The CEO Water Mandate

Discussion Paper
From Footprint to Public Policy –
The business future for addressing water issues

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1. Introduction

In response to growing concerns of water scarcity and unchecked water consumption, the concept of "water footprint" has been drawing attention among businesses, policy makers, and the public over the last few years. Originally developed as an analogy to the more widely recognized "ecological footprint" and "carbon footprint", water footprint has emerged from an advocacy tool to a measurement for assessing the total freshwater requirements to produce goods and services.

As interest and research in water footprint increases, and methodologies to assess water footprint become more robust, a number of corporations have started to conduct these assessments as a part of their water management strategies. While this is a useful and important step for businesses to identify water requirements, dependencies, and wastewater discharges embedded in their direct operations and value chain, the exercise of water footprinting alone (or even reduction of a company's water footprint) can only go so far in eliminating water-related business risks. Among other reasons, this is because water is fundamentally different from carbon or other natural resources in various ways:

- Its availability, management, and impacts are local at a watershed or basin level, thus business risk around water is fundamentally related to location and exposure to water stress at a catchment or local level.
- It is typically variable in space and time, with a high degree of uncertainty about future changes.
- The availability for use is constrained, and often with complex rights and undeveloped pricing-market systems.
- It is both an economic and public good, with significant socio-political implications.
- Freshwater ecosystems are vulnerable to and are highly interconnected with human activities.

These multi-dimensional characteristics of water necessitate that companies pursue a spectrum of management measures from water footprint assessments to public policy engagement, in order to solidify meaningful and lasting outcomes.

This paper illustrates an emerging "roadmap" of water risk identification and management approaches that many companies are beginning to pursue, framed as a journey from water footprint to public policy. It describes how water footprinting can serve as the foundation for various "responses" that address water risks. We conclude by discussing how and why certain types of water risks can only be effectively managed through public policy engagement that goes beyond addressing just a water footprint.

2. Water risks

Water is essential for life and crucial resource for nearly all commercial activities. Yet water resources around the globe are more and more under pressure. Business water risks are increasing and becoming more complex due to a number of global trends affecting availability and access to freshwater resources, including:

- Demand for freshwater increases due to population and economic growth
- Water quality declines in many regions of the world
- Climate change is likely to exacerbate water scarcity and water quality problems due to changes in precipitation patterns, severe drought and flooding, and sea-level rise
- Delivery and treatment of water requires energy, yet energy use is also increasingly constrained

- Public and media attention to private sector water use are growing, and communities and stakeholders have greater political and reputational pressure on businesses' impacts on water resources
- Water use and discharge impacts on ecosystems are intensifying

While these are global trends, their intensity and impacts on business vary greatly from company to company. Likewise, there are general categories of risk that will impact companies differently, depending on the purpose of the water use, amount, timing, location, price of water supply and discharge requirements, which differ greatly among sectors and companies. These risks can hit companies' direct operations as well as their supply chain, ultimately affecting their operational costs, profits, and future growth. In general these manifest as:

- **Physical risks**: direct risks related to a lack of availability of quality water, caused by water scarcity, drought, increased competition for water resources, infrastructure failure, poor water management, water source contamination etc.
- **Reputational risks**: physical constraints in water resources increase competition for clean water, and lead to potential conflict with other water users including local communities. Increased awareness around water scarcity and quality means companies' water use and discharge come under scrutiny and may affect their social license to operate.
- **Regulatory risks**: both physical and reputational pressure for water use and discharge can result in more regulation, price increases, and even loss of operating licenses.
- **Financial risks**: water shortages translate into higher energy prices, higher insurance and credit costs, and lower investor confidence, all of which further undermine business profitability.

Water is a limited resource shared by a multitude of users: agricultural, industrial, municipal and ecosystems/environment. All require water to survive, and water availability/quality is affected by the interrelated practices of all of these actors. Said another way, businesses ideally rely on healthy systems, coherent policies that govern water use and functioning ecosystems to access clean water and avoid risk. As a result, measures to manage water risks only within the company and its key suppliers (i.e., efforts to reduce water footprints within a company's direct operation and supply chain) can not entirely eliminate water risks and water supply uncertainty. For instance, a well managed business in a poorly managed catchment remains at risk if other users are not adequately supplied. Thus business risk around water is only mitigated where catchments are equitably, efficiently, and sustainably managed.

This interdependence in turn presents a need and opportunity for companies to collaborate with government/public to reduce water risks collectively. Indeed, there are often shared interests by public and private sectors around water, particularly related to avoiding water stress and promoting economic development.

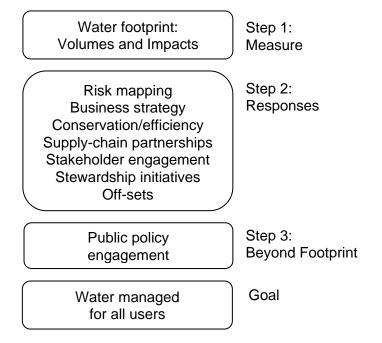Examples of shared interest include:
- Both government/public and business want sustainable clean water supply that enable economic growth and social development.
- Both government and business are exposed to reputational and political risks if local communities' access to clean water is negatively affected.
- Public sector water management capacity affects water supply reliability and price, affecting regulatory risks for business.

Because of the multiple factors that affect water resources in various levels and scales, there is no single solution for companies seeking to manage water risks. In the next section, we discuss various approaches companies are taking to address water risks.

3. Business 'Roadmap' to Address Water Risks

The awareness of water as a key input and as a risk for business has led to significant action at both the individual company and collectives levels over the last few years. Figure 1 tracks the progression a growing number of businesses are taking to identify and response to water risks.

Figure 1 Business 'Roadmap' to Water Risk Identification and Management

Water footprint: Volumes and Impacts	Step 1: Measure
Risk mapping Business strategy Conservation/efficiency Supply-chain partnerships Stakeholder engagement Stewardship initiatives Off-sets	Step 2: Responses
Public policy engagement	Step 3: Beyond Footprint
Water managed for all users	Goal

Step 1: Measures

Risk motivates business to eliminate prospective problems so as to maintain stability and consistency in the business model. In order to accurately assess risks, companies typically conduct an accounting to understand water use and wastewater discharge throughout their value chain. In fact, many businesses are beginning to measure their water use using both life-cycle assessment (LCA) and water footprint analyses. Both of these methods are useful depending on the boundaries that are set and the questions and issues that are being considered. The results of the accounting can provide the basis for the evaluation of "relative risks", and help companies prioritize management efforts and set strategic goals. To be most effective, the footprint analysis should include not only direct operations (i.e., direct use), but also supply chains as well as product use and disposal stages (i.e., indirect use). Understanding water use "beyond the fence line" can be highly material to industries with significant "product embedded water" or disposal concerns.

The measurement of water footprint in volume alone however cannot provide an accurate picture of water risks. As discussed above, one of the most significant characteristics of water-related risks is that the impacts of companies' water use vary depending on local hydrological, social, economic and political factors. One unit of water is not equal to another unit - the same amount of water withdrawn in an arid urban area versus a rural wet region has completely different impacts (and concomitant risks). Therefore, on a regionally-specific basis, companies will need to assess impacts associated with their water footprint by looking at such factors including: shortage and flooding risks, trends in regional demand, institutional or political water governance capacity, local and regional water access and pricing, impacts of companies' water use and wastewater discharge on local communities and ecosystems, and climate trends.

There is now a global effort to establish harmonized 'tools' for business that can also measure impacts as well as volumes. The Water Footprint Network (WFN) is one such organisation that has been established towards standardising the methods used for companies, municipalities and other entities interested in measuring water. The advancement of methods in this area is helping to avoid some of the confusion that has gripped the carbon debate, and seeks to assure that responses are credible and are developed sooner rather than later.

Step 2: Responses to drive down risk
The responses in Figure 1 are just a few of the activities that have been observed over the last few years. Responses to a water footprint are designed to reduce risk and maintain a license to operate. For some, and depending on the sector and the type of product, this may remain more of a public relations effort, but for others their responses are vital to ensuring stability. Below we describe examples of such responses to reduce water risks.

Water Efficiency
As a first step to drive down water risks, many companies focus on reducing their direct water footprint by conserving and recycling water within their own operations, as well as managing water quality by reducing wastewater discharges and pre-treating discharged water. Water footprinting can help companies identify the processes and facilities that have larger water requirements or discharge, and prioritize management efforts accordingly.

Efficiency measures at the factory level are quite advanced in many companies and businesses are sharing common technologies and innovations to reduce and recycle water and return, in many cases, cleaner water to the environment. But at a field level, much more nuanced approaches for the best practices in that hydrological system are required to reduce water use, and perhaps risks depending on the conditions and appropriate irrigation requirements and techniques. While efficiency at various business levels is important, it is too often seen as an end in itself. To meaningfully reduce and manage water risks often requires measures that address water impacts beyond companies' fence line as opposed to overall volumes.

Full-cost accounting is a method that can also be used to evaluate and compare potential water strategies and management measures. It is based on a life-cycle approach, and aims to identify and quantify all internal and external environmental and social costs associated with certain business decisions or activities. Companies can use full-cost accounting to measure the "true cost" of their water use and discharges, in order to incorporate water factors into their overall business strategy and decision making.

Risk Assessment and Supply chain management
Understanding water use "beyond the fence line" can be highly material to industries with significant "product embedded water" or disposal concerns. Depending on the sector, companies' direct water use can pale in comparison to the water embedded within their supply chains. This is the area where water footprint analysis provides useful information that allows companies to identify where the most significant water use and discharges exist in the value chain and the type of water (rain or river) that went into production.

Once a water footprint reveals the amount and location of water requirements, companies can begin to assess associated risks. The World Business Council for Sustainable Development (WBCSD) has designed an online water risk assessment tool which is useful in establishing a first cut at potential water resource risks in a business supply chain. Risk mapping is crucial in allowing companies to determine the "hotspots" where immediate intervention is necessary, as well as where issues may arise in the future, due to evolving regulatory frameworks/requirements, or climate or demographic changes. Together these represent significant potential risks around water and understanding where these exist or may emerge will prove to be essential to businesses strategic responses.

Stakeholder and community engagement

Businesses are benefiting from sharing what was learned in their water footprint and risk assessments in order to gain feedback from stakeholders and local communities. Early and continuous involvement with communities and concerned stakeholders enables companies to better anticipate and respond to emerging issues and expectations, such as competing water demands by local communities or local concerns over wastewater discharges. Open discussions with local communities can be an important factor in preventing or reducing the risk of future water-related disputes or disruptions. Since communities often feel very strongly about the use of local water resources, ongoing discussions with local communities are vital to good business planning and guiding priority areas for action.

Civil society representatives and NGOs now play increasingly important roles in defining water policy along with the affected communities. Where a company plays a large role in a community or is a substantial water user, developing early and ongoing ties with local groups can prevent or reduce the risks of future water-related disputes. Early identification of local actors and their water-related needs, coupled with a policy of open communication, can reduce risks of controversy that, in extreme cases, can lead to the loss of a company's license to operate.

In addition to communication efforts, companies engagement activities are also including programs to improve water quality or water availability within the watershed, such as direct participation in developing local water systems, the provision of funds or appropriate technology, education, or water resource planning. Engaging with communities to install clean water technologies, supply access to water through wells and rainwater harvesting techniques, are all becoming common responses from business. Whether or not these are specifically activities to reduce risk is arguable, but maintaining the social license to operate is crucial for most operations.

Collective Action

Effective management of water offers an occasion to collaborate and establish partnerships that diminish business risks and maximize social and economic returns. An open and transparent approach to such partnerships can further enhance trust among stakeholders, and can provide businesses with a platform for dialogue on other issues. Peer-to-peer learning on water has increased through emerging industry sector-specific initiatives promoting best practice.

At the global level, most notably through the UN CEO Water Mandate and in the World Economic Forum process, business responsibilities and responses relating to water are being collectively debated. The awareness of water as a key risk and input to business has risen rapidly in these fora, which have attracted both considerable support and occasional criticism for their role in attempting to define the corporate response to global water challenges.

Water Stewardship

Management standards: Standards for water use and performance have existed through numerous bodies (e.g., ISO GRI, BSI). However, for standards to be better prepared to address the complex issues that surround water there needs to be an exhaustive and detailed re-assessment. Water standards that were once sufficient for business operations may not prove robust in the face of uncertain water supply in extensive supply-chains, or in geographic regions where water scarcity and conflict are becoming more pronounced. The Alliance for Water Stewardship (AWS) is one emerging initiative developing international standards that address the myriad of complexities relating to responsible water management.

Neutrality and off-setting: Many initial business responses to global water challenges have mimicked approaches taken in the climate/carbon arena, both in actions and in terminology. For example, water neutrality and water off-sets have been explored in detail, as well as driving efficiency at field level as a way to reduce absolute water amounts. There has been a tendency for many to assume that water can be treated the same way as carbon, that is, reduce intensity and thereby reduce risks. Unlike carbon, however, water impacts are completely dependent upon the system from which that water was taken and the rules that govern water use. Simply

reducing use without taking into account the local circumstances of water may fail to deliver the desired outcomes. Nonetheless water off-sets have crept into the list of potential stewardship activities for business and may prove to be useful activities in some situations.

Step 3: Beyond Footprint – Public policy engagement

Driving down risk through efficiency improvements and stakeholder engagement are common activities but depending upon the business and its location, the risks described earlier may still play out in different ways and to varying degrees. This is because, for some, the ultimate risks will lie in the way in which governments manage water for all users, and whether or not their business operations are situated in areas where this consideration is low or non-existent. It is the uncertainty of risk in this context that will force companies to decide between relocating, living with risk, or engaging with water managers to support the policies required to improve water management.

Since water is a shared resource, companies can rarely achieve the best water management outcomes on their own. Most solutions to water supply, quality, and sanitation issues require an adaptive co-management approach. And yet while there is increasing momentum around water conservation and quality improvement activities, there is little discussion on how companies can gain competitive advantage through organizational alignment of their corporate water strategies with public policy goals and multi-stakeholder initiatives. In fact, public policy is highlighted as one of the key points of the CEO Water Mandate but there is poor understanding of what this exactly means for business in practice.

What is water policy?

Public policy attempts to define the rules, the intent and the instruments for government to implement water management. Public policy functions that have direct bearing on companies' interface with water include: development of policy and legislation around water, planning and implementation of water resource allocation and management, water infrastructure development and operation, management and delivery of water supply and sanitation services, and protection of water resources and natural systems.

Why companies need to engage in public policy "beyond water footprint"?

As noted, there are many factors that are expected to worsen water scarcity and quality problems. Water-related risk can be reduced by operational and supply chain interventions as described above, however, these steps can only take things so far. In some cases, it is only by intervening in the water policy and governance spheres that that water-related risk can be reduced to an acceptable level. Increasing water stress and competing water users (including local industry, local population, environment/ecosystem) in particular make it necessary for corporations to engage in 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.

Moreover, there is a growing recognition by businesses that they can and should play a larger role in achieving water-related policy goals, as well as increasing expectation by society for businesses to transparently participate in regional and international water governance efforts. Especially in the regions under high water stress, or regions where substantial populations lack safe and affordable water for basic needs, expectations are growing that companies work with local stakeholders including water agencies, community groups and other industry water users to share and manage limited resources more equitably and efficiently.

Various drivers for corporate engagement in public policy

Regardless of external expectations, there are various reasons/scenarios why a company may want to engage the external environment beyond its direct operations or supply chain, including:

- To manage short-term (physical) water risks: when accident or natural disaster cause disruption of local water supply, government and business have shared interest and

need to quickly address the impacts, requiring collaboration such as information sharing/dissemination, management support, financial contribution.

- <u>To reduce mid- to long-term (physical and regulatory) water risks</u>: systemic water-related risks and uncertainty in water supply and quality may be reduced by helping government establish and implement stable and effective water resource policy. Activities include ongoing policy engagement with local/state government and formulation of water policy through multi-stakeholder fora.
- <u>To reduce reputational risks</u>: alignment of corporate water management strategies with public policy/public interests in reliable and accessible clean water supply will reduce risk.

Examples of engagement

Engagement in water public policy can take various forms, including advocacy/lobbying, self/voluntary regulation, partnership with government and local authorities, financial support to build water infrastructure and/or to advance police objectives, etc. The engagement activities can be done at different levels, ranging from local, to catchment/regional, to state/national level.

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

- Beverage companies engaging local water supply to neighbouring communities in the interests of ensuring social license to operate.

- Brewery jointly engaging future municipal water supply from nearby catchments in the interests of ensuring reliability and shift away from deteriorating sources.

- Food processing company engaging local water associations linked to upstream farm suppliers in the interests of ensuring continued production under increasing regional growth and water stress.

- Extractive processing company engaging the long-term water policy and strategy in a stressed catchment before deciding to invest.

4. Goal: Water managed for all users

Arguably, the only true situation to eradicate risk and provide social, economic and environmental stability is through well managed water resources. While this may seem idealistic and the above mentioned self-regulatory actions will be the more usual practice, this must surely remain the ultimate prize. So what would good management look like?

- Functioning water resources and aquatic ecosystems that provide goods and services to current and future society and economy
- Water rights and allocation systems that ensure equitable access and efficient use of water to meet economic and social objectives
- Reliably operated and maintained infrastructure required to supply water and discharge waste of acceptable quality
- Effective management of disasters ranging from floods, droughts and pollution incidents that threaten people and infrastructure
- Recourse when license breeches and unilateral actions impinge on other users

Achieving good water management through alignment of corporate interest and public interest will result in "shared benefit": All stakeholders, including government, civil society and business desire sustainable and reliable water supply that enables equitable and sustainable economic growth without destroying the very systems that support life.