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Headline: Protecting 'invisible' water

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Climate change is causing global temperatures to rise, putting our most visible sources of water at risk. Southeast Asia has been projected as one of the regions to be most affected by climate change.

Closer to home, the Philippines faces ongoing water scarcity with its dry season spanning six to eight months and supplies frequently shut down to preserve capacity. This year, utility companies and the government are looking to ensure that Metro Manila averts a similar water crisis that hit the capital three years ago.

As water becomes a scarce resource, the Philippines needs to tackle water shortages quickly and efficiently. Water plays a crucial role, not only in sustaining the lives and livelihoods of almost 110 million people but also in supporting the agriculture sector, which contributes an average of 20 percent to the country's GDP. Some 80.5 percent of water is also allocated for household consumption.

What is often overlooked is groundwater. Put simply, groundwater is water found underground, and currently supplies more than half of the potable water supply and 85 percent of the piped water supply in the Philippines. It is strategically and economically important to current and future water supply during dry season.

Despite its increasingly vital role, many still struggle to understand this invisible resource and find effective ways to protect it. Human activities and climate variability are increasing the pressure on groundwater resources. Now, a quarter of the world's population is using water faster than the planet can replenish this natural resource.

With this World Water Day's theme, "Groundwater—Making the invisible visible," experts have noted that the time is now to actively protect all our water resources, especially groundwater. To sustain the world's water resources, we need to utilize intelligent technology to ensure effective water management strategies and, in turn, protect and sustainably use groundwater.

The first approach is protecting the quality of this water source. Groundwater is especially vulnerable to pollutants from commercial or industrial activities, and even urban development. Groundwater sources in the Philippines face the issue of pollution from agricultural run-off pollutants, aquaculture, industrial waste, and domestic sewage, only 42 percent of which is reported to be free from contamination.

Demand and waste production go hand-in-hand — the more we consume, the more waste we generate. Wastewater, when handled improperly, can have adverse effects on the biological diversity of aquatic ecosystems and can disrupt the fundamental integrity of our life support systems.

Recognizing this, water solutions providers like Grundfos are increasingly applying intelligent technology to manage wastewater. Through the Internet of Things, advanced real-time data collection and sensors, wastewater treatment facilities can operate in a more predictive manner,

reducing downtime and avoiding serious business and environmental consequences. These systems are also able to ensure that energy and other resources are used as needed, achieving greater cost-effectiveness and sustainability, which can be key considerations for countries like the Philippines.

It is also imperative that we think longer-term. Climate change can affect the amounts of soil infiltration, while rising temperature increases evaporative demand over land, which impacts the ability of groundwater resources to recharge.

Countries are already taking actionable steps toward decarbonization, and it is heartening that the Philippines is committed to reductions in greenhouse gas emissions of 70 percent by 2030.

However, water itself actually holds an intrinsic relationship with energy use. Energy is required in the entire water process, from pumping, transportation, treatment, and desalination. With fossil fuels being the source of most of the energy produced today, water processes are indirectly responsible for producing large amounts of greenhouse gases, contributing to climate change.

One way to reduce the carbon footprint of water processes is by making them more energy efficient. Technology has been a key enabler of energy efficiency, and we are now equipped to achieve considerable efficiencies in water processes, such as utilizing smart technologies to enable pumps to be more responsive to fluctuating demand, adjusting water use through real-time monitoring.

Lastly, we should not neglect the fact that water solution providers can help the cause of strengthening water security by introducing innovative solutions and industry expertise.

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