

MASTERS DEGREE IN ENVIRONMENTAL MANAGEMENT

PART-TIME OVER TWO YEARS

**“SUSTAINABILITY DEPENDS ON FUNCTIONING
ENVIRONMENTAL SERVICES”** (Prof MT Seaman)

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STRATEGIC ACADEMIC CLUSTER: WATER MANAGEMENT
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WATER FOOTPRINT

– Improving business water use, step by step

The water footprint has gained a global foothold since its introduction a decade ago. Lani van Vuuren explores this tool and its potential application in the corporate world.

These days it is not uncommon for people to know exactly how much water it takes to produce a glass of red wine (about 120 ℓ), a kilogram of rice (2 500 ℓ) or even an average-sized pizza (1 260 ℓ). The so-called water footprint concept, first introduced in the Netherlands in 2002, is now used internationally to create awareness around the water consumption and pollution of consumer products, within catchments and even countries.

Like similar tools which raise awareness around water use efficiency, the water footprint is becoming increasingly important, especially for South African corporations as they find themselves having to share a scarce resource with the socio-economic needs of a growing population as well as having to meet ecological requirements.

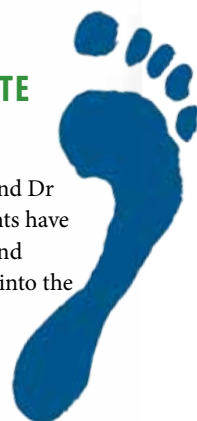
But what is the water footprint and how does it work? According to a new Water Research Commission (WRC) report on the applicability of water footprints in South Africa, a water footprint is an indicator of freshwater use that considers the direct and indirect water required

to produce a project, measured over the full supply chain. The report, authored by Elizabeth Hastings and Dr Guy Pegram forms part of a larger WRC project lead by Pegasys Strategic Management into adapting water footprints for South Africa.

“The water footprint concept was developed to raise awareness that for inclusive sustainability management, one should go beyond direct water use as the only impact a process, product, producer or consumer has on the water cycle,” explains Dr Marieke de Groen of SSI Water Management. The consulting engineering firm now offers water footprint services to South African companies. “As such the water footprint includes the consumption of surface and groundwater (so-called ‘blue’ water), evapotranspiration of rain water (‘green’ water), as well as the effect of effluent (‘grey’ water).”

BENEFITS TO PRIVATE SECTOR

According to Hastings and Dr Pegram, water footprints have the potential to bring new and important decision making into the





water debate in a way that is intuitive and cuts across sectors. “Additionally, water footprints create an opportunity for companies to join a global process of disclosure, understand risk and integrate an understanding of water into planning decisions. With this potential, the concept of water footprints has gained significant traction in the past ten years in the private and public spheres across a variety of sectors.”

Much of the corporate risk literature discusses that because corporates use water in operations, they may face water risk in terms of physical limitations, reputational risks, social risks or regulatory risks. Water footprint adds another dimension to this in that it highlights the importance of supply chain water risk, as it indicates not only direct water use but also indirect water use such as that required by raw materials (think of cotton that needs to be grown to manufacture jeans, for example). “Companies are now beginning to understand that the most significant water risk may fall outside of their internal operations and instead be located in their supply chains,” the WRC report authors say.

A further benefit is the potential use of the water footprint as a benchmarking tool to understand supply chain water use as a starting point, and track improvements. Water footprinting could assist with benchmarking products within a company or between companies.

In South Africa, where water scarcity is a persistent reality that most companies have to grapple with, using tools such as the water footprint can help them identify their level of vulnerability to current and future water availability, while evaluating the potential contribution of a more environment-friendly way of operation in terms of risks, costs and good stewardship, notes Dr de Groen. “In addition, since water is shared among various users in a catchment, companies can also use the water footprint to determine what their share of water use is and how this is influencing

the livelihoods of communities in the areas where the suppliers of the companies are located.”

At present, the food and beverage and textile sectors are most active with water footprint assessments, as the tool helps to understand significant upstream supply-chain risks. These are industries with a large reliance on agricultural inputs, which use significant volumes of water. Consumer products and the cosmetics sector, which have large downstream water implications, are also becoming interested.

The WRC report notes that the water footprint concept has not found traction to date in industries such as chemicals or mining. This is most likely due to the fact that direct water use and wastewater from operations are the most significant concerns, rather than water use elsewhere in the supply chain.

LONG ROAD TO SUSTAINABILITY

It is important for companies to note that undertaking a water footprint exercise alone will not solve its water issues. In fact, calculating the water footprint is but the

first step in a company’s long-term journey towards more sustainable use of water resources, says Dr de Groen. “A water footprint is merely a snapshot of current water use and effluent generation – an aerial view of current activities that serves to highlight where the main impact is on water use. It still requires detailed assessment as to whether this water use or water pollution is a problem. Once these hotspots have been identified, a company will have to undertake more detailed analysis to enable improvement in these areas.”

The challenge is not only to work on potential risks for the quantity and quality of the water supply to the company, but also to determine the environmental, economic and social impact of water consumption of the company. “This will require local assessment of water availability, water demand, water efficiency and water risks. A company that values sustainability will use company risks and opportunities, as well as external impacts in choosing between mitigation measures,” notes Dr De Groen.

Water, or the lack of it, is bound to become an increasingly important conversation point within company Board rooms in the near future. As the tightrope between water supply and demand is pulled tauter companies will have to take more deliberate steps towards improved sustainability. 

FROM WATER DROPS TO DROPS OF BEER



One of South Africa’s international players to have their water footprint assessed recently is SAB Miller. The company teamed up with WWF to determine where water is being used in its businesses as well as the context of water use. The total net water footprint for the brewer’s South African operations (excluding grey water) was found to be 421 billion litres – equivalent to 155 ℓ of water for every litre of beer produced. The local cultivation of crops was found to be the dominant water consumer at 84,2% while another 14,1% of the water footprint was derived from the cultivation of imported crops. This means that 98,3% of the water footprint of the company is related to the growth of crops. SAB Miller is now considering how it can reduce its risk by exploring water savings initiatives for barley farming.