



REPORT

ZA

2011

TOGETHER
INVESTING IN THE
FUTURE OF SOUTH
AFRICA'S MARINE
AND FRESHWATER
ECOSYSTEMS



Sanlam



Managing water risk: business response to the risk of climate change in South Africa - a synthesis

ABOUT WWF

WWF is one of the world's largest and most respected independent environmental and conservation organisations, with almost 5 million supporters and a global network active in over 100 countries. WWF South Africa is a national office that is part of the WWF network. We are a local NGO that for more than 40 years has worked towards the aim of inspiring all South Africans to live in harmony with nature, for the benefit of our country and the well-being of all our people.

South Africa's natural resources – freshwater, arable land, clean air, plants and animals – are finite. It is up to all of us to protect these resources to ensure ongoing food security, human health and overall economic prosperity. At WWF-SA we strive to encourage and empower everyone from school children and local community leaders to consumers and CEOs, to value, respect and defend the integrity of the natural ecosystems that underpin the sustainable development of our country.

ABOUT THE WWF SANLAM LIVING WATERS PARTNERSHIP

The wise management of our water resources and aquatic ecosystems is one of the most decisive factors that will affect the socio-economic development of South Africa and the well-being of the poorest sectors of our society over the next twenty years.

In response to this WWF and Sanlam have developed the WWF Sanlam Living Waters Partnership, which seeks to catalyse concerted action from government, the private sector and civil society around the sound management of our aquatic resources.

The Partnership continuously challenges itself, its partners, the government and ultimately the country to achieve this vision.

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INTRODUCTION

There is wide international recognition that water scarcity will increase significantly as a result of a burgeoning global population, climate change and unsustainable consumption patterns.

This poses an increasing risk to the global economy, environment and society. The private sector is a key player in the search for solutions to address these global water risks, not only because of the potential direct impact on business, but also the opportunities that may arise from better business practices.

Globally, the private sector has started to engage on the issues of water risk, many of them having experienced direct risks to their operations and supply chains. This has led to the setting up of numerous initiatives to help business engage with water issues, such as the UN CEO Water Mandate, CDP Water Disclosure and WEF Water Initiative among others. Such initiatives were critical in mainstreaming water into the development agenda globally, and the focus now is to translate those statements of intent into collective action on the ground.

In South Africa, water availability has always been a major constraint to economic activities, people and ecosystems. The private sector has, however, not fully grasped the concept of water risk, with only a handful actively seeking to understand their water related business risks. This was acknowledged by some of South Africa's largest companies and NGOs during the CEO Water Mandate working conference in 2010, where they pointed out that: -

- South African corporates with a domestic focus have not fully comprehended the threats and opportunities around water risk in the country and therefore their participation in corporate water initiatives has been slow and intermittent.
- Government representatives (particularly in the water sector) have generally not recognised the global trends and domestic opportunities that the shared risk paradigm provides for improved management of the country's scarce water resources.
- There is an increasing risk to the private sector and civil society that will require new ways of engagement and partnerships to maintain South Africa's competitive advantage in the global economy, linked to the concept of a resilient water economy.

There is a need to therefore develop a compelling business case for the private sector in South Africa to develop understanding of their water related business risks and to explore avenues for collective action. Water-related risks will be driven primarily by water scarcity and poor water quality. However, climate change and unsustainable land use practices will exacerbate the situation. Understanding the key drivers of water-related business risks is therefore critical for developing strategic and proactive risk response strategies.

UNDERSTANDING THE KEY DRIVERS OF WATER- RELATED BUSINESS RISKS IS CRITICAL FOR DEVELOPING STRATEGIC AND PROACTIVE RISK RESPONSE STRATEGIES

THE DRIVERS OF WATER RISK IN SOUTH AFRICA

WATER RESOURCE SCARCITY

Two thirds of South Africa is semi-arid with an average rainfall of 420mm, less than half the global average. Geographic variability in rainfall intensity and magnitude results in various parts of the country experiencing periodic droughts and flood events in others.

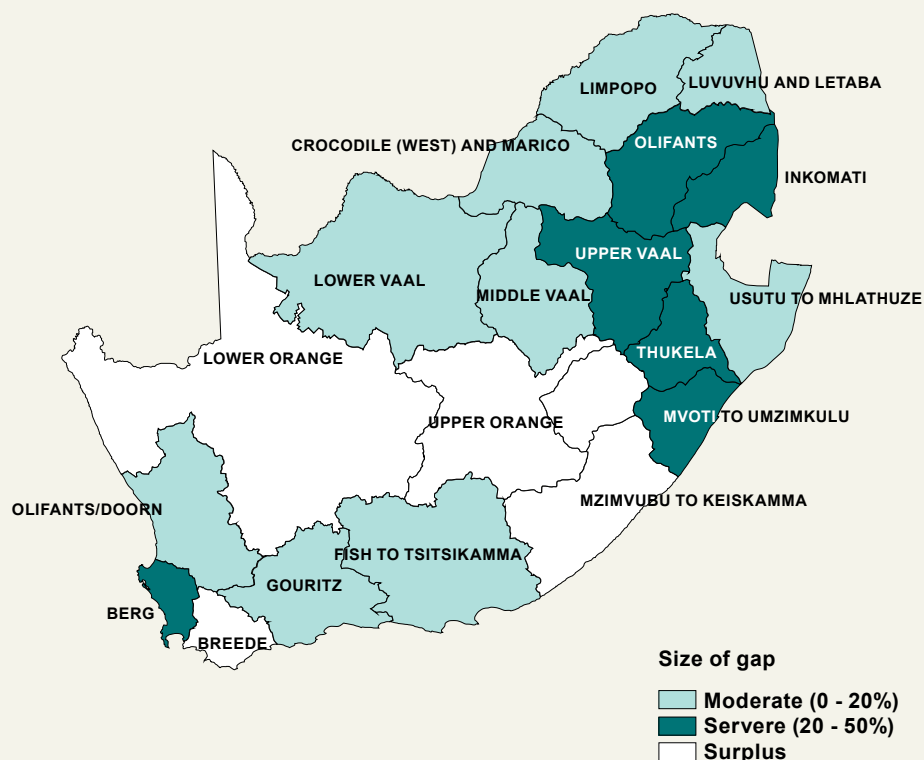
Water scarcity is therefore a significant constraint to economic and social development goals and the sustenance of ecological systems. It has been estimated that there will be a gap of about 17% in water demand and supply by 2030 if no significant policy shifts occur (2030 Water Resources Group, 2009). Within

individual freshwater catchments in South Africa, it is predicted that the gap between supply and demand could range between 20 - 50% by 2030 (Figure 1).

South Africa's main economic hubs of Gauteng, KwaZulu-Natal and the Western Cape are all located in regions that will experience severe water challenges in the future, presenting a serious challenge to the country's economic growth prospects. Businesses that are located in these regions should therefore be prepared for potential restrictions in water use, increased cost of water, and the requirement to improve water use efficiency measures in their operations. All these measures will come at a cost to business.

Figure 1: The water gap between supply and demand by water management area

THE GAP BETWEEN WATER SUPPLY AND DEMAND



SOURCE: National Water Resource Strategy, DWA; 2030 Water Resources Group

POOR WATER QUALITY HAS MAJOR IMPLICATIONS FOR BUSINESS

THE WATER QUALITY CHALLENGE

Deteriorating water quality is another key driver of water risks to business. Poor water quality is mainly attributed to urban and industrial effluent discharge into river systems, poorly maintained waste water treatment works, salinity from irrigation return flows, acid mine drainage and inadequate sanitation facilities mostly in informal settlements. The Department of Water Affairs is leading efforts in addressing water quality challenges with active water quality monitoring taking place across the country. Unfortunately poor water quality still remains a major challenge and government's effort alone cannot address the extent of this scourge.

There is a need for greater levels of enforcement to ensure compliance with water quality standards. However, this will require local municipalities to be well capacitated. Municipal infrastructure capacity in many urban centres has lagged behind growing populations. This, coupled with inadequate investment in maintenance, has resulted in higher levels of pollution.

Poor water quality has major implications for business because of increased treatment costs if the water supply does not meet water quality standards for production. Business productivity might also be negatively impacted by poor drinking water quality impacting the health of workers and hence affecting productivity of labour-dependent businesses (such as mines). This is an issue of major concern in South Africa, where HIV prevalence is very high.

CLIMATE CHANGE

Climate change is predicted to exacerbate risks associated with water scarcity and quality. Overall it is expected that the western parts of the country will receive less precipitation, whereas the central and eastern areas will receive more variable rainfall with more intense rainfall events.

The predicted variability in rainfall patterns across the country will make it more difficult for business with national operations to strategically respond to their water-related business risks, as the risks will manifest themselves at the very local level. Businesses that are located in drought-prone regions should therefore be prepared to deal with the potential imposition of water restrictions by local authorities, which could result in the interruption of their operations. Flooding associated with intense rainfall events, on the other hand, could lead to infrastructure failure, water-borne diseases and increased insurance costs for business.

DEMOGRAPHIC CHANGES

An increasing population and specifically a growing middle class in South Africa will increase pressure on the scarce water resources. Urban centres will be especially hard hit. The last two decades have seen a substantial increase in urban populations (Figure 2), and future water demand is expected to grow from 2.1 billion m³ per year in 2005 to 3.2 billion m³ per year by 2030. Industrial use is expected to increase from 1.5 billion m³ per year to 3.5 billion m³ in 2030. This will place enormous stress on catchment systems and freshwater ecosystems that supply water to these areas.

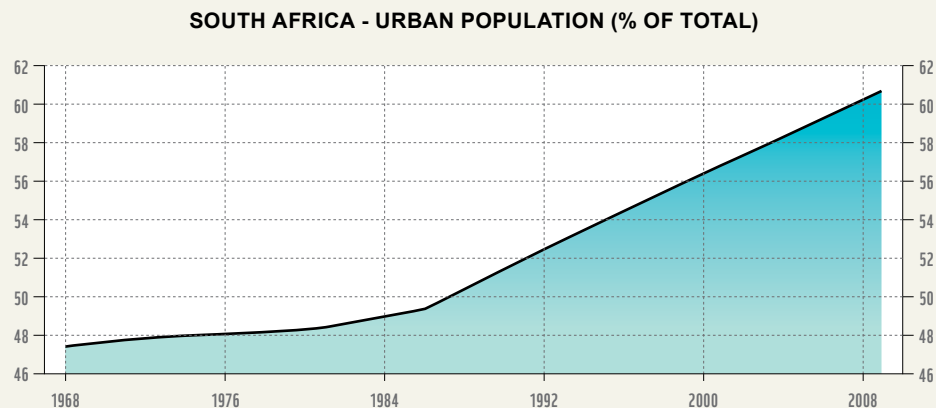
Demographic change presents both a business risk and opportunity. Due to the increasing demand for water, business will experience more intense competition from other water users. However, a burgeoning middle class provides a good opportunity for businesses to develop new products that are more water efficient in order to meet the increasing demand.



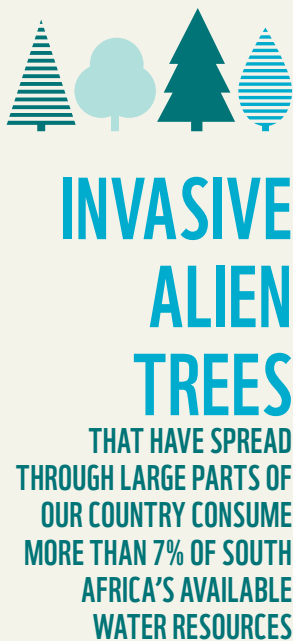
FUTURE WATER DEMAND

IS EXPECTED TO GROW
FROM 2.1 BILLION M³ PER
YEAR IN 2005 TO
3.2 BILLION M³ PER YEAR
BY 2030

Figure 2: South African urban centres have been growing exponentially since the mid-1980s



SOURCE: TradingEconomics.com



UNSUSTAINABLE LAND USE PRACTICES

Unsustainable land use practices pose a major threat to ecosystems, business and the livelihood of local communities. Land use practices such as over grazing and the modification of flood plains, river banks, and wetlands will reduce the regulating capacity of catchments and will increase erosion and sediment loads in rivers as well as the risk of flooding. Furthermore, invasive alien trees that have spread through large parts of our country consume more than 7% of South Africa's available water resources . In some catchments, this can be as high as 20% (Nel et al 2011), significantly impacting on the availability of water for social and economic well-being.

GOVERNANCE AND INSTITUTIONAL CHALLENGES

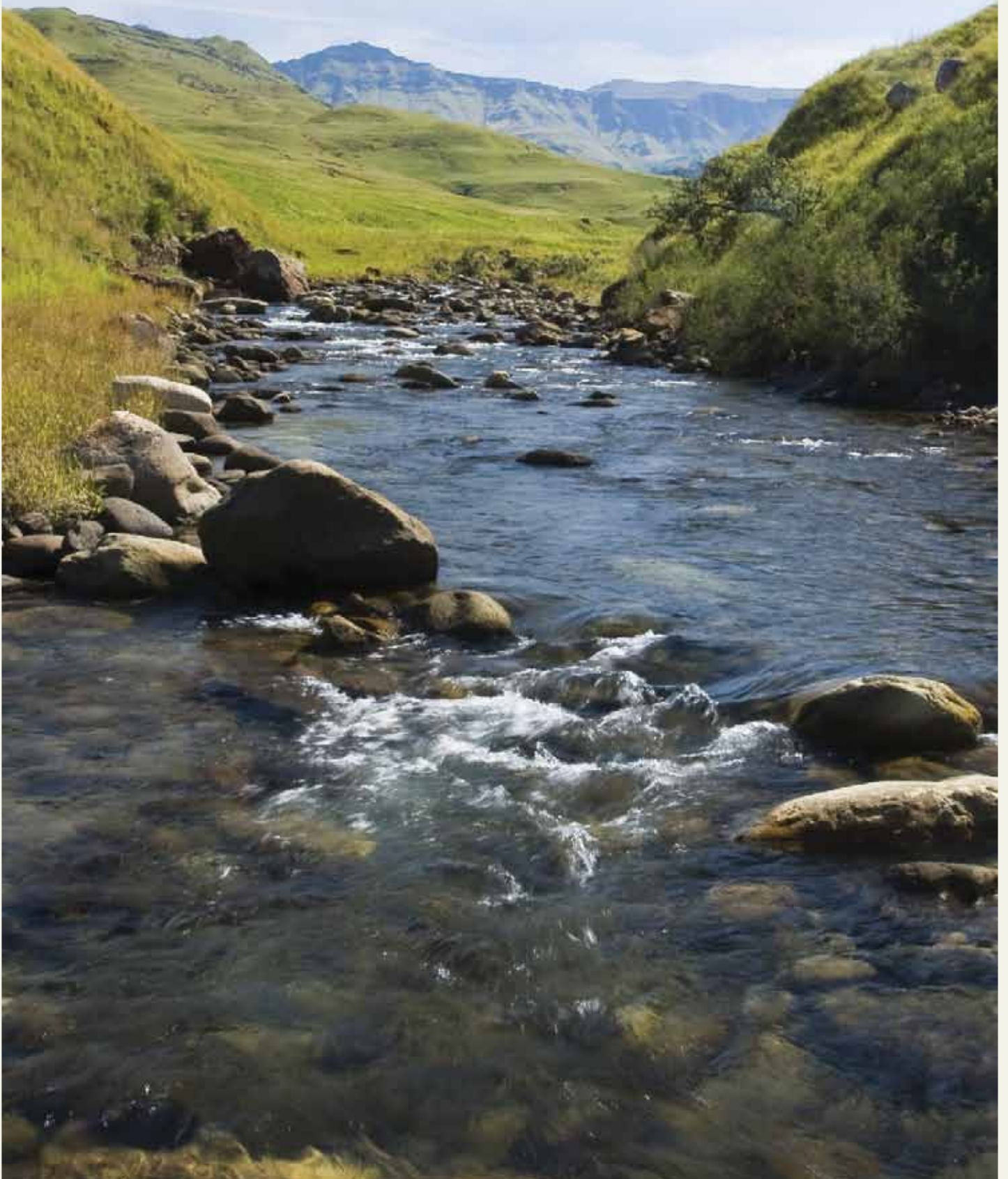
One of the major challenges South Africa faces is the lack of adequate capacity at the local level to manage water resources effectively. The responsibility for compliance monitoring, enforcement and infrastructure maintenance lies with local authorities, who in some cases lack the skills and capacity to execute their duties. Pollution in many cases is attributed to failing waste water treatment works, resulting in raw sewage spills into river systems. The lack of appropriately qualified municipal engineers and the capacity for long-term planning, to effectively maintain and upgrade water infrastructure timeously, is a key driver of this risk.

To alleviate such risks, business might choose to work closely with municipalities and other local authorities through strategic private-public partnerships for infrastructure maintenance and development. Capacity challenges with local municipalities could also be addressed through strategic engagement with the private sector. For example, a number of business forums have proposed that companies second experienced engineers to local municipalities to help them address this challenge.

CORPORATE STEWARDSHIP FOR WATER



Big business has a vital role to play in ensuring economic growth, but it must also play a stronger role in helping sustain our growth, by helping to secure freshwater ecosystem functioning.



THE NATURE OF WATER RISKS AND BUSINESS RESPONSES

Water risks to business can be categorised into four major types; physical, reputational, regulatory and financial (Figure 3).

The nature and severity of the risk to a particular business will depend on its location, the state of water resources and the type of business. However, regardless of the risk type, there are likely to be financial implications for companies that do not actively engage their water-related business risk.

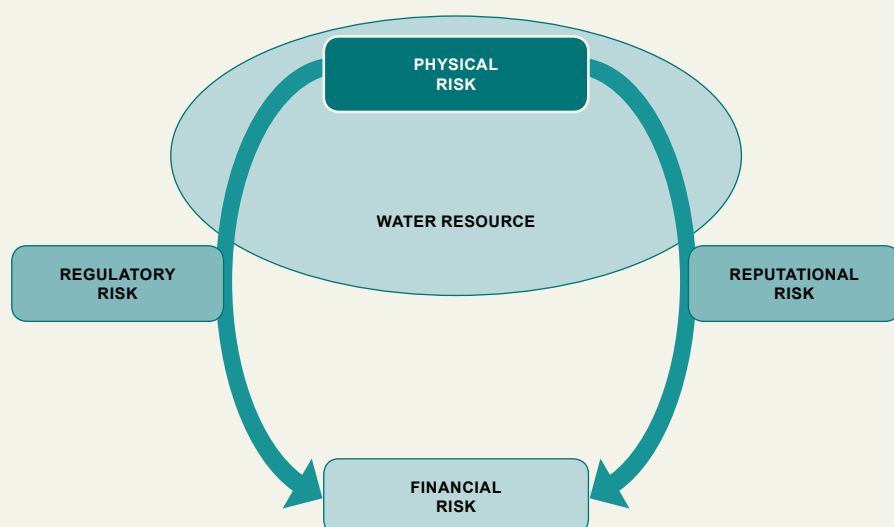
PHYSICAL RISK:

Physical water risk is primarily associated with the physical availability of water, whether it is to do with too little water (scarcity), too much water (flooding), or unfit for use (poor quality). The risk attributed to physical availability could be business interruptions. This may be as a result of regulated water supply restrictions (i.e. water shedding – the equivalent of electricity supply load shedding) or, even worse, unscheduled interruptions in water supply.

REGULATORY RISK:

Changes to water policy, laws and regulations pose a risk to the nature and cost of doing business. For instance, new businesses or businesses seeking to grow their operations in water-stressed catchments may find it more difficult to access legal water allocations. Increasing water demand and threats posed by pollution are likely to increase the cost of accessing water (both quantity & quality) for large users. This will not only result in higher production costs, but can also reduce investor confidence, making it more difficult to raise capital for business establishment and growth.

Figure 3: The interdependent nature of different types of water risks to business (modified from Pegram and Eaglin (2010))



>75%
OF COMPANIES
REPORTED THAT THEY
FACE PHYSICAL WATER
RISK TO THEIR OPERATIONS
AND SUPPLY CHAINS



THE NATURE OF
WATER
AS A SHARED RISK
MAY ALSO PRESENT
OPPORTUNITIES FOR
BUSINESS TO CREATE
SHARED VALUE BY
INCREASING THEIR LONG
TERM PROFITABILITY,
WHILE AT THE SAME TIME
ADDING VALUE TO SOCIETY

REPUTATIONAL RISK:

This risk is associated with the perception that stakeholders have of a business and its relationship with water. As major water users, businesses that fail to engage with communities with whom they share common water resources face a significant risk of being held responsible, truthfully or not, for impacts on these shared resources. This may in turn result in negative consumer sentiment leading to loss in sales and market share.

FINANCIAL RISK:

Physical water shortages, poor water quality or the impact of flooding on a business all have direct financial costs. This can be manifested through decreased income due to business operations, increased operational costs associated with water pricing or internal water treatment, increased public relations spend to counter negative perceptions, increased insurance premiums associated with risk or increased cost of capital due to lower investor confidence. These financial implications will have a direct impact on the profitability of a business.

The water risks discussed above represent some of most important risks a company can face in relation to water in South Africa. According to the Carbon Disclosure Project (CDP) Water Disclosure survey for South Africa, more than 75% of the companies reported that they face physical water risk to their operations and supply chains (CDP Water Disclosure 2010). Companies mostly tend to focus on their operations, as this presents an immediate risk. However, in order to address strategic water risks, companies will need to extend this view to working with other stakeholders with whom they share the resources and engaging their supply chains.

To proactively manage water risks, business needs to work closely with other stakeholders, including their competitors that share the same water risks, because many dimensions of the risks are beyond the control of a single business entity. The nature of water as a shared risk may also present opportunities for business to create shared value by increasing their long term profitability, while at the same time adding value to society. This can be achieved by reconceiving products and markets, and collaborating with other businesses and stakeholders with whom they share the same risks.

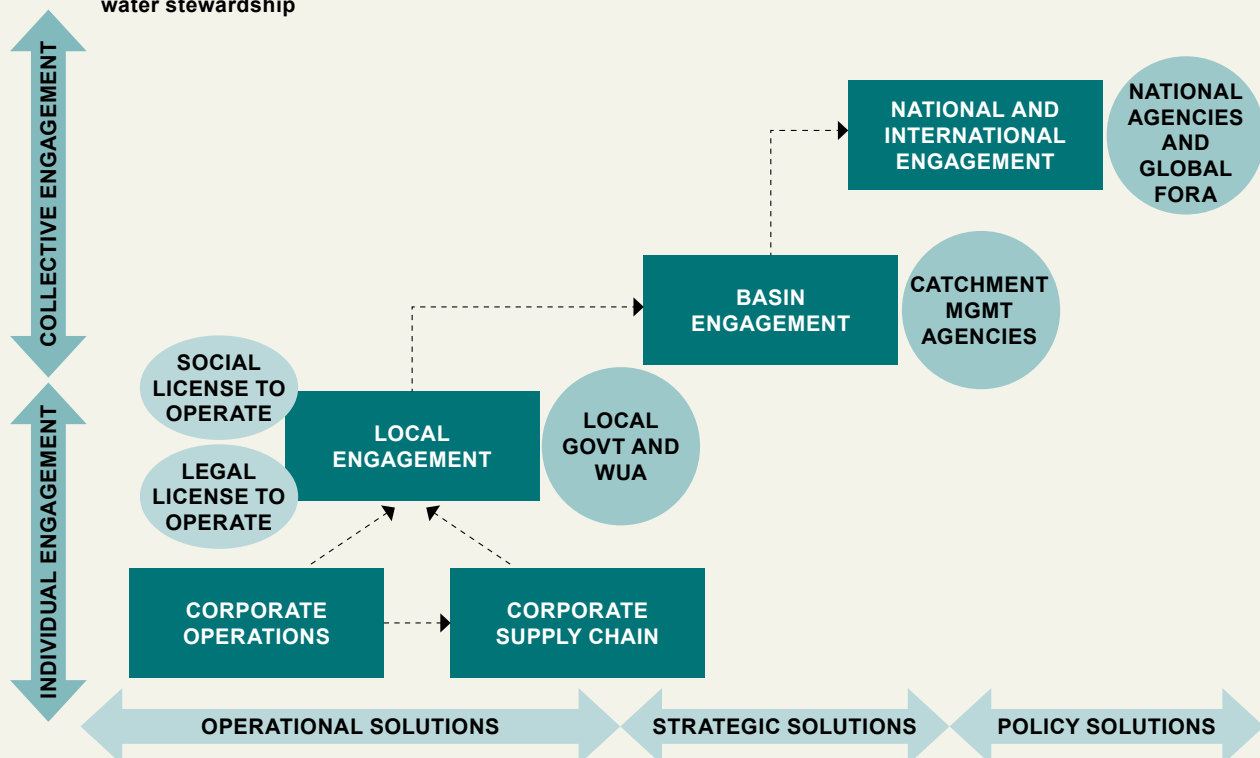
THE WATER STEWARDSHIP JOURNEY

The discussions on the nature of water risks and their drivers show that business engagement in water is complex and requires business to view it as a process and not a once-off intervention.

The strategy to engage in sustainable water management will vary depending on the type of business and its potential risk exposure. To this end, some frameworks and guidelines are starting to emerge to inform business engagement in water policy (Figure. 4).

The emerging framework for corporate engagement in water risk discussed here is presented in more detail in the report *Corporate water risk in South Africa, implications for growth and development* (Pegram & Eaglin 2010). Depending on various factors, a corporate player could engage in water risk at various levels ranging from addressing risks associated with their operations to engaging in the global debate on water risk. However, it is recommended that corporates view water stewardship as a journey by initially implementing operational solutions followed by strategic and policy solutions as illustrated here.

Figure 4. Emerging framework of corporate water stewardship



SOURCE: Pegram & Eaglin 2010.

>80%
OF SAB LTD'S WATER
RISKS IN SOUTH AFRICA
LAY IN THEIR SUPPLY
CHAINS ACCORDING TO
THE RESULTS OF A WATER
FOOTPRINT ASSESSMENT

OPERATIONAL AND SUPPLY CHAIN MANAGEMENT

This is the starting point for companies to develop an understanding of their relationship with water. By measuring how much water they are using and discharging from their operations and supply chains will provide a base line for companies to measure their water related risks, prioritise efforts and measure progress (Morrison & Gleick 2004). Companies such as SABMiller have used this approach quite effectively to develop a strategic approach to managing their water risks. The result of the SAB Ltd water footprint assessment in South Africa for example showed that more than 80% of their water risks lay in their supply chains, which was quite insightful for their water strategy and risk management.

LOCAL AND CATCHMENT LEVEL ENGAGEMENT

Once companies recognise that their water risks may also lie outside of their own operations, they will need to engage with other stakeholders with whom they share the water resources. These could be local communities that often feel very strongly about the use of local water resources and whose perception of a company's water use is critical to providing the required social license to operate. Companies need to actively participate in local water forums, such as the Water User Associations (WUA), to provide leadership and contribute to protection of water resources, in this way jointly addressing their shared water risk with other relevant stakeholders. With the establishment of Catchment Management Agencies (CMAs), businesses need to support these local institutions as they will be responsible for managing local water resources. Since the CMAs are responsible for making local water management decisions such as the allocation of the resources, any forward-thinking business needs to be fully engaged in these process not only to promote their self-interest, but for the collective good of all water users.

NATIONAL AND INTERNATIONAL ENGAGEMENT

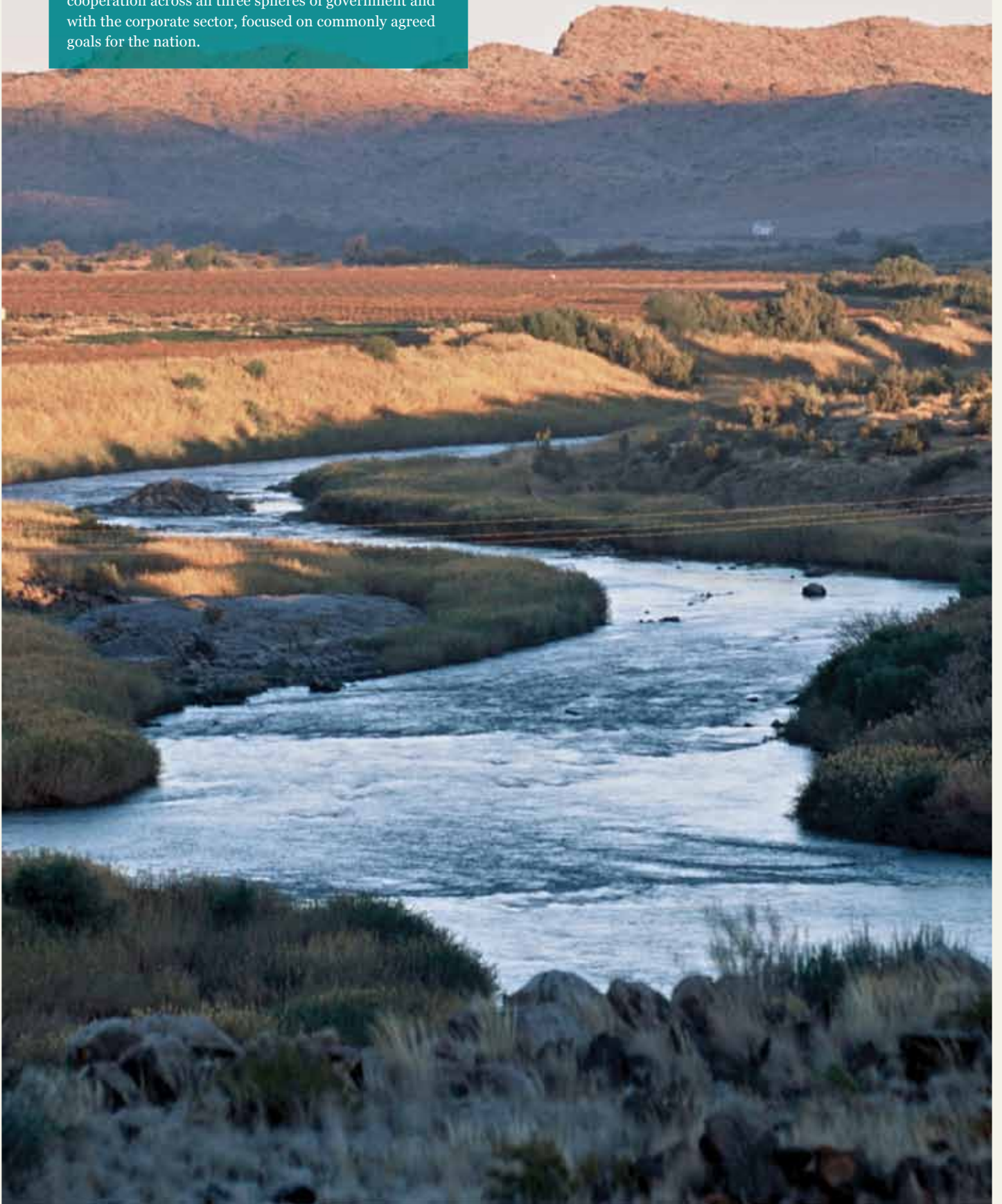
Even though water is mostly a local issue and a company's priority should be to engage at that level, it is important for the private sector to realise that policy direction at the national and global levels might impact their operations. In the absence of effective local water institutions, national government is ultimately responsible for managing water resources. This has been the case in South Africa with the delay in the implementation of Catchment Management Agencies. Some South African companies are engaged in multilateral initiatives such as the United Nations' CEO Water Mandate and the UNEP Finance Initiative that aim to influence water policy at a national and international level. Even though these global initiatives might not provide immediate solutions to addressing a company's water risks, they are important for engaging companies in the on-going dialogue on water and could provide a potential lever for influencing national governments.

The water stewardship journey is clearly an approach that a company cannot undertake on its own; it requires that businesses actively engage in partnerships with the public sector and other business to effectively address their shared risk. There are many opportunities for such collective action in South Africa at the moment as many companies are grappling with the same issues. Business therefore needs to be proactive in brokering such partnerships to address their shared risks.

THE WATER
STEWARDSHIP
JOURNEY
IS CLEARLY AN APPROACH
THAT A COMPANY CANNOT
UNDERTAKE ON ITS OWN

BETTER COOPERATION FOR SUSTAINABLE DEVELOPMENT

The need to ensure that healthy ecosystems continue to underpin economic growth requires improved cooperation across all three spheres of government and with the corporate sector, focused on commonly agreed goals for the nation.



EMERGING BEST PRACTICES IN MANAGING WATER RISK IN SOUTH AFRICA

From the discussions on the water situation in South Africa, it is clear that leadership is required from all sectors including government, civil society and the private sector. It is encouraging to note that some progressive companies have started to engage in water-related risks in a manner that will create shared value for their businesses and other stakeholders.

Case Study 1:



SAB LTD WATER JOURNEY: FROM WATER FOOTPRINT, TO WATER RISK AND RESPONSE STRATEGIES

As a starting point to its water journey, SABMiller undertook a water footprint analysis of its entire beer supply chain in a number of countries. For its South African operations, the study found that almost 85% of its water footprint lay in the production of agricultural products within South Africa; including barley, maize and hops production. This initial screen allowed SAB Ltd to firmly focus its efforts on the agricultural production component of its supply chain. SAB Ltd then scanned the geographical location of its agricultural activities to identify the crops that were located in catchments under the most severe water stress. This analysis pointed to the production of hops in the Gouritz Water Management Area, in the Southern Cape area of South Africa. The Gouritz Water Management Area currently operates under a water deficit of 64 million Kl per annum, which is predicted to double by 2025. SAB hops production in this area requires about 5 million kl per annum, of which about 2.2 million kl was irrigated.

The risk assessment process for SAB Ltd's hops farms was structured according to four components:

1. A situational assessment of various systems that may drive water risk
2. Identification of key systemic drivers of risk
3. Scenario analysis to understand how these drivers of risk may change over time
4. Design of response strategies

The situational assessment described how SAB Ltd's agronomic system for hop production was located within the broader socio-economic, hydrological, ecological, climate and governance systems; and how drivers within these systems were affecting water risk.



**THE COST OF
REPLACING THIS WATER
WITH GROUNDWATER
WILL BE AROUND
R5.5 MILLION
PER ANNUM**

From this process, three key systemic drivers of risk were identified:

1. Climate change impacts on water requirements and availability, mainly through the effects of increased temperature and, to a lesser extent, trends in rainfall.
2. Ecological degradation of the hydrological systems in the catchment, mainly through the spread of water-intensive alien invasive trees.
3. Competition for water, particularly from urban development in the Oudtshoorn municipal area.

A scenario analysis approach of climatic changes revealed that increased temperatures and a decrease in rainfall is likely to lead to a requirement of an additional 220,000 kl of irrigated water per annum (ca. 10% increase). As surface water options have been exhausted, this water would need to be accessed from ground water systems (at a cost of ca. R7/kl) elevating annual hop production costs by around R1.5 million.

Ecological degradation of the hydrological systems, as a result of the spread of alien-invasive trees, was currently reducing Mean Annual Run-off (MAR) by about 15%, and if left unchecked the spread of these water-intensive trees could reduce MAR by up to 40%. It is estimated that this will reduce the water yield to surface dams by about 780,000 kl per annum. The cost of replacing this water with groundwater will be around R5.5 million per annum.

Finally, increased urban demand from the Oudtshoorn municipal area is estimated to increase the current water deficit in the Olifants sub-catchment which is the main source of water for this area, of 3 million kl per annum, to around 8 million kl per annum. Without further augmentation of supplies, this water could be recovered through re-allocation of agricultural irrigation (as has been mooted). This would reduce the irrigated hectares of hops farming by about 20%. The current plan to augment Oudtshoorn's water supplies is by means of the Deep Artesian Groundwater Exploration for Oudtshoorn Municipal Supply (DAGEOS) project, which is estimated to deliver around 11 million kl of ground water per annum, effectively eliminating the threat of the need to reallocate agricultural irrigation water to urban use. However, the DAGEOS project comes with its own risks, as there are potential hydrological links between groundwater being accessed by SAB hops farms and the Oudtshoorn extraction.

Based on this analysis, the following response strategies were proposed and designed:

1. Rehabilitation of hydrological systems:

The removal of the 2,800 hectares of invasive alien trees is estimated to cost in the region of R40 million over a 15 year period. This is an average of R2.6 million per annum which is still much less than the R5.5 million per annum that would be required to access the water that would be lost, were the spread of these trees left unchecked. However, partnerships with the national government's department of environmental affairs and provincial agencies could reduce these costs to less than R1 million per annum.

HOPS FARMERS

COULD ALSO EMPLOY A
NUMBER OF ON-FARM
ADAPTATION MEASURES

2. Groundwater monitoring and management:

Given the potential risk posed by the Oudtshoorn municipal project to access deep groundwater resources, it is imperative that hops farmers start to monitor their groundwater resources in a scientific manner, and engage effectively with water management decisions in this area. This will require the development of a local groundwater monitoring system that is able to collect, collate, and analyse groundwater data in a scientific manner. Furthermore, the hops farmers will need to organise themselves into a forum (potentially into a formalised Water User Association (WUA)) that can effectively engage with the groundwater monitoring committee associated with the DAGEOS project.

3. On-farm adaptation:

Hops farmers could also employ a number of on-farm adaptation measures that include: more efficient irrigation scheduling; active groundwater recharge as opposed to surface storage of water (in order to reduce increased evaporation losses); and the breeding and selection of more drought- and heat-tolerant strains of hop plants.

ACKNOWLEDGEMENT: This research was conducted in collaboration with the Council for Scientific & Industrial Research and funded by the GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit).



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Hops are used as a flavouring and stability agent in the brewing of beer.

Case Study 2:

**GLOBALLY,
THE INSURANCE INDUSTRY
IS COMING UNDER
INCREASING PRESSURE
DUE TO RISING CLAIMS
RESULTING FROM
NATURAL DISASTERS**

**>80%
OF SANTAM'S CLAIMS OVER
THE PAST 15 YEARS WERE
SUBMITTED IN THE LAST
FIVE YEARS**

**CHANGES TO LAND-USE
IMPACTS IN THE LOCAL
CATCHMENTS HAVE THE
POTENTIAL TO CHANGE
1:75 YEAR FLOW TO
1:45 YEAR FLOWS**

THE INSURANCE INDUSTRY AND FLOOD RISK:

Although water risks are normally associated with a shortage of water or the deterioration of water quality, water risks can also be associated with *too much* water, as is the case in flooding.

Globally, the insurance industry is coming under increasing pressure due to rising claims resulting from natural disasters. This has been linked to an increase in the frequency of severe weather events as a result of climate change, as well as a decrease in the natural buffering capacity of ecological systems. To date the global insurance industry has responded to this challenge by mainly focussing its efforts on developing ever-finer scale risk assessments, with a view to better pricing and contracting of risks.

Within this context, the Council for Scientific and Industrial Research (CSIR), the University of Cape Town and WWF embarked on a pilot study with South Africa's largest short-term insurer, Santam. The pilot study was conducted within the Eden municipality in the Southern Cape of South Africa. This area has been devastated by a number of severe floods, linked to intense rainfall events (so-called 'cut-off low pressure cell' phenomena) over the past decade. The objectives of the study were to:

1. To understand the current risk regime
2. Identify the key systemic drivers of risk
3. Understand how these drivers are changing over time and affecting future risk exposure
4. Define how the insurance industry can best respond to ensure its own viability and build the overall resilience of the area.

The study revealed four major findings:

1. Risks are higher than ever before and will continue to increase

More than 80% of Santam's weather-related claims over the past 15 years were submitted in the last five years. This could be attributed to an observed increase in the incidence of severe rainfall events. Furthermore, downscaled climate models predicted that the frequency of intense rainfall events was set to continue to increase into the medium term future (2010 to 2040).

2. However, changes in local land-use had an equal effect on flood risk

Our study revealed that land-use changes observed within the local catchments had an equal effect on increasing flood risk exposure, as compared to climate change. These land-use changes were mostly associated with large forestry operations and their exposure to fire risk.

3. In complex systems, fine-scale risk assessment has its limitations

We were able to show that changes to land-use impacts in the local catchments have the potential to change 1:75 year flows to 1:45 year flows, illustrating the limitations of striving towards ever-finer risk assessment models to try and predict 1:50 year flood lines, for instance.

THE INSURANCE INDUSTRY

WILL NEED TO ENGAGE
WITH STAKEHOLDERS THAT
HAVE INFLUENCE OVER THE
DRIVERS OF RISK

4. Traditional risk assessment approaches need to be complemented with risk management activities at the local scale

The study highlighted the need, and opportunity, for the insurance industry to become engaged in proactive management of the main drivers of risk in the local landscape. Whilst risk mitigation and management is not entirely foreign to the insurance industry, traditional approaches have been aimed at the site of the insured asset, and not at the location of the drivers of the risk. As illustrated in our catchment example, the actual systemic drivers of risk may be located within the local landscape at some distance from the insured asset itself. This will therefore require the insurance industry to engage in partnerships with key organisations and stakeholders that have influence over these drivers of risk. These organisations will include local municipal authorities, that control much of the planning and development of the local landscape, as well as other agencies that have control over land-use management activities. Also included would be a number of agencies that are actively engaged in rehabilitating local ecosystems, thereby improving the flood regulation and buffering capacity of the system.

The insurance industry will need to partner with these local agencies in a way that capitalises on opportunities for greater alignment of resources and capabilities, in order to catalyse action that addresses their shared risks.



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Flood risks are higher than before and continue to increase.

ASSESSING WATER-RELATED BUSINESS RISK IN DEVELOPMENT FINANCE: THE WWF-DEG WATER RISK FILTER TOOL

The risks faced by financial institutions

Water-related business risk for finance institutions is mainly associated with the status and activities of their clients to whom they lend and invest in. This means that generally, finance institutions are indirectly exposed to water-related risks. However, if a bank owns shares in a business then it has a direct water risk exposure.

Many finance institutions are starting to recognise their potential exposure to water-related risks and are taking steps to address those risks. For example DEG, the German Development Bank has been leading efforts in developing tools and approaches to better understand their water related risks. Swiss Re is another financial institution that has been grappling for many years to try to understand its water-related risks. In 2002 it reported an increase in claims of 'business interruption cover', which was associated with periodic water shortages.

The WWF-DEG Water Risk Filter Tool

In 2010 WWF partnered with DEG, the German development bank to develop a water risk filter tool for financial institutions. Engaging with the private sector on water risks is of key strategic interest to WWF, because water is a vital resource and the private sector should provide leadership to ensure that it is sustainably managed for the benefit of society.

The aim of the water risk filter tool was to *"allow financial institution employees with relatively little environmental expertise to reasonably and quickly arrive at a detailed and yet comprehensive assessment of a client's relationship to water and the potential issues and risk arising from this relationship"*.

The risk filter tool will help a company visualise where its water-related risks lay in its portfolio and subsequently take steps to mitigate those risks. The risk filter tool is divided into two aspects, as outlined below: -

- A simple pre-assessment tool to be used for all existing and potential new clients, which is a high level risk indicator.
- A detailed and comprehensive water risk filter tool, to be used for more detailed risk assessment for the most exposed clients in the portfolio.

So far the risk filter tool has been tested using the DEG portfolio and Swiss Re, while in sub-Saharan Africa, the International Finance Corporation has participated in its testing. Based on the preliminary testing of the tool, it will undergo refinement and be made freely available as a web-based tool for finance institutions to access.



2002

DEG REPORTED AN INCREASE IN CLAIMS OF 'BUSINESS INTERRUPTION COVER, WHICH WAS ASSOCIATED WITH PERIODIC WATER SHORTAGES

EMERGING FRAMEWORK FOR WATER RISK ASSESSMENT AT THE LANDSCAPE LEVEL

From the case studies presented and further experience, key design principles which a company needs to implement to effectively manage its water-related business risks can be developed.

These can be framed as a set of fundamental questions that a company needs to answer in order to design a shared water risk response strategy. However, it is important to note that managing water risk is

always going to be an action-learning process. There is nothing such as a perfect water strategy, though these leading questions should provide starting a point for companies to proactively managing their water-related business risks.

1 WHAT IS THE NATURE OF THE COMPANY'S DEPENDENCE AND IMPACTS ON WATER RESOURCES?

The nature of water-related business risks vary depending on the type of industry, the sourcing strategy of the company and its location. A good understanding of the context under which a company is operating is therefore critical in developing a water risk management strategy that is sustainable.

Understanding a company's relationship with water requires deep introspection of how a company is using water and its dependence and impact on the resource. A very transparent company driven assessment is critical at this stage. To start with, companies need to develop a good understanding of the water issues in their operations and supply chains. This will help companies to first 'put their house in order' before engaging on the broader issues of water risk management that are beyond their individual control. However, companies need to view internal processes that seek to build efficiency in water use as merely the first step in the water stewardship journey.

2 WHAT ARE THE SYSTEMIC DRIVERS OF WATER RISK IN THE LOCAL LANDSCAPE?

For a company to effectively address its water-related risks, it needs to have a good understanding of the local socio-ecological landscape in which it operates, as water risks manifest themselves at the landscape scale. A company therefore needs to develop a situational assessment of the various systems that affect water risk at the landscape level, including the hydrology, climate, social, ecological, economic and governance systems. Questions that a company may ask include the following: -

- How much water is available in the catchment and who are the main users?
- What is the condition of these water resources and ecological systems through which this water moves?
- Who are the other stakeholders in the catchment with whom you share the common resources, and what are their needs and potential impact on the resource?
- Is there a suitable regulatory framework to govern the common water resource to ensure its protection and equitable use?

The above questions, amongst others, are what a company needs to answer in order to develop a good understanding of the landscape in which it operates, to manage those water risks beyond their control which are strongly driven by the landscape drivers.

3

HOW ARE THESE DRIVERS OF WATER RISK CHANGING OVER TIME?

The key drivers of water risk associated with systems such as climate, hydrology, and ecology are always changing to create situations that could bring about business opportunity or risk to a company. Businesses need to have a good understanding of how the key drivers of risk are interacting and changing over time and the implications for their operations. For example, changes in rainfall might lead to incidences of extreme events of droughts or flooding, which will have important repercussions for business sustainability if no advanced planning is undertaken.

4

WHAT ARE THE COMPANY'S KEY STRENGTHS AND CAPABILITIES TO ADDRESS THESE KEY DRIVERS OF RISK?

In order to make profits and stay ahead of its competitors, a company needs to have a good understanding of its strengths and capabilities in order to leverage these into business opportunity. Similarly, in order to address water-related risks a company will need to have a good understanding of its key capabilities in relation to these risks. A company that designs strategies that are closely linked to its core business and unique set of skills will deliver higher impact and more sustainable solutions. This could range from finance industry designing financial products that provide incentives for appropriate behaviour; to engineering companies providing capacity development support for municipal engineers; through to rural and labour-based companies becoming more involved with community engagement projects and labour-intensive ecological rehabilitation projects.

5

WITH WHOM DOES THE COMPANY SHARE THESE RISKS?

At this point, a company needs to identify other stakeholders that share these water risks and who have an interest in working in a collaborative way towards addressing these. This will include other private sector companies as well as public institutions that have a mandate to deliver water management functions in these areas. This process is heavily reliant on strong proactive leadership from a single company or a small group of stakeholders. Successful collaborations are also reliant on the ability to find complementary resources, skills and interests that can give rise to more comprehensive and mutually beneficial responses.

A photograph of a person from the waist down, wearing a blue long-sleeved shirt and dark trousers. They are holding a bright green watering can and pouring water into a garden bed. The background is a blurred green landscape. A teal-colored text box is overlaid on the bottom left of the image.

CONCLUSION

The challenges of water scarcity and poor water quality that we face are enormous, and these will be exacerbated by climate change, population growth and unsustainable land use practices.

It is therefore clear that business as usual can no longer suffice if the threat posed by water to the economy, livelihoods and ecosystems is to be addressed. The private sector needs to play a leading role in the transition towards a low water economy; by firstly making sure that its own houses are in order and then rallying other players to the table. This is because water poses a shared risk and to effectively manage these risks requires cooperation between all the different sectors of society, ranging from the private sector, public to civil society. To truly create shared value where business can thrive while benefiting society, every company needs to develop a good understanding of their relationship with water and take a proactive stance in managing that relationship.

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The Business of Water

100%
RECYCLED

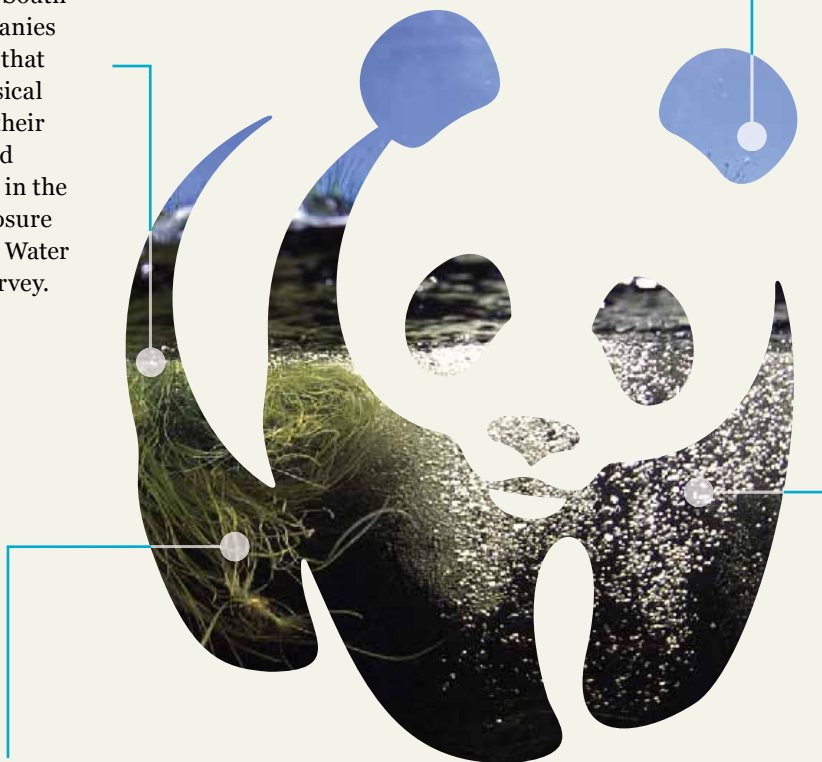


420 MM

Average rainfall in South Africa, less than half the world's average.

> 75%

Percentage of South African companies that reported that they face physical water risk to their operations and supply chains in the Carbon Disclosure Project (CDP) Water Disclosure survey.



17%

Estimated gap in water demand and supply in South Africa by 2030 if no significant policy shifts occur.

2030

Future water demand expected to grow from 2.1 billion m³ per year in 2005 to 3.2 billion m³ per year by 2030.



Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

www.wwf.org.za

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