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The WRC operates in terms of the Water Research Act (Act 34 of 1971) and its mandate is to support water research and development as well as the building of a sustainable water research capacity in South Africa.

TECHNICAL BRIEF

Water policy

Applicability of water footprints in South Africa

The WRC is investigating the applicability of the international ideology of Water Footprints for South Africa. An interim report providing the initial comprehensive literature review is now available.

Water footprint – an indicator

A water footprint is an indicator of freshwater use that considers the direct and indirect water required to produce a product, measured over the full supply chain. A water footprint also considers the origin of the water used, and considers both water quantity and water quality impacts by differentiating between blue, green and grey water.

Potential

Water footprints have the potential to bring new and important decision-makers into the water debate in a way that is intuitive and cuts across sectors and create an opportunity for companies to join a global process of disclosure, understand risk and integrate an understanding of water into planning decisions. However, the water footprint as a tool is still developing and many conceptual and methodological questions remain.

Contribution to industrial sector

The purpose of the WRC project is to understand how water footprints may contribute to sustainable management of water in South Africa, primarily in the industrial sector, and to explore linkages between water and energy and the concept of water offsetting.

An interim study reviewed the international experience and methods for water footprinting, and explores linkages with carbon, energy and offsetting. It also summarises the purposes for which water footprints are being explored in the industrial sector, and highlights questions that must be addressed to use the water footprint as a reliable and meaningful indicator.

Offsetting, carbon and energy

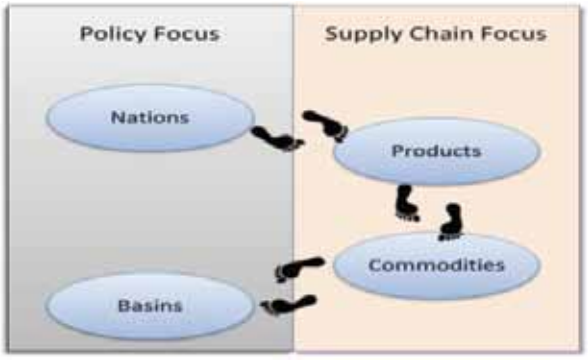
The differing nature of carbon and water introduces complexities when exploring the potential of water offsetting. Most importantly, it is assumed that carbon emissions have a global impact and may be offset at a global level. Conversely, water is a local resource and must be offset at the local level. Thus, any offsetting effort must track the geographical location of water use through the supply chain and to a point of sale, and must offset in the same geographical location as water use.

Trade offs

Water and energy are linked as each is required to provide the other. Additionally, there are often trade-offs between water and energy, where becoming more efficient with one leads to less efficient use of the other. As carbon footprints can represent implications of energy use, carbon footprints and water footprints may be helpful in illustrating and clarifying the connection between water and energy, and understanding trade-offs.

From commodity, to product, to basin

Water footprints have been completed for nations, products and companies, commodities and markets, and river basins. Through these different applications, the methodology and the purpose of the footprint have evolved as well. While the



first footprints focused on consumption by country, many footprints now have much more of a production focus and are targeted at specific products.

Two fundamentally different streams of water footprints exist. One stream has a policy focus, and includes nation and basin footprints which are intended to help understand trade, agricultural or other policy issues. The second stream has a supply-chain focus, and includes product and commodity water footprints which are intended to help understand risks and dependencies. The water footprint studies conducted in each of these streams have very different purposes, and the approach and methodology should be informed by the intent.

Implications for South Africa

Water footprints have gained significant traction in the private and public spheres across a variety of sectors. This is partly because a water footprint is an intuitive concept which enables it to be used as a communication tool with people outside of the water resources management sector.

- ***Tools for efficiency and awareness –*** Tools which can inform efficiency and raise awareness and create dialogue with people not previously involved in water debates are potentially very useful. Water footprints have the potential to contribute in this way, bringing new and important decision-makers into the water debate in a way that is intuitive and cuts across sectors.
- ***Case studies –*** The case studies have shown that in the private sector, the applicability of water footprinting has been explored for three broad purposes:
- ***Disclosure and reporting*** – This is the simplest use of a water footprint because the volume of water use is sufficient in itself, without having to understand the impact of that water use.
- ***Risk filter*** – Understanding supply-chain dependencies, and the origin of water used in the supply chain.
- ***Planning and decision-making*** – The most complex way as it requires a full understanding of the environmental, economic and social impacts of a water footprint, and an understanding of opportunity costs and trade-offs.
- ***Indicator*** – Significant questions must still be addressed in order for water footprinting to be a reliable and meaningful indicator. These include understanding the impact, water quality, and integrating complexity and nuance.

Future actions

The key questions outlined above have important implications for the applicability of the water footprint concept in South Africa and must be addressed. The next steps of this project, including the development of a framework and case studies, will seek to address these gaps.

Further reading:
To obtain the report, *Literature Review for the Applicability of Water Footprints in South Africa* (**Report No. 2099/P/11**), contact Publications at Tel: (012) 330-0340; Fax: (012) 331-2565; Email: orders@wrc.org.za or Visit: www.wrc.org.za to download a free copy.