



Join the Challenge!

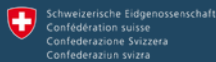
WORLD BANK YOUTH
INNOVATION
CHALLENGE

WATER SOLUTIONS FOR A NEW
CLIMATE REALITY



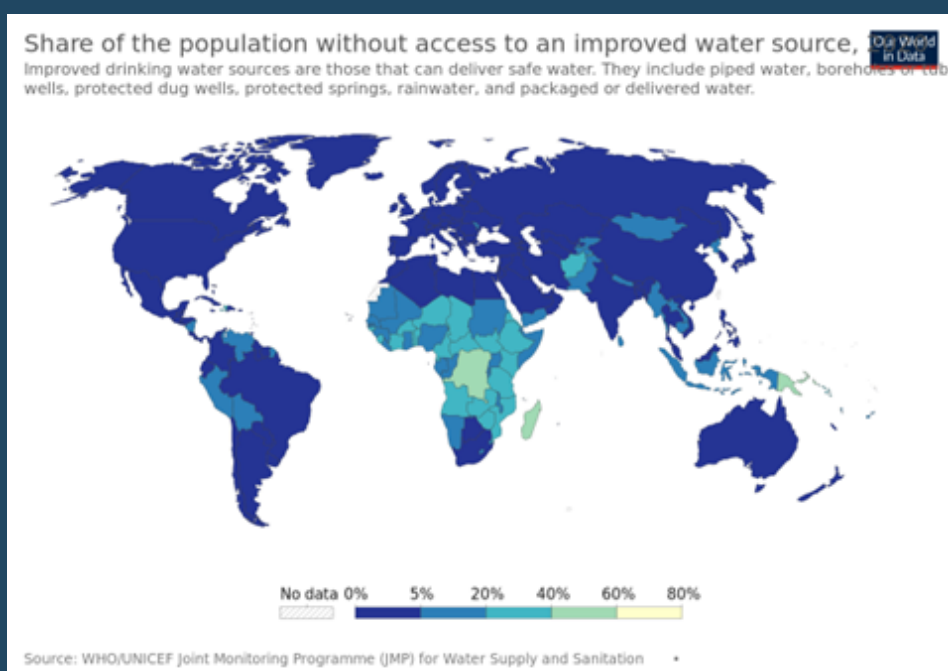
Launching December 8, 2023 at COP28!

TRACK 3 CONTAMINATED WATER



Challenge Statement

- About 2.2 billion people worldwide do not have access to safe drinking water (SDG Report 2022).
- According to UNICEF, every day, over 1000 children die from diseases associated with unsafe drinking water, sanitation, and hygiene.
- The WHO estimates that around 485,000 deaths occur annually due to waterborne diseases, emphasizing the health impact of poor water quality. Contaminants such as bacteria, viruses, and parasites in drinking water can lead to diseases like cholera, dysentery, and typhoid, particularly in regions with inadequate sanitation and water treatment.
- Disparities in water quality are often pronounced between urban and rural areas. The Joint Monitoring Programme (JMP) by WHO and UNICEF reported that, in 2019, about 76% of people in urban areas had access to safely managed drinking water services compared to only 55% in rural areas. This highlights the need for targeted efforts to improve water quality in rural communities.



Water contamination poses a significant threat to public health and environmental sustainability, impacting communities worldwide. Contaminants such as pathogens, heavy metals, nutrients, and industrial pollutants can compromise the quality of drinking water sources. The consequences of water pollution are far-reaching, leading to waterborne diseases, ecosystem degradation, and compromised agricultural productivity. Inadequate sanitation and wastewater treatment contribute to the problem, particularly in densely populated areas.

Access to clean and safe drinking water is a basic human right, yet millions of people face the daily risk of consuming water tainted with harmful substances. The quality of water sources is intricately linked to broader environmental health, making effective water quality management crucial for safeguarding ecosystems and the well-being of both human and aquatic life. Efforts to address water contamination involve stringent regulations, advanced water treatment technologies, and community awareness initiatives to ensure sustainable water quality and mitigate the adverse impacts of pollution.

Contaminants of emerging concern (CoEC) is a term used to describe substances found in water bodies that are not yet regulated but may be of environmental or human health concern. These include pharmaceuticals, industrial compounds, and personal care products.

Monitoring and treatment are essential components in addressing contaminated water, as regular surveillance ensures early detection of pollutants and potential health hazards, while effective treatment methods are pivotal for purifying water sources and safeguarding public health.

The global water problem of water quality is a concern for public and environmental health. The exacerbation of this crisis due to climate change demands urgent attention and innovative solutions. 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

Business Model Innovation:

Your solution could involve creating an innovative business model. It should promote collaboration across diverse sectors, including government, the private sector, and nonprofits. The model should prioritize both scalable social impact and financial sustainability, ensuring that the most vulnerable sectors gain access to safe and clean water. Diversifying revenue streams to encompass Planet, People, and Profit is integral to achieving a comprehensive and effective approach

Technology Innovation:

Solutions with novel water purification or desalination systems, pathogen destruction technologies, and decentralized water treatment solutions are all examples of projects. Moreover, the utilization of data science and artificial intelligence could be leveraged for water quality monitoring and treatment. In navigating this path, a balance must be struck between scalability, affordability, feasibility, and environmental sustainability.

Policy Recommendations:

To address water quality, governments need to create an enabling environment for sustainable water monitoring and management. Governments at local, national, and even international levels should work together to formulate and implement policies that incentivize clean water usage and environmental discharge. The policies must incorporate behavior change adaptation measures so they can be effectively implemented on the ground.

Pioneering Solutions for Inspiration

- Aquacycl - environmentally-friendly and cost effective microbial electrochemical wastewater treatment solutions
- Aclarity - electrochemical water treatment systems aim to provide efficient and sustainable solutions for removing contaminants, ensuring access to clean and safe drinking water
- EOMAP- a company specializing in satellite-derived water quality monitoring and bathymetry solutions.
- Kai Pono - stormwater filtration systems and trash capture devices.

Resources

- [Background on Contaminants of Emerging Concern: Emerging Contaminants - ScienceDirect](#)
- [Removal of Emerging Contaminants in WWTPs in India: https://pubmed.ncbi.nlm.nih.gov/36502902/](https://pubmed.ncbi.nlm.nih.gov/36502902/)
- [Water at the center of climate crisis - Water – at the center of the climate crisis | United Nations](#)
- [10 Things You Didn't Know About Water - 10 things you didn't know about water | UNICEF](#)
- [We All Live Downstream - Clean Water Action Podcast | Clean Water Action](#)
- [Xylem Learning Platform \(xylemsales.com\) - Water and Sustainability lecture.](#)

Citation Links

- <https://www.who.int/news/item/18-06-2019-1-in-3-people-globally-do-not-have-access-to-safe-drinking-water-unicef-who>
- <https://www.unicef.org/press-releases/triple-threat-water-related-crises-endangering-lives-190-million-children-unicef#:~:text=Globally%2C%20more%20than%201%2C000%20children,to%20climate%20and%20environmental%20threats.>
- <https://www.who.int/news-room/fact-sheets/detail/drinking-water>
- <https://washdata.org/sites/default/files/2022-01/jmp-2021-wash-households-highlights.pdf>

Learn more about the challenge here...

<https://wbyouthinnovationchallenge.org>



Applications Due February
23rd, 2024