Microsoft

# Making the most of water: How FluxGen is mitigating Bengaluru's growing water crisis

Water is often in short supply in Bengaluru, India's third-largest city—a problem of urbanization made worse by climate change. Based in Bengaluru, FluxGen is helping people to make more efficient use of the water that is available. With support from Microsoft, FluxGen's Internet of Things (IoT) and AI-based solutions are reducing water consumption for two hospitals in Bengaluru and other clients around the world.

## Pioneering water conservation in Bengaluru

Known as the "city of a thousand lakes," Bengaluru was once renowned for its numerous man-made lakes, irrigation wells, and canals that provided a year-round water supply. These innovative water storage systems, built centuries ago, effectively stored and distributed rainwater, sustaining both domestic and agricultural needs in the southern Indian city. However, in recent years, rapid urbanization and frequent droughts have led to the disappearance of over 800 of Bengaluru's lakes, contributing to an acute water crisis.

With groundwater depletion rates nearly double the natural replenishment, dry taps and empty wells have become common. Consequently, many of Bengaluru's 14 million residents and businesses must rely on expensive private water tankers for their daily water needs. Climate experts warn that the situation will likely worsen as climate change continues to affect rainfall patterns,

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leading to more severe and frequent droughts in the region.

Bengaluru-based FluxGen, a provider of AI and IoT-powered water management solutions, is working to reverse this trend. The story of FluxGen begins with Ganesh Shankar, who grew up in Bengaluru and witnessed firsthand the city's deteriorating water situation. This inspired him to found FluxGen, a company dedicated to addressing the water crisis through innovative water management and conservation solutions. "I still remember my early childhood when we had a well at home that dried out by the time I started going to school. The water situation has been very bad in the city of Bengaluru," explains Ganesh, "but we believe that it can be reversed if we work on water efficiency."

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Ganesh Shankar, Founder FluxGen

Today, FluxGen's solutions are being used to solve water-related issues around the world and right in Ganesh's hometown of Bengaluru, where Microsoft is partnering with FluxGen to deploy its water management solutions at two charitable hospitals.

## Partnering to benefit local hospitals

With funding from Microsoft, FluxGen is implementing its water management solutions at two hospitals in Bengaluru: St. Martha's Hospital and another reputed multi-specialty hospital. Located in the heart of the city, these hospitals primarily serve underprivileged communities and face significant water challenges. The collaboration, which aims to increase the hospitals' water efficiency and reduce reliance on freshwater, supports Microsoft's goal to become water positive by 2030.

FluxGen has deployed 64 sensors at St. Martha's Hospital. Photo credit: FluxGen

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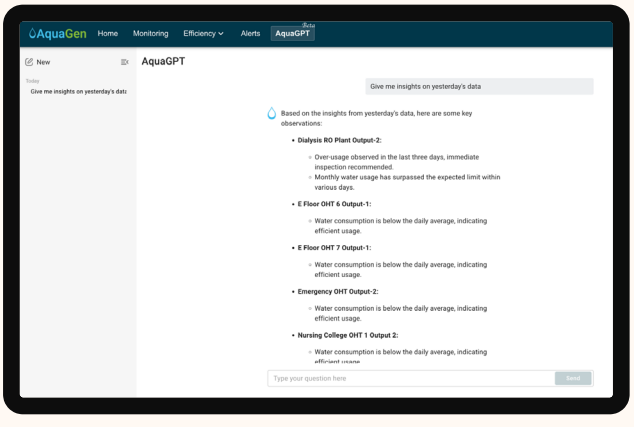
FluxGen's solution works by deploying a combination of IoT sensors and AI technology to monitor and manage water resources effectively. The sensors collect real-time data on water usage and conditions, including water flow, level, and quality. This data is then sent to the cloud, where it is analyzed using Microsoft Azure cloud storage and data analysis capabilities.

One of the key components of FluxGen's solution is Aqua GPT, a generative AI-based tool powered by Microsoft technology. Aqua GPT provides prescriptive alerts and actionable insights to help identify inefficiencies in the water network, such as leaks, wastage, and excessive usage. "While there's always a question about how AI uses a lot of water, we are using AI to actually solve for water. It's a use case that makes so much sense in a world where there is water shortage," says Ganesh.




AquaGPT provides real-time alerts to help detect leaks, overflows, and abnormal usage patterns. Image credit: FluxGen

FluxGen aims to reduce water consumption by 50% at the facilities, and early results are promising. At St. Martha's Hospital, water use decreased by up to 10% following the installation of flow meters, level sensors, piezometers, and rain gauges to monitor water flow and consumption patterns. "It's amazing how specifically and accurately FluxGen can show us water data for each department or point," reports Gracie Thomas, Sister Superior at St. Martha's Hospital.

The next phase of the project at St. Martha's Hospital includes implementing advanced water-saving technologies such as aerators, rainwater harvesting systems, and using recycled water to further reduce consumption. "Our work together is attracting considerable attention from officials interested in replicating the model," says Ganesh, noting the potential for the projects to set a benchmark in water conservation for hospitals across India.

## Supporting FluxGen's mission

FluxGen's decision to partner with Microsoft was influenced by Microsoft's ambitious water positive goal. Working with a technology company that is conscious of its environmental impact was crucial for FluxGen's mission to conserve water. Microsoft's goal to become water positive by 2030 aligned perfectly with FluxGen's mission to conserve water and inspired

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FluxGen to switch its cloud partner to Microsoft Azure.

The company is also partnering with Microsoft Research, a Microsoft team focused on advancing science and technology to benefit humanity. This collaboration enabled FluxGen to deploy advanced technologies like verified telemetry, which significantly enhanced its ability to monitor and manage water resources effectively. The partnership also enabled the company to upgrade its tech stack and develop Aqua GPT.

FluxGen is part of an initiative called Microsoft Entrepreneurship for Positive Impact and the Microsoft for Startups program. FluxGen also participated in a Microsoft program called Project Amplify, focused on supporting start-ups in the Asia Pacific region. Through these programs, FluxGen was able to showcase its startup and became one of the winners of the Microsoft Entrepreneur Positive Impact Cup in 2024.

## Going further, together

FluxGen is focused on expanding its water conservation initiatives across the globe. Having already implemented its solutions in regions such as the Middle East and Africa, the company is now setting its sights on expanding into Europe and the United States. By applying its expertise, innovative approaches, and cutting-edge technology, FluxGen aims to tackle water inefficiencies on a global scale, benefiting communities worldwide.

Ganesh believes FluxGen's partnership with Microsoft has played an important role in helping FluxGen expand its efforts by fostering relationships in the water sector. Ganesh emphasizes, "Microsoft has introduced us to other people working on water issues, and now we're working with them. So, our partnership has enabled more partnerships, leading to better outcomes."

**Learn more about how Microsoft is working to restore and protect the water basins where it operates.**

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