Reporting by Rob Worthington-Smith

Water: FOR FACTORY, FARM AND FAMILY

Finger-pointing alone will not restore the purity of our country's water supply. Corporate South Africa therefore needs to realise that together we sink and together we swim. And only together can we responsibly govern our use of this most precious of all our country's rich commodities.

Over the long term, climate change experts are predicting that the distribution of rainfall over southern Africa will change, worsening the existing imbalance such that rainfall over the eastern half of the region is expected to intensify, while the western half will become yet more arid than in the present day.

Rising demand, falling supply

Aside from long-term climate change, our anxiety around water relates to the availability of clean, fresh water. South Africa's population continues to rise, as does per capita wealth. Both factors increase the demand for water. Meantime, industries are employing more sophisticated production processes, and these demand much higher levels of water purification than ever before. Agriculture, food and beverage processing are sectors that demand surprisingly large quantities of water per unit of product, and such water needs to be of the purest quality.

Making water fit for industry and fit for drinking ultimately places further demand on the nation's energy supply. Significant energy is required to lift water over hills and to push it through filters. Desalination plants recently installed in Garden Route towns to alleviate drought-induced water shortages have proven the feasibility of this emerging technology, but at significant additional cost to these municipalities' energy bills.

A poisonous legacy

On the other hand, it takes only one pollution incident, such as a wastewater effluent spill from a factory, to completely ruin the drinking quality of an entire downstream river system. Clearly, our first area of focus to improve water supply should be to prevent fouling of the existing water resources at our disposal.

Acid mine drainage (AMD) is a prime example. AMD occurs when pyrite and other sulphide minerals in mine wall rocks, waste rock piles, low-grade ore stockpiles and tailings deposits oxidise in water, resulting in the formation of sulphuric acid. There is no doubt that South African gold mines operated within the bounds of the existing legislation. And while the many operational mines were removing excess water, the problem remained intangible. Now, in the industry's sunset years, it has become clear how irresponsible and unsustainable this behaviour was.

The government-convened *Team of Experts*' report, released in February this year, recognised that the problem would cost well more than R1 billion and would take many years to bring within manageable levels.

But who would pay? The report makes the obvious point that passing on the costs of pollution by historical mining activities to other water users would be unfair. Whilst some of the costs could be defrayed by selling various by-products of the cleaning process, the larger portion would have to be born partly by currently operating mines, partly be the state, and partly by raw water tariffs and waste discharge charges. The original culprits, of course, have long ago extracted their bounty before abandoning the sinking ship.

Other industries face similar legacy challenges. ArcelorMittal SA, formed in 2004 following the unbundling of Iscor in 2001, inherited serious legacy pollution challenges, culminating in a swoop by the Green Scorpions in 2007, closing their hazardous waste dump site in the Vaal catchment area. 'Worst-case scenario' clean-up costs for water pollution are estimated at R1.5 billion, according to Siegfied Spanig, ArcelorMittal SA's general manager for the environment.

Corporates can be a part of the solution

From a reputational point of view, companies need to determine whether they are part of the problem, or part of the solution. It won't take long before thirsty households direct their gaze straight at the factory gate when taps run dry.

While the Department of Water Affairs (DWAF) has done a good job storing and redistributing fresh water for extraction by municipalities across South Africa, a major challenge being faced is the lack of management capacity at municipalities, in particular those in rural areas. Few municipalities can claim not to waste at least a third of the water in their systems through leakage, with some losing even more than two thirds, according to a 2007 CSIR report. Further, many municipal wastewater treatment works are also not producing effluent that meets DWAF standards.

When drought strikes, as happened recently in the Southern Cape, stressed municipalities found themselves literally running out of water, a situation that, for the communities concerned, was even more disastrous than the power cuts experienced in the Western Cape two years earlier.

It takes a natural disaster such as this for humankind to truly understand the interrelations between the state, industry and society. Amongst those companies that responded to this crisis were PetroSA and Nestlé.

PetroSA, the National Oil Company of South Africa, invested R80 million towards the construction of a desalination plant capable of producing 15 million litres of water a day to alleviate the impact of drought in Mossel Bay and the Southern Cape. The balance of the R210 million cost of the facility was born by the National Treasury and the Mossel Bay Municipality.

Following good rains this winter, the plant will not be immediately needed; however, it stands by not only for municipal use, but also to provide water to operate PetroSA's local Gas-to-Liquid (GTL) refinery.

Other measures introduced by PetroSA to save and manage water usage in Mossel Bay include:

- The recycling of 60 m^3/h of storm water at a cost of R8 million,
- The recycling of 170 m^3/h of treated effluent,
- A R22.5 million investment in an effluent water purification project run by the Mossel Bay Municipality.

Nestlé is another major corporate player that responded to the Mossel Bay drought situation. Nestlé had already identified effective water resource management as a strategic issue and "one of the three key focus areas of Creating Shared Value," according to its website. The Mossel Bay drought was an early test of the company's commitment to the decentralised management of water at the watershed level, and the local operation immediately responded by reducing its water use by 54% in seven months in 2010. It achieved this through purchasing more efficient equipment that recovers water through condensation, shortens automatic wash times and modifies hosepipes to reduce flow. These mechanical changes were combined with an awareness campaign and close monitoring of water use in order to guide further planning of water management initiatives.

Group-wide, Nestlé has already reduced its freshwater withdrawals from 4.5 to less than 1.5 litres per US dollar of sales, and is seeking further efficiencies. The company's leadership on this issue and its supply chain management efforts led to Nestlé being awarded the Stockholm Industry Water Award at World Water Week in Sweden in August 2011.

SAB – share the risk and collaborate

For a company like South African Breweries (SAB), a sustainable supply of clean water is crucial not only for the contents of its beverage products but also for its processing and the original cultivation of key ingredients like barley and hops. This strong reliance has prompted SAB to take its relationship with water seriously.

As the South African subsidiary of one of the world's leading brewers, SABMiller, SAB is well aware that water security represents a critical risk, but a risk it does not face alone. "Water is a resource risk we share with the government and broader society," explains Andre Fourie, head of sustainable development at SABMiller. "When this is understood by all parties, the case for collaborative action between users is easily made." Underlining this policy, SAB has formed a Water Futures Partnership with WWF and the German technical agency GIZ aimed at raising the profile of water conservation, building credibility for co-operation, and conducting in-depth studies of water risks and management options.

SAB has developed a water plan based on four pillars:

1. Optimise water use in the brewery, using less water to make more beer and manage effluent standards
2. Work with the supply chain, including farmers, to identify water risks and options to reduce water use
3. Assist communities through CSI projects that will provide safe drinking water
4. Address water governance – to keep water on the SABMiller strategic and risk agenda, mobilise staff to save water, engage government on policy issues and deliver on the Water Futures Partnership.

This strategy is backed by a variety of SABMiller initiatives that include becoming a founding signatory to the UN CEO Water Mandate, conducting local watershed risk and business water risk assessments, carrying out water footprint analyses and setting a target of reducing its water consumption by 25% per hectolitre of beer brewed by 2015. SABMiller has also recognised that water risks must be addressed at the local level, and thus has mandated each local business to assess its own risks and develop specific action plans.

Food and beverage companies have an obvious self-serving interest in championing responsible water management. Water makes up their product and they use a lot of it per unit of end product. But what about the rest of corporate South Africa? Are those of us who rely on water for production and across our value chains any less exposed?

The reality is that many companies use great volumes of water and degrade its quality on discharge, burdening other users and the environment. Not only will irresponsible practices not be allowed to continue, but corporate reputations will be placed squarely on the line as this issue gains further media attention.

Sasol taking on water demand management

Sasol's sustainability reporting reflects a strong commitment to using its industrial strength to partner with impoverished communities within reach of its operations. Recognising that it shares dependency on water resources with other users, Sasol is exploring opportunities to support water demand management across the catchment feeding the Vaal system. In particular, the company sees significant water saving opportunities through helping to reduce physical losses in urban water supply systems.

New technologies at some Sasol plants have increased water efficiency by over 30% and Sasol is implementing designs that produce zero liquid effluent. At its Secunda plant, Sasol invested R500 million installing water treatment processes to recover water-based effluent for re-use, saving 18 megalitres per day (about 5% of the plant's total raw water intake). Sasol is also investigating the use of treated sewage effluent as a substitute for other water sources for some of its processes.

The lesson: don't mess with a fundamental human right

What if companies don't respond to the challenges of responsible water use? There will be consequences. Firstly, competition for water will lead to increased cost and possible water shortages – some illustrated above. Considering the role of water as a fundamental human right, companies not responding responsibly will risk serious reputational damage. Finally, government, recognising the shared nature of responsible water stewardship, will have its hand forced to impose strict legislation and expensive levies that will affect those users who aren't implementing well thought-through water conservation strategies.

South Africa has seen the consequences of the failure to provide basic needs. Power shortages were disastrous for the South African economy, often bringing the country to a complete standstill. Water, arguably, represents an even more essential need than electricity. There are no alternatives to fresh water – we can survive barely more than a day without it. Now is the time to plan ahead and ensure both industry and communities can share this resource sustainably into the future.