

What's the price for a safe, secure source of water?

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Today is World Water Day. Every year, it offers an occasion for all of us to pause and consider our use of this most vital of resources.

On a global level, it helps focus attention on what lies behind the problem of scarcity in various cities around the world, and what can be done to avert or manage it.

First, some hard facts. About 2.5 billion to three billion people in the developing world currently do not have access to safe drinking water. What we are facing here is not so much a physical scarcity of water but of water that is fit for human consumption.

Even in the developed world, trust in the quality of tap water is not assured and has, in some places, declined in recent years.

The reasons for this are many and varied. For example, most Singapore and Hong Kong households continue to boil water for drinking even when it is safe. This may be a holdover from the practice during the 1960s and 70s, when the quality of tap water was still questionable.

In North America, trust in the safety of water took a big hit after two major incidents. In 2000,

seven people died and more than 2,000 fell ill in Canada as a result of bacterial contamination of the municipal water supply in Walkerton, Ontario.

In 2014, the city of Flint, Michigan, made headlines worldwide for a crisis that arose from poor urban water management. Improperly treated water taken from the Flint River left thousands of the city's residents in danger of lead poisoning after it leached the metal from the pipes.

Years on, the state of Michigan continues to spend US\$22,000 (S\$29,000) a day on bottled water, *Newsweek* reported this month.

In most other places where lead poisoning is not a problem, aggressive advertising campaigns by bottled water companies and manufacturers of point-of-use treatment systems have made water a costly lifestyle issue.

Health-wise, it is difficult to understand why any individual would pay at least 1,000 times more for the bottled stuff in cities like Singapore or Tokyo, where piped water undergoes extensive safety checks each day. And even then, the authorities are likely to add to the number of safety tests as new contaminants like microplastics and endocrine disruptors become a public health issue.

One major takeaway is that it is no longer enough for utilities to focus simply on ensuring adequate quantities of water. Increasingly,

we will see a shift towards ensuring trust in the quality of water as well.

Just as water is essential to human survival, it also plays a vital role in sustaining the economy. Food production is an obvious example, but its impact is far greater.

Population growth, urbanisation and, lately, climate change – especially in terms of the costs of evermore intense droughts and floods – drive home the message of how critical sound water management is to national survival.

As the task becomes evermore complex and challenging, growing attention is also being paid to studying people's attitudes and behaviour on water-related issues, in particular, pricing.

IMPORTANCE OF WATER PRICING

Getting the price right is important. This will ensure that water utilities have enough revenue to keep their infrastructure going – to provide drinkable water for everyone, irrespective of their incomes – while at the same time discouraging waste.

Money is also needed to dispose of or reuse wastewater, and to invest in research and development. The lower the tariffs, the more difficult it is for utilities to provide a good service. It also threatens the quality of water that the domestic, commercial and industrial sectors receive.

The water price in Singapore was unchanged from 2000 to 2016. It was raised last year, with another increase this year. Even after these two rounds, as a percentage of household income, it will still be less than what consumers paid in 2000.

Despite this, and the fact that over 70 per cent of people have no idea what is in their water bill, news of the increase last year set off much venting on social media.

There are lessons to be drawn from this. Tariffs should have been increased at least a decade ago, and

more could have been done to make people aware of water's strategic importance. Two cities offer real-life examples of how important it is to get the right policy in place.

• **Cape Town.** Drought-stricken Cape Town has been in the news lately because of "Day Zero", when this city of four million is forced to turn off the taps for lack of water.

While Day Zero, which was originally set for next month, has been pushed back a few months, the situation remains dire, with a mad scramble for alternatives like drilling into aquifers.

Even after the current drought is over, Cape Town is likely to pay the price for decades to come because of the shortcomings of its water supply system, made worse by the vagaries of the weather. Investments will take a hit as businesses move to other cities or outside South Africa, and that, in turn, has consequences for badly needed job creation and economic growth.

• **Sao Paulo.** Very few cities have managed their water supply successfully during serious droughts. One of the very few to have done so is Sao Paulo in Brazil.

Sao Paulo's water authority, SABESP, is a public-private company, with the state government holding 50.3 per cent of the shares.

The utility provides drinking water to 27.7 million people. It is listed on the Sao Paulo and New York stock exchanges. It has been consistently profitable, and has successfully raised investments from the market. It does not receive any subsidies from the state and federal governments.

During the drought from 2014 to 2015, SABESP was compelled to make a decision that proved to be critical to its success in managing a dwindling supply. It took a carrot and stick approach, and its

instrument was pricing.

To cut consumption, it offered domestic users a 30 per cent discount on their water bills if their water consumption dropped by more than 20 per cent. The result: 49 per cent of households received discounts in 2014 and 78 per cent in 2015. Water consumption fell 19 per cent during the crisis.

Not everyone cut back. In all, 19 per cent of domestic users used more water. Those whose consumption rose by up to 20 per cent saw their water bills increase by 40 per cent. It was a 100 per cent jump for those whose consumption went up by more than 20 per cent.

The carrot and stick approach worked remarkably well. Daily per capita consumption declined from 160 litres in 2012 to 143 litres in 2014, and 120 litres in 2015.

After the crisis was over in 2016, this figure has increased only marginally. People have realised the value of water, and the importance of its conservation.

WATER-SAVING TARGETS

Going by the per capita water consumption yardstick, Singapore, at 143 litres, still has a long way to go if it is to hit a target of below 100 litres by 2035.

But it can be done. Major advances in water conservation have been made by countries like the Czech Republic (87 litres) and cities like Leipzig, Malaga or Tallinn – all under 94 litres.

Managing urban water is not rocket science. Every city must aim to concurrently reduce both domestic and industrial demand for water, treat and reuse wastewater, and increase supply in a cost-effective and environmentally acceptable manner.

All these steps also have to be financially sustainable.

Properly managed and with the help of rapidly improving technology and expertise, every city

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has enough water for all, even for the decades ahead with the challenges of rising population density.

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