

## Water Currency - Every Drip Counts

Whether we realize it or not, each of us is a part of a greater whole. In nature, this is referred to as an ecosystem - where all living organisms and non-living components must interact. Ecosystems can thrive - or die. Companies, too, exist by interacting with others in their “ecosystems” of suppliers, employees, customers, and greater communities. Those that interact successfully can thrive. As the corporate world delves deeper into sustainability, we see that companies can develop competitive advantages by making environmental and social decisions that are good for themselves and good for the larger ecosystem of humans and the environment.

The latest opportunity for companies to manage their future prospects of profit and well-being has been triggered by the a decline in the world’s most precious resource: water. The dwindling supply and quality of water and the increasing uncertainty of drought or flood has sparked global concern over our ability to survive without something that is present in every aspect of life. No water, no life. For companies, a similar fate awaits if they continue to ignore the importance of the most valuable and most underpriced resource available.

Most of us have heard some of the warning bells:

- “One in seven people today, an estimated 894 million globally, do not have access to the five to 13 gallons of safe fresh water per week that is considered the minimum necessary to meet basic human needs.”
- Or: “According to the United Nations, if present consumption patterns continue, two-thirds of the world’s population will live in water-stressed conditions by the year 2025.”
- Or: “By 2025, 1.8 billion people will be living in countries or regions with absolute water scarcity.”

Ok, ok. Doom and gloom isn’t the only story - and it certainly won’t get us very far. The good news is, according to Robert Giegengack, professor emeritus in the the Department of Health and Environmental Science at Penn and faculty member at the Initiative for Global Environmental Leadership at Penn/Wharton#, “Even at 10 billion [the estimated population by 2050] there is enough water, if we were to use it responsibly.” Those looking to thrive in the future have already realized the opportunities posed by water shortage.

For companies, there’s a chance to develop significant competitive advantages and mitigate future risks by developing a corporate water management strategy. To do this, they can assess their current water footprint, the associated risks, design and implement plans to mitigate water uncertainty and their responses, and interact with external stakeholders to improve water management for their ecosystems. But, first, why?

We can see in a couple examples how companies have felt the pain of water uncertainty. In 2001, Anheuser-Busch, the world's largest brewer of beer, took a hit to their supply chain as the result of a temporary drought in the U.S. Pacific Northwest, which increased the prices and reduced the availability of key inputs to Anheuser-Busch's brewery operation – barley and aluminum. To better face water-related challenges in the future has taken a more comprehensive, strategic and sustainable approach to water issues. # Unrelated to weather, Coca-Cola, for instance, had to close a plant in India when its heavy water use came into conflict with local agricultural needs. Subsequently, Coca-Cola has invested heavily in water management and strategy and sponsored research on the future of global water shortage.

According to a report by the organization Business for Social Responsibility and the Pacific Institute titled *At the Crest of a Wave: A Proactive Approach to Corporate Water Strategy*:

“In the next two to five years, companies will need to adapt to availability concerns such as water stress and flooding; quality concerns, including increasingly contaminated surface and groundwater; and access concerns, specifically competition (real or perceived) with other water users. As a result, a thoughtful water strategy will prove an essential mechanism for managing medium-term business risks and opportunities. In being proactive, corporate leaders will not only anticipate the future, but will shape it while gaining advantage in some of the key--and most water constrained--markets worldwide.”

A quick assessment of any companies supply chain will quickly reveal how important water is to their business. Here's a quick look at the direct and indirect costs of water:

#### Direct costs

- Water use and wastewater discharge fees
- Pretreatment technology
- Energy cost associated with water use (heating, pumping, water treatment etc.)
- Regulatory cost (permits, compliance assessment, etc.)
- Cost for water management measures (staff time and resources, technology, equipment and materials)

#### Indirect costs

- Disruption of service
- Site location limitations
- License to operate or grow (marginal cost for capacity expansion)
- Relationships with stakeholders (suppliers, financial institutions, employees, regulators, customers, shareholders, neighbors and local communities)
- Health of employees and neighbors
- Loss or damage of ecosystem/species

Three components of water issues that can significantly effect companies are water supply, water quality, and the risks of unexpected weather change, i.e droughts or flooding.

### Water Supply

In many countries, especially those labeled 'developing', water is no longer abundant. As public and private organizations withdraw water it is not replaced at a similar rate into the regional water table; or it is replaced at a lower quality no longer be usable for humans. Companies operating in these regional environments will often times find themselves the losers in the battle for water since governments typically prioritize domestic use over industrial use; a large risk where companies are already operating in regions with inadequate water infrastructure#. This becomes more significant as evidence points to falling water supply globally: "Groundwater overdraft is also occurring in many parts of the world. For example, in northern China, parts of India, and the Ogallala basin in the Great Plains of the United States, groundwater levels are dropping faster than they can be replenished. The result is short-term rising energy costs to users, and long-term uncertainty over supply."

### Water Quality

Even when we do return water to the water table, rarely do we return it clean. In fact, it's usually polluted. The technology to do clean significant volumes of water doesn't exist yet, nor are there legitimate regulations to effectively produce this outcome. Global water quality has significantly decreased such that municipalities and governments are rethinking water infrastructure and use. Specifically, national restrictions will create risks based on the type, size, or location of specific industrial investments, as well as new and costly constraints on a company's wastewater outflow. "With an estimated 90 percent of wastewater in developing countries discharged directly into rivers and streams without any waste processing or treatment, the legal and financial implications could be significant." As regions grow economically, new costs from stringent water-treatment requirements will feed into a company's inputs, directly and indirectly. Industrial expansion may also be affected in regions where the water supply is already contaminated, particularly for industries that require clean water in production.

As companies take a holistic look at the environments they operate in, the staggering impact of diminishing quality of water on fellow humans becomes apparent. As human access to water is limited, battles, often time political (and sometimes physical), erupt as advocates for clean water become more vocal. To exacerbate both the practical and impassioned responses to poor water management decisions by companies and governments, in 2002 The UN recognized that access to water is an essential human right. Over the past 30 years, the public has taken on an increasing concern for water and communities often feel strongly about the use of local water resources. High profile examples of this include large public demonstrations and outcries to the Narmada Dam in India and the Three Gorges Dam in China. In 2008, protests erupted

in Maine when Nestle Waters withdrew water from natural underground water sources. Advocacy groups and NGOs continue to put public pressure, often times through shaming, on governments and corporations who misuse -or hoard - water. Companies looking to manage public reputations and goodwill will find it necessary to understand the positions of water advocates and interact genuinely with governments and NGOs fighting similar battles.

### Risks of Weather Change

With plenty of recent, well-documented examples of unexpected weather patterns, it seems pretty certain that climate change is going to impact our environment by altering the world's hydrological cycles. As these changes occur, scientists expect to see, among other things:

- Changes in traditional precipitation and runoff patterns;
- Increases in the frequency and severity of both drought and floods;
- Degradation of water quality by changing water temperatures, flows, runoff rates and timing; and
- Threats to coastal aquifers from rising sea levels, with potential implications for coastal populations reliant on groundwater resources.#

All of these threats and risks will impact each step of a company's supply chain. For example: sourcing materials/inputs (water needed to mine, create, ship these materials; cost of water increases, materials cost increases), manufacturing (water used during the manufacturing process; water discharge costs; how does it affect regional water system?), distribution (water needed to build distribution equipment; needed to get things to customers), product-use, reuse, and recycling (do customers need water to use, reuse, or recycle our products?; does water-shortage make our product less useful, more difficult to use?). Additionally, changing weather and water uncertainty threaten current market share (can water catastrophes affect our markets, slowing economic growth and social well-being, leading to poor economic conditions for business success?); access to labor (does water-quality, access to water, sanitation, flooding affect the quality/cost/well-being of your labor?) and expanding production (will we have access to water when we need to expand in current or new markets?).

### Additional Influences

Outside of immediate impacts mentioned above, the water shortage and a plan to manage it can significantly effect how a company is seen by external stakeholders. For example, the Global Reporting Initiative (GRI), which many companies have adopted to measure and report their sustainability and CSR endeavors asks about water risks. Two indicators suggest that companies report: Water bodies and related habitats significantly affected by discharges of water and runoff; Water sources significantly affected by withdrawal of water. Other tools are being developed to help companies assess their water and allow stakeholders and investors to calculate a companies water risk. The Water Gauge (<http://www.sustainableinnovation.org/Corporate-Water-Gauge.pdf>) by the Center for Sustainable Innovation, is a context-based solution for measuring the sustainability of organizational water use by comparing the rate of use

measured against rate of renewable supply, which determines sustainability performance. Another tool for investors and analysts is the Water Index, a partnership of the World Resources Institute (WRI), General Electric and Goldman Sachs. The Water Index is an initiative to measure water-related risks facing companies and their investors:

“The initiative will develop a water index as a standardized approach to identify and mitigate water-related corporate risk. The index will aggregate nearly 20 weighted factors capturing water availability, regulations, water quality and reputational issues. The index will aim to allow companies and investors to transparently and adequately capture the various components of water-related risk and enable business leaders to make more well-informed investment decisions.”

Increased transparency will increase pressure on companies to manage water risks, but as new tools develop, companies will also have the opportunity to take a competitive lead both operationally and among public opinion.

Even as resources have constrained ecosystems over time, those that survive and thrive have proven to be resilient by adapting. For nature, we may call this survival of the fittest, or evolution. For companies, they will be called the forward-thinkers, those with the ability to look into the future, see potential challenges, and adopt new, innovative methods to best them. When it comes to earth's most precious resource, this appears to be the only option. Will your company survive?

### Summary

J. Gowdy Consulting has experience providing sustainability consulting for business, non-profit, and academic organizations including Bridgestone, Blu Skye (Wal-Mart and clients), Ingram Barge, Lexmark, Wildlife Habitat Council, World Wildlife Fund, Vanderbilt University, and University of Auckland. Projects have focused on sustainability strategy development, implementation, and training and external and internal communications.