

Agricultural water use in the spotlight during talks on SDG 6

On the 23rd and 24th of July, the Academy of Science of South Africa (ASSAF) co-hosted a workshop on the achievement of Sustainable Development Goal (SDG) 6 with the Department of Human Settlements, Water and Sanitation. SDG 6 focuses on the provision of access to clean water for all, and includes critical subobjectives relating to water quality, management and efficiency.

Agriculture once again came under the spotlight as it is the largest water consumer in South Africa, accounting for roughly 61% of the country's water consumption. As it stands, South Africa is rated the 30th driest country in the world and the effects of climate change is likely to place even more strain on the country's water availability. At the same time, our population is increasing and the need for domestic and industrial water consumption will consequently rise, resulting in even more competition for water resources between sectors.

This is a stark reality which the agricultural sector and the current figures do not look good. Regarding SDG 6.4, the FAO prescribes a methodology to measure efficiency that places the focus on Gross Value Add to the economy. According to this measurement, the efficiency of various sectors is determined by the gross value add to gross domestic product per cubic meter of water consumed. Primary agriculture contributes a maximum of 3% to GDP whilst it uses two-thirds of South Africa's water. Its efficiency rating therefore appears very low as it generates less than one US dollar gross value adds per cubic meter – this compared to manufacturing which produces nearly 18. When one looks at these metrics cold, it does not paint a pretty picture for agriculture. However, it would be a mistake to do so as it belies the context.

Context is extremely important. Firstly, the 3% GDP figure is very misleading as it supports an upstream and downstream value chain that accounts for close to 14% of GDP, not to mention 25% of the aforementioned manufacturing sector. The metric of \$1 GVA of agriculture compared to the \$18 of manufacturing is a misnomer as the manufacturing sector relies substantially on the water provided to agriculture. In other words, it is not \$1 compared to \$18 in reality as the \$18 figure would not exist without the water allocated to the agricultural sector.

Secondly, the metric only measures the quantity of water abstracted but does not consider the quality of the water used nor the cost of supplying same. Agriculture generally abstracts raw water from surface or underground water sources. The on-farm infrastructure is directly financed by the sector itself and irrigation schemes are indirectly financed by the sector through the water infrastructure component of the water tariff. The water is also untreated at the abstraction point. In contrast, the manufacturing industry, admittedly with exceptions, generally uses potable water delivered to their facility through municipal infrastructure. When only measuring the GVA of the sector divided by the quantity abstracted, one fails to account for the significant subsidy in treating the water and delivering it via municipal infrastructure. Finally, many irrigation schemes use water which would otherwise flow out of the system into the ocean, and in certain instances agriculture uses the excess water discharged from cities after it is used for industrial and domestic purposes. Agriculture therefore often does not have the first right to water, but uses what is left after other sectors have used their fill.

Finally, a simple analysis of GVA fails to account for the non-financial benefits of the agricultural sector. Agriculture is generally the largest water consumer in most countries that rely on own production for their food security. Own-production, opposed to relying on imports, provides greater security against fluctuations in currency and trade dynamics. It also brings down the price of food from import to export parity price. The result, is the substantial benefit of affordable and available food supplies for the county, which has socio-economic benefits that cannot be measured in Rands or US dollars.

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Whilst the figures may not paint the full picture, there is, however, little doubt that water use efficiency must remain a top priority for the sector. The mandate is a daunting one; to grow the agricultural outputs and employment whilst the relative allocation to the industry is likely to decrease. The application of water saving management practices and biotechnology will be absolutely key in this regard.