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# GLOBAL TRENDS IN THE WATER SECTOR AND THEIR IMPLICATIONS ON THE GCC MARKET

**AUTHORED BY:** NIDESHNA VARATHARAJAN,  
SENIOR CONSULTANT - ENERGY & ENVIRONMENT

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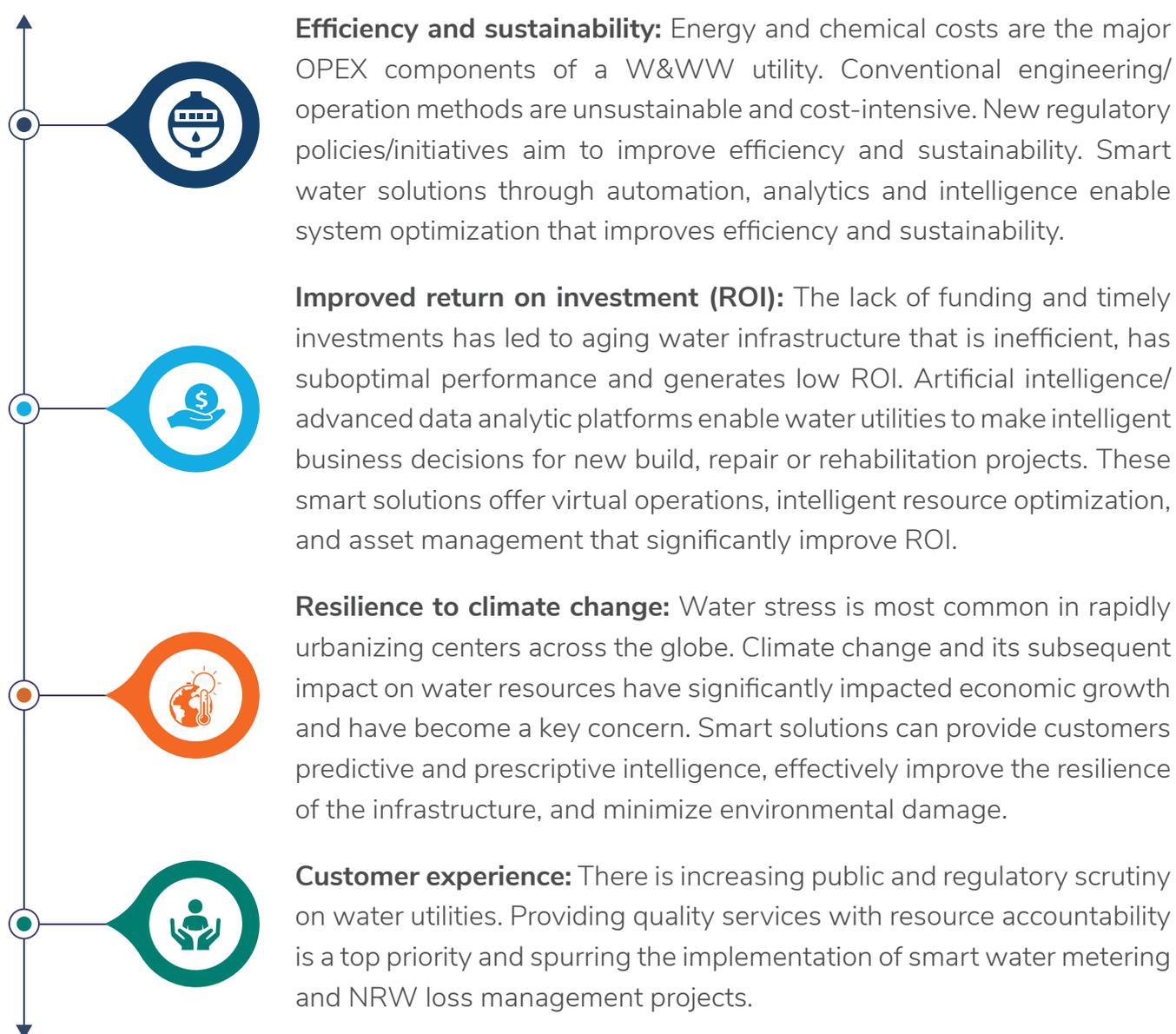
The world is preparing to transition to circular growth models from the current linear models that significantly impacted key resources, including water. Globally, the water sector is witnessing a radical shift with state-of-the-art technology being implemented across water utilities. As water stress is most common in rapidly urbanizing centers, several nations, including the United Kingdom, the United States of America, France, Denmark and China, are taking requisite steps to address:

- Non-revenue water (NRW) loss.
- Aging infrastructure.
- High operating costs.
- Compliance costs.
- Process control.
- Quality of asset and service.
- Plant efficiency.



The COVID-19 pandemic has significantly affected the global water sector. Operational resilience and economic sustainability have become key focal points of investments due to the pandemic. Customers have become highly price-sensitive and are directing their new investments toward digital and smart solutions that can enable seamless remote operation and visibility of their systems or infrastructure. The municipal/utility segment has shown the highest resilience due to support packages from governments and its criticality across the globe.

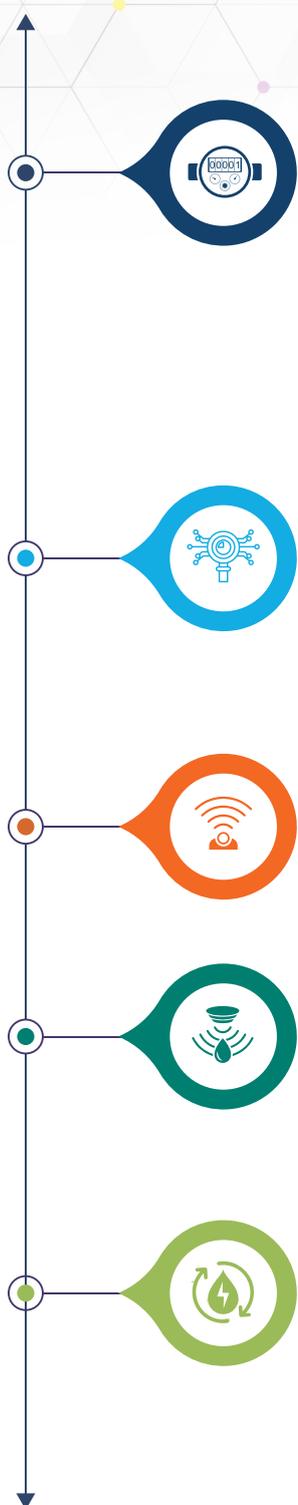
The industry challenges and disruptions caused by the pandemic have accelerated the digital transformation of the water and wastewater (W&WW) sector. Other major factors that support this transition are:





Digitization of assets across the value chain is critical, and the focus on water networks is increasing. The monetary loss caused by water leaks greatly hampers utilities' sustainability and resilience, yet aging pipelines are the most common cause for leaks in water and wastewater environments. The GCC countries also face similar challenges of water leaks/NRW and aging infrastructure. Following its global counterparts, the GCC has also embraced digital transformation to overcome its challenges. Digital transformation is getting the necessary impetus from governments through initiatives such as UAE's Water Security Strategy 2036, which aims to reduce water demand by 21% and increase the reuse of treated water by 95% by 2036. Similarly, the KSA's Qatrah initiative aims to cut daily per-capita water consumption by nearly half, from 263 liters in 2019 to 150 liters by 2030.

The key growth opportunities arising from the current challenges and radical transformation in the GCC are:



**Smart water meters:** The UAE is at the forefront of smart water meter adoption in the GCC. The Dubai Electricity and Water Authority (DEWA) has installed more than 2 million smart meters (including electricity and water meters) in Dubai. DEWA has also developed a Smart Meter Analysis and Diagnosis Centre, where the smart meters are remotely monitored. Through this transformation to smart grids, DEWA has detected over 0.5 million water leakages and 16,000 defects, resulting in savings of USD 88 million.<sup>1</sup>

**Smart analytics and AI:** Dubai Municipality has developed an industrial wastewater treatment plant with an AI system and intelligent sensors that can read the quality of incoming wastewater and enable it to carry out the processes without human intervention. The AI systems are programmed to automate the entire process, even directing treated waste to storage units.<sup>2</sup>

**Smart sensors:** Utilities are using smart sensors for remote management, data collection and analytics etc.

**Smart leak detection systems:** The market for smart leak management solutions is expected to reach USD 130 million by 2025 in the Middle East and Africa, registering a CAGR of 8% from 2015 to 2025.

**Water recycling and reuse systems:** All GCC countries have developed water recycling and reuse systems in the municipal and industrial segments. Kuwait has constructed four municipal wastewater treatment plants with tertiary treatment units that enable the reuse of the treated water. Key technologies used for tertiary treatment are sand filtration, reverse osmosis, ultrafiltration, ultraviolet, etc. The treated wastewater is predominantly used for landscaping applications.

<sup>1</sup> <https://www.smart-energy.com/industry-sectors/smart-meters/dewa-passes-2-million-smart-electricity-and-water-meter-milestone/>

<sup>2</sup> <https://www.constructionweekonline.com/projects-tenders/257355-dubai-municipality-opens-600m3-jebel-ali-wastewater-treatment-plant>

The GCC countries have favorable policies that drive the demand for advanced smart meter solutions. Saudi Arabia's National Transformation Program and Dubai's Smart Applications via Smart Grid and Meters initiative have spurred the demand for smart meters in the past three years.

NRW in the GCC, 2019

Country	Estimated NRW (%)
 UAE	13
 KSA	40 – 60
 Qatar	19
 Kuwait	13
 Oman	30
 Bahrain	30

Source: UNESCO and Frost & Sullivan Analysis

The challenge of low-efficiency levels is compounded by physical leakage in water distribution networks. The physical leakage component of NRW in the GCC is as high as 40%, which counters the high cost (USD 1-2 per m<sup>3</sup>) of water production. The UAE has reduced its NRW from 40% to 13% by investing in smart leak detection systems using smart sensors and data loggers. The KSA, Bahrain, and Oman have high NRW and high-potential markets for smart leak detection solutions.

The wastewater recycling and reuse concept is currently gaining recognition in the GCC. Growth of this market is attributed to strict laws, stringent wastewater discharge limits and increasing scarcity of freshwater. Municipalities and industries understand the necessity to treat wastewater for recycling and reuse. The GCC's industrial water and wastewater treatment equipment market was valued at USD 1.6 billion in 2020 and is expected to reach USD 2.1 billion by 2025, registering a CAGR of 6.4%. New investments in the industrial sector, particularly in chemicals, petrochemicals, and oil and gas, will drive this growth.

Climate change's effect on water resources and poor water management practices has had a significant economic impact and is propelling the need for digital transformation in the GCC. The GCC offers immense growth potential for companies providing smart and efficient water management systems across water and wastewater treatment, water reuse systems, water distribution and wastewater collection networks. Digital transformation in the water industry enabled by the industrial internet of things (IIoT) is expected to disrupt business models and make advanced technology accessible across segments, including price-sensitive customers in the GCC.



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2601, Swiss Tower, Cluster Y  
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F16, Level 1, Localizer Mall  
2803 Prince Muhammad Bin  
Abdulaziz Rd  
Al Olaya, Riyadh 12222  
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myfrost@frost.com

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