensity.
Bidvest Group Ltd	Industrial Conglomerates	While the Group draft water policy does not include specific water volume or usage targets, Bidvest Corporate has set itself the following target: That the Group businesses who are large water-users, or for whom water is considered a material or otherwise strategic business issue, put in place water policies by the end of the 2014 financial year and relevant targets by 2015 (where they have not already done so).	This is work in progress and Bidvest will be able to report this next year. Selected business have put in or place water-related targets or goals.
		Refers to Bidvest Automotive division: water intensity (per vehicles sold and service retail jobs) reduction targets have been set. 2013 = 5.0%, 2015 = 7.5% and 2017 = 10.0%.	The 2013 year data is not yet complete as the 2013 financial year has not yet ended.
		Refers to IVS business (Bidvest Freight): The intensity target is to reduce the volume of water to below 0.05.kl per tonne of product handled by the end of the 2014 financial year.	This target was set recently and is work in progress.
		Refers to 3663 (UK) - Bidvest Europe division: Has set targets in Summer 2010 to reduce mains water consumption by 10% over 5 years and commenced investigation in to suitable methods to drive progress.	Two years into this initiative have achieved a 17% reduction. Significant developments are anticipated in the coming year, which will be reported on at the end of the next financial year.


We hope that the publication of this report will catalyse companies to reassess whether they are doing enough to address the water-related challenges that South Africa faces, and that it will encourage investors to engage with companies to stress the importance of effective management of water risks and opportunities.

Investor signatories 2013

530 financial institutions with assets of US$57 trillion were signatories to the CDP 2013 water questionnaire dated February 1st 2013

Signatory investors

3Sisters Sustainable Management LLC
Aberdeen Asset Management
ABRAPP - Associação Brasileira das Entidades Fechadas de Previdência Complementar
Achmea NV
Active Earth Investment Management
Acuity Investment Management
Addenda Capital Inc.
Advanced Investment Partners
Advantage Asset Managers (Pty) Ltd
Aegon N.V.
AEGON-INDUSTRIAL Fund Management Co., Ltd
AK PORTFÖY YÖNETİ Mİ A.İ .
Alberta Investment Management Corporation (AIMCo)
Alberta Teachers Retirement Fund
Alcyone Finance
AllenbridgeEpic Investment Advisers
Alliance Trust
Allianz Elementar Versicherungs-AG
Allianz Global Investors AG
Allianz Group
Altira Group
AmpegaGerling Investment GmbH
Amundi AM
Antera Gestão de Recursos S.A.
APG Group
Apsara Capital LLP
Arisaig Partners
ASB Community Trust
ASM Administradora de Recursos S.A.
ASN Bank
Assicurazioni Generali Spa
ATI Asset Management
Atlantic Asset Management
Australian Ethical Investment
AustralianSuper
Avaron Asset Management AS
Aviva
Aviva Investors
Baillie Gifford & Co.
BaltCap
Banco Comercial Português SA
Banco do Brasil Previdência
Banco do Brasil S/A
Banco Espírito Santo SA
Banco Nacional de Desenvolvimento Economico e Social (BNDES)
Banco Popular Espanol
Banco Sabadell
Banco Santander
Banesprev – Fundo Banespa de Seguridade Social
Bank of America
Bank Sarasin & Cie AG
Bank Vontobel
Bankhaus Schelhammer & Schattera Kapitalanlagegesellschaft m.b.H.
Bankinter
BankInvest
Banque Degroof
Banque Libano-Francaise
Barclays
Basellandschaftliche Kantonalbank
BASF Sociedade de Previdência Complementar
Baumann and Partners S.A.
Bayern LB
BayernInvest Kapitalanlagegesellschaft mbH
BBC Pension Trust Ltd
BBVA
Bedfordshire Pension Fund
Beetle Capital
Befimmo SA
Bentall Kennedy
Berenberg Bank
Blom Investment Bank
Blumenthal Foundation
BNP Paribas Investment Partners
Boston Common Asset Management, LLC
Breckinridge Capital Advisors
British Airways Pensions
British Coal Staff Superannuation Scheme
British Columbia Investment Management Corporation (bcIMC)
Brown Advisory
BT Financial Group
BT Investment Management
CAAT Pension Plan
Cadiz Holdings Limited
CAI Corporate Assets International AG
Caisse de dépôt et placement du Québec
Caisse des Dépôts
Caixa de Previdência dos Funcionários do Banco do Nordeste do Brasil (CAPEF)
Caixa Econômica Federal
California Public Employees' Retirement System (CalPERS)
California State Teachers' Retirement System (CalSTRS)
California State Treasurer
Calvert Group, Ltd.
Canada Pension Plan Investment Board (CPPIB)
Canadian Labour Congress Staff Pension Fund
CAPESESP
Capital Innovations, LLC
Capricorn Investment Group
CARE Super
Caser Pensiones E.G.F.P
Catherine Donnelly Foundation
Catholic Super
CBRE Group, Inc.
Cbus Superannuation Fund
CCLA Investment Management Ltd
CDF Asset Management
Celeste Funds Management
Central Finance Board of the Methodist Church
Ceres
Change Investment Management
Christian Brothers Investment Services Inc.
Christian Super
Christopher Reynolds Foundation
Cleantech Invest AG
ClearBridge Investments
Climate Change Capital Group Ltd
CM-CIC Asset Management
Colonial First State Global Asset Management
Comgest
Comite syndical national de retraite Bâtirente
CommInsure
Commonwealth Bank of Australia
Commonwealth Superannuation Corporation
Compton Foundation, Inc.
Concordia Versicherungs-Gesellschaft a.G.
Connecticut Retirement Plans and Trust Funds
Conser Invest
Co-operative Asset Management
Co-operative Financial Services (CFS)
Daegu Bank
Daesung Capital Management
Daiwa Securities Group Inc.
Dalton Nicol Reid
de Pury Pictet Turrettini & Cie S.A.
DekaBank Deutsche Girozentrale
Delta Lloyd Asset Management
Deutsche Bank AG
Development Bank of Japan Inc.
Dexia Asset Management
DLM INVISTA ASSET MANAGEMENT S/A
Domini Social Investments LLC
Dongbu Insurance
Doughty Hanson & Co.
Earth Capital Partners LLP
Ecclesiastical Investment Management
Ecofi Investissements - Groupe Credit Cooperatif
Edward W. Hazen Foundation
EEA Group Ltd
Eko
Elan Capital Partners
Element Investment Managers
Environment Agency Active Pension fund
Epworth Investment Management
Equilibrium Capital Group
equinet Bank AG
Erik Penser Fondkommission
Erste Asset Management
Erste Group Bank AG
Essex Investment Management Company, LLC
ESSSuper
Ethos Foundation
Etica SGR
Eureka Funds Management
Eurizon Capital SGR S.p.A.
Evangelical Lutheran Church in Canada Pension Plan for Clergy and Lay Workers
Evangelical Lutheran Foundation of Eastern Canada
F&C Asset Management
FAELCE – Fundacao Coelce de Seguridade Social
FAPERS- Fundação Assistencial e Previdenciária da Extensão Rural do Rio Grande do Sul
Fédéris Gestion d'Actifs
FIDURA Capital Consult GmbH
FIM Asset Management Ltd
FIM Services
Financiere de l'Echiquier
FIPECq - Fundação de Previdência Complementar dos Empregados e Servidores da FINEP, do IPEA, do CNPq
First Affirmative Financial Network, LLC
First Commercial Bank
First State Investments
Firstrand Limited
Five Oceans Asset Management
Florida State Board of Administration (SBA)
Folksam
Fondation de Luxembourg
Forma Futura Invest AG
FRANKFURT-TRUST Investment Gesellschaft mbH
Friends Fiduciary Corporation
Fukoku Capital Management Inc
FUNCEF - Fundação dos Economiários Federais
Fundação AMPLA de Seguridade Social - Brasiletros
Fundação Atlântico de Seguridade Social
Fundação Banrisul de Seguridade Social
Fundação de Assistência e Previdência Social do BNDES - FAPES
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Fundação Rede Ferroviaria de Seguridade Social – Refer
Fundação Vale do Rio Doce de Seguridade Social - VALIA
FUNDIÁGUA - FUNDAÇÃO DE PREVIDENCIA

COMPLEMENTAR DA CAESB
Futuregrowth Asset Management
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Generali Deutschland Holding AG
German Equity Trust AG
Global Forestry Capital S.a.r.l.
GLS Gemeinschaftsbank eG
GOOD GROWTH INSTITUT für globale Vermögensentwicklung mbH
Governance for Owners
Government Employees Pension Fund ("GEPF"), Republic of South Africa
GPT Group
Greater Manchester Pension Fund
Green Cay Asset Management
Green Century Capital Management
GROUPAMA EMEKLİ LİK A.İ.
GROUPAMA SİGORTA A.İ.
Groupe Crédit Coopératif
Groupe Investissement Responsable Inc.
GROUPE OFI AM
Gruppo Monte Paschi
Harbour Asset Management
Harrington Investments, Inc
Hauck & Aufhäuser Asset Management GmbH
Hazel Capital LLP
Healthcare of Ontario Pension Plan (HOOPP)
Helaba Invest Kapitalanlagegesellschaft mbH
Henderson Global Investors
Hermes Fund Managers
HESTA Super
HIP Investor
Holden & Partners
HSBC Holdings plc
Humanis
Hyundai Marine & Fire Insurance Co., Ltd.
Hyundai Securities Co., Ltd.
IBK Securities
IDBI Bank Ltd
Illinois State Board of Investment
Ilmarinen Mutual Pension Insurance Company
Impax Group plc
Independent Planning Group
Industrial Bank of Korea
Industrial Development Corporation
Inflection Point Capital Management
ING Group
Insight Investment Management (Global) Ltd
Instituto Infraero de Seguridade Social - INFRAPREV
Instituto Sebrae De Seguridade Social - SEBRAEPREV
IntReal KAG
Investec plc
Investing for Good
Irish Life Investment Managers
Jessie Smith Noyes Foundation
JPMorgan Chase & Co.
Jubitz Family Foundation
Jupiter Asset Management
Kaiser Ritter Partner Privatbank AG (Schweiz)
KB Kookmin Bank
KBC Asset Management NV
KCPS and Company
KDB Asset Management Co., Ltd.
KEPLER-FONDS Kapitalanlagegesellschaft m. b. H.
KEVA
KeyCorp
KfW Bankengruppe
Killik & Co LLP
Kiwi Income Property Trust
Kleinwort Benson Investors
KLP Insurance
Korea Technology Finance Corporation
KPA Pension
La Banque Postale Asset Management
La Financiere Responsable
Lampe Asset Management GmbH
LBBW Asset Management Investmentgesellschaft mbH
LD Lønmodtagernes Dyrtidsfond
Legal & General Group plc
Legg Mason, Inc.
LGT Capital Management Ltd.
Light Green Advisors, LLC
Limestone Investment Management
Living Planet Fund Management Company S.A.
Lloyds Banking Group
Local Authority Pension Fund Forum
Local Government Super
LOGOS PORTFÖY YÖNETIMI A.İ.
London Pensions Fund Authority
Lothian Pension Fund
LUCRF Super
MainFirst Bank AG
MAMA Sustainable Incubation AG
MAPFRE
Maple-Brown Abbott
Marc J. Lane Investment Management, Inc.
Maryland State Treasurer
Matrix Group
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Meeschaert Gestion Privée
Mercy Investment Services, Inc.
Mergence Africa Investments (Pty) Limited
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Midas International Asset Management
Miller/Howard Investments
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Mirae Asset Securities
Missionary Oblates of Mary Immaculate
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For further information on how you may become involved in the NBI's key initiatives, please visit our website (www.nbi.org.za) or contact Steve Nicholls on nicholls.steve@nbi.org.za.