Investigating Shared Risk in Water: Corporate Engagement with the Public Policy Process

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Executive summary

The past few years has seen a radical increase in media and corporate recognition of the importance of water for society, economy and ecology, largely due to the increased understanding of the pressures and risks associated with the world's freshwater resources. Corporate risk related to water is therefore an emerging issue and is likely to become more significant into the 21st century, due to increasing water stress internationally, investor perceptions and public awareness.

Multinational corporates have begun to assess the risks and uncertainties they face throughout their supply chains in producing and marketing their goods and services. The CEO Water Mandate and World Economic Forum (WEF) processes (amongst others) are already distilling these debates. One of the most complex issues is the engagement of corporates with public water policy. Following their stated interest in advocating for improved management of freshwater systems for people and nature, WWF has commissioned this paper in an attempt to frame the debate and explore various issues, and thereby to foster a dialogue around corporate engagement with public water policy.

The central premise of the paper is that government and corporates have a shared risk around water that manifests itself in different ways, depending upon the specific risks and uncertainties associated with a particular situation. The process of identifying government and corporate risk around water, and then understanding shared risk may enable both parties to find common ground (possibly with civil society) in the very real need to manage water effectively, equitably, efficiently and sustainably.

Water related corporate risk revolves around physical water shortage, quality or flooding, regulation and reputation, together with the financial consequences to the business though its entire supply chain. Government water-related risk similarly revolves around physical shortage, quality or flooding and the implications for the achieving social, economic and environmental imperatives, together with the political consequences to the political leadership.

Some of these risks may be shared by corporates and government, particularly related to avoiding water stress, promoting economic development and ensuring functioning freshwater systems, which provides an opportunity for cooperation around common interests.

There are circumstances under which externally imposed uncertainty, vulnerability and possibly water related risks, indicate that engaging outside of a company's production and supply chain may be required for the long-term viability of the company, including engaging in public water policy.

While engagement in water policy-related processes at the local, catchment or national level may reduce water related risks, it introduces various other uncertainties and challenges, particularly as water management is not a mandate or core business element of most companies.

The nature of water and effective corporate engagement around specific issues implies that there is no one-size-fits-all solution and these must be developed for the local, catchment or national context in which the corporate risk is manifest.

For those corporates that face this challenge, it is important to foster a positive environment for corporate engagement, through collective engagement in public (media) and policy (government) discourse at both the national and global level through vehicles such as the CEO Water Mandate and WEF.

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PART A:
Background and context

Introduction

The management and provision of water for domestic and productive use is typically a public sector responsibility, albeit with private sector water industry involvement under specific circumstances. For many years, governments and international development agencies have been engaged in formulating and implementing public policy around the most suitable principles and most effective approaches to manage (and regulate) the protection, development and utilisation of water resources (i.e. rivers, aquifers, dams, etc), as well as the associated delivery of water supply and sanitation services to households, farms and businesses.

The typical position of the private sector (particularly companies that use water in production) has been to resist increased regulation, or in specific circumstances to provide financial and/or management expertise on contract or in partnership to government. In most countries, the underlying assumption was that with adequate management there would be enough water of adequate quality for economic production, while meeting the basic social needs of people for water. In the past decade, this paradigm has shifted with the recognition of water as finite resource with ecological, social and economic requirements within a continually changing environment.

With this shifting paradigm, the concept of 'corporate risk' around water has emerged with a range of initiatives being launched in the past couple of years to redress public perception and also reduce future risks. At the global level, the UN Global Compact has helped to facilitate corporate understanding and dialogue around water through the CEO Water Mandate. The Water Footprint Network (WFN) has evolved from academics initially working with individual corporates to estimate water use. The measurement of corporate 'water footprints' is now recognised as an important first step in evaluating amounts, impacts and potential risks. Similarly, organisations such as the World Business Council for Sustainable Development (WBCSD) and the World Economic Forum (WEF) have helped keep water issues on the corporate agenda, through reports, risk tool development and dialogue.

Parallel to these efforts, standards for water users and utilities are improving and being piloted through, among others, groups like the Alliance for Water Stewardship (AWS), and many businesses are eager to have transparent measures for compliance reasons. Community engagement has also been on the increase with business philanthropy, with activities such as the construction of wells, increasing the access to water resources to local villages. While the latter may be more designed to maintain a social license to operate, as credible and tested methodologies for measurement and standards are evolving, these activities serve as good intentions.

But there is also wider interest around water issues emerging from global financial institutions and the insurance sector, in response to the recognition that their investments and clients are becoming increasingly exposed to water risks and policies around water access, rights and suitable use of this often scarce resource.

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Background and context

Purpose of this Paper

WWF has stated interest in improving the management of freshwater resources for people and nature. In addition to advocacy around government and public engagement with water resources, WWF has an interest in greater awareness and engagement of the private sector to support better management of these precious resources.

This paper takes the current corporate engagement with water and risk as its point of departure, and in particular the CEO Water Mandate element around public policy. It is intended as a discussion piece to provoke thought and dialogue around these complex issues. In some cases it attempts to frame the debate, but at no time is the discussion intended to be prescriptive or provide a guideline.

While existing work on corporate water footprint and supply chain is critical, this paper unpacks possibilities "beyond footprint" where corporates individually or jointly may have to engage broader public policy process, in order to manage their own business risk at a number of levels. The main target audience is the private sector and particularly those already engaged in managing water risk at some level, but it is intended to also challenge the pubic sector and civil society in rethinking traditional paradigms of private sector engagement with public policy.

Throughout the paper, the discussion is framed for large corporates rather than the private sector as a whole, because the interpretation is that individual firms are most likely to engage these opportunities, in some cases jointly with other firms. Also this paper recognises the wide range of private sector firms face completely different risks depending on sector, product and location. Towards the end of the paper the concept of cooperative engagement/ joint action by private sector representative bodies is explored.

The remainder of this introductory chapter attempts to contextualise the following discussion around the emerging global water situation, together with the importance of freshwater to people and nature. Because the paper focuses on public policy, Part B provides a high level outline of the key purpose and approaches to water management and policy from a government perspective. This shifts to a corporate perspective in the unpacking of corporate risk around water in Part C. Part D builds on these elements and the perspectives of government and corporates to explore the concept of shared risk around water and the opportunities and risks for corporate engagement. Finally, in Part E, the focus shifts from corporate engagement to possibilities of collective engagement in public policy through representative fora such as the CEO Water Mandate.

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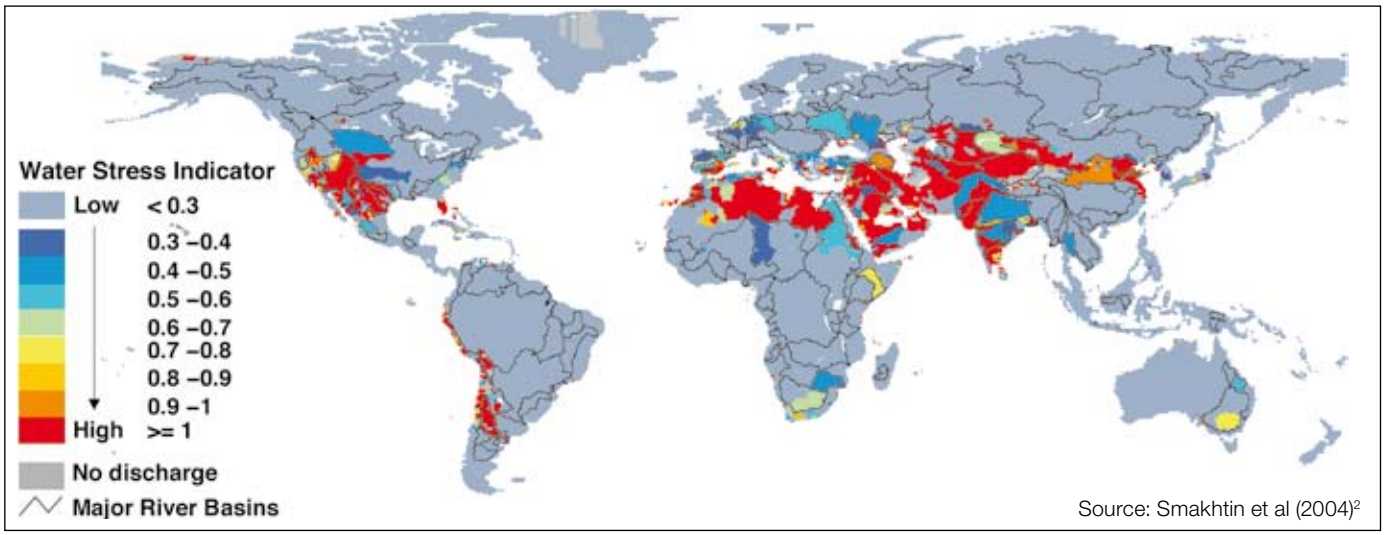
Background and context

A Perspective on Our Shared Water Future

One of the consequences of the increasing globalisation of trade is a dramatic increase in the interdependence of the world's population on the limited freshwater resources that support the production of food, goods and services. It is estimated that 1,000 m^3 (1 million litres) to 1,300 m^3 per person/yr is required to meet minimum standards in food production, giving a more realistic picture of each individual's minimum water 'footprint'. WWF's country water footprint work exposes the level and nature of this interdependency, much of which is in the form of embedded water in products that are bought and sold by multinational and domestic private sector firms. A recent report estimates that the daily requirement for a UK citizen is over 4,600 litres per person per day when embedded amounts are considered (WWF, 2008)[1].

As has been dramatically demonstrated through the financial crisis, interdependence can create systemic vulnerabilities to shocks and instability across the world. At the same time opportunities are created to buffer these shocks through coherent action and response. What this means for water is that companies and consumers in one part of the world are dependent upon and vulnerable to water availability, management and use in another part of the world. Already the world's freshwater resources (surface and ground water) are stressed by over-abstraction, pollution and environmental degradation of the upstream watershed, as illustrated by the following map of stressed basins (Figure 1.1).

Figure 1.1 **Water Stress in key water basins**



Source: Smakhtin et al (2004)[2]

1 WWF. 2008. UK Water Footprint: the impact of the UK's food and fibre consumption on global water resources. WWF-UK. Godalming, UK.

2 Smakhtin, V, Revenga, C and Döll, P. 2004. Taking into account environmental water requirements in global-scale water resources assessments. Comprehensive Assessment Research Report 2. Comprehensive Assessment Secretariat, Colombo, Sri Lanka.

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Importantly, those areas of stress are where a large portion of the global food and consumer goods production is currently taking place. Though the current situation looks bleak, future projections have even more dire implications:

Economic / demographic drivers

- Global population growth will primarily (90%) be in developing countries with poor water management and institutional capacity, including those highlighted above, with a consequent increased demand for water.
- Economic growth rates demand more water for increased production and improved standards of living, and cause shifts to more water-intensive diets and commodities.
- Pressures on food prices and threats of food security may restrict international trade in food and increase the production of crops in areas with already limited water, which may have negative consequences for local livelihoods and domestic use.

Climate / energy drivers

- Climate change and variability typically causes those areas that are already relatively dry to become dryer, while wet areas may experience floods with increasing rainfall.
- The pressure for energy (including green energy push) may lead to water being allocated to hydropower and biofuels with the consequent impact on domestic and agricultural uses, as well as fisheries in fish-reliant societies.

Physical / environmental drivers

- Land use change in response to economic and demographic change will lead to increased urbanisation, deforestation and desertification.
- Environmental degradation of freshwater ecosystems (including wetlands and riparian habitat) will have resultant negative consequences for water flow and quality.
- Hydrological change due to land use change and environmental degradation will increase flooding, quantity and timing of streamflows.

These key drivers and the hydrological implications will continue to have consequences for water resources management, including the likely strengthening of trends around:

Water supply dimensions

- Focus on the delivery of water supply and sanitation services (as well as other development goals) to poor and marginalised segments of the population (under the auspices of the MDGs).
- Continued and unhelpful separation of water resources management issues and water supply and sanitation service delivery.

Valuation of water

- Full cost pricing of water to remove direct or indirect subsidies on water infrastructure and management costs associated with providing water for economic productive purposes.

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- Environmental taxes / levies to promote water use efficiency through economic pricing and/or discharge control through polluter pays approaches.
- Emergence and formalisation of water markets, likely in closed systems to promote economically efficient allocation of water between economic productive users.

Regulation and enforcement of water use licensing

- Tighter controls on the allocation of water in line with water allocation planning and watershed management priorities to achieve ecological, social and economic objectives.
- Increased monitoring and enforcement to ensure only legal use of stressed water resources in line with water rights, authorisation and allocation systems.

Institutional decentralisation and stakeholder participation

- Delegation of responsibility for water management to basin/watershed and/or local government institutions for the management and delivery of water.
- Increasing awareness and expectations for involvement and participation of private sector and civil society stakeholders in local water-related decision making.
- Continued human, infrastructure and financial resource capacity constraints for water management at a local level.
- Increasing pressure for private sector and non-governmental involvement in water management partnerships where government is constrained in delivering water.

These changes indicate that the global water sector is in a dynamic and transitional period, which will increasingly require adaptive management and the engaged involvement of all stakeholders to ensure robust and sustainable management. This situation and changes underlie the emerging recognition of the private sector (corporations and representative bodies/forums) around their vulnerability to water stress and the potential business risk throughout the supply chain.

Importantly, corporates from a range of industries and sectors are simultaneously engaging this issue, from the food and beverage manufacturers concerned about upstream agricultural water requirements, through household chemical manufacturers concerned about negative water impacts through their products' use, to financial institutions concerned about the risk to their investments.

The last piece of the puzzle relates to the emerging popular consensus about the importance of water to society, as reflected through focused freshwater initiatives by NGOs and the increasing coverage of water issues in the media. Together these provide an important opportunity to challenge and redefine the traditional paradigm of water management and public policy. However, there is a specific challenge in facilitating this paradigm shift, due to the generally differing languages and expectations of these groups around needs, time-frames and modes of communication.

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Why Water is Different from Other Resources?

While parallels have been drawn between potential water crises in the 21st century and the ongoing energy and carbon crisis, it is the magnitude of these challenges on a global scale that is most relevant. It is crucial however, to recognise that water is fundamentally different to other resources for a number of reasons.

The availability, management and impacts of water are local at a watershed or river basin level. This means that business risk around water is fundamentally related to location and exposure to water stress at a local level. Conversely the most effective response will be improved management, taking account of the local situation at that level. This is the complete opposite of the global management and markets around carbon.

Water is typically variable in time and space, with the hydrological processes that underlie water availability, quality and timing generally having a significant degree of uncertainty about future changes. This implies that one watershed may be suffering extended drought while relatively neighbouring watersheds may be experiencing devastating floods, neither of which can be predicted with any degree of certainty. This variability and uncertainty can be partially reduced by infrastructure that stores and moves water (dams, pipelines, etc). The variability of water has meant that in most situations, water users have learned to live with seasonal and inter-year changes (including shortages). In the more arid parts of the world, this has created resilience and adaptation to change, which may serve these societies well under changing climate, demographic and economic conditions.

The availability of water for social and economic use is physically constrained (finite) by the economically exploitable renewable water resources, while the legal use of water is often based on complex historical water rights systems and undeveloped pricing-market systems. While the use of non-replenished sources of old aquifer water is being practiced and desalination is a potential solution, this is costly in financial and energy terms and so is limited to high value domestic and economic use. Because typically water cannot be substituted in productive or consumptive use, it is a relatively finite resource at a watershed level and should be optimally managed to ensure a balance between ecological, social and economic purposes.

Water is bulky and low value relative to traded commodities, so there are constraints on the degree to which it can be moved from places of abundance to places of scarcity. Even for the highest value bottled water there are transport economies that restrict the effective range of distribution. Furthermore, the carbon footprint of water supply typically increases as it is transported (pumped) or treated (including desalinisation). It is usually more carbon and financially efficient to move goods with water already embedded than to move the considerably greater volume of water required to make them.

Water is fundamental to life, human dignity and the most basic of human rights. However, these social and cultural dimensions are juxtaposed with the need for water in various production processes, which imposes an economic value of water. It is this duality, together with the need for water to support all ecological processes, which has resulted in water resources and their typically monopolistic management the domain of government in the “public interest”.

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Freshwater ecosystems depend upon the quantity, quality and timing of surface and ground water flows that are driven by a variety of physical and climatic conditions. These in turn are often greatly impacted by the nature of development and water use in their watershed areas. People live in and around freshwater systems, so ecosystems are highly interconnected with human activities and are quite vulnerable to change. At present, freshwater ecosystems are the most threatened of all ecosystems globally, with a high concentration of endangered species and habitats.

For corporates, where and how water is accessed is critical to the cost and reliability of the supply. For the reasons outlined above, it is very unlikely that a global market for water will develop, except in the existing case of extremely high value drinking and industrial water. There is instead an implicit global trade in water through its embedded nature in all goods.

The key message from this discussion is that while the water crisis is global in dimension, its management and corporate response cannot be the same as carbon or other global economic resources. A more locally relevant and nuanced set of responses is required to address relevant risks and maintain license to operate.

Why Functioning Watersheds are Important

Water ecosystems underpin functioning economies. It is when these resources are degraded to unsatisfactory levels that the risks are transferred onto those who directly require waters services for basic needs, whether through health and sanitation, waste disposal or basic livelihoods.

However, clean and healthy watersheds are too frequently misunderstood to be something separate from economic growth and social stability, a kind of luxury good that should be conserved once basic needs have been satisfied. As a result the importance of the services that natural water systems render, and the risk incurred when these systems are disturbed, tend to be discounted in economic and political trade-offs involving water. Though many understand intuitively that the environment is a supplier of natural resources, few grasp fully the limitations of natural systems or the risks and issues that arise when they break down.

Healthy water systems afford “provisioning services” (such as freshwater, fish and transport routes), “regulating services” or ecosystem services (such as water purification, stream flow mediation and options for adaptation to changes such as those caused by warmer climates) and “cultural services” (such as aesthetic beauty, spiritual significance and heritage value) on which human life depends. Over-abstraction and water storage infrastructure tend to disrupt the flow of water as it moves through the aquatic ecosystem, and threaten the stable flow of environmental goods and services. Such disruptions expose people and the environment to a range of difficult to predict but very real risks. Business and government clearly rely on the integrity of these systems to avoid social problems and risks, as well as to deliver economic and basic needs.

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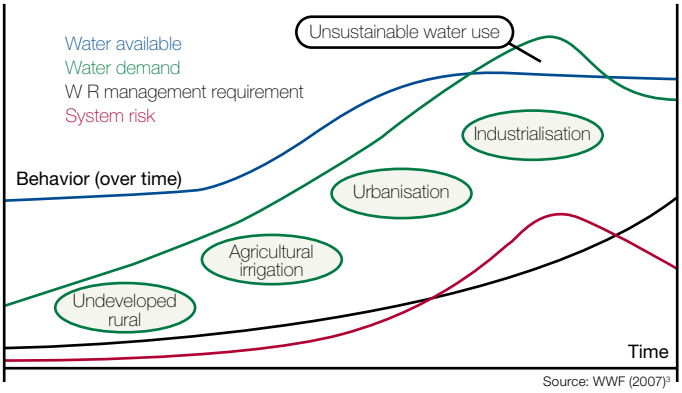
Water Management under Increasing Water Stress

Many of the drivers of change described in the preceding discussion, place increasing stresses and associated risks on river basins or watersheds. It is instructive to unpack the way in which this typically occurs within a watershed (WWF, 2006), with the drivers of water use typically shifting from undeveloped, through agricultural irrigation to urbanisation and industrialisation, as illustrated in Figure 2.1.

Figure 2.1 **Changing system risk with increasing development and watershed stress**



Source: WWF (2007)[3]

The increased water requirements through economic and social development in fig 2.1 are typically met through infrastructural development in the watershed (dams, etc). At the same, water users (including corporates) assume water is available and continue production without engaging water risk. In some cases, the demands in the watershed increase to a point at which they exceed the economically available water. At this point, water stress, the negative impacts on social and economic development, and deteriorating health of aquatic ecosystems, typically prompts a more coherent and integrated management of water resources.

Increasing development and water utilisation tends to be associated with increasing numbers of people being economically and socially dependent upon the watershed's water resources. Therefore, as water resources become more stressed, the ecological risk obviously increases, but so does the economic and social risk associated with failure of supply (particularly in watersheds with highly variable hydrology). The management of this systemic risk requires increasing water resources management sophistication and effort, with a shift from technical engineering solutions to integrated, multi-disciplinary, stakeholder approaches. This is the point at which water stress and the associated corporate risk around water begins to emerge, due to competing requirements for water.

Figure 2.1 frames this evolution in a simple matrix with complexity of the environment (including number and capacity of role-players) on the vertical axis and degree of water stress (or conversely impact of any decision) on the horizontal axis. Any watershed may be positioned on this matrix, but following the preceding discussion is usually gradually evolving towards the top right. Complex stressed situations are characterised by competitive coalitions over the access to and development of water resources in the watershed, and therefore ensuring stability and coherence in complex environments requires sound policy, effective management and mature users.

3 9 Le Quesne T., et al. 2007. *Allocating scarce water: A primer on water allocation, water rights and water markets.* WWF-UK, Godalming, UK.

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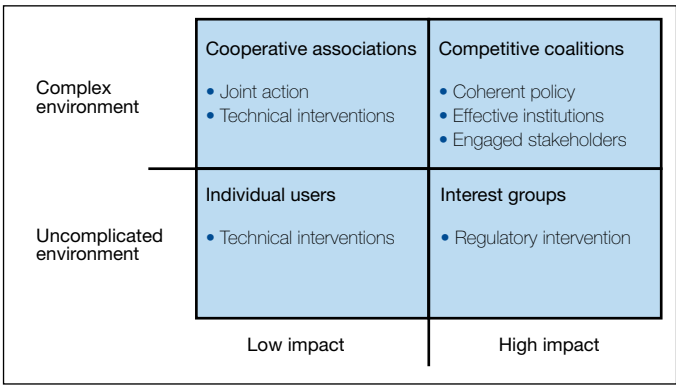
Figure 2.2 **Matrix of management complexity versus degree of water stress**



As will be seen in subsequent chapters, this is the situation in which corporates may find it necessary to engage public policy processes, in order to articulate the common interests of stability and cooperation, rather than merely compete over a resource that is becoming more scarce and therefore more socially, ecologically and economically valuable.

Government Risk Related to Water

The mandate for managing water resides with government, although this may be implemented though public agencies and/or in partnership with private water companies. Ideally, governments should attempt to balance ecological, social and/or economic imperatives, while hopefully considering principles of sustainability, equity and efficiency when managing water resources. In addition, government has a mandate to provide water supply and sanitation services to domestic, commercial and industrial water users, and mainly in urban areas.

In this context, the primary risk will be too little water (scarcity), too much water (flooding) and/or water that is unfit for use (pollution). This is usually because water allocation, water use by different sectors, and water resources infrastructure are not adequately managed at a policy, strategy and/or implementation level. From this, a series of risks to government's other mandates emanate around public health, environmental health, food security, energy security and industrial development, which in turn may hamper the ability of government to achieve environmental sustainability, poverty alleviation, social development and economic growth objectives.

Conversely, water resources may be adequately managed, but water supply and sanitation service delivery may be inadequate, usually due to inadequate institutional capacity, financial viability and infrastructure operations. This secondary water risk threatens government credibility, particularly in urban areas with concomitant political implications.

Unfortunately, few water managers frame policy, strategy or management decisions in these risk terms. Rather the focus is on reconciling the demand and availability of supply, with some attention to inter-sectoral allocations against social and economic considerations. Water managers tend not to engage the broader political and economic context of how water facilitates or constrains macro-economic decisions around trade and investment that are fundamental to business. Attempting to explore and reframe this disjuncture is a critical element of this paper.

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The Key Elements of Public Water Policy

Public policy attempts to define the rules, the intent and the instruments for government to implement water management. Public policy may be interpreted as government's response to various risks around the water sector. While public policy may be narrowly interpreted to be the policy and legal framework within which water is managed, this paper takes a broader perspective of the public policy arena that has an impact on corporate operations and risk around water, to include:

- Enabling framework: principles, policy and legislation governing mandates, decision making and action around water management.
- Strategic intent: strategy and planning around resource allocation and management, considering protection/conservation issues.
- Implementation practice: the way in which decisions and strategies are implemented by water managers, amongst others.

This interpretation implies that engaging public policy is not reserved for policy advocacy or strategy formulation, but may include engaging failures in policy implementation.

A second important aspect of public policy is that it is located at different levels of government. The National and State/Provincial Government level is typically where legislation is developed, although this can also be at the state/provincial level in countries with a federal system and water resources management may be carried out through river basin organisations at a watershed level in some counties.

Local government is often responsible for delivering water supply and sanitation services and it therefore a key point of interest for firms and communities. The International arena is where countries cooperate at a global, regional or transboundary river basin level to promote consistency of implementation through customary international law.

Water policy is an extremely broad topic and can be viewed from a number of perspectives. However, for the purposes of this paper it may be useful to highlight the elements of public water policy that have a direct bearing on corporates' interface with water.

- Water resource protection typically relates to the setting of objectives and/or requirements for stream flow volume and quality to sustainably maintain basic human needs, ecological functioning, cultural use, biological resources, and services (such as flood attenuation and waste assimilation).
- Water allocation (based on water strategies and water rights) determines access to water for productive purposes, considering water requirements for social and ecological purposes, specifies the possibilities for reallocating water to meet social and/or economic objectives and enables the authorisation (licensing or permitting) of water use.
- Water quality management governs the discharge and/or disposal of waste to water resources to maintain water which is fit for relevant downstream uses (typically including recreational, agricultural and ecological requirements), usually through adherence to discharge standards.

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- Water use regulation, control & enforcement through physical monitoring of licence conditions and engagement/prosecution of offenders is necessary for a functioning water allocation and quality regime, as is the promotion of water use efficiency (reduce, recycle and reuse) by authorised water users.
- Water infrastructure development, financing and operation of both large water resources infrastructure (dams, pipelines, etc) and local water supply and sanitation systems (i.e. the water supply value chain) is necessary to ensure reliable supply of water and in some cases the control of floods.
- Water pricing and economic instruments firstly may determine the cost of water and can be related to user charges on management and infrastructure, as well as levies on pollution or inefficiency, and secondly may enable the allocation of water through local water trading under strict criteria.

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It is apparent that a failure in any one of these water policy domains may adversely affect a particular firm or the private sector within a watershed or country.

In addition to the functional areas outlined above, the institutional arrangements (roles and responsibilities of water management institutions) are clearly also part of an enabling water policy. However, they are distinct in that they determine the way in which the abovementioned water policies and strategies are implemented. A particularly important aspect of the institutional arrangement is the institutional mandate and level of responsibility for planning, implementing and monitoring the various elements of water policy, i.e. which organisations at what level are responsible for doing what. A second aspect is the nature and process of stakeholder involvement in decision making around water management at the relevant level, including the way in which stakeholders are identified and included in the process.

The challenge is that the institutional arrangements determine implementation and practice and in institutionally weak environments, the best policy framework may be inappropriately, inconsistently or incoherently applied or even corrupted. Policy must be formulated for the specific conditions in which it will be applied – "the best should not become the enemy of the good".

These various perspectives on water policy represent lenses on policy issues, opportunities and risks in the short and long term, for the private sector in specific situations. As such these categories provide a way of understanding water policy, as well as representing a possible diagnostic for identifying private sector issues and potential engagement in a specific context.

A last issue arises due to the inter-connected nature of water with other sectors, in that water scarcity is fundamentally related to government (and private sector) policy around agriculture, energy, industry and urbanisation/development, as well as fiscal policy in the allocation of government resources. Talking to water policy in isolation of these other policy environments tends not to be as effective, particularly as there is often misalignment between public policy on similar issues from different departments. There are also a number of emerging issues around trade policy and the relationship with water management and stress within sovereign states.

Water planning and management is increasingly moving beyond technical water considerations to include broader government social and economic objectives, with projections and scenarios built around future objectives. This implies that government takes a broad and longer-term perspective on water, which is different to corporations' typically shorter term and narrower profit perspectives.

In unstressed watersheds and countries, poor formulation and implementation of policy does not have tremendous implications for corporates. However, as water becomes scarce, countries and watersheds become stressed and pressure increasingly mounts for improved management and regulation of water. Depending upon the way in which this is managed, the outcome may be improved cooperation and management of the system or increasing conflict and poor management.

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Unfortunately where institutional capacity (bureaucracy) is weak and/or policy is ambiguous, the latter is certain. However, even with clear policy and empowered institutions, good water governance is not guaranteed, but at least it can be promoted by an articulate and engaged civil society (including the private sector).

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What are the Features of Good Water Management?

Water is being managed in an increasingly globalised world governed by flows in trade and investment, and consumers have an increasing awareness of social, environmental, carbon and even water consequences of productive activities. It is important to recognise the minimum policy requirements for effective and sustainable water management in a particular situation, while considering the ideal policy positions. Understanding this may become a key element of supply chain decisions, in terms of locating in and/or sourcing from specific countries and possibly even watersheds where business risk around water is considered.

The previous section has outlined the key elements of public water policy, but it is critical that this is translated into good water management that enables equitable, sustainable and efficient use of water resources to create an environment that is conducive to economic growth and development. From a private sector perspective, this must also facilitate and sustain production to ensure a return on investment.

The critical outcomes that indicate good water management relate to:

- Functioning water resources (rivers, lakes, wetlands, etc) with their aquatic ecosystems that provide goods and services to current and future society and economy.
    - This means that rivers must continue to flow, water quality must be maintained and river banks and beds must be conserved.

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- Water rights and allocation systems that ensure equitable access and efficient use of water to meet economic and social objectives.
    - This means that rules around the use, transfer and pricing of water must be predictable and consistently applied, while protecting the basic domestic requirements of households.
- Reliably operated and maintained infrastructure required to supply water and discharge waste of acceptable quality.
    - This means the development and operation of viable infrastructure systems where water is required, with adequate institutional capacity and sustainable financing.
- Effective management of disasters ranging from floods, droughts and pollution incidents that threaten people and infrastructure.
    - This means proactive planning and timely response to public safety and property risk associated with water, based on sound information and understanding of the system.

Ideally, this requires a combination of regulatory and economic instruments to promote economic efficiency, while safeguarding social and environmental imperatives.

Finally, it can be argued that good water governance should be built on three pillars, namely:

- Predictable, open and enlightened policy making

The water policy environment (including implementation strategies and instruments) must be sound, coherent, predictable and aligned to broader government imperatives, and preferably formulated through some degree of stakeholder involvement (including private sector).

- Professional bureaucracy acting in the public interest

The institutional capacity (in its broadest interpretation including human, financial, infrastructural, knowledge and partnerships) to implement water management must reflect the requirements of the policy environment and ensure consistent and ethical application.

- Strong civil society participation in public affairs

The involvement of civil society and private sector groupings is critical for the formulation of good water policy and the monitoring of its implementation by the water institutions, in order to represent and articulate the range of interests at national, watershed to local levels.

PART C:
Understanding corporate risk around water

Typical Corporate Engagement with Water Management

From the outset, it is important to recognise that business has always engaged with public policy around water, specifically to ensure that the regulatory environment is coherent between government departments, predictable and stable over time, consistently applied to all enterprises and enables competitiveness (including profit and return on investment). Historically this has mainly resulted in the polarisation of business lobbying for less regulation and government proposing regulation to protect social and environmental interests. In furthering their interests, multinational and national corporates are well versed in lobbying and negotiating policy positions with government bureaucrats and politicians.

With the increasing recognition that water and environmental resources are threatened and business sustainability is dependent upon a regulatory license and a social licence to operate, corporates are accepting the need for reasonable regulation, as long as it is coherent, predictable and consistently applied. Thus corporate engagement is shifting to cooperative advocacy for regulation of water allocation and licensing from water resources and for regulation of water supply, sanitation access, and pricing in urban settings.

Understanding Corporate Risk in the Context of Water

Risk relates to the impact and likelihood of an event or outcome[4]. Both the impact and likelihood vary according to a firm's vulnerability amid a wide range of conditions. Therefore, firms have different risk profiles and exposure in a specific water management context, but we suggest that the nature and manifestation of the risk is commonly shared. Business risk related to water can be examined through four interrelated lenses (see also JP Morgan, 2008; WWF, 2009)[5].

- Physical risk is directly related to too little water (scarcity), too much water (flooding) or water that is unfit for use (pollution), each of which is associated with management of the availability of, use from and discharge to a water resource. Risks can be associated with water resources at the river basin level, or through the delivery of water supply and sanitation services through infrastructure systems. Even where water is available, physical risk can emerge from poor management and not just natural changes in the resource.
- Regulatory risk is related to government's management of water resources, particularly in time of crisis (induced by physical risk) when regulatory regimes are changed unpredictably or incoherently, or they are inconsistently applied due to political expedience, incompetence or corruption.

4 In the case of water, the event would be drought, flood or pollution, each of which can extend in time from a single, short-lived, extreme event to a long-term shift in water quantity and quality.

5 JP Morgan. 2008. Watching water: A guide to evaluating corporate risks in a thirsty world. Available from: http://pdf.wri.org/jpmorgan_watching_water.pdf [Accessed 10 January 2009]: WWF, 2009. Understanding water risks; A primer on the consequences of water scarcity for governments and businesses, WWF-UK. Godalming, UK.

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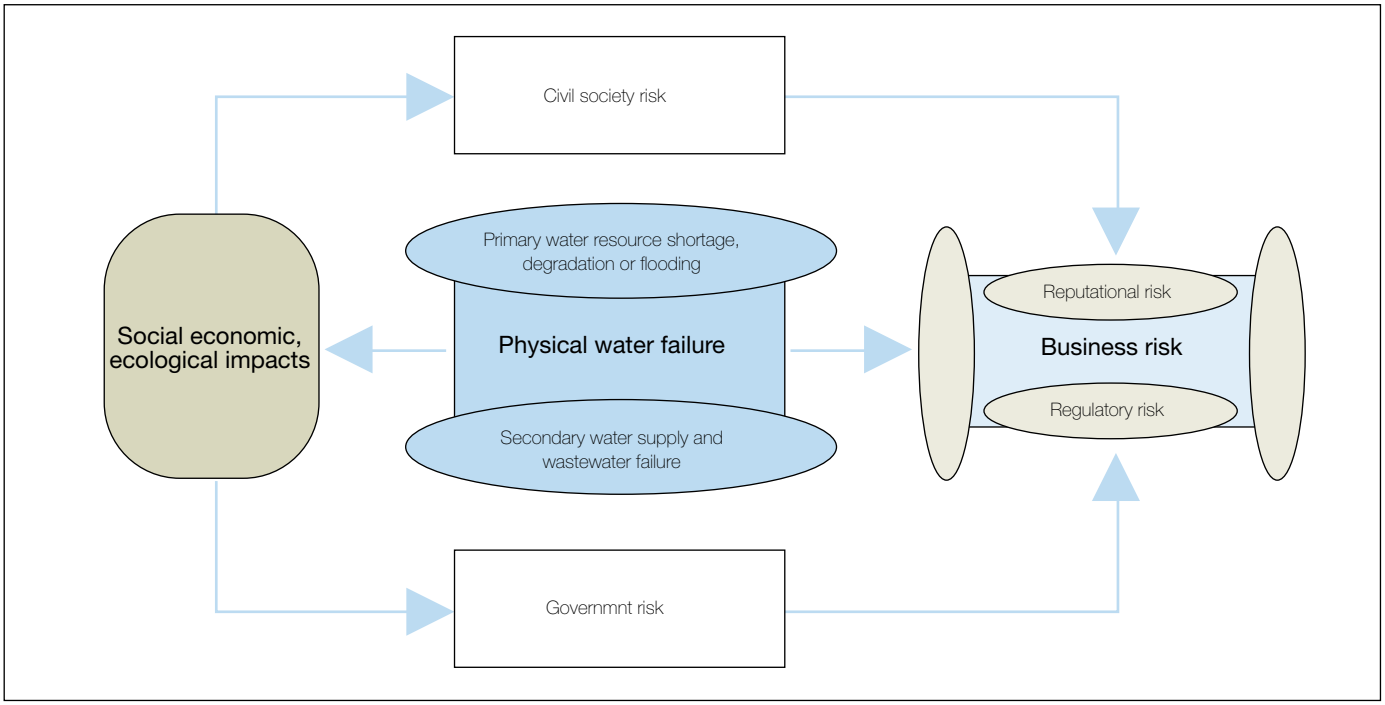
- Reputational risk is related to the exposure of companies to customer purchasing decisions, associated with perceptions around business decisions, actions or impacts on water resources, aquatic ecosystems and communities that depend upon them.
- Financial risk is related to the impacts on revenue and/or costs associated with each of these other risks (including suppressed growth), as well as indirect cost impacts for water, energy, insurance and/or debt associated with physical and regulatory risk in the company's production or supply chain.

Other risks relate to the indirect consequences of physical water scarcity, flooding and pollution, on public health, physical economic infrastructure, social services and environmental functioning (Figure 3.1). These potential outcomes have negative consequences for labour, capital, logistics and markets which affect business performance, but are not commonly perceived as direct water risk.

Figure 3.1 **Interactions between different types of risk**



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Increasingly, corporates are recognising these risks and the importance of water in their production and supply chains. Recently SAB-Miller has extended the typical 3-Rs of reduce, reuse and recycle to include pRotect (related to use of water from stressed watersheds) and Redistribute (related to community access and wastewater treatment). JP Morgan are applying the water risk concept to key sectors and the implications for financing, and are arguing for increased disclosure of water dependencies in supply chains. At the same time, the mainstreaming of water scarcity and climate change risk into the popular media has increased the public awareness to water issues.

From this, it is apparent that certain corporates may feel the water squeeze at an operational level and in their entire supply chains, from investors that are increasingly wary of risk and from an increasingly aware public and customers, as well as from governments that are managing increasingly stressed water resources.

Corporate Risk Under Increasing Water Scarcity and Change

At a particular moment in time, the risk exposure of a company to water may be acceptable, but as highlighted in Part A, the water situation is likely to be changing all the time. Historically this change has generally not impacted much on business operations, because they are generally involved in higher value or strategic use of water (than agriculture as the dominant use) and therefore storage has been developed and/or water has continued to be allocated, even in stressed watersheds. This situation is not guaranteed going forward, because:

- an increasing number of basins internationally are already stressed (availability, pollution and/or flooding) or 'closed' to further development and growth;
- further population and economic growth will exacerbate this situation; together with increasing climate variability;
- globalisation and communications technology has increased the ability of communities to exert political and reputational pressure; and
- awareness, understanding and application of environmental, social and economic regulation by governments are improving.

The consequence is that acceptable risk today may become increasingly unacceptable under change. With increasing physical water stress, communities, interest groups and politicians become increasingly vociferous (particularly where poor water management arrangements exist). The associated dispute and conflict often leads to poor (knee-jerk) water management decisions, inappropriate (punitive) regulatory responses and/or unfair (easy) targeting of large corporate water users, with increasing physical, regulatory and reputational risks, respectively.

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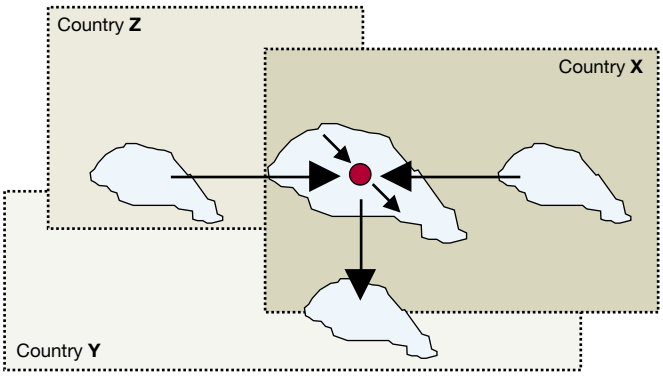
Understanding Water Footprint and Supply Chain Risk

The first response of companies to this recognition of risk is to become more water efficient in their operations and to strengthen their legal access / rights to water. This often leads to a realisation that the company's supply chain is far more vulnerable to water risk than the direct operations, but this vulnerability is often difficult and the associated risk is often difficult to assess. This has led to a process of measuring and mapping water use in the upstream and downstream supply chains or, in other words, determining the "water footprint" of the company. At the same time, there are various initiatives around water disclosure, transparency and certification, some of which were referred to in the introduction.

Determining a water footprint poses a significant dilemma in that, unlike carbon, the interpretation of the implications of water use and the associated risks are locally dependent. Water use in a stressed watershed typically poses greater risk than in a water abundant watershed, while water use in an area with indeterminate water rights and inadequate institutional capacity has greater risk than in a well managed watershed. For a specific company, the supply chain is likely to cross watersheds and countries, each with their own water policy regime and water availability. Therefore companies may source from different watersheds and process in yet others, which all entail specific policy regimes (Figure 3.2). In some cases the upstream supply chain is through global markets from multiple countries and watersheds. Understanding the water footprint is relatively mechanical, while assessing the risk and determining how to manage this risk is far more complex.

Figure 3.2 **Conceptual locations of supply chains in watersheds and countries**



The pragmatic solution is to flag places where primary water resources failure or secondary water supply failure may significantly impact on the supply chain. Working with suppliers and operations managers to mitigate or limit the possibilities of these impacts through efficiency production changes, and possibly even relocation, are important responses as long as the external water environment (public policy, bureaucracy and civil society) is stable, predictable, consistent and supportive. A well managed business in a poorly managed watershed remains at risk if it is dependent upon water.

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Indicators of Risk in the Supply Chain

A number of factors may indicate potential physical, regulatory and/or reputational risks for a company, through its supply chain. While many of these are self-evident, it is useful to highlight them at this stage:

- Stress of water resources used to supply production, upstream inputs or downstream use of the products, in terms of the availability and quality of the water.
- Reliability of water supply and waste services to production related to water infrastructure operations and/or institutional capacity.
- Flexibility in supply chain enabling sourcing of less thirsty substitutes or products dependent upon less stressed water resources.
- Security of water rights, allocation or trading systems ensuring that water for investment decisions will continue to be available.
- Efficiency of water pricing as a signal to reflect full financial costs, economic value and/or social-environmental externalities in providing for sustainable water demand.
- Compliance with license conditions and relevant regulations requiring investments in water use efficiency and waste discharge along the supply chain.
- Equity of access to water by communities for domestic and livelihood use and to support local economic development.
- Level of community disputes around water, potential disruptions, political rhetoric and dispute resolution mechanisms.
- Adequacy of resource protection related to aquatic ecosystems in terms of flow, quality and habitat for the ecological and cultural purposes.

The first three relate largely to physical risk, the next three relate mainly to regulatory risk and the last three relate primarily to reputational risk. The absence of these factors implies some degree of potential exposure for a particular company in its production and/or supply chain. The following example (Box 1) highlights how one company has adapted to potential downstream risks in their supply chain.

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Borealis downstream case study in Austria

Borealis carried its first water risk mapping in 2007 as part of the pilot group of companies that supported the development of the WBCSD's Global Water Tool. The development of Borealis' Linzerware fertiliser distribution along the Danube region was also coupled with the establishment of state of the art storage centres to prevent safety and environmental risks in the products' logistic chain. Tracked at group level, water use of the plant nutrient and melamine business is now reported at 180 000 m^3 in 2008 out of a total 16.9 million m^3 of fresh water used across Borealis operations.

More than at production stage, water risks from fertilizer use essentially occur when excessive or inappropriate uses lead to runoff in the environment causing surface water eutrophication. To address this risk, Borealis spearheaded precision farming techniques in Austria.

The technique relies on a network of so-called N-Testers which measures the chlorophyll-content in the crop's leaves giving an indication of nitrogen absorption by the plant. In practice, after measuring 30 leaves of plants in the field, the N-Tester automatically calculates the amount of nitrogen nutrition that is still needed by the crop avoiding excessive or deficient nutrition. To complement the system, Borealis also provided farmers with access to an online database which stores information that has been gathered by the Austrian farming community since 2002 and generates reports on nitrogen demand in the different farming areas.

Business proactively addressed and potential reputational issue for the company and turned sustainable agriculture policy into a business opportunity.

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Private Sector Exposure to Water-related Risks

From the preceding discussion it is clear that various types of risk may be manifest in different parts of a company's supply chain, but that these risks obviously differ for the type of company, its sourcing strategy, and the water policy context of its operations and supply chain. There are some key self-evident characteristics that should be highlighted before diving into each sector.

Firstly, companies with products that require significant amounts of water for production, upstream supply chain inputs and/or downstream use of products are clearly more vulnerable to physical and regulatory risks than those with less water intensive supply chains. Secondly, companies that are customer facing with consumer products (particularly those with strong international brands), tend to be more vulnerable to reputational risk around water than those companies that are producer facing or are nationally based. Thirdly, companies involved in competitive lower-value water-intensive business tend to be highly exposed to physical risk with significant regulatory risk, particularly as watersheds become stressed, compared with higher value water-efficient users. Fourthly, companies involved in production that is considered to be of strategic national or regional importance tend to be less exposed to physical risk (because water is typically guaranteed), but with greater regulatory risk, than those that are considered to be more discretionary. Lastly, a distinction should be made between producers of goods and services directly using water that are therefore directly exposed to physical, regulatory and reputational risks, from those in the financial and retail sectors that are indirectly exposed through their relationships with the former.

Sectors Directly Exposed to Operational and Supply Chain Risk

Broad water risk profiles can be developed for different sectors, noting that the particular risks facing a specific company will depend on a range of factors and that there may be more variation in risk levels within a sector than between sectors.

- Agri-business is directly vulnerable to water stress for the irrigated production of crops and bio-fuels, and have associated regulatory and financial risk where higher value uses begin to compete for water within a watershed.
- Food & beverage companies are particularly vulnerable to water stress in their supply chain through agricultural produce, as well as around reliability of supply to their operations, and tend to have reputational concerns leveraged through consumer perceptions and actions in addition to regulatory licensing issues.
- Consumer goods manufacturing (particularly water intensive) industries are vulnerable to reliability (quantity and timing) and quality of supply, and have potential regulatory and reputational risks (leveraged through consumer perceptions) around the quantities of water used and waste discharged in production as well as certain product consumption.

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- Heavy industry and construction companies may be vulnerable to water availability in production but more typically have regulatory constraints around waste discharge and impacts on water resources and local communities with the associated reputational risks potentially leveraged through political means.
- Extractive industries have a significant regulatory vulnerability around siting, waste discharge and water availability, with potential community conflicts and reputational risk.
- Power generation (particularly thermoelectric, nuclear and hydropower) sector has significant vulnerability to availability of good quality water when it is needed for cooling, with the associated regulatory risks and privileged access to government as a strategic resource.
- Water industry is vulnerable around availability of supply, although acting for government typically immunises them from the physical risk, while they take on significant reputational and regulatory risk around the supply to communities and treated waste discharge.
- Tourism and leisure companies are vulnerable to the health and availability of water in rivers and coastal aquifers, particularly in drier regions with dwindling supplies, growing competition and intermittent supply. This increases costs and risks around tighter volumetric use and discharge rules.

Financial and Retail Sector Exposure to Water Risk

In addition to these directly exposed sectors, three other sectors have related exposure to water risk through their relationships with specific companies at risk:

- Retail may be vulnerable to suppliers whose production or costs are affected by water risk (particularly where these are sole or dedicated suppliers), or alternatively may be linked to the reputational risks of a supplier with water issues in a particular context; however these risks are often isolated in suppliers, while financial risks may be passed along to customers.
- Insurance may directly exposed to potential disruptions and/or financial impacts related to water related risks, and may have exposure to reputational and/or regulatory problems, which may be increasingly exacerbated by climate related variability, poor water management and an inadequate regulatory regime.
- Finance and investment is exposed to the totality of financial risk associated with a company's vulnerability to water related physical, regulatory and reputational risk through its ability to repay debt or ensure an adequate return on investment over the medium term.

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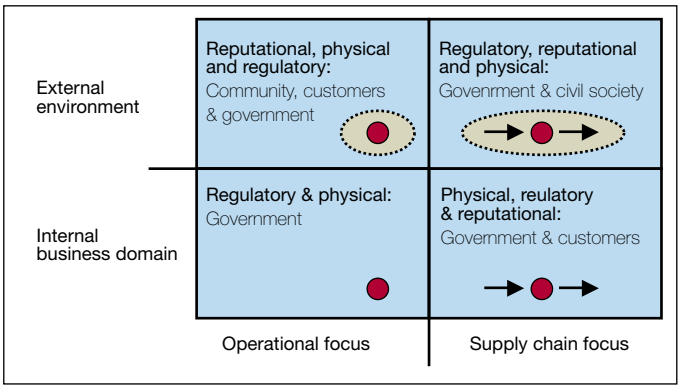
Should Corporates Engage "Beyond Footprint"?

The previous risk discussion poses numerous questions. While it is clear that many firms have sought to drive down risk through activities such as community engagement, or efficiency measures, for most, some level of engagement 'beyond footprint' is inevitable. That is, certain activities outside the policy arena serve to maintain a social license to operate and buffer against sudden shocks in water use, pollution or regulation. However, where uncertainty remains, the consideration of public policy engagement for stability and consistency is strong. A key element of taking the next step may revolve around deciding how much uncertainty they may be willing to live with, versus spreading risk to search for potential new areas of sourcing or manufacture.

While regulatory compliance (or even exceeding requirements) in a company's operations is a necessity to manage these risks, it is typically not sufficient. The following matrix provides a frame against which to consider the key source of water risk and business vulnerabilities (Figure 3.3). The horizontal axis relates to the focus of business risk, either in the firm's operations or in the entire supply chain. The vertical axis distinguishes vulnerability stemming from an internal business value chain focus or from an external environmental perspective.

Figure 3.3 **Matrix of key sources of corporate risk**



An internal business-operational risk perspective (bottom left) is relevant where the main water risks relate to the production process and the important issues revolve around ensuring production compliance and water efficiency to ensure adequate supply and maintain discharge standards. This perspective may be particularly important for strategic enterprises, including heavy industry and power generation with limited reputational exposure, but it does assume an ongoing dialogue with government to ensure regulatory and policy predictability, coherence and stability in terms of the "legal license to operate". Even where there is regulatory engagement, this perspective is often characterised by an adversarial relationship between business and government, as well as with civil society.

A business-supply chain risk perspective (bottom right) is particularly relevant where the water related risks are primarily in the upstream supply chain and downstream use of products, with the main issues revolving around

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compliance and efficiency in the entire supply chain to ensure water availability and achievement of water quality objectives. This perspective is particularly important for food and beverage, and consumer goods manufacturing industries with a dependence on agricultural inputs or distribution of products that require water use by consumers. The dual focus of this perspective is on the government regulatory regime and on customer perspectives around water use and waste discharge in the production process.

These first two perspectives imply that the main water-related risks are within the direct or indirect control of the business. However, there may be times under severe stress or change where the water-related risk imposed on the business by the external environment are far greater, as reflected in the following two perspectives.

An external-operational perspective (top left) is particularly relevant where water-related risks are primarily around the local operations of the business due to local community conditions / perceptions (linked to broader reputational considerations) or the local public policy environment (posing physical or regulatory constraints). This perspective is particularly appropriate where a water intensive manufacturing facility / plant is located within a stressed watershed in which social and/or ecological requirements are not being adequately met or local water infrastructure management is inadequate leading to supply disruptions and/or violation of discharge standards. For the former situation, local community-based interventions outside of the enterprise may be required to ensure a “social license to operate”, while in the latter local government interventions may be required to ensure adequate institutional capacity and reliable operation. Both of these may be built around a local partnership approach.

An external-value chain perspective (top right) becomes relevant when various elements of the business’ supply chain are at risk due to widespread existing or threatened (watershed or national level) water stress, institutional water management incapacity and/or water policy inadequacy. This requires active engagement of business with government over the broader water strategic, institutional and/or policy environment. To be effective this engagement must be framed in the common interest, rather than narrow corporate interests, and can be strengthened with collective action by two or more corporates, preferably in partnership with civil society. This cooperative (and potentially multi-stakeholder partnership) paradigm requires a fundamental shift from the traditional corporate policy lobbying approach, but is consistent with the emerging corporate citizenship consciousness.

It is interesting and important to recognise that a particular corporate may need to simultaneously adopt all four perspectives across its different regions and/or product lines, because water-related risk may be manifest unevenly. The key question is whether the emergent potential risks of engaging beyond operations or supply chain (into the external environment) may outweigh the business risks associated with non-engagement; or in other words should corporates engage “beyond footprint”?

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Motivation for Engaging Beyond Footprint

Synthesising these perspectives leads to three potential reasons why a corporate may decide to engage the external environment beyond factory walls or supply chains.

- Immediate threat to production: associated with water-related disruption of operations or inputs, due to physical water stress, institutional water supply failure, or regulatory intervention.
    - This is typically the domain of operational management.
- Recognition of corporate strategic risk: in the medium to long term, based on a corporate understanding of the nature and location of business vulnerability around all potential water risks in operations and/or supply chains (identified through footprint assessment).
    - This is typically the domain of executive management.
- Adoption of corporate leadership / stewardship position: associated with a corporate belief in the business logic or ethical imperative to act as a responsible corporate citizen, linked to the reputational and regulatory dimensions of risk.
    - This is typically the domain of the board.

Again, these rationales are not mutually exclusive and may be simultaneously expressed at different levels within in a specific company at the same time.

Uncertainties and Risks of Engaging Beyond Footprint

The preceding discussion has introduced the perspectives on water-related business risk that would indicate when and why a company may consider engagement outside of its immediate sphere of control. The possible range of interventions will be outlined in the following chapter, but before doing so it is important to note that engagement with external processes comes with uncertainty and potential new risks, including:

- Perceptions around policy capture by corporates to the disadvantage of other groups – government and civil society representatives have a jaundiced view of corporate motivation for engagement, so this must be tackled with transparency and ongoing public outreach.
- Corporate endorsement of the process to ensure its completion – care should be taken to avoid starting a process (particularly if commitments are made) that is at risk of being left uncompleted, because the resulting negative perceptions may be more damaging that not engaging at all.
- Relevance and efficacy of the intervention in the wider water management process – interventions that are not aligned run the risk of being ignored or even opposed by stakeholders, with the negative consequences for the corporate sponsor.
- Political / community commitment to ensure the cooperation / partnership is successful – in the absence of political will, the corporate sponsor of an intervention has a greater exposure, but with potentially little benefit.

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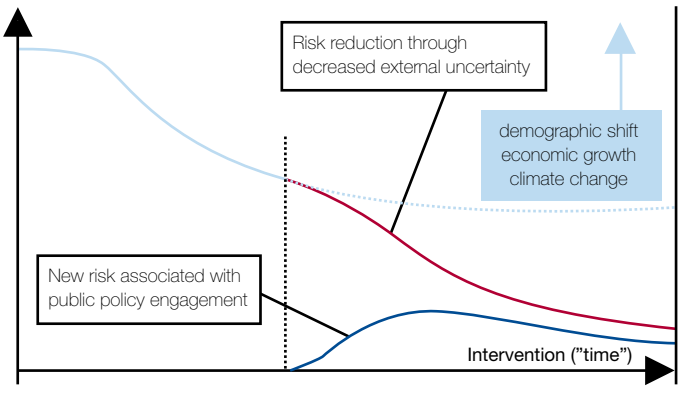
- Institutional capacity of potential partners to ensure success – cooperation requires skills and expertise on both sides and the lack of this in government jeopardises the ability to implement effective interventions, as business is not responsible for water.
- Government abdication in cases where a corporate intervenes – the public sector with stretched resources will often reprioritise effort away from areas that are being managed, which leaves the corporate with the entire responsibility for a non-core function.
- Resource requirements, in terms of human, infrastructure and financial resources – effective interventions in the public sphere usually require time and resources, and the shortage of either may jeopardise the effectiveness or completion of a process.
- Exit challenges as water-related interventions are not core business – it must be recognised that managing water resources or supply is not the business of most corporates, and comes with a number of reputation and financial risks.

Unfortunately, it is difficult to assess these risks before embarking on a process of dialogue with government or communities (civil society). The following figure attempts to illustrate the changing risk regime of different interventions over time. In the first half of the graph (before the vertical dotted line), water-related risk is reduced by operational and supply chain interventions as described in the introduction. However, while this may achieve an acceptable level of risk exposure, it can only take the processes so far. Unfortunately as conditions change, the risk curve is likely to inexorably move higher. In some cases, it is only by intervening in the external environment that that risk can be reduced to an acceptable level.

To reduce the water-related risk level further requires external engagement, either at the local level or in broader public policy. Unfortunately, the additional risk of this external engagement may exceed the non-engagement risk, at least in the short term as processes and partnership are initiated (Figure 3.4).

Figure 3.4 **Risk over time associated with corporate water-related interventions**



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The hope is that over time the combined risk decreases, but this is initially uncertain. The important determinant of whether to engage is the perceived vulnerability of a business, its risk tolerance and the uncertainty it is willing to live with before acting/intervening/engaging. Obviously this will vary between sectors, businesses and local conditions (including historical engagement).

Importantly, corporates throughout the world are already engaging in the external environment for various reasons, illustrated by the following:

- Beverage companies are engaging local water supply to neighbouring communities in the interests of ensuring social license to operate.
- A brewery is jointly facilitating future municipal water supply from nearby watersheds in the interests of ensuring reliability and shift away from deteriorating sources.
- A food processing company is engaging local water associations linked to upstream farm suppliers in the interests of ensuring continued production under increasing regional growth and water stress.
- An extractive processing company is supporting the long-term development of water policy and strategy in a stressed watershed before deciding to invest in a new plant.

In conclusion, it seems that there is an emerging rationale and space for corporate engagement in the external environment, including public policy at a national, watershed and local level. While this provides a key means of reducing risk in the long term, it is not without its problems from a corporate perspective. These issues must be carefully considered before deciding to embark into this new and relatively unknown territory.

The next chapter takes this discussion further by attempting to explore the concept of shared risk between the private and public sectors, and potentially involving civil society as an intermediary, facilitator and partner in the process.

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PART D:
Exploring shared risk and policy engagement

The Concept of Shared Risk

In the preceding two chapters, public and private sector risk has been explored. Common wisdom assumes that these are typically divergent and this is borne out in the traditional adversarial relationship between the government as water regulator and business as water user. Furthermore, public and private sector mandates and imperatives diverge, with the former focusing on broad social, economic and ecological imperatives and the latter having a profit imperative often related to the firm's long term economic value.

However, in light of the topic of this paper, it is important to recognise a number of commonalities in their respective exposure to water-related risk:

- For both government and business, all water related risk ultimately stems from physical risk related either to stress in the water resources (quantity and quality) or failure of supply systems. Water scarcity poses significant challenges on government's ability to maintain economic growth and ensuring public health and welfare, social development and ecological sustainability, whereas for corporates water scarcity poses challenges for production and supply chains. Neither corporates nor government have an interest in the uncertainty and potentially instability that can ensue, and conversely have an interest in continued economic growth supported by water.
- For government inadequate availability or access to water for social and ecological purposes can result in political (and possibly electoral) opposition, which has its parallels in the reputational risk to which corporates are exposed.
- Water stress and supply failures are often linked to inadequate public sector management capacity, which can contribute to incoherent, unpredictable and inconsistent water policy (and regulatory) revision and implementation, which in turn is at the heart of corporate regulatory risk.
- Ultimately, inadequate public sector water management may constrain economic growth, which is the primary imperative of most governments. This directly relates with, and has parallels to the financial risks experienced by business.

These commonalities are not meant to imply that public and private sector risks are the same, but there are areas of shared risk that provide opportunities for cooperation and even partnership in the effective and sustainable management of water resources. This is particularly relevant when both government and business managers take a longer term perspective of their respective imperatives, which is unfortunately often disincentivised by relatively short terms of office and need to demonstrate immediate results.

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When can a Shared Risk Paradigm benefit Corporate Engagement/Risk?

Many of the approaches that are currently adopted by business to engage risk are internally focused. While these are essential, they can only take the process so far. In thinking about when shared risk may be relevant, it is useful to further unpack the potential reasons for corporate engagement beyond footprint:

- Immediate threat: related to sudden (possibly extreme) events or local water supply failure, when government and business may have shared expedient interests in urgently addressing impacts and may therefore agree to collaborate and align activities. This may include information sharing or dissemination, management support, financial disbursement and even service delivery. Significantly, this type of risk sharing and cooperation is short-term in nature, in that once the event or problem has been addressed, the need for cooperation subsides (although cooperative relationships may have been built).
- Strategic concerns: to reduce systemic water-related risk and uncertainty over the long term by developing and implementing coherent, effective, predictable, responsive and consistent water policy regimes that reflect national, watershed and local needs, together with the available institutional capacity. This may involve an ongoing collaborative process (requiring alignment, but not necessarily continual corporate engagement) of policy engagement, strategy refinement and implementation evaluation between the public and private sector (and potentially civil society), in order to ensure that uncertainty and risk in the system is reduced to acceptable levels in the interests of stable political and business environments.
- Normative alignment: where corporate stewardship imperatives align with government's social and environmental objectives around water management in the long term. While the motivations for corporate stewardship may vary, the ethos of businesses that adopt this approach are typically aligned with government, and may create opportunities for collaboration around public policy formulation and implementation based on a common perspective of social mandate.

Historically, the public and the private sector have rarely viewed risk as shared and seldom recognise a common perspective on water risk, primarily because of a fundamental mistrust on both sides. Government mistrusts business' motivations, assuming that business is servicing its own interest (which is the case) at the expense of society's interest (which is not necessarily the case where risk is shared). Business mistrusts government's capacity to deliver effective water management that addresses business risk and doubts government's policy position, assuming that in the medium to long-run the "rules of the game" may change for political reasons. While business' perspective is appropriate for risk that is divergent, it is not necessarily accurate for risk that is shared. Ultimately, business risk around water is only mitigated where watersheds are equitably, efficiently and sustainably managed (Box 2).

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SABMiller engagement with public policy in Dar es Salaam

SABMiller subsidiary Tanzania Breweries Limited brews beer in the capital, Dar es Salaam. The city faces a challenging water supply situation with problems of quality, quantity and reliability resulting in high incidence of water-related disease and constraints to poverty reduction and business growth.

This situation creates challenges for domestic users, businesses and the public sector alike. As a result of the supply situation, individuals and companies supplement this supply shortfall with borehole water, but this is becoming rapidly more saline. There is the possibility of a major fossil water aquifer which has recently been discovered and undergone initial investigation, but it is not clear how easily it can be extracted.

In March 2008, SABMiller subsidiary Tanzania Breweries Ltd brought together a range of stakeholders to discuss the short, medium and long-term water challenges facing the city. WWF, WaterAid and Care International, local research and advocacy NGO Shahidi wa Maji (Water Witness), the water company DAWASCO, the government environment agency and the river basin authority joined the dialogue. The output from the day was a statement of priorities detailing actions that could be taken to secure and enhance water resources in the area. Most importantly it was clear that there was good alignment between the business, civil society and public sector representatives regarding the importance of the challenge and potential solutions.

This dialogue was but one of a number of engagements that different parts of civil society have had to seek to improve water supply in Dar. That broader process is ongoing and in recent months new supply projects for the city have been budgeted for to preserve existing water resources, provide new water infrastructure and improve the efficiency of existing networks. It is important that these projects remain on track and improve both reliability and access for all water users in the city.

PART D:
Exploring shared risk and policy engagement

It is abundantly clear that identification and articulation of the concept of shared risk is the primary vehicle through which common public and private sector engagement on water risks can be achieved, in the interests of both constituencies, namely citizens and shareholders. This reframing of the traditional polarised paradigm is the potential entry point for corporates to engage public policy processes in a way that overcomes mistrust and adversarial relationships.

However, it is important to recognise that exploring and understanding shared risk does not necessarily mean that this is the most appropriate approach for business, but rather it enables business to ask the right questions. Three important considerations are relevant at this point.

- Corporate executives tend to want public policy engagement to be short-term, targeted and low-cost.
- Unfortunately, the reality is seldom ideal and engagement is typically drawn-out, difficult and complex to exit.
- Engagement gains credibility through stakeholder involvement, so it is valuable to build coalitions with other corporates and even civil society groupings.

It is therefore important to consider all aspects of the costs and benefits of engagement and the implications for risk and uncertainty. Decisions about the nature of engagement in "water policy" should not be made lightly and must reflect the operational, strategic and/or normative imperatives of the business within that context. Considerations that should influence the nature of engagement (or non-engagement), may include:

- Complexity of the problem, understanding of water issues and ability to frame a clearly defined, finite and targeted intervention.
- Coherence and stability/fluidity of the policy-legal framework that must be engaged or within which an intervention must be implemented.
- Political will of counterparts to engage in good faith, particularly before a crisis situation has developed.
- Institutional capacity of water managers to cooperate/collaborate (i.e. engage effectively in a sustained manner).
- Governance practice in water management that exposes significant risk, including issues of corruption, etc.
- Ability to initiate a process or intervention, including the involvement of potential allies and specialists
- Tolerance by corporate shareholders of long-term initiatives that may not yield short-term profits.
- Clear ability to communicate intentions and maintain transparency of engagements.
- Financial, human and/or infrastructural resources that will be required to have an impact.

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Engagement in the water public policy arena should primarily be motivated by the mitigation of risk and uncertainty, but once the decision to engage has been made, success in the engagement requires the corporate position to be aligned with the broader public interest.

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How should Corporates Engage with Public Policy Processes?

Engagement in water public policy may take various forms. The following highlights a number of these, presented in order of increasing corporate commitment, resources and exposure:

- Advocacy / lobbying / influencing ("changing the way things are done") – is particularly effective in fluid policy or strategy environment, where high level decisions are being made, or alternatively through one-on-one interaction with decision makers.
- Self-regulation ("ensuring we all do things in the same way") – is particularly relevant where there is a need for concerted action to address joint risk between users and interests in a specific watershed, but regulatory capacity is weak and is unlikely to achieve the required outcomes.
- Partnership ('jointly taking responsibility for action") – is particularly necessary to build ownership/ responsibility around joint action, which may be given effect through one or more of the other engagements (and may also include collaboration with other corporates or NGOs).
- Financial support / facilitation ("ensuring financial resources to do things") – is particularly relevant for capital intensive interventions (such as infrastructure), which may be enabled by agreement for future payments (rather than initial capital) or facilitated through 3rd parties.
- Institutional strengthening ("improving the ability of others to do things") – is particularly effective where government capacity is weak and existing institutions require technical-managerial capacity or new institutions are required, at a local or basin level.

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- Implementation ("doing it yourself - taking over the role of government") – is particularly effective for local response to specific problems with direct operational impacts, but is associated with massive financial and reputational risks (including exit).

Three levels of engagement should be recognised:

- Local level engagement: relates to a specific risk element of the supply chain, where a possible intervention would address the associated physical production risk, typically due to unreliable water supply. This level may include the whole continuum of engagement alternatives from advocacy to implementation. For example, engagement with local government to ensure reliable water supply to a factory (as well as other urban users) or working with water user associations to ensure that local farmers (and other users) have continued access to water for crop irrigation.
- Watershed level engagement: relates to a more strategic risk where a number of elements of a supply chain are vulnerable to water management within the watershed / basin or local level engagement is inadequate to ensure water for a specific element of the supply chain. This level of engagement will tend to focus on advocacy around water strategy-allocation or financial support and institutional strengthening of public sector water managers to ensure effective and consistent implementation of water policy and strategy. From the business' perspective good (equitable, sustainable and efficient) management of the watershed reduces uncertainty, and thereby the potential exposure to physical, reputational and regulatory risks for around their legal water use.
- National/State level engagement: relates to a corporate recognition of systemic water risk due to policy inadequacy, gained through experience of problems in policy implementation and the resulting impacts on water risk in companies' supply chains at a watershed and/or local level. Typically this level of engagement focuses on advocacy, lobbying and attempting to influence national or state water policy processes.

When thinking about how corporates should engage with public policy, a distinction should be made between specific firm/s and the broader private sector.

Typically broad private sector engagement is the agglomeration of multiple corporate perspectives and is therefore relevant at the national/state (and even global) level around the broad principles, policy frameworks and regulatory implementation of water sector management. By definition this type of engagement remains in the advocacy/lobbying domain and has some "necessary ambiguity", as it reflects the common denominator between sectors and businesses around risk (i.e. building improved water management capacity). However, there is still an opportunity in these engagements to adopt a more public interest paradigm for corporate activities around water, thereby building the credibility of the private sector engagement process in the eyes of government and civil society.

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On the other hand, individual corporates with specific risks are more likely to start at a local level and only "spill" to higher levels of engagement if the risks and uncertainties remain. The following illustrates this by taking the perspective of the individual firm attempting to engage around a clearly-identified water-related operational and/or supply chain risk (typically coming out of a corporate water footprint exercise):

1. The point of departure is the specific concerns in the supply chain, linked to an assessment of the company's vulnerability and the likelihood of the external water environment exacerbating these risks beyond an acceptable level.

- As highlighted earlier in this paper, water is local and the resolution of most problems will be local in terms of the supply system or authorisation to use water.
- Where possible, other firms with the same problems and potentially civil society (and local communities) may be brought into the solution process.

2. Where a local solution cannot be found, the broader management of the supply watershed or new sources of supply may be relevant, so the engagement needs to escalate to the watershed level.

- Watershed allocation processes and the institutional arrangements to ensure their effective and sustainable management need to be considered.
- Companies must promote their interests, but also considering the needs of all groups in the process.

3. Where this fails to address the problem, further escalation to the national policy level may be required to ensure effective implementation of policy and/or review of specific policy elements that are ineffective.

- Collective action through multi-stakeholder platforms at which the private sector is present, provides the most appropriate vehicle for engaging policy processes.

When more fundamental reform of the water policy is mooted by government, this also provides the private sector to engage in the interests of growth and development which supports business. While business is hesitant to engage too actively, it should be remembered in all of these situations that good water governance is dependent upon engaged civil society (which the private sector has particular resources and capacity to support).

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Facilitating Government Engagement with Corporates

For a corporate intending to engage public policy at a national, watershed or local level, the next key issue is to determine what interest government has in engaging in good faith. The concept of shared risk is a useful starting point but typically government does not rigorously evaluate risk and thus this may be a somewhat intangible concept. There is a real need to articulate the concept of shared risk at a global and national level, as well as the reasons that corporates may wish to engage public policy, through representative business bodies.

The following questions assist in framing engagement with the public sector and determining the readiness of the public sector to respond.

- Why would the public sector respond?
- What are the leverage points?
- How to motivate shared risk?
- How to find institutions / capacity with which to cooperate?
- How to prevent abdication?
- How to avoid perceptions around policy capture?

The process of initiating dialogue leading to meaningful policy engagement at any level requires corporates to demonstrate good faith (potentially through action, rather than words) and to ensure that the counterparts will be responsive to initiatives. On the one hand, personal interactions to discuss the problems without blaming may assist in proposed interventions later, while bringing an independent/neutral facilitator into the process initiation can assist to broker the discussions.

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Broader Implications of Adopting a Shared Risk Approach

While the shared risk approach can enable constructive dialogue between business and government in the common interest, there is a very real threat of perceived institutional capture. If this is not managed carefully, it can derail the process and cause significant reputational harm to the corporate. There are a number of considerations in managing this risk.

- Business must always recognise that water management is a public mandate and corporates are wise not to attempt to take on water management or supply responsibilities (except where this is core business for water companies).
- Effective policy engagement to manage risk requires the alignment of corporate interest with common (including social and environmental) interest, which means that companies cannot be seen to be at the table only advocating/negotiating their own positions or attempting to use the process to receive favouritism or to get away with less regulation.
- The processes must be as transparent as possible, preferably including civil society groups with a direct interest in the issue as partners, leading to the establishment of multi-stakeholder platforms for policy engagement (that may survive beyond the company's engagement).

Fundamental to this approach is that if a company honestly wants to engage public water policy in order to manage risk in the long-term, this needs to be with integrity of joint purpose. At the same time as engagement with public policy, companies would be wise to maintain a parallel engagement with popular dialogue (potentially through the media and multi-stakeholder platforms) to ensure public opinion is not at odds with the policy process.

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PART E:

Engaging public policy through the CEO Water Mandate

Summary of the Key Issues

This paper has explored government and corporate risk around water, in order to assess the relevance and limitations for corporate engagement with public water policy. The paper is not intended as a definitive position or guideline, but rather as a vehicle to explore various issues and foster debate around corporate engagement with public water policy. A number of critical conclusions have emerged through this process:

- Firstly, corporate risk related to water is a significant emerging issue and is likely to become more significant into the 21st century, due to increasing water stress internationally, investor perceptions and public awareness.
- Secondly, some risk may be shared by corporates and government, particularly related to avoiding water stress and promoting economic development, which provides an opportunity for cooperation to mitigate this risk.
- Thirdly, there are circumstances under which externally imposed uncertainty, vulnerability and possibly water related risks, indicate that engaging outside of a company's production and supply chain may be required for the long-term viability of the company.
- Fourthly, engagement in public policy processes may reduce water related risks, it introduces various other uncertainties, risks and challenges, particularly as water management is not a mandate or core business element of most companies.
- Lastly, the nature of water and effective corporate engagement around specific issues implies that there is no one-size-fits-all solution and these must be developed for the local or catchment context in which the corporate risk is manifest.

Joint Engagement with Policy Discourse

Much of this paper has dwelt on the engagement of specific corporates with risk related to water in their production or supply chains, and the implications for public policy at a local, watershed and national level. It takes the position that there are potentially situations (and internationally there is already some experience) where engagement may necessary, despite the potential pitfalls. However, this type of engagement is significantly supported where organised business creates the positive environment for engagement. This takes two forms:

1. engaging the public discourse to ensure media and public awareness of the emerging paradigms and the potential role of the private sector in policy engagement, and
2. engaging public policy discourse by governments to create the conditions for public policy engagement by corporates in the context of shared risk.

The former is a general ongoing engagement (potentially targeting the media), while the latter must be held at the national and state levels (primarily targeting national governments), supported by engagement and support at the global and regional levels. Ultimately, most in government, civil society and business desire equitable and sustainable economic growth through the utilisation of a country's water resources. This becomes a great challenge under conditions of stress, which makes it more imperative that representative bodies engage policy processes in order to ensure that governments understand corporate motivation for engagement, while avoiding the hint of institutional capture or taking up of government's water management role.

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Policy Engagement and Discourse at the Global Level

The past century has seen an emerging global policy discourse around water that intensified in the past three decades around the issues associated with water resources management on the one hand and water supply & sanitation on the other. Key players in this dialogue have been the development community led by the World Bank (with the regional development banks) and the United Nations institutions (such as UNDP, UNEP, FAO, UNESCO and WMO, represented more recently in this sector by the umbrella UN Water), with key bilateral donor agencies and national governments, as well as some international NGOs.

By implication this policy dialogue has largely been between different public sector groupings at the global, regional and national levels, with some involvement of civil society, and has thus been framed primarily (and probably correctly) as a development and environmental debate, with consideration given to sustainable economic growth as a vehicle for development. These emerging debates have and continue to fundamentally frame national policy and legislation reform, interpretation and implementation in most countries around the world.

The private sector (corporates) have been conspicuously absent from the debate at a global and regional level, which means the specific challenges and opportunities raised in this paper have not been adequately identified, unpacked, engaged or addressed. There seems to be an implicit assumption that corporates will look after their own interests, have significant influence over these processes and do not share the same perspectives as the development and environmental community. Historically, this may have been a realistic assessment, but no longer.

The emerging recognition of water as a critical resource by corporates (and the broader public), together with the platforms being provided by the CEO Water Mandate (part of the UN Global Compact) and World Economic Forum (amongst others), provide important opportunities to reframe this debate. Importantly, these global and regional debates are fluid (and the “common wisdom” has continually shifted over the past few decades).

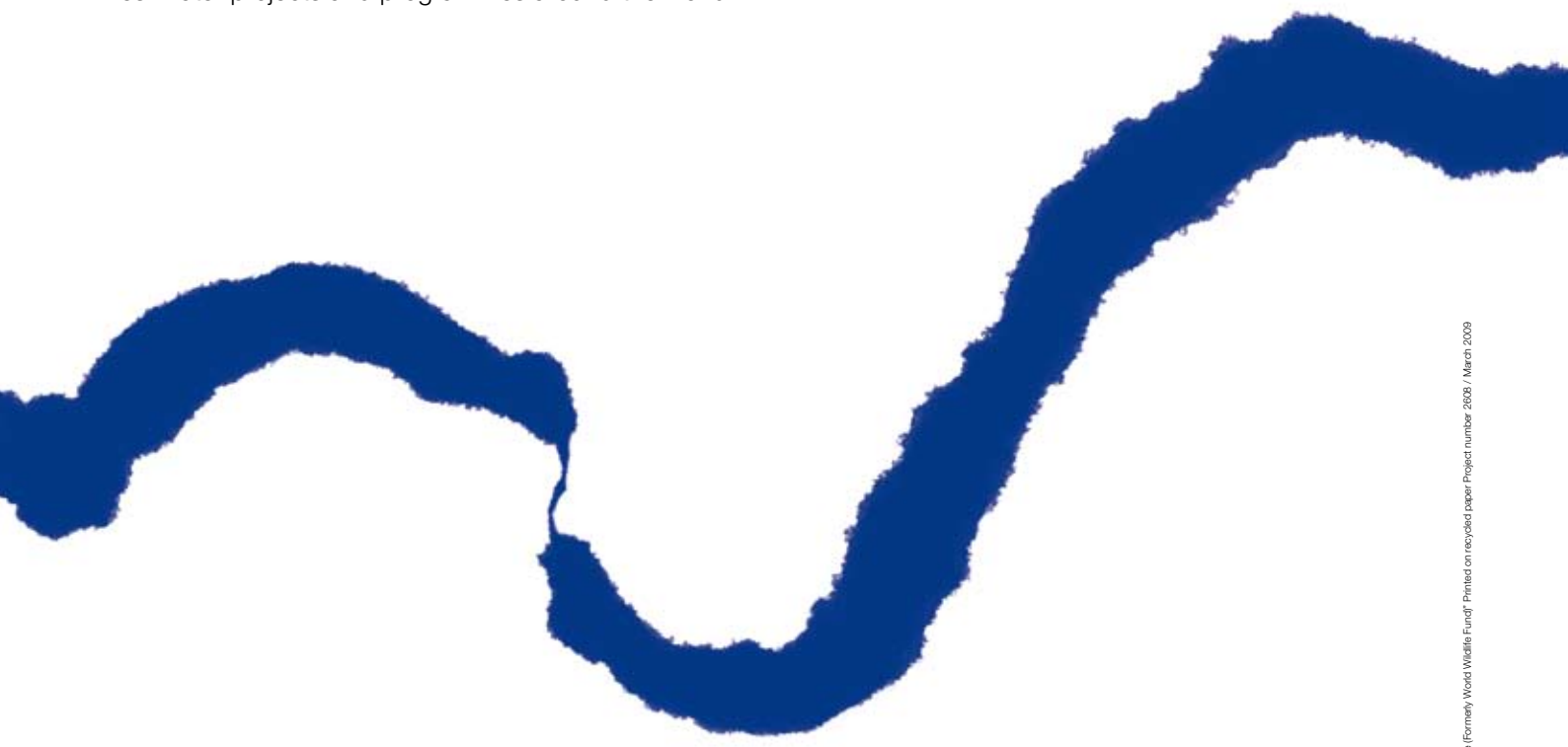
With the expected rates of climate change, development, poverty and ecosystem destruction within an increasingly globalised, connected, dynamic and uncertain world, the intensity of this discourse is increasing and continually shifting, which provides increasing space for new ideas and paradigms.

This provides an opportunity for corporates through the CEO Water Mandate, WEF, WFN, etc to begin to formulate global corporate positions on water management, shared risk and public water policy and potentially to engage global policy debates. This would involve multi-lateral discussions with global and regional institutions involved in water policy and finance, such as the World Bank/ regional development banks (and associated institutions), UN Water (and its affiliates) and possibly bilateral donor agencies, each of which have profound influence on policy processes at a national level. Importantly, the emerging cooperation between the corporate forums and international NGOs may provide an important partnership in this endeavour.

The content of these discussions should ultimately be around improving water management at a national, watershed and local level, while considering the role and interests of private sector as a risk partner rather than competitor to local communities and ecosystems. This paper has outlined many of the dimensions of that dialogue, but requires further debate and adaptation to capture the diverse perspectives of different business sectors, stakeholder concerns and geographic contexts.

About WWF

With a global network covering more than 100 countries and nearly 50 years of conservation work behind us, WWF is one of the most experienced environmental organisations in the world, actively contributing to delivering freshwater projects and programmes around the world.



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Formed in 2007, the HSBC Climate Partnership brings together HSBC, The Climate Group, Earthwatch Institute, Smithsonian Tropical Research Institute and WWF to tackle the urgent threat of climate change on people, water, forests and cities. For more information visit www.hsbc.com

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