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Water services, South African law and your health

South Africa faces an ever-increasing water resource and service delivery challenge, especially in its cities. Here too, science, and the right legislation, can make a difference.

According to the most recent Statistics South Africa (SSA) General Household Survey, almost one-third or 29% of households reported dysfunctional water supply services in 2020. Access to water also declined in six provinces between the years 2002 and 2020, with the largest declines observed in Mpumalanga, Limpopo and the Free State. This is worrying, given that the COVID-19 pandemic highlighted the absolute importance of access to clean water for hygiene and sanitation purposes.

Water cities

The promise of access to safe, reliable, and nearby water supplies has always drawn people to urban areas. This is likely because access to water in metropolitan areas is reportedly higher, with 98,1% of households having access to piped or tap water in their dwellings. Furthermore, water interruptions are less frequent in metropolitan

areas compared to households nationally – 12,1%, compared to 28,6% (number of households who reported interruptions over a 12 month period).

However, during pandemics, residing in densely populated urban areas poses many public health risks and challenges. Science tells us that urban areas or cities are ideal spaces for the spread of infectious diseases such as COVID-19. This is because issues that are often found in cities, such as inadequate and polluted water, waste and sanitation access, and management challenges, increase the risk of infectious diseases. Buildings that lack effective ventilation systems could lead to respiratory tract diseases, while crowded and densely populated areas in cities increase shared airspace and intensify peoples' risk of exposure to infectious diseases.

It is for this reason that effective service provision, particularly water services, becomes essential to sustain communities' public health and safety. This leads us to the question: what does the law say regarding the provision of water and public health services in South African cities?

Your water rights, according to law

Our first point of entry is that cities, also known as local governments or municipalities, are generally responsible for providing services that benefit the local community. These services include municipal health, municipal public transport, and water and sanitation services. As such, the Constitution of the Republic of South Africa, 1996, (the highest law of the land) tasks cities to provide services to local communities in a sustainable manner, thereby bearing in mind the needs of future generations.

These services are so essential that cities are required to structure and manage their administration, budgeting, and planning processes to give priority to the basic needs of the community. In a court case concerning the City of Johannesburg, the court explained that the provision of basic municipal services is a cardinal function, if not the most important function, of every municipal government.

Next, it is important to note that, in South Africa, everyone has a constitutional right to have access to sufficient water. This does not mean that everyone has an immediate right to water services, but that over time the government must take reasonable steps within its available resources to realise this right.

The Constitution also clarifies that cities are required to provide water and sanitation services limited to potable water supply systems and domestic wastewater, as well as sewage disposal systems. Therefore, cities play an important role in achieving the realisation of the constitutional water right.

Furthermore, the constitutional water right is put into action through legislation, specifically the Water Services Act 108 of 1997. The Act provides for the rights of access to basic water supply and services and sanitation in the country. The Water Services Act also says that while cities, who form a part of the local sphere of government, are responsible for water services, the national and provincial spheres must offer their support.

The Act recognises that the right of access to basic water supply and sanitation services is needed to ensure sufficient water, and an environment that is not harmful to our health or wellbeing. Science plays a very important role in this regard, because science tells us whether or not water is safe to drink, informs us of how much water we need to survive, and so on. The law enforces this and requires cities to adhere to these standards to protect communities' health. Under the Water Services Act there are rules, or 'regulations', as well as norms and standards in place that

provide guidelines on what is meant by basic water supply, potable water and basic sanitation.

For example, it holds that the minimum standard for basic water supply services is education on proper water use and a minimum amount of drinkable water of 25 litres per person per day (or six kilolitres per household per month). This water should be available at a minimum flow rate of no less than ten litres per minute and must be within 200 metres of a household. Moreover, basic water supply services should be effective so that no one is without a supply for more than seven full days in any year.

Environmental health services

In addition to water services, we are fortunate enough that the Constitution requires district and metropolitan municipalities to provide certain services to ensure we live in a safe and healthy environment, and maintain our public health. These services are called municipal health services, and arise from our constitutional right to an *environment* that is not harmful to our health or wellbeing.

Therefore, these services are concerned with environmental health. Environmental health is a branch of public health involving all parts of the natural and built environment that may affect human health. Another law, called the National Health Act of 2003, tells us exactly which municipal health services cities must provide. These services include, for example, food control, waste management, the surveillance and prevention of communicable diseases (such as COVID-19), and environmental pollution control.

Water testing

Notably, municipal health services also include water quality monitoring. Thus, before water is provided to households, the water provider (often the city) must test the water for harmful substances. The water must adhere to specific scientific standards as prescribed by the South African National Bureau of Standards. These standards include that the water must not contain health risks (for example, *Escherichia coli* or faecal bacteria, or illness-causing parasites) in excess of certain limits that may cause acute or chronic health problems. It is also tested for aesthetic and operational risks with limits on, for example, the fluoride, ammonia and sulphate levels in the water.

Biology tells us that a variety of pathogens (organisms causing disease to its host), bacteria and protozoa (single-celled organisms that may cause diseases) are transmitted by water. These organisms, called microorganisms, often cause illnesses such as cholera, dysentery, and gastroenteritis, all of which are associated with polluted water. To determine whether water is safe from these harmful organisms, scientists have to rely on 'indicator organisms', or organisms whose presence show that water is potentially unsafe or polluted. Since most of the common water-borne diseases are caused by pathogens in the faecal-oral route, South Africa's domestic water quality

guidelines provide that drinking water must be tested for faecal pollution. This would be indicated through the presence of, for example, *Escherichia coli*.

Therefore, the South African law recognises that there is a vital link between water services and public health, particularly the spread of diseases. The COVID-19 pandemic again illustrated how important it is for cities to be aware of this link when providing services to communities, but it also highlighted many existing vulnerabilities in our country that continue to exist.

Pandemic measures

To protect public health during outbreaks of infectious diseases, such as COVID-19, in cities, improved access to safe water, sanitation, hygienic and good environmental conditions are essential. However, access to water, sanitation and hygiene services is very limited in low-income countries and densely populated cities. This leads to the challenge of preventing potential future outbreaks by curbing transmission of diseases like COVID-19.

For example, hand hygiene, a major protective measure recommended by the World Health Organisation to prevent COVID-19 transmission, is not adequately provided for due to underfunding in many low-income countries, including South Africa.

COVID-19 showed that there is an urgent need to address historical gaps in water supply in South Africa. As a short-

term response to the pandemic, South Africa's disaster law and response measures allowed us to set up water supply points across the country for hand washing. Similar measures have been adopted in Ghana and Peru.

Research shows that in the medium to long term, however, the law will have to prioritise developing and expanding current water and sanitation systems to underserved areas, such as in large and ever-developing cities. But the law alone is not sufficient to protect us; national and provincial governments will continue to play an important role in supporting local governments to provide sufficient and safe water. Science will also play an important part in early-warning systems for disease outbreaks in large and densely populated areas. Maintaining proper scientific testing of water will similarly prevent the spread of dangerous diseases, and protect us from consuming unsafe water.

We must also work *together* with city governments to protect ourselves and ensure we have access to vital water services. We can do this by, for example, reporting water leaks to the city immediately, and avoid wasting or polluting precious water sources.

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Uthini umthetho mayelana namalungelo okuthola amanzi okuphuza aphephile nahlanzekile? Ilovo umbuzo esiwuphendulayo kulesihloko-kanye nokuthi I Sayensi isisiza kanjani ukuba sihlole ukuthi amanzi ngempela aphephile empilweni yakho.

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