



# Water: Reshaping the Business and Policy Context

Discussion Paper for “H209 | Water: Money Down the Drain or Revenue Stream of the Future?”

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## About this Report

This briefing paper has been prepared for the conference “Water: Money Down the Drain or Revenue Stream of the Future?”, hosted by the Swedish-American Chamber of Commerce in New York. The purpose of the paper is to raise some important issues related to corporate use and management of water resources and stimulate discussion around the roles various actors can play to address water-related challenges, as a lead up to the conference on November 5, 2009. The paper was authored by Linda Hwang at BSR with contributions from Johan Kaijser at the Swedish-American Chamber of Commerce in New York. We would like to thank the interviewees for their input and ideas. We are extremely grateful to IBM for their financial support of this work.

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The Swedish-American Chamber of Commerce in New York is the largest in the world outside of Sweden and an important meeting place for Swedish-American businesspeople and interests. This only seems natural when you consider that Sweden has the world's oldest trade agreement with the U.S., signed in 1783 in Paris by Benjamin Franklin and Count Carl-Gustaf Creutz (later the first Swedish ambassador to the U.S.). The Chamber remains true to its mission: To promote, advance and protect direct commercial relations between the U.S. and Sweden. The Chamber's main resources are its members and its lengthy experience. By leveraging its unique network and a century of Swedish-American business, it is well positioned to help you facilitate any kind of venture.

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## Era of Water Scarcity

“If we continue on our current path, continuing to do things the way we’re doing them, we’re going to be much worse off in five or ten years, or in the coming decades, because the way we manage water now is inappropriate. It’s not sustainable. We over-pump our groundwater. We take water from ecosystems. We don’t think about how we grow and where we grow our population.”

Peter Gleick, President of The Pacific Institute, Circle of Blue news, July 9, 2008.

## Data Challenges

The lack of accurate water resource data around the world is an impediment to effective policy making. Unfortunately, there is no international organization endowed with a data-collection capacity that is authorized to gather water quality data worldwide, similar in scope to the data collected on nuclear issues by the International Atomic Energy Association (IAEA).

## Introduction

Water in sufficient quantity and acceptable quality is essential for all life on Earth. Unfortunately, these conditions are not fulfilled in many parts of the world, and today approximately 1.2 billion people have no secure access to clean drinking water. Water resources are under great stress as populous cities, states, and countries require and withdraw more water from rivers, lakes, and aquifers every year. Unless radical reforms emerge, the number of people who live with water scarcity could rise to 4 billion by 2025.



Water scarcity may be the most underestimated resource issue facing the world today. As world water demand has more than tripled over the last half-century, signs of water scarcity have become commonplace. In the U.S., the Colorado River now rarely reaches the sea, water tables are falling in the key grain producing area in the southern Great Plains, and water availability has become a common source of conflict among southeastern states. In Europe, the Alps are especially vulnerable to scarcity driven by climate change. For Sweden in particular, climate change may bring increased precipitation, threatening dams, raising sea levels and causing more floods.

In spite of the challenges, water also represents significant opportunities for cooperation among stakeholders. Water scarcity heavily depends on different actors’ goals and usage patterns, the distribution of water, and the prioritization of needs on local, national and global levels. As such, opportunities to cooperate involve not only local and national governments concerned with protecting their own water resources, but also the private sector and civil society groups, to access the potential of technology and social organization to reduce per capita water use without negatively affecting human and ecosystem welfare. Unless we take action now to manage global water resources, supply constraints will intensify the competition for this diminishing resource, severely restricting human health and the functioning of ecosystems on which we all depend.



## International Survey Finds Concerns on Water Quality and Scarcity

A public opinion survey commissioned by Circle of Blue found that people around the world view the fresh water crisis as the planet's top environmental problem. The impediments to clean water and sanitation, and the millions of premature deaths from water-related disease are seen as having a greater influence on quality of life and the planet than air pollution, species extinction, depletion of natural resources, loss of habitat and climate change.

Source: "Water Tops Climate Change as Global Priority", Circle of Blue WaterNews, August 18, 2009.

# Message from the Swedish-American Chamber of Commerce in New York

## Why we are addressing water issues?

Most people know that there is a shortage of potable water in many poor countries. What few may realize is the importance of water in the developed world. Water is a vital component in virtually all production. For example, it requires about 630 gallons of water to produce one hamburger, and about 20 gallons of water per U.S. dollar of industrial product.<sup>1</sup> Currently, many developed countries have an abundance of water resources priced well below the costs associated with extraction, treatment, conveyance and distribution. This in turn means companies have little to no incentive to reduce their water consumption.

We believe this lack of focus on water conservation needs to change, and change quickly, otherwise there may be dramatic impact on virtually all sectors of society. We need both political and private sector leadership to prevent a fatal crisis. Efforts to address energy consumption in the world are moving in the right direction, and it is equally important now to put sustainable water management high on the agenda for the next global climate agreement. Companies that work proactively to reduce their water consumption, manage their wastewater, and convert their production processes to optimize water efficiency ahead of mandated regulation show great responsibility and prudent business acumen.

Sweden is at the cutting edge of technological and capacity-building developments that can contribute to such a desirable change. World Water Week, the annual global meeting for water and development held in Stockholm, is an excellent example of just that. There is no doubt that the application of Swedish technology for water efficiency and water quality has great potential for the rest of the world, not least in the U.S., where the commercialization of innovative technology has great potential to progress to wide-scale utilization.

Countries worldwide have begun to replace fossil fuels with other energy sources which have a much lower impact on our environment in terms of reduced carbon and greenhouse gas emissions. But unlike alternative energy sources, there is no such thing as an alternative to water.

## Our Mission

The Swedish-American Chamber of Commerce in New York has dedicated 2009 to water. Throughout the year, we have conducted activities aimed at the business sector focused on environmental issues, and on water in particular, culminating in our upcoming conference "H209| Water: Money Down the Drain or the Revenue Stream of the Future?" in New York on November 5, 2009.

The conference will address innovative and sustainable solutions to a host of water issues close to our hearts and homes, focusing on water-related challenges and risks through three perspectives: industry, technology, and government. We hope to stimulate interactive discussion among panelists and attendees on a range of topics and questions: Is desalination a viable solution? How should managers choose among water recycling technologies? Instead of spending billions on technologies that clean up pollution, should we not instead

<sup>1</sup> Water Footprint Network. "Product Gallery." Available at <http://www.waterfootprint.org/?page=files/productgallery>



## Water and Energy

Water resources and energy resources are far more closely linked than many utility managers realize - what's more, the management of both of these resources is linked with the management of greenhouse gas emissions. Recognizing this energy-water-greenhouse gas relationship and integrating together the management of these three elements provides utility managers with significant opportunities to save energy through water conservation efforts, save water through greater energy conservation, and reduce greenhouse gas emissions through both greater water and energy efficiency.

use the money to prevent water pollution in the first place? Is it possible to calculate companies' and individuals' "water footprints" and use that as entry points for water policies and corporate water strategies?

Prominent scientists, technicians, politicians and captains of industry from the U.S. and Sweden will give their answers to these and many similar and related questions at the conference.

### The United States and Sweden: A Perfect Match

The Swedish-American Chamber of Commerce in New York has always been at the forefront of environmental issues. Ten years ago the Chamber hosted an Environmental Symposium that featured some of the most influential people from the business and political community.

Today, the Chamber is again bringing together leaders from a variety of key sectors to address water-related challenges. In so doing, the Chamber continues to serve as a conduit for pooling new investment and pairing it with bright ideas, and to act as a catalyst for change. In an increasingly globalized world economy, the Chamber's role continues to be bringing together the best and brightest talent from Sweden and the U.S. under one roof.

Collaboration between organizations in Sweden and those in the U.S. can build a strong foundation for promoting sustainable development both in the U.S. and around the world. For example, the Swedish government's policies and programs have established a reliable and sustainable energy supply through the use of renewable energy sources.

The Chamber's goal is to connect Swedish innovative technology, with the possibility of impacting the energy situation globally, with venture capital and strategic partnerships from the U.S.

While our overall goals may be aspirational, we seek tactical solutions that are down to earth and pragmatic. We are a chamber of commerce, and through our conference we first and foremost look forward to stimulating an exchange of ideas and a profitable forging of new partnerships between American and Swedish companies and individuals deeply immersed in water.



## “Smart Grids” for Water

IBM addresses the community and ecosystem challenges of water efficiency, water security, aging infrastructure, and increased demand for proactive water-related risk management by leveraging all of the benefits of smarter automation and digitization. IBM technology enables strategic information management solutions and intelligent infrastructures to support the management of entire natural water systems, levee systems, water infrastructure, water utilities, and water treatment facilities. This ensures the most efficient water use and conservation and the associated energy and carbon management savings, as well as helping to lower costs for utilities and consumers while providing better protection of the natural water environments.

## A Message from IBM

Addressing the water challenge requires a smarter approach and so IBM is proud to support this report on water.

Every time we interact with water, we change its direction, chemistry, usefulness or availability. Because of this daunting complexity, water is poorly understood and often mismanaged. For example, global agriculture wastes an estimated 60 percent of the 2,500 trillion liters it uses each year. Municipalities lose as much as 50 percent of their water supply through leaky infrastructure. And there are nearly 53,000 different water agencies in the United States alone, each managing a short stretch of river or a handful of reservoirs. There is no coordination of these agencies, despite the fact that they are all managing a shared resource. There is inadequate sharing of data to achieve a holistic view of the entire watershed or water ecosystem, and of the impact of human activity upon it.

Fortunately, the world is getting smarter. Advances in technology - sophisticated sensor networks, smart meters, information management systems, deep computing and analytics - enable innovative new ways to manage water systems. We can monitor, measure and analyze entire water ecosystems, from rivers and reservoirs to the pumps and pipes in our homes and enterprises. We can give all the people, organizations, businesses, and communities dependent on a continuing supply of freshwater - that is, all of us - a single, reliable, up-to-the-minute and actionable view of water use, and accurate information to enable balancing that use with the needs of the environment. Through a combination of information technologies and tools, global water management can be transformed, indeed reborn.



## Taking Care of Wastewater

AstraZeneca has identified emissions to water and water use as instrumental indicators of environmental performance, and is therefore reporting in this area to satisfy water-related Global Reporting Initiative (GRI) Environmental Indicators. AstraZeneca has several examples of projects aiming to minimise water use and track areas of water use. AstraZeneca has also been involved in state of the art wastewater bio-treatment facilities at manufacturing locations in Sweden (Södertälje) and the UK (Bristol). The company is also proactively setting risk-based process wastewater quality standards for active pharmaceutical ingredients to assess how best to remove pharmaceutical residues from aqueous effluent streams.

## Water Challenges in the 21<sup>st</sup> Century

The availability of water is likely to become one of the greatest social and environmental challenges of the 21<sup>st</sup> century. Businesses decisions related to strategic investments in new products, projects, services and technologies will be dictated by the availability of and access to water resources. The trends shaping this new business context are:

- » Growing populations in the face of increasing and inequitable demand
- » Impacts of climate change on hydrological cycles
- » Ongoing over-appropriation

### Growing Populations in the Face of Increasing and Inequitable Demand

Competition for water resources among individuals, regions, and countries and associated human activities are already occurring with the current world population. About 40 percent of the world's population lives in regions that directly compete for shared water resources. In China for example, where more than 300 cities already are short of water, these shortages are intensifying as some rivers no longer reach the sea. A major threat to maintaining future water supplies is the continuing over-draft of surface and ground water resources. Even in wealthier regions, access to water is increasingly contentious.<sup>2</sup>

As the world population continues to grow geometrically, great pressure is being placed on arable land, water, and energy resources to provide an adequate supply of food while maintaining the integrity of our ecosystem. Enlarged populations and changing patterns in food consumption both create additional water needs and reduce available supplies. Based on current rates of increase, the world population is projected to increase from 6.5 billion to more than 9 billion in 2050.<sup>3</sup> Increasing wealth in certain segments of societies also generates additional competition between water uses.

According to the United Nations, if present consumption patterns continue, two-thirds of the world's population will live in water-stressed conditions by the year 2025.<sup>4</sup> As water quantity and quality issues grow in the coming years, tensions are likely to increase between businesses and local communities, particularly in developing countries.

The growth of urban areas in particular intensifies the demand for water and at least potentially reduces both water supply and water quality. Conventional urban development replaces native vegetation with paved surfaces, channeling rainfall away from where it lands and preventing it from filtering through the soil to replenish the groundwater. In contrast to the filtering and cleansing effect of the soil, water traveling along pavement and through cement storm systems picks up pollutants such as oil and gasoline residues, fertilizers, herbicides, and pesticides, and concentrates them downstream. As a result, conventional storm sewer systems can both divert a potential resource (water from rainfall) and increase water pollution.

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2 BSR and the Pacific Institute. 2007. "At the Crest of a Wave: A Proactive Approach to Corporate Water Strategy." Available at [http://www.bsr.org/reports/BSR\\_Water-Trends.pdf](http://www.bsr.org/reports/BSR_Water-Trends.pdf).

3 "World population to increase by 2.6 billion over the next 45 years, with all growth occurring in less developed countries." UN press release, February 24, 2005.

4 "Making every drop count." UN-FAO press release, February 14, 2007.



## Addressing Impacts of Consumer Use

The focus of Axel Johnson's water equipment companies, Kinetic and Parkson, is on designing and building products that reduce their customers' water consumption and waste. To this end, both companies employ water treatment engineers whose sole job is to continuously study the water utilization habits of their municipal, industrial, commercial, and residential customers and identify ways to modify our products, and their habits, to reduce their water utilization and quality risks.

Both companies employ full-time customer "trainers" tasked with educating customers on their water usage (and waste) profile. In this way, Axel Johnson raises customer awareness of their own water challenges, thus initiating a virtuous cycle of collaboration and development.

Water consumption in urban areas is also significant because of the embodied energy in water. The energy requirements of a particular water supply reflect energy use at five stages of the water cycle: extraction, treatment, distribution, use, and disposal. The end use of water by consumers - especially for energy intensive uses such as washing clothes and taking showers - consumes more energy than any other part of the urban water conveyance and treatment cycle (and therefore generates the highest amount of greenhouse gases of any step in this cycle). On the downstream end of the water cycle, the energy required to collect, pump, treat, and dispose of wastewater is also significant. More than 60,000 water systems and 15,000 wastewater systems in the U.S. are among the country's largest energy consumers, using about 75 billion kilowatt hours/year nationally - or about 3 percent of annual U.S. electricity consumption.<sup>5</sup>

## Impacts of Climate Change on Hydrological Cycles

Global climate change poses another dimension of stress on water resources in many parts of the world, as freshwater resources are highly sensitive to variations in weather and climate. While it is virtually certain that there will be changes in the global quantity and distribution of precipitation and runoff,<sup>6</sup> there are significant uncertainties regarding the specific nature of the local and regional impacts of climate change on hydrologic patterns and cycles. These uncertainties will pose the greatest challenges for water governance.

All regions of the world show a net negative impact of climate change on water resources, but these impacts will vary greatly from region to region. The problem may be particularly acute for many parts of Asia, where millions of people residing in coastal areas and flood-prone regions are vulnerable due to accelerated rates of glacial melt.

## Ongoing Over-Appropriation

As demand for water grows, current water use often exceeds available supplies. In many regions of the world, water allocation and appropriation varies due to a wide variety of legal and institutional conditions that reflect the complex public and private values of water. Water limits have been breached in many major basins, notes David Molden of the International Water Management Institute, adding, "there is little or no additional stream flow or groundwater for further development remaining in the Murray–Darling River in Australia, the Yellow River in China, the Indus in Pakistan and India, the Amu and Syr Darya in central Asia, the Nile River, and the Colorado River in the U.S. and Mexico."<sup>7</sup>

The challenge is that over-appropriation is occurring in a context of growing demand. So, even as many regions are experiencing greater demand than supply, demand continues to grow. Moreover, climate change is beginning to introduce new uncertainties ranging from unanticipated alterations in water supply and availability to new extremes in both flooding and drought. The end result is that over-appropriation of water in today's complex context is likely to become more challenging, not less so.

5 Cohen, R., Nelson, B, and Wolff, G. 2004. "Energy Down the Drain: The Hidden Costs of California's Water Supply." Natural Resources Defense Council. Available at <http://www.nrdc.org/water/conservation/edrain/edrain.pdf>.

6 Huntington, T.G. 2006. "Evidence for intensification of the global water cycle: Review and synthesis." *Journal of Hydrology*, 319(1–4), 83–95.

7 Molden, David. "Planetary boundaries: The devil is in the details." Commentary in *Nature reports Climate Change*, September. 23, 2009. Available at <http://www.nature.com/climate/2009/0910/full/climate.2009.97.html>.



## Assessing Water-Related Risks

To manage water-related risks, The Coca-Cola Company conducted a plant-level survey of its approximately 1,000 global bottling plants initially in 2005 and then again in 2009. Data from these 150 plus questions is fed into a robust quantitative risk model to map risks across the following categories:

- » Watershed sustainability
- » Water supply sustainability
- » Supply economics and efficiency
- » Regulatory compliance
- » Social risks

In addition, the company requires all plants to map their ultimate source of water, assess its vulnerabilities to quantity and quality and then work with the government, civil society, other industry and communities to effectively manage the water.

## Water-Related Risks

The management of water is the interaction between social, economic and environmental systems. In practice, water scarcity is more often caused by the inappropriate allocation of water rather than by total availability of the physical resource. Thus in addressing the challenges posed by water scarcity, the focus should be on both increasing efficiency of our use of water and improving the interaction among all users of and uses for water.

### Corporate Sector Risks

Around the world, water is vital to almost every sector in the economy. It represents a growing market on its own and serves as an input to nearly every industry. Because of this, an increase in the price of water driven by scarcity or quality problems will affect almost all of society's commercial activities. As water fundamentals shift for many sectors of the economy, stakeholders from financial institutions, environmental protection organizations, citizenship coalitions and industry roundtables are asking new questions to determine water performance differences among firms operating within sectors. Increasingly, the capacity of a business to respond to water risk is an indicator of overall business resilience.

Increasing water scarcity presents physical, regulatory, reputation and market risks to companies, as depicted in Table 1.<sup>8</sup>

**Table 1. Water-Related Risks**

Risk	Description
<b>Physical</b>	Reduced availability of water supply, higher costs of input, disruption to business operations due to the lack of supply or degraded quality.
<b>Regulatory / Legal</b>	New government regulations, user fees, penalties, lawsuits, restrictions on expansion of operations, higher transaction costs.
<b>Reputation:</b>	Damage to brand and reputation, challenges to "license to operate."
<b>Market:</b>	Changes in customer preference.

### The Technology Challenge

Today there is a wide variety of technology solutions that address water scarcity, energy consumption, and salt intrusion. However, it is not enough to develop technical solutions to the problems of scarcity, declining water quality and inequitable access - the technology must also be transferred to the country and community that needs it. In general, direct technology transfer can encounter

<sup>8</sup> Adapted from United Nations Environment Programme Finance Initiative's "Half Full or Half Empty?", available at [http://www.unepfi.org/fileadmin/documents/half\\_full\\_half\\_empty.pdf](http://www.unepfi.org/fileadmin/documents/half_full_half_empty.pdf) and JP Morgan. 2008. "Watching Water: A guide to evaluating corporate risks in a thirsty world," available at <http://www.jpmorgan.com>.



## Being a Responsible Consumer of Water

SCA consumes large amounts of water to produce pulp and paper and therefore assess water risks, water discharges impact on eco systems, stakeholder engagement in SCA corporate water strategy and implementation of best available technology. SCA operates an extensive system of gathering and presenting water data for production facilities and business groups worldwide.

In 2005 SCA management took on two corporate objectives related to water improvements, one targeted at reducing water consumption and the second at reducing oxygen consuming content of wastewater. By the end of 2008, SCA had achieved a 5.5 percent reduction in water consumption and a 17.1 percent reduction of organic content in wastewater (with 2005 as a reference year).

many obstacles, and to be effective, technology transfer must be accompanied by technology adaptation and technology adoption to take account of the technical capability, infrastructure and market potential of the country that needs the technology. Different approaches are needed for countries with different sets of socioeconomic realities. Technology transfer should be complementary to efforts that also develop local capacity.

## The Governance Challenge

Yet the problem is not merely one of physical scarcity or stress or lack of technology, but one of inadequate access to improved water supplies. The 2006 Human Development Report is unambiguous in its assessment of the problem: “Scarcity is a product of public policies.”<sup>9</sup> In other words, access to water can be compromised by local and national laws, regulations and actions put in place by government agencies, as well as implementation of those policies. Indeed, the 2<sup>nd</sup> World Water Development Report adds that “the capacity of countries to provide water supply and sanitation for all ... depends to a large extent on their ability to establish sound and effective governance systems.”<sup>10</sup> For example, a study in rural India examining the wide variation in access to tap water found that the caste and religious composition of communities plays a major factor in access to tap water.<sup>11</sup> The public policy implications of the findings are that different public policies may be required to address access to public goods like tap water.

Access to water and water scarcity are therefore intimately linked to wider aspects of public policy, including poverty reduction, infrastructure construction and maintenance, the legal status of certain social groups, and the role of the private sector in delivering basic services. Ultimately, good water governance will succeed in distributing water equitably between all users and sectors, as well as ensuring that environmental needs are also met.

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9 UNDP. 2006. “Human Development Report 2006”, page 10.

10 UNESCO. 2006. “World Water Development Report II: Executive Summary,” page 7.

11 Balasubramaniam, D. et. al. 2009. “Got Water? Social Divisions and Access to Public Goods in Rural India.” Available at SSRN: <http://ssrn.com/abstract=1365393>



## Water as Part of Corporate Strategy

The Volvo Group has recognized global water challenges and carefully considers water from a broad range of perspectives when acquiring new businesses and facilities. There are several examples where Volvo Group participates in water conservation and water harvesting programs. In India, Volvo has created systems where water is re-used for irrigation in a closed circuit. In its New River Valley plant in the U.S, Volvo was recently praised by the Governor of Virginia for recycling 70 percent of the wastewater used in production processes.

Volvo Group also actively provides solutions where water is scarce, for example through mobile irrigations plants provided by Volvo Penta.

## Objectives for the Conference

As the demands of our food and industrial systems place more stress on natural resources around the world, global companies must be innovative in their approach to finding solutions to both the demand side and supply side of the challenge. Soaring energy costs and increasing water scarcity means companies must create measurable savings not only financially but also in terms of environmental impact. The conference is an opportunity to discover how international business leaders, policy makers and leading research institutions are creating practical solutions to manage the new sustainability risks related to water. The objectives are to facilitate the various stakeholders in water resources management to share their experiences in solving the water crisis around the world.

The day-long forum will highlight water-related challenges mainly from three perspectives: industry, technology, government. We will also hear from three new water companies tackling the same challenges of water demand and supply.

### Industry

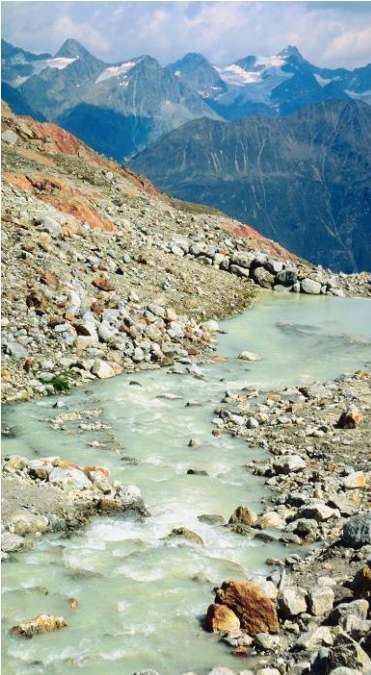
The current and future global water availability challenges are compounded by the intertwined relationship between energy and water usage. Now more than ever, it is critical for corporations to evaluate their water needs, and understand how the strain on water and energy is being exacerbated by population growth, economic growth, climate change and policy choices. Discussion topics include:

- » What impact will water availability challenges have on corporations and cities (even companies that do not have water as a raw component in their products and those that operate in water-abundant regions)?
- » Do the solutions make sense from a business perspective today and are they viable with current market conditions?
- » How can corporate decisions for water management reflect the interaction of social and ecological systems?

### Technology

Today there is a wide range of water technologies available to help resolve water problems. However, poor governance and poor economies in many regions of the world where water is scarce impair the application and uptake of innovative water technologies. A major challenge is tailoring solutions to the socio-economic, political, and geographical conditions of a region. Discussion topics include:

- » Do we have the right technologies in place to increase water efficiency and availability? Why are many already existing technologies not used?
- » What incentive structures are required to improve the adoption and diffusion of appropriate technologies?
- » How can we make sure that relevant technologies and knowledge on how to use them reach the 1.2 billion people who do not have access to safe water?
- » What role can entrepreneurs have in this new space? How large is the potential market?



“The advantage of being ahead of the game is not that you can dictate the terms of legislation, but you can influence the thinking around issues based on the experience you already have.”

Mr. Gcabashe, CEO of Eskom, in “The Company That Anticipated History”

## Government

Regulatory and policy issues are increasingly strong drivers of corporate water programs. At the same time, policy networks play an important role in enhancing the success of collaborative efforts among governmental authorities and other political actors in areas of increasing water stress. Discussion topics include:

- » What does water governance mean for poverty alleviation?
- » What organizations, structures, information and practices are necessary to ensure that participation from the private sector benefits the public good?
- » No single government agency, nongovernmental organization, corporation, international organization, or academic institution can provide all the expertise required to meet the challenges of solving the water challenges. Where types of partnerships could be most beneficial to meeting the challenges?

## Finding the Solutions

How can corporations and cities contribute to the solution? More than likely, the solutions will be found in regulatory, behavioral and technological approaches, including non-technological solutions that support healthy ecosystems and waterways. These include:

- » Water efficiency and conservation practices
- » Investments in ecosystem services related to water
- » Technology transfer and implementation at all levels (residential, industrial, commercial, institutional)
- » Good governance of water resources, including demand side management, regulation, support for voluntary programs, and smarter financial investments

Reliable access to water, its management and disposal, is critical for all industries. Given growing public concern about water resources, the private sector has an urgent need to demonstrate, and be recognized for, responsible water management. Effective performance in this regard will help business maintain its social license to operate and continue to grow. It will also support progressive government policies that address economic growth, food security and public health. The water debate today is rapidly evolving and its drivers are dynamic, many falling outside of industry control. But a commitment to continuous improvement in water management and efficiency demands a strategic approach that takes into account:

- » Increasing competition for limited resources
- » Protection of water quality
- » Rising prices
- » Shifting community expectations
- » Impacts of climate change
- » Evolving policy context

These issues present an urgent challenge to find innovative solutions to protect multiple sectors from rising costs and uncertain impacts on production. There is increased pressure for significant water users and local and national governments to manage water more sustainably and to recognize water as an asset on loan from the community and from ecosystems.