



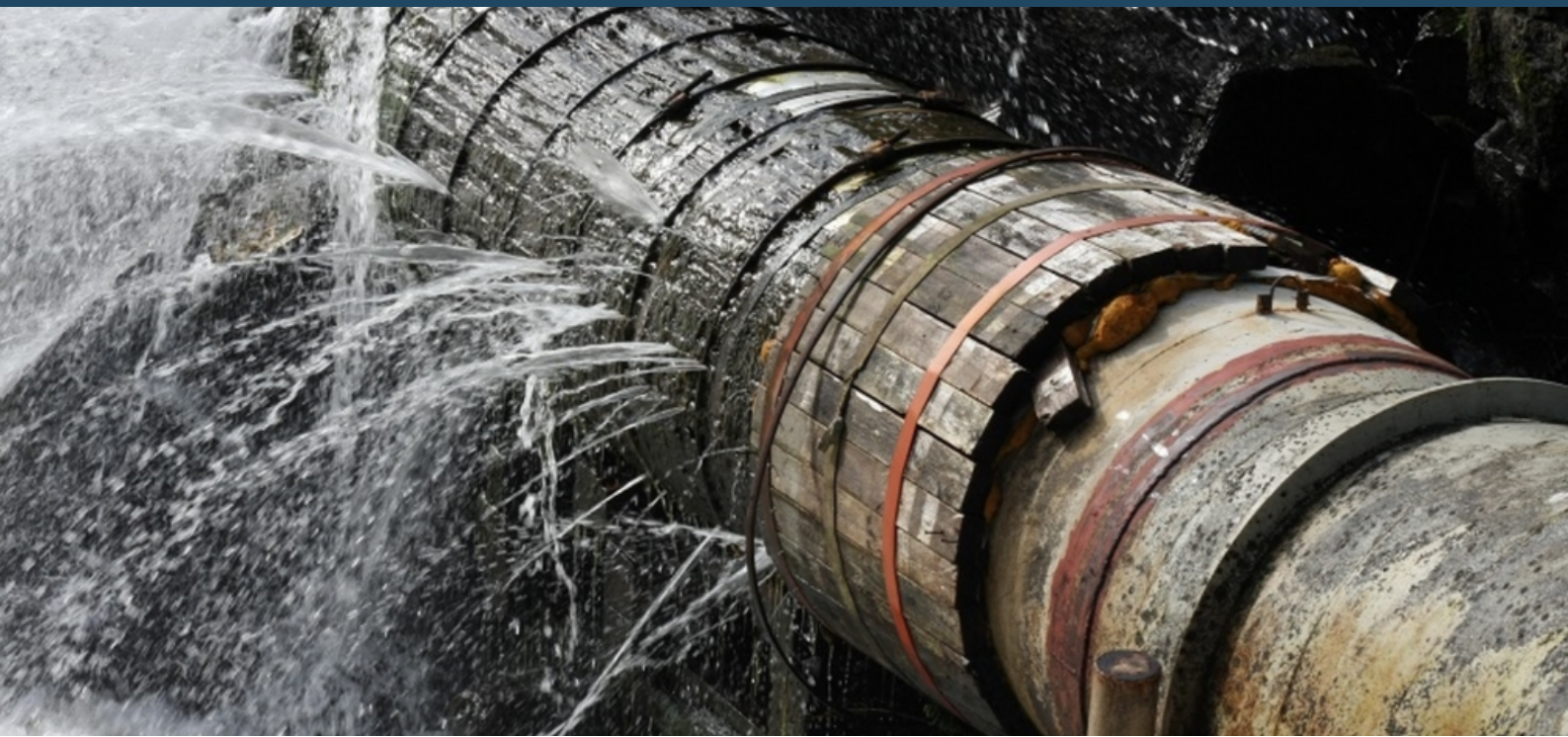
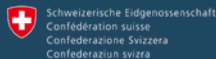
WORLD BANK YOUTH
INNOVATION
CHALLENGE

WATER SOLUTIONS FOR A NEW
CLIMATE REALITY



Launching December 8, 2023 at COP28!

TRACK 4 MISMANGED WATER



Challenge Statement

- Worldwide, 2.4 billion people remain without access to improved sanitation, and nearly 0.7 billion remain without access to improved drinking water sources. Those who have access to water supply and sanitation services often must cope with intermittent water supply, sewerage system overflows, and poor customer service. [1]
- Poor service delivery frequently stems from a vicious cycle of dysfunctional political environments, inefficiencies in water and sanitation utilities, and lack of investment. Globally, the infrastructure gap alone is estimated to be between USD 74 billion and USD 166 billion annually [2]. Global forces — including climate change, water scarcity, abrupt changes in the environment, population growth, migrations, and rapid urbanization — exacerbate these challenges and threaten the provision of high-quality and sustainable WSS services, jeopardizing the possibility of providing “water and sanitation for all.”
- Donors have invested tens of billions of USD over the last two decades to improve both infrastructure and operations in the WSS sector. Nonetheless, many of these investments have not led to sustainable improvements in service, in part due to inadequate addressing of the political economy.
- In this complex environment, water and sanitation utilities have a key role to play and require innovative approaches to provide water and sanitation quality services that ensure continuity of operations, encourage continuous improvement, develop strategic capabilities, and create efficient and sustainable strategic business models.

[1] Mumssen, Yogita, Gustavo Saltiel, and Bill Kingdom. 2018. “Aligning Institutions and Incentives for Sustainable Water Supply and Sanitation Services: Report of the Water Supply and Sanitation Global Solutions Group, Water Global Practice, World Bank.” World Bank, Washington, DC.

[2] Soppe, Gerard, Nils Janson, and Scarlett Piantini. 2018. “Water Utility Turnaround Framework: A Guide for Improving Performance” World Bank, Washington, DC.

- A utility that provides reliable, safe, inclusive, transparent, and responsive services, requires identification of innovative ways to strengthen capabilities in the key processes to deliver water and sanitation service to customers, as shown in the pyramid below that illustrates the interdependencies and complexities of a utility (see www.worldbank.org/uof for more details).



- Utilities need to identify and incorporate new approaches that will enable them to accelerate the path to excellence leading to “water and sanitation for all”. This means, for example:
 - Strengthening commercial processes, such as improving customer service channels, optimizing billing and collection processes, facilitating payment methods, or creating mechanisms to change customer behavior towards water use.
 - Develop more efficient and cleaner processes in the operation of water and sanitation, such as data management and/or georeferencing pipeline networks, equipment and assets, automation of maintenance processes, intelligent mechanisms for reducing water losses, early warnings of possible impacts related to climate change.

- Your challenge is to design and propose solutions that will address these issues focusing on designing a comprehensive and scalable business model, producing technology, or designing policies that promote positive behavior change among people.

Opportunity Areas

Digitalization:

Digital transformation is crucial to improve the performance of water and sanitation utilities. There is room for improvement in all areas of the operation with great potential for digitalization, such as online banking, mobile technology, customer service, water losses, monitoring water quality, maintenance processes (preventive and corrective), pipeline network management, financial management, data management, among others.

Energy Efficiency:

Identifying processes where there is potential for optimizing energy consumption and incorporating clean energy is crucial for the sustainability of utilities and reducing carbon footprint. Improving energy efficiency is at the core of measures to reduce operational cost, since energy represents the largest controllable operational expenditure of most water and sanitation utilities, identifying energy efficiency solutions supports quicker and greater expansion of clean water access for the poor by making the system cheaper to operate.

Water losses (non-revenue water):

One of the major issues affecting water utilities in the developing world is the considerable difference between the amount of water put into the distribution system and the amount of water billed to consumers (non-revenue water - NRW). High levels of NRW reflect huge volumes of water being lost through leaks, not being charged to customers, or both. It seriously affects the financial viability of water utilities through lost revenues and increased operational costs. In addition to having a significant financial impact on utilities, the environmental impact is important since a large amount of water is being wasted in developing countries, mainly impacting regions with scarce water resources.

Pioneering Solutions for Inspiration

- [CANN Forecast](#) – Startup helping municipalities transition to a proactive approach to water management with AI and machine learning powered tools. The technology can be leveraged to create business cases for preventive maintenance by forecasting which pipes are most vulnerable to leaks or breakages across a city's water distribution network.
- [Kai Pono Solutions](#) – Startup designing and manufacturing innovative stormwater filtration solutions to help cities and communities tackle runoff pollution at the source. This solution aims to be a critical piece of a city's infrastructure puzzle.
- [Desolenator](#)-- Startup bringing next gen solar desalination technology to the Middle East and around the world. Their innovation aims to provide clean drinking water by using solar power to desalinate seawater, offering a sustainable solution to water scarcity in coastal regions.

Resources

- Staying ahead of the wave: How water utilities are becoming climate-ready: <https://blogs.worldbank.org/water/staying-ahead-wave-how-water-utilities-are-becoming-climate-ready>
- The race to zero: How youth help water utilities mitigate carbon emissions: <https://blogs.worldbank.org/water/race-zero-how-youth-help-water-utilities-mitigate-carbon-emissions>
- Utility of the Future : Taking Water and Sanitation Utilities Beyond the Next Level 2.0 - A Methodology to Ignite Transformation in Water and Sanitation Utilities:
<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099325005112246075/p1655860d146090dc097dc0165740604044>
- The main components and processes of a utility can be identified in the UoF tool, the UoF framework and training material available at: www.worldbank.org/uof
- To support utilities in this journey, the World Bank has developed Utility of the Future Program (UoF), a program designed to ignite, materialize, and maintain transformation efforts in water and sanitation utilities, through the combination of a methodological framework, toolkits, trainings, and support by sector specialist that guides utilities in the process to build internal capacities and to reinvent and strengthen themselves (video).
- Water Utility. Turnaround Framework: A Guide for Improving Performance:
<https://documents1.worldbank.org/curated/en/515931542315166330/pdf/Water-Utility-Turnaround-Framework-A-Guide-for-Improving-Performance.pdf>

Resources

- Aligning Institutions and Incentives for Sustainable Water Supply and Sanitation Services: Report of the Water Supply and Sanitation Global Solutions Group, Water Global Practice, World Bank:
<https://documents1.worldbank.org/curated/en/271871525756383450/pdf/Aligning-institutions-and-incentives-for-sustainable-water-supply-and-sanitation-services.pdf>
- A primer on energy efficiency for municipal water and wastewater utilities
https://www.esmap.org/sites/default/files/esmap-files/FINAL_EECI-WWU_TR001-12_Resized.pdf

Learn more about the challenge here...

<https://wbyouthinnovationchallenge.org>



Applications Due February
23rd, 2024