

Tap resources to manage water

DESPITE regular flash floods causing havoc, we are lucky to have abundant rainwater in Malaysia. So much so we take it for granted. We can keep our faucets running while brushing our teeth because for some households, water bills cost less than a cup of latte!

In a world where fresh water is becoming a scarce resource, capturing and effectively utilising rainwater is like finding gemstones in the clouds. Malaysia has started talking about this topic but we need a "movement" to galvanise change towards a sustainable water management practice.

Freshwater sources, including rivers, lakes, underground aquifers and glaciers, are essential for maintaining life. Water like everything else is a finite resource. It can morph from liquid to solid to vapour, but it cannot be "created" anew.

Water's great escape

This brings me to the pressing issue in the water ecosystem which is non-revenue water (NRW). It refers to the percentage of water that is lost once treated.

One may categorise it into real losses and apparent losses. Among the real loss factors are leakages from wear and tear of pipes, corrosion or simply poor maintenance. Apparent losses are harder to trace due to water theft and meter tampering.

That is not the only part that gobbles up funds. Take for example, the amount of money needed to treat water in Peninsular Malaysia and Labuan. In 2020, it cost RMRM1.68 per cubic metre but the tariff collected was RM1.37 per cubic metre. This means there is already a loss from the onset!

Despite so much rain, some states are actually experiencing water scarcity! Selangor, Malacca, Kedah and Penang are facing water shortages due to urbanisation, growing population and the good old climate change.

In fact, the International Energy Agency estimates that 34% of water worldwide becomes NRW. In Malaysia, the levels of NRW are quite high, some reports state it's between 35%-50% of all water produced.

One might ask, how does it affect me? As long as I have water in my pipes, perhaps it is not my concern. But it very much is because NRW will

affect its price, and in the long run with climate change, it may impact the amount of water running out of our taps.

Countries prone to drought like Australia have instituted tough measures to limit the use of water. Most of its cities restrict the number of times your sprinkler can come on and when you can wash your car. Even flushing toilets and washing clothes are monitored closely!

Between 2018 and 2022, RM8bil was lost in NRW, according to SPAN.

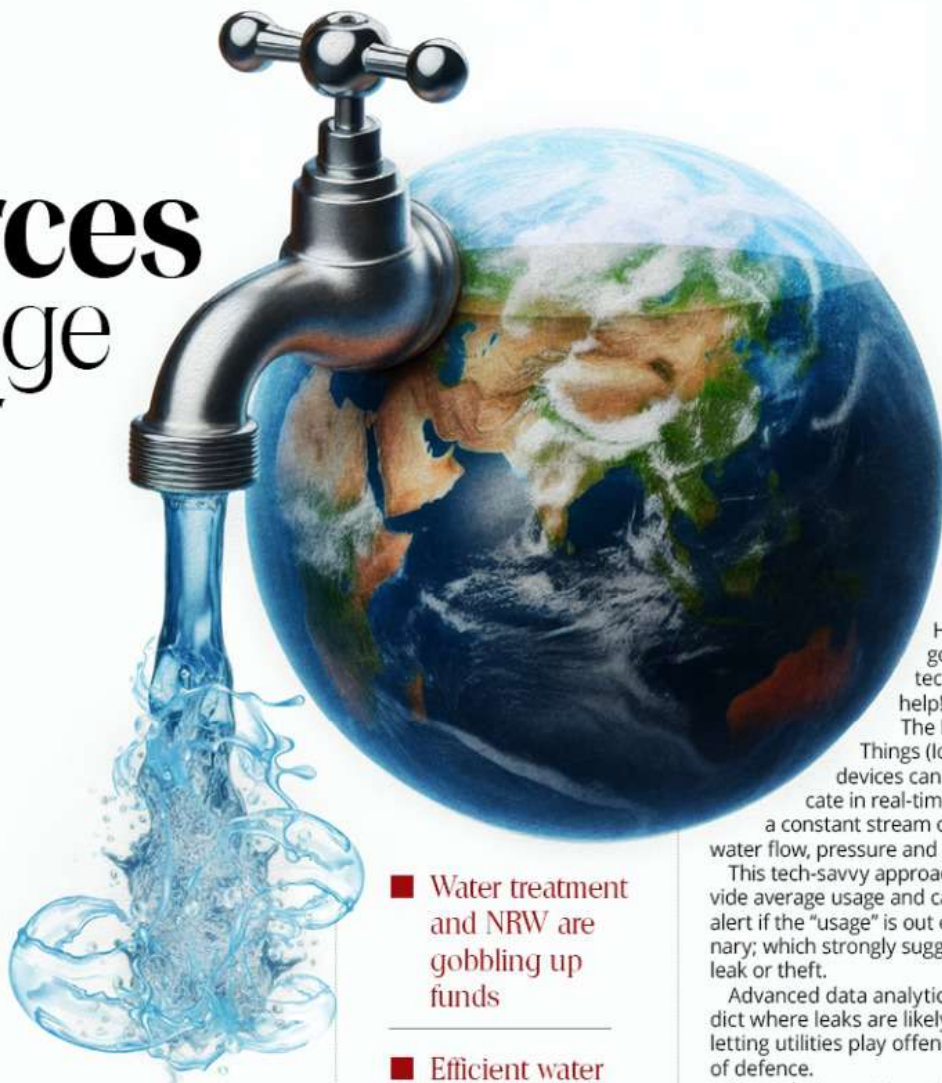
In 2022, Malaysia lost a potential revenue of RM2bil from various leakages, resulting in 7.08 billion litres of treated water wasted each day.

Commercial losses like water theft accounted for 20% of leakages.



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Here's the good news, technology can help!

The Internet of Things (IoT)-enabled devices can communicate in real-time, providing a constant stream of data on water flow, pressure and quality.

This tech-savvy approach can provide average usage and can send an alert if the "usage" is out of the ordinary; which strongly suggests either a leak or theft.

Advanced data analytics can predict where leaks are likely to occur, letting utilities play offence instead of defence.

By analysing patterns in water usage and system pressure, these tools can forecast potential weak spots and allow for proactive maintenance, nipping NRW in the bud.

At TM R&D, we have developed a solution to address NRW and automate the billing and maintenance workload.

SWIMS or Smart Water Integrated Management System is the first of its kind solution designed and developed by TM R&D for utility players.

SWIMS has also been certified by MOSTI's MySTI programme, acknowledging that goods produced through local R&D bring a multiplier benefit to the country.

Through local R&D, the Intellectual Property (IP) belongs to Malaysia, in this case TM and no outflow of funds. More jobs are created through a robust business ecosystem. Win-win for both the utility company and our country!

This application offers end-to-end smart water integration improves NRW management, optimises repair and replacement of ageing infra, while speeding up responses to weather events like floods.

Moreover, the SWIMS water meter solution has water quality and water level sensors in a single integrated management portal.

Water management must continue to stay on the radar for our nation, and with the right tech tools and trained teams, those mysterious leaks and losses may soon be water under the bridge!

■ **Water treatment and NRW are gobbling up funds**

■ **Efficient water use is grabbing headlines as global water demand rises and supplies dwindle**

■ **Water management must continue to stay on the radar for our nation**

Another call to deal with NRW is resource management. Efficient water use is grabbing headlines as global water demand rises and supply dwindles.

I've often thought about how governance and accountability affect NRW. High NRW rates are often the tell-tale signs of poor governance and operational inefficiencies.

To mitigate this, we should argue for better management practices and increased transparency.

How tech can help

Whether it's from leaks, theft or tampered meters, NRW is a costly conundrum that experts worldwide have struggled to fully resolve.