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THE BLOG

The Hidden Water Crisis: From Sharing Resources, To Sharing Scarcity, To Dealing With Non-Availability

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MARK MAWSON VIA GETTY IMAGES



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Over the last month I have been invited by Governments and Corporations around the world to debate the outcomes of COP21 and the impact on business models, focusing mostly on electricity. At the majority of these meetings I was asked to comment on the water energy nexus (the link and interdependence of these two systems) and was interested to see how this issue was either considered as urgent and very important or conversely ignored or left in full denial.

This isn't something new; the news of accelerating water shortage isn't anywhere near as visible as it should be, despite its urgent reality. However, I realized the countries I visited recently, Saudi Arabia, India, South Africa and Brazil, have one worrying common denominator, severe surface water issues leading to a fast depletion of underground water.

Saudi Arabia uses ten times more groundwater than nature is able to replenish, which equates to projections that the Kingdom could run out of water in [the next 13 years](#). Eight-eight percent of Saudi Arabia's water is used for agriculture and

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historically 91 percent of that is from groundwater. The situation is now so dire that we can see examples of Saudi organisations buying land in California and Arizona to grow food and feed to [ship back to Saudi](#). Essentially spending hundreds of millions to use water in the U.S. to preserve their now very scarce reserves.

Being in India to speak at a large-scale utility conference there, I was already aware of how severely water stressed the country is, with the world's worst crisis of ground water availability, coupled with the fact that half of it [is contaminated](#). Unfortunately no water or very polluted water are the only options for a large part of India's population, with known consequences on health. On 29th February this year it was reported that the water crisis would affect 5 million people in Delhi that day; in Delhi half of the water is lost because of bad connection and poor maintenance.

The impact on the water energy nexus is immediate; just one example is low water levels in West Bengal forcing the National Thermal Power Corporation's Farraka coal-fired plant to be shut down, causing severe outages.

Over to South Africa, we see the same issues again. Renewable freshwater accounts for 24 percent of total withdrawal, and agriculture accounts for 57 percent of use. Wastewater treatment networks have been poorly maintained and need serious investment in order to stop contaminating rivers and lakes. Due to a lack of water infrastructure in rural areas of South Africa, 74 percent of the rural population is entirely dependent upon groundwater. The water energy nexus is already under stress, as lack of power is jeopardizing the integrity of the water system and water shortage is creating a problem for the cooling of the plants on which the electricity system relies.

When in Brazil, I saw another side of the equation, mismanagement and political denial, specifically in Sao Paulo. This is a region that should never be under water stress but mismanagement has meant that water is now one of its biggest issues. During the last two years, the Sao Paulo Water Company has had to organise interruption of supply and deliver water by army-guarded trucks. It was also revealed that one third of water is lost in Sao Paulo through old pipes and bad connections because of [general mismanagement](#).

In 2014 the water situation was already a problem, however because of the World Cup and election the crisis was hidden. No major party mentioned the possibility of rationing even when the reservoir only stood at 20 percent capacity. Soon after the election the truth was revealed and rationing started together with emergency investment. Amazingly, last week, because of a good wet season that put some of the reservoirs back to 45 percent (still well below the normal historical level) all the measures of rationalization have been lifted...as the coming election requires.

So what will happen when truly difficult times arrive? The politicians will first preserve the public use of water; the fire stations, hospitals and the necessary emergency infrastructure for humanity to exist. Next in line will be agriculture; food and feed that still have lobby strength and voting power in most of these countries. So in the ranking the first thing that will be cut off will be industry. We will go from sharing resources, to sharing scarcity, to dealing with nonexistence.

We already have seen this to some extent in India where the population from a village violently shut down a beverage factory, believing that the factory was using water needed for the community. Some organisations are already anticipating this and are taking steps to organize themselves. Giant companies such as Coke and

Nike are changing their business model and technologies to reduce water in their supply chain or processes. In recent times Nike has announced a new technology that eliminates the use of water from fabric dyeing, and Coca-Cola's strategy extends to watershed protection and sustainable communities, with the goal of replenishing the same amount of water that it uses. Veolia has developed technology for reducing use, recycling and reusing water for industrial processes to answer these growing needs.

Banks and investors are now looking at water access as part of the evaluation criteria for the risk level of their portfolio and rating agencies are also focusing on that risk category.

Population growth and changing habits, overuse and climate change will deeply disturb the global water equilibrium in some regions. To use without precautions the limited and fragile underground water reserve, just because we do not physically see them being depleted or polluted, is a real danger.

To mitigate this risk we have to leave the Denial Zone, tell the truth to the users and rely on the courage of our leaders. We then need to put a governance model in place to preserve the resource and administer its use. This is a difficult step, especially for groundwater where multi-country governance will be needed.

Infrastructure investment in recognition of services rendered by nature will have to be accelerated and finally a true price of water will be necessary to deal with this ticking time bomb for local communities and society in general.

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