BIZCOMMUNITY

SDG 6: There is no life without water so give it the attention it needs

By Belinda Carreira, issued by SAICA

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Can you imagine living without clean water and sanitation? Waking up and not being able to have a hot shower, clean water to brush your teeth, flush your toilet or prepare your coffee? For most of us, it's only when our water main breaks or when Cape Town almost ran out of water in 2018 that we begin to feel some of the discomfort that so many people in our country live with on a daily basis. It's only, as the famous quote from Benjamin Franklin says, "when the well is dry that we know the value of water".

The Water Resources Group forecasts that South Africa will have a water supply deficit as great as 3.8 billion cubic metres come 2030 (a cubic metre is 1,000 litres). This is of concern to both individuals and businesses as research by the World Bank tells us that, come 2035, industry will need 50% to 70% more water globally, and energy production will use 85% more water.

According to the UN World Water Development Report issued in March 2020, 2.2 billion people currently do not have access to safely managed drinking water, and 4.2 billion, or 55% of the world's population, are without safely managed sanitation. UNICEF says that women and girls spend 200 million hours every day collecting water. If we were to estimate the cost of this time at South Africa's minimum wage of R20, this equates to R4 billion in lost income to women and girls around the world EVERY DAY. But as Jason Morrison, CEO of the Water Mandate, presented in March 2021, that the opportunity cost is far greater to girls as they also miss out on going to school and a lack of education makes it harder to obtain a well paying job. This is one of the root causes of generational cycles of poverty and gender inequality and all of these social issues have a limiting impact on our economic growth potential.

This is why Sustainable Development Goal (SDG) 6, clean water and sanitation, is so important to both individuals and businesses. The UN describes the goal of this SDG as 'to ensure availability and sustainable management of water and sanitation for all.' (An outline of the Targets and Indicators for SDG6 is reflected in Appendix A.)

This goal leads us to ask the question of how to address the global water shortage and lack of safely managed sanitation? The answer, which in itself provides us with a number of business opportunities, lies in delivering practical and innovative solutions for the following four main areas:

1. Climate change reduction;
2. Wastewater management;
3. Water resource management; and
4. Sanitation solutions.

1. Climate change reduction

Climate change has a large impact on our water availability. It alters hydrological cycles, making water more unpredictable and increasing the frequency and intensity of floods and droughts. In addition, UN Water tells us that water quality is affected by increased water temperatures and a decrease in dissolved oxygen, leading to a reduction in the self-purification capacity of freshwater basins. Climate change results in increased water pollution and pathogen contamination and has a negative effect on food production and physical and mental health.

Four ways to be a part of the solution are to:

- Reduce your organisation's carbon tax and increase its renewable energy usage;

- Engage in the political process to help stimulate effective political action to reduce climate change;
- Provide capital to support our economy in becoming climate resilient; and
- Improve your climate related reporting and disclosure.

You can read more about these actions in the #SustainableSA article on SDG 13 published in the April 2021 issue of *AccountancySA.*

2. Wastewater management

In its *Wastewater Report*, the International Water Association states that used water is one of our most under-exploited resources. Not only is it an unexploited resource but not treating wastewater that is discharged into rivers, lakes and oceans creates health and environmental hazards, and contributes to greenhouse gas emissions, including nitrous oxide and methane. These emissions are three times larger than those produced by conventional wastewater treatment. Recovering water, energy and nutrients and other precious metals embedded in wastewater is an opportunity to transition to the circular economy and contribute to improved water security.

Professor Kala Vairamoorthy, executive director of the International Water Association estimates the global market for wastewater management to be $22.3 billion.

#SustainableSA's case study, **'In Support of Water Security'**, provides a practical example of how to better manage wastewater.

3. Water resource management

Investment in information management for water and (natural and man-made) infrastructure is key to better water resource management. The World Bank shares that institutional tools such as legal and regulatory frameworks, water pricing and incentives are needed to better allocate, regulate and conserve water resources. Information systems are required to monitor water use, support decision making in uncertainty, and assist with forecasting and warning. Investments into innovative technologies can enhance the productivity of water use and developing non-conventional water sources in addition to seeking opportunities for enhanced water storage should be explored.

#SustainableSA's case study, **'In Support of Water Security'**, provides a practical example of how to better manage water resources.

Case Study: In Support of Water Security

In its recently published *Sustainability Report*, AECI set one of its Sustainability Goals as 'Better Water'. In this report the group gives practical examples and insights into how it is-applying its water business capabilities cross-functionally and drawing on its public and private-sector network to build and operate better water systems for municipalities, other mandated authorities, schools, communities, farms, mines and industry.

Dean Mulqueeny, Group Executive of AECI Water says that overall AECI has set the following targets for 2025:

1	Schools supplied with potable (drinking) water.	50 Schools
2	Potable water reduced / replaced in the mining sector.	2 Billion litres
3	People in remote areas supplied with potable water.	1 Million people
4	Litres of potable water reduced / replaced in the private industrial sector	2 Billion litres
5	Litres of liquid effluent discharged by industry to be reduced / repurposed.	1 Billion litres

Mulqueeny shares that AECI Water is targeting the replacement of over 3 billion litres of potable water used in the AECI Group's process streams with recycled / repurposed water alternatives over the next five years. Another target is to replace over 2 billion litres of potable water used in process streams in

the mining sector with recycled acid mine drainage and / or grey water alternatives.

He explains that many mining operations generate excess water, known as fissure or seepage water, which can be treated and used. This significantly reduces a mine's use of potable water. High chemical oxygen demand (COD) effluents are a further opportunity. Trials at one of AECI's chemical sites established that bacteria enzyme treatments can result in the re-use of up to 65% of wastewater if properly applied. Mulqueeny says that AECI is also involved in partnerships to implement desalination processes at coastal industrial operations. These partnerships have not only secured much needed water but also helped to safeguard more than 2 000 jobs that were at risk due to potential factory closure. The water treatment plants also ensure that wastewater meets specifications for discharge to sea.

AECI's purpose is 'One AECI for a better world' and the organisation is committed to supply 50 schools with drinking water by 2025 to address the plight of South African learners with inadequate access to water and sanitation services. To do this, AECI has partnered with local municipalities to deploy decentralised water solutions to schools. It aims to provide clean water to more than 500 000 learners over the next five years.

Pictured below is Goza Primary School, in Soweto, receiving the donation of a sustainable clean water supply.


AECI
In support of food and water security
good chemistry
AECI
WATER
GAUTENG PROVINCE
Promoting safe and healthy living in our schools


WATER
TREATMENT PLANT
AECI
WATER
In support of sustainable water
and food security solutions

4. Sanitation solutions

The World Bank also asks asked us to consider the following three hard truths about sanitation:

- One quarter of the world's population does not have access to a decent toilet;
- Only 39% of human waste is 'safely managed' globally, with only 55% of the world's population using a safely managed sanitation service; and
- The total global costs of inadequate sanitation are estimated at $260 billion per year – that is, on average, 1.5% of a country's GDP.

It is estimated that 1.6 million people die every year due to poor sanitation and hygiene. The lack of safe sanitation facilities in peoples living places has a long-term impact on health, especially for children, (approximately 500,000 children die from diarrhoea every year). Access to sanitation doesn't get the same level of attention as other major health issues, but it's a major problem.

A comprehensive approach to sanitation improvement requires adequate planning, technical and service delivery innovation, institutional and regulatory reforms and mobilising funding for the sector. The answer needs to come from working with communities to understand their needs and then create solutions to address these. Waterless toilets are one sustainable solution that do not require the release of waste into the environment, and they have a lifespan of 50 years. Your organisation could sponsor waterless toilets for its surrounding communities.

Another great practical solution is what Toilet Twinning is doing. The charity's motto is to "flush away poverty, one toilet at a time" and its model is based around the innovative idea of having donors "twin" their toilet with one in the communities the charity works with. The charity also works with local communities to educate them on the importance of hygiene.

So what now?

As you can see, there are a number of ways that both individuals and businesses can play a part in helping to achieve SDG 6.

As Mulqueeny so succinctly puts it: 'Water conservation and the appropriate use of potable water is everyone's responsibility. Closer to home, a common practice is to use potable water for drinking, washing, bathing, gardening etc. However, with careful construction design for new and existing homes, one could replace potable water with treated grey water or borehole water for non-drinking purposes like bathing, toilets and washing as well as irrigation systems which use substantial quantities of scare potable water. Fitting of modern auto stop taps for basins also could assist. In schools, irrigation of soccer fields and playgrounds could be done with treated borehole water instead of potable water.

Water is a scarce commodity which is vital for life in humans and animals and for food security from agriculture. If everyone plays their part, the numbers will quickly add up and the current trajectory of water shortages can be dramatically reversed. We need to remember that there is no life without water, so give it the attention it needs.'

Appendix A:

SDG 6 has eight Targets and each of which have one or more indicators:

SDG 6: 'Ensure availability and sustainable management of water and sanitation for all'

Target		Indicator	
6.1	By 2030, achieve **universal and equitable access to safe and affordable drinking water** for all.	6.1.1	Proportion of population using safely managed drinking water services.

6.2	By 2030, achieve **access to adequate and equitable sanitation and hygiene** for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.	6.2.1	Proportion of population using (a) safely managed sanitation services and (b) a hand-washing facility with soap and water.
6.3	By 2030, **improve water quality** by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.	6.3.1	Proportion of wastewater safely treated.
		6.3.2	Proportion of bodies of water with good ambient water quality.
6.4	By 2030, substantially **increase water-use efficiency** across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.	6.4.1	Change in water-use efficiency over time.
		6.4.2	Level of water stress: freshwater withdrawal as a proportion of available freshwater resources.
6.5	By 2030, implement **integrated water resources management at all levels**, including through transboundary cooperation as appropriate.	6.5.1	Degree of integrated water resources management.
		6.5.2	Proportion of transboundary basin area with an operational arrangement for water cooperation.
6.6	By 2020, **protect and restore water-related ecosystems**, including mountains, forests, wetlands, rivers, aquifers and lakes.	6.6.1	Change in the extent of water-related ecosystems over time.
6.a	By 2030, **expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes**, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies.	6.a.1	Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan.
6.b	**Support and strengthen the participation of local communities in improving water and sanitation management**.	6.b.1	Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management.

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