Expo Zaragoza, Spain – Tribuna del Agua

The Water Tribune – Thematic Week 9: Water & Energy
1. – 3. September 2008

Business in the world of **water**

World Business Council for Sustainable Development – WBCSD Water

Water Scenarios from a Corporate Perspective

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No water - no business. Companies must understand local water conditions to make intelligent decisions. Many are only just now beginning to grasp how essential water is to everything in life – food, energy, transportation, nature, leisure, identity, culture, social norms, and virtually all the products used on a daily basis. With population growth and economic development driving accelerating demand for everything, the full value of water is becoming increasingly apparent to all. Scarcity usually encourages better management of resources.
For some business this trend means new economic opportunities in making water available to meet demand or in finding solutions to improve water quality and water use efficiency. For others, it means closer scrutiny of how they, their supply chains, and their markets access and use water, and of how new business risks emerge as they compete with other users.

The World Business Council for Sustainable Development (WBCSD) has been documenting successful business experience in water management, partnerships, and provision of water services to the poor since it formed its first water working group in 1997. In 2004, the group of WBCSD member companies that we represent decided to reinforce our collective effort to help businesses understand why they should be thinking about water and what they can do about it.

We recognize that the world of water is changing and complex, and that our best hope for new insights and strategies for action lies in pooling our individual perspectives and experience. Because water is everybody's business, business needs the help of other actors in society to get to the issues that really matter.

The WBCSD has chosen to build scenarios because scenarios provide a platform for coming to a more systemic and shared view of the bigger and deeper picture. Furthermore, building and using scenarios can help forge shared commitment, as well as shared understanding, by acknowledging uncertainties, by respecting differences in perspectives, and by pointing beyond the problem to explore what solutions might unfold and to what effect. In a water-constrained world, managing water-related risks becomes imperative.

Our specific objectives in building these scenarios were threefold:
1 Clarify and enhance understanding by business of the key issues and drivers of change related to water.
2 Promote mutual understanding between the business community and non-business stakeholders on water management issues.
3 Support effective business action as part of the solution to sustainable water management.

We began by reviewing basic information about the current world water situation and by identifying specific actions that businesses can take. This resulted in two publications:
Water Facts & Trends and Collaborative Actions for Sustainable Water Management. We then launched the scenario process as an ideal tool to enable us to look into the future and to act more effectively together in building a platform for dialogue and understanding through constructive engagement.

This paper presents the three stories that have emerged from rich and varied discussions as project

participants explored ways in which the future may or may not be like the past and why traditional forecasting methods are not good enough. The stories are primarily intended to encourage businesses to ask “What if?” as they test the robustness of their strategies, policies, and principles across a range of plausible, alternative futures in relation to water. As the product of a collaborative process involving many stakeholders, these scenarios also offer value as a catalyst for joint exploration with other actors in society of how businesses can contribute to sustainable water management. The final chapter aims to stimulate ideas about how to use the scenarios and encourages customized approaches tailored to meet the needs of individual organizations.

These scenarios – the ‘H2O Scenarios’ – are thus a starting point. Taken as a set, they provide an aid to navigating the rapidly changing world of water. During the scenario-building process, we gathered more information than we could include in the scenarios. This additional material – such as information on new technologies, water reuse, valuing nature, and water use in the life cycle of goods and services – can be downloaded from the WBCSD website (www.wbcsd.org/web/H2Oscenarios.htm).

Business in the World of Water

Water should be high on the business agenda because all businesses depend on water. The continuity and future success of any business are impacted by the availability, cost, and quality of water at many points along the ‘value chain’, including ‘upstream’ (in the production and supply of raw materials), ‘midstream’ (in what businesses make from raw materials or other pre-processed inputs), and ‘downstream’ (consumers need water, and everyone needs water to be treated and recycled). Like people and governments, businesses tend to ignore water until it becomes scarce, polluted, too expensive, or in some way is mismanaged. But in the near future – as a result of changes in both human and natural systems that affect water availability, access, affordability, and quality – the water management challenges facing humanity will become more complex. The prospect of water shortages, scarcities, and stresses will increase.

Increasing Shortages, Scarcities, and Stresses
In considering the context for the water challenges that face business, we explored five interacting drivers of change in which these challenges are most clearly seen:
People – Planet – Past legacy systems – Politics – Policies.

The world of water issues is potentially paralyzing in its complexity - so to deal with this complexity in a way that would encourage a cross-sector business dialogue on these issues, we created a set of water scenarios. The 'H20' scenarios help make sense of the evolving complexity and focus attention on three significant global water challenges that will combine to impact businesses and societies everywhere - the *efficiency challenge,* the *security challenge,* and the *interconnectivity challenge.* Each of these challenges incorporates many other challenges to business that are emerging from the changing status of water.

The Efficiency Challenge
With economic development, water demand increases more quickly than population. The resulting stress on water resources is exacerbated by low water-use efficiency, especially in the agricultural sector, caused by factors such as outmoded water systems, poor regulatory enforcement, ineffective price signals, and the lack of incentives for changes in behavior, particularly by those who claim historical rights to water access. The *efficiency challenge* in the world of water calls for more value per drop - and "more drops for less," including the value that comes from more jobs per drop, less energy and pollution per drop, efficient water use, and more water for less environmental impact.
This *efficiency challenge* leads to the business challenge of *innovation* - not only in producing new products and services, but also in avoiding or addressing legacy constraints - for example, established infrastructure and technology standards, social habits and attitudes, and standard business practices. These behaviours and norms were appropriate for a bygone era (for example, a context of abundant cheap energy) and within a certain socio-economic and political context (for example, food security and priority for agricultural water uses), but not for current or future conditions (for example, increasing urbanization and post-industrial economies). The biggest challenge of all will be to meet the water needs of the two billion people living in poverty in the developing world.
How can businesses be encouraged to see water-related problems and constraints as opportunities for innovation and value creation? What are the dilemmas raised by the multifaceted efficiency challenge (more value per drop, more drops for less, less pollution and energy per drop, more jobs per drop)?

Will further urbanization intensify the water crisis, or does it provide an opportunity to find a solution? Which legacies need to be unlocked to enable more sustainable water practices and more appropriate solutions? Which sectors will need to take the lead in partnering with municipal and national authorities to ensure city solutions are agreed and implemented on a sufficiently fast and large scale?

The Security Challenge

The increasing stress on local water supplies in many parts of the world raises the issue of water *security* quantity and quality for all. Business plays a major role in ensuring water security, not only directly, through its role in developing, installing, and operating water technologies and services, but indirectly, through its role in the international food trade. Future water and food security will depend even more on trade. Most important of all, business provides the livelihoods that enable families to pay for their food and water. The major challenge in water security is to ensure that water is allocated and managed effectively and that there is enough to meet all needs - including those of the seriously water scarce and of the ecosystem services and products on which many livelihoods and economies depend. This issue requires businesses to engage with the evolving concept of security, which is shifting beyond the protection of what some have today in effect, a form of risk management for the few - to the more inclusive and interdependent notion of security for all, through security of the other. The political processes for re-allocating water fairly and effectively are of fundamental importance because if local water security is not maintained, the business challenge will include preserving the *social license to operate* in that area - even for businesses that are not directly involved in water issues. What begins as a security deficit evolves into a 'trust deficit' for business if allocation issues are not fully resolved or become tainted by corruption.

As the number of users and uses of water increases, allocation issues will become even more contentious. These issues are shaped by the increasing interplay of many different and sometimes conflicting concepts of fairness. Addressing allocation in a more inclusive manner and on a fairer basis in order to ensure security for more people raises issues of:

Representation - Who actually participates - or can be trusted to participate - in the decisionmaking process?

Legitimacy - What forms of evidence and judgements are acceptable?

Competency - Once decisions are reached, can they be implemented effectively? What about the capacity to meet sudden crises? Or to change over time with changing circumstances?

Increasingly, businesses will have to be mindful that concepts of 'representation', 'legitimacy', and 'competency' vary among countries and in discussions about global governance. There are many sides to the allocation issue.

The Interconnectivity Challenge

While water is a local issue, ensuring the allocation of sufficient supplies at the right time, in the right place, and of the right quality, increasingly requires consideration of the *interconnectivity* of larger contexts and many diverse stakeholders. Human security and development cannot be isolated from the health and viability of the earth's underlying life support systems. The *interconnectivity challenge* requires us to be able to think and act in terms of multiple geographies of connection, from nation states and city limits to watersheds and river basins, and in terms of multiple timeframes, in order to ensure that short-term interests do not foreclose longer-term possibilities.

The *interconnectivity challenge* also requires us to take into account not only 'blue water' issues of the water we see, such as the water in lakes and rivers, but also the so-called 'green water' contained in healthy soils, and the 'virtual' or embedded water contained in traded products and services. Human security and development also increasingly depend on the ability to consider links in actions and policies relating to food security, energy security, and water security. The challenge to business in a global environment of increasing accountability is to understand *the business role in water governance* how to fit into this dynamic, ill defined, unpredictable set of systems that culminates at the level of a truly global, interconnected, whole system.

To what extent can human and business activity adapt to new and evolving constraints imposed by the 'big' - or hydrological - water cycle? When we solve a water problem upstream, how can we avoid unintended consequences downstream? How will formal institutional arrangements give a voice to the ecosystem? What are the tensions and dilemmas that need to be surfaced and resolved to govern water at local, national, and global levels? How can more investment be mobilized to finance new innovative schemes for local water solutions?

Learning from the Future

Most companies lack an understanding of the risks and opportunities associated with the changing landscape of water - for example, how increased water-use efficiency can be profitable in a way that

can also contribute to a more sustainable use of water. Businesses will be required to understand the political, social, economic, and ecological context of water issues and will need to determine their roles in the collaborative water framework. Sometimes business can take the lead, sometimes it must act in close collaboration with other stakeholders, and sometimes it must simply support government actions and leadership. But whatever it aims to do or is called upon to do, business must pay closer attention to its growing role in the world of more constrained water and ever-tightening supply-demand balances.
Our intention is for these scenarios to offer a tool for usefully simplifying the issues so that different businesses can assess their 'strategic fit' with and state of preparedness for the rapidly changing world of water.

The H20 Scenarios - An Overview of Different Imagined Futures

The **H20** scenarios offer three stories about the role of business in relation to the growing issue of water in the world. These stories do not try to cover everything, but attempt to bring to life a limited number of alternative future environments that will challenge economic viability, social legitimacy, and global fitness in the marketplace.
While the three stories together - H, 2, and 0 - were created in relation to each other, as part of a 'molecular set', they are intended to present mutually exclusive worlds as platforms for discussion.

Hydro* is the story of *efficiency (more value per drop and more drops for less). It highlights avoiding or unlocking legacies inherited from the past - in ways of thinking as well as in technologies, business practices, and public policies - to create new business opportunities in the world of water. The story focuses on the 'H' of H20 - 'Huge' economic opportunities in this new, urbanized world through *innovations,* especially in technology. In *Hydro,* there is a strategic advantage to being the first to market with the flexible, right-choice solutions rather than being locked out. While the geographical focus of the story is China, *Hydro* raises serious questions about other parts of the world. Where else is urbanization at risk from a multitude of water challenges? Where else are governments and their societies likely to respond with market-enabled solutions? The implicit warning in this world of increasing hydro opportunities is that current business and technical solutions cannot be continually or effectively scaled up to solve the growing water stress. In addition, technical and efficiency-focused solutions are not likely to solve the resource allocation problems - that is, who should have the water?

Rivers* is the story of *security enough water of sufficient quality for both the haves and the have-nots. In this story, cast in the form of a cautionary tale, business recognizes that there are many different sides to security. Some businesses increasingly risk losing the license to operate where they are competing with basic human needs or are out of touch with political realities.
The story focuses on the '2' of H20 2 sides of the water question (although sometimes there are more than two sides); 2 sides of a water dispute - often, literally, on opposite banks of a river that divides one territory from another or between upstream and downstream interests; 2 ingredients for meeting future water needs - market-driven solutions *and* far-sighted government policies; and, most importantly, the necessity of solving water problems '2-gether', in partnership with other stakeholders. How do we allocate water fairly for all users in a community, not just the highest bidders? In ***Rivers*** business cannot choose to operate only in the economic realm, which is just one side of the management challenge, if it wants water *security.*

Ocean* is the story of *interconnectivity- accounting for the sustainability of the whole system. It focuses on how business begins to recognize its role in a world of bigger, more complex, interconnected, and dynamic water challenges and natural systems in which economies, societies, cities, and individual human lives are embedded. In the world of ***Ocean,*** business realizes that it cannot help particular communities survive and prosper at the expense of causing water stress elsewhere. ***Ocean*** is a world that offers new opportunities to help societies and governments achieve more inclusive and integrated forms of security. Like the entirety of the ocean, the enormous whole round '0' of the H20 scenario set is difficult to see, much less to act in relation to - but if we could imagine ...

Hydro
Hydro is the story of *unlocking* additional water sources and greater economic value from every available drop of water. It highlights the promise of technological and institutional innovation that might be released if some of the legacies inherited from the past - in ways of thinking as well as in infrastructure, business practices, and public policies - are transformed to create new business opportunities in the world of water. The story focuses on the 'H' of H20 - 'Huge' economic opportunities - as they might play out in China.

The Hydro Storyline: *More drops, more value per drop*

2005 – 2010: More and More Mega Cities
- Consume more and more water, leads to increasing water stress
- 2008 – 2010: In the Shadow of the Olympics
- Positive press coverage ignores increasing tensions between rural & urban (preferential treatment to urban and industrial)

2010 – 2015: Huge Opportunities
- China opens up its market to outside companies in attempt to bring best technologies; 5-yr plan to 2015, business is active participant

2015 – 2025: Hydro Economy
- China is spinning its water cycle faster "more value/drop" – Chinese solutions on global market take many by surprise

Rivers

Rivers is the story of *securing* water for the haves and the have-nots - including the business haves who increasingly risk losing **who uses the same stream"** the license to operate where they are competing with basic human needs and where there is political conflict over resources. The story focuses on the '2' of H20 - 2 sides of the water question (people and business, business and governments, rural interests and urban interests, industry and agriculture, individuals and communities); 2 sides of a water dispute - often, literally, on opposite banks of a river that divides one territory from another or between upstream and downstream interests; 2 ingredients for water prosperity - markets *and* far-sighted government policies; and, most importantly, the necessity of solving water problems '2-gether'.

In *Rivers* businesses can't choose to operate just in the economic realm - just on one side of the river - if they want water *security.* They must also engage with other stakeholders in the community, including partnering with local, provincial, and national governments to safeguard the interests of those segments of society who are unable to pay.

The Rivers Storyline: *security for all….in terms of quality and quantity*

2005 – 2015: Security Deficit
- Low-income and emerging economies lack safe drinking water – if they want clean water, they have to pay for it

2010 – 2015: Trust Deficit
- Increase media coverage – increased pressure on EU and US companies that operate in developing countries

2015 – 2020: Local Partnerships
- Increased number of PPP's, business help shaping policy

Ocean

Ocean is the story of how business begins to engage with political processes and multiple stakeholders in a world of bigger, more complex, interconnected, and dynamic water systems in which ecosystems, economies, societies, cities, and individual human lives are embedded. To navigate through this sea of complexity requires long-sighted policies and clear-headed leadership of networks. Like the entirety of the ocean, the enormous whole round '0' of H20 is difficult to see, much less to act in relation to - but if we could imagine ...

The Ocean Storyline: *Accounting for the whole system*

2005 – 2015: Unintended Consequences
- Asleep at the water wheel – more conferences, little action
- Floods continue because of mismanagement of climate change and mismanagement of ecosystems, deforestation in Asia, Rhine delta is under pressure

2010 – 2015: Global Fair Water Movement
- « Need global standards to guarantee right to clean water for all humans on planet »

2015 – 2020: Water Footprints
- Drive for bio-fuels in Southern Europe increases pressures on scarce water resources – companies start to report on their water footprint

2020 – 2025: Networked Global Governance
- Companies with large water footprints engage in virtual water trading on basis of fully priced externalities - emergence of water-based economic zones

Some messages from the scenarios

Some of the companies initially involved in the project came up with messages from the scenarios based on a workshop discussion. Examples:

Related to 'H' – **Hydro**
- Technology is only part of the solution
- Appropriate solutions involve participation and partnerships and are not necessarily 'high tech'
- Relevant innovation is driven locally

Related to '2' – **Rivers**
- Business cannot buy its way out of water problems
- Business must engage and negotiate outside its fenceline, within the territory of the 'other', in order to secure its activity
- Creating trust helps to secure the license to operate

Related to '0' - **Ocean**
- Take into account the changing water context in order to anticipate risks that stem from far outside your current business model or comfort zone
- Connect all the components into a whole system to create opportunities to which you would otherwise remain blind
- A new level of accountability and governance is required

Navigating with the WBCSD Water Scenarios

Where Do These Stories Lead? For those who had the good fortune to participate in this scenario process, the stories have helped to think, see, and act differently about water. The process has helped to see the 'obvious' (what we already knew) in more focus. It has provided us with new information and insights and given the inspiration and incentive to imagine some of the complexities that the water future will bring.
Our understanding of the factors driving change - the five 'Ps' (planet, people, past, politics, policies) - leads us to believe that the water challenge facing our world is potentially as serious as climate change. To face this challenge, we isolated just three of the many themes to which businesses, individually and collectively, need to pay special attention, and in relation to which they can contribute and make a difference: *innovation, security and allocation,* and *connectivity.*
Each of us is now faced with the need to do something useful with what we have gained.
Conscious of this need to disseminate understanding so that it can contribute to action and change, we conducted an exercise in the last part of our final workshop. Participants heard the stories and then were asked to come up with key messages, lessons, or challenges for each scenario and for the scenarios as a set.

Messages **from the** Scenarios as a Set:
- Business cannot survive in a society that thirsts.
- You don't have to be in the water business to have a water crisis.
- Business is part of the solution, and its potential is driven by its engagement.
- Growing water issues and complexity will drive up costs.

Our Vision - The H20 Scenarios as a Platform for Action
Water issues are very complex and interconnected. Business is one actor among many in the world of water. It has an important role to play in meeting the emerging challenges and opportunities. We see business as being a part of the solution. Each business must play its part, as well as working with others.
A first step is for individual companies to reflect on the implications of the evolving waterscape for their own strategies and plans. The scenarios provide a set of alternative strategic contexts for enabling this reflection. This should help every company to have a clearer and more robust strategy to guide its future actions where water is concerned.
These scenarios can also be used to support engagement among diverse groups of businesses, such as the member companies of the WBCSD. Businesses can take constructive action together when they have a clear collective view of the challenges and opportunities posed by each scenario and the common implications of the scenarios as a set.
A further step is to engage with non-business stakeholders to explore and mobilize in relation to shared water challenges. These scenarios offer a platform for such discussions the stories do not represent anyone actor's perspective or one sector's position. Instead they aim to provide a neutral space in which a much wider set of options can be considered. In the complex world of water, multi-stakeholder dialogue is an essential first step towards mobilizing and sustaining collaborative action.
The above suggestions indicate some of the ways the WBCSD Water Scenarios can help a range of organizations and partnerships navigate the complex and dynamic waterscapes that are unfolding from local to global levels. Interconnected water challenges are beyond the responsibility and capability of a single organization or institution. The scenarios can support a move beyond talking to social learning and the forging of frameworks and partnerships that are needed to anticipate and adapt to these interconnected concerns.
Our vision is that businesses - together with others everywhere - can play an active and responsible

role in ensuring socially equitable, ecologically respectful, and economically viable water management.

Some Questions for Discussion
Getting together to read and discuss the WBCSD Water Scenarios provides an opportunity for individual and institutional learning. The following questions are suggested as useful tools for anchoring initial discussions, but are aimed at providing guidance rather than being prescriptive. We hope that readers will be able to generate many more specific questions of their own.

Related to 'H' – **Hydro**
- Which legacies need to be unlocked to drive innovation?
- Where will cities face big water challenges?
- What appropriate solutions can you see and reach?

Related to '2' – **Rivers**
- What happens if the water haves and have nots issues are ignored?
- What constitutes fair water use, and who will decide?
- How can water conflicts be avoided?

Related to '0' - **Ocean**
- What happens when the whole system isn't taken into account?
- How can virtual water be made more transparent?
- What are the tensions and trade-offs in managing water resources and allocation at local and global levels?

What Business **Can Do**
Businesses can take many actions - individually, collectively, and in partnership with others - to address the evolving water challenges.

a) Water footprint solutions
- Reduce the use of water and pollution discharges/wastewater flows throughout the supply chain.
- Don't assume water will always be here.
- Produce products and services that reduce water usage and/or discharges by the end-user/customer.
- Help develop and promote appropriate solutions that take into account different contextual realities, such as culture, affordability, water scarcity, climatic variability, and economic diversification.
- Recognize that costs will go up, and water availability will come down - reduce consumption and save money.

b) Partnership opportunities
- Look beyond the plant/site boundary and fenceline/supply chain.
- Help raise a wider awareness of the water challenge.
- Be proactive in the local community, recognizing the opportunity of new markets.
- Contribute clear messages to political leaders about the importance of water policies and their equitable and consistent implementation.
- With other stakeholders, attempt to create a clear set of water principles.

Wider Questions on Water Issues
Businesses can also use the scenarios as a context for conducting a SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) - What are their company's specific *Strengths* and *Weaknesses* in each scenario, and how do they match with the more generic water *Opportunities* and *Threats* posed by each future? Again, the following list of suggested questions can be used to help anchor and initiate this sort of strategic conversation:

- How is your business dependent on water for its success today upstream, midstream, downstream?
- Do you know and understand your water supply, treatment, and disposal context? Do you know the influential institutional and/or governmental individuals who deal with water in your business community?
- Can you assess your water footprint? What measures do you have in place to monitor water use? What do your competitors do? What is best practice?
- If the quality, availability, or cost of water for your suppliers, yourselves, or your customers/ consumers changed significantly (x2, xlO) in the next 5, 10, or 20 years, how would your business be affected? Do you consider water in your long-term strategic planning?
- What are the generic opportunities and threats in each scenario? Who is the prime mover - that is, which organizations and institutions are setting the standard?
- Reading the scenarios - ask yourself not "whether", but "what if" - how would your business be affected if this future came true? Which aspects of each scenario are particularly relevant to your products and services? What other water dimensions need to be added? Which water challenges and opportunities seem most relevant to you as a citizen? A consumer? A businessperson?
- Considering the scenarios as a set, what do you now think are the biggest risks and opportunities for your business' operations, investment decisions, products, or services in an increasingly waterstressed world?
- Who might be new partners or stakeholders in judging your business operations or in

providing new and better solutions to grow your business?

The Water Scenarios in the WBCSD
Individual member companies within the WBCSD plan to use the scenarios within their own organizations. In addition, as it continues its work on water, the WBCSD will provide a platform for sharing experience and insights gained through the application of the scenarios. It will also make the scenarios and related material available to partner organizations in the WBCSD Regional Network. Other projects of the WBCSD work program will use the scenarios to assess possible implications for their areas of focus.

Special Focus in recognition of Zaragoza Thematic Week 9: Energy & Water Nexus

Since 2005, the WBCSD has had "Water and Energy linkages" on the radar screen because we seek to better understand this interconnection in order to support companies' decision-making processes in the future. Some of the linkages belonging to the Energy & Water Nexus are addressed under the WBCSD 'Ocean' scenario.

The Linkages, four main points:
1) Water for Energy and Energy for Water;
2) Increasing Incomes – the Energy and Water Ladders;
3) Water, Energy and Climate Change;
4) Looking ahead.

1. Water for Energy and Energy for Water
- If we are to achieve water and energy security, the connection between the two must be recognized and acted upon. Looking at water use and energy use simultaneously generates valuable insights that do not arise from separate policy analyses of water and energy.
- Greater energy security requires a more reliable, abundant, and predictable source of water, a resource that is already in short supply throughout the world.
- The growing imbalance of water supply together with a growing demand will therefore require a more efficient use of energy in water and wastewater technologies.
- In France during the heat wave in 2003 electricity production was reduced because of cooling water withdrawal limitations because of temperature and river flow.
- China uses 15% of total water withdrawals for energy production, mainly in coal-fired thermoelectric plants. This percentage has been steadily growing.
- Biofuels is an important topic, and the WBCSD is working on assessing pros and cons of bioenergy from many aspects of sustainable development. One aspect of particular interest to the Water Project of course, is how much water is needed to produce the same amount of energy from biofuels compared to traditional sources.

2. Increasing Incomes: the Energy and Water Ladders
- Energy demands increase with income – at low income cheap energy is used for cooking and heating, whereas as income increases, people use energy for refrigerators, transport and cooling. We call this the Energy Ladder.
- Energy demand is forecasted to double in 2050, which will put new demands on water.
- Many new technologies will be more water intensive: A hydrogen economy would require even more water.
- At the same time, water use increases with wealth too: people with low income use water for survival: for drinking, cooking and washing… but as their income increases, water is used depending on lifestyle choices, like Jacuzzis and swimming pools. We call this the Water Ladder.
- The dilemma here is that water enables us to move up the energy ladder, and energy enables us to move up the water ladder: you need water for hydropower, but you also need energy for your Jacuzzi. How can we encourage economic growth and development for all, while keep these two fundamental resources from feeding off each other continuously?
- So far, the conversations and progress we have made to date has been in identifying the key drivers, and ensuring that water is on the energy & climate agenda. The Water Project at WBCSD aims to get water higher up on the Water & Energy agenda.

3. Water, Energy and Climate Change
- A third pillar must be considered when considering linkages between Water and Energy – that of Climate Change.
- The Energy & Climate Focus Area at the WBCSD have a specific workstream on Adaptation to Climate Change.
- The group has already identified that many of the key impacts from rising global temperatures are linked with water availability. They include rising sea levels (leading to salination of groundwater reservoirs due to aquifer penetration by raising seas), increased water stress due to changing precipitation distributions, droughts and floods, increased incidence and severity of storms.

4. **Looking ahead**

- The complex interrelations between water and energy – or the so-called Energy & Water Nexus – is already presenting risks and opportunities for business.
- Risks can be for industrial users in water scarce areas that are likely to face increasing pressure to conserve water, and where there is a potential for conflict and risks to license to operate; Flooding of water supply works located in riverine locations leading to supply disruption; Infrastructure upgrade costs and damage from sewer flooding, associated with flash floods.
- Opportunities also exist in terms of increased demand for water-saving technologies and services.

Further information: www.wbcsd.org