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WASH THE FUTURE OF WASH

Collaboration with the Institute for Sustainable Futures, University of Technology Sydney and The London School of Hygiene & Tropical Medicine (LSHTM)

The Challenge

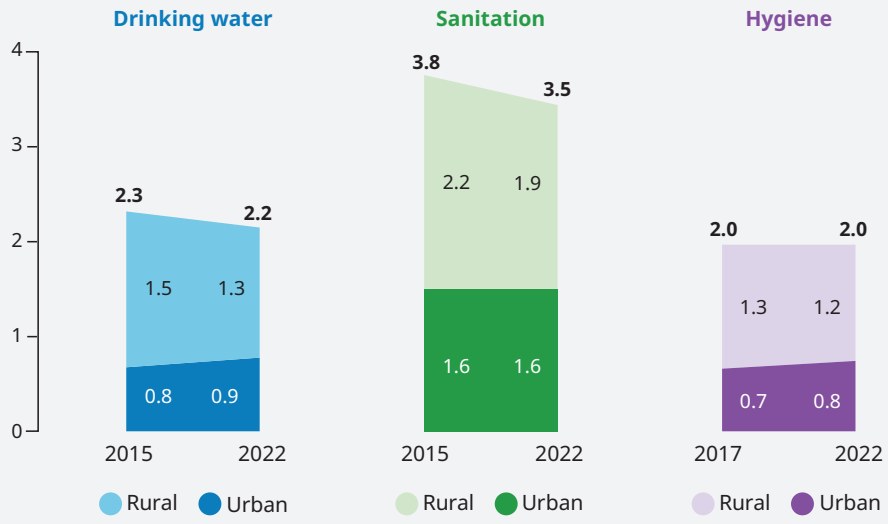
2.2 billion people **lacked safely managed drinking water,** including 703 million without a basic water service.

3.5 billion people **lacked safely managed sanitation,** including 1.5 billion without basic sanitation services.

2 billion people **lacked a basic handwashing facility with soap and water** at home, including 653 million with no handwashing facility at all.[1]

Households with people with **disabilities have less access to water and sanitation.** [2]

Chart: Global urban and rural population without safely managed drinking water, safely managed sanitation, and basic hygiene services, 2015/17-2022 (billions)



Source: The Sustainable Development Goals Report 2023: Clean Water and Sanitation[2]

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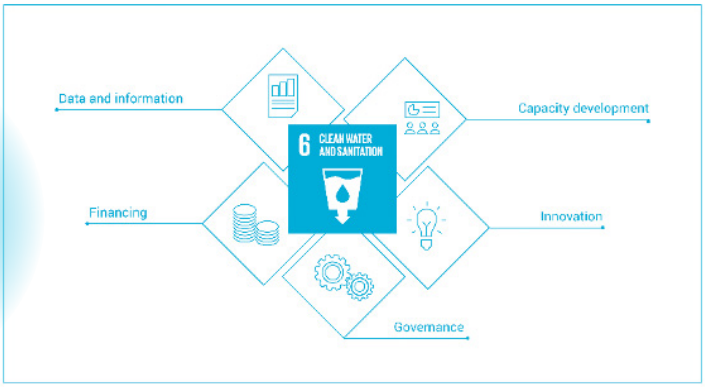
Context

SDG 6 of the 2030 Agenda for Sustainable Development calls to "ensure access to water and sanitation for all". It is a cross-cutting goal, as human and environmental health and wellbeing including gender equality, disability and social inclusion cannot be achieved without WASH.[3]

Global costs of achieving SDG 6 exceed US$ 1 trillion annually[4]; however, the world is still not on track to achieve the Sustainable Development Goal 6 by 2030. Achieving universal coverage by 2030 will require a substantial increase in current global rates of progress: sixfold for drinking water, fivefold for sanitation and threefold for hygiene.[5] Both innovative technologies and approaches are important and needed to accelerate achieving SDG6 as outlined in the SDG 6 Global Acceleration Framework.[6]



Key Takeaways

After reading this brief, you will know more about

- Technologies and innovations that could advance WASH for all.
- How might we accelerate SDG 6 and decelerate the climate and environmental crises through harnessing novel and emerging technologies.
- The potential impact of novel and emerging renewable WASH sector innovations and approaches including Gender Equality, Disability and Social Inclusion (GEDSI), governance, behavior change, and finance.

Findings

Water Technologies

- Their effectiveness and appropriateness depend heavily on local contexts and enabling environments such as governance structures, technical capacity, and infrastructure. A significant challenge lies in their end-of-life management, particularly for digital components that become electronic waste.[7]

Sanitation Technologies

- Must be specific to the context in terms of soil, water sources, housing density and consider GESDI.[8]

Hygiene Technologies

- Innovation around reducing purchasing cost and reuse is an important and emerging area, especially in development contexts.[9]

Climate Change Mitigation

- Solar energy has huge potential in the water and wastewater sectors given that emissions from wastewater are on a par with those from aviation.[10]

Artificial Intelligence (AI)

- AI driven optimization can improve resource efficiency, reduce waste and regenerate natural systems, increasing resilience with predictive maintenance.
- Challenges include limited internet connectivity, access to digital devices, lack of comprehensive data, capacity and capability to implement required system changes.
- Ethical considerations are paramount.[11]

GEDSI

- Consideration of intersectionality, transformative approaches and innovations in inclusion are necessary to implement appropriate and effective interventions.[12]

Behaviour Change

- Behaviour change forms the foundation for sustainable improvements in WASH.[13]

Innovative Finance

- Opportunities in WASH include Infrastructure Finance, Microfinance, SME Finance, and Results-Based Finance, although all should be viewed as a complementary tool rather than a replacement for traditional funding sources.[14]

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Impact

- Safely managed and affordable WASH underpins all elements of life and health.
- Equitable WASH will improve the quality, accessibility and reliability of all other essential services such as education, universal healthcare, and food security and nutrition.

Insight Brief

Innovation Nodes Insight Briefs serve as a resource for practitioners and decision makers to quickly get up-to-speed on new and unknown areas of potential innovation.

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Opportunities

- The path to achieving safely managed WASH for all requires both technological advancement and systems strengthening. By taking an integrated approach that considers sustainability, equity, and local capacity, we can accelerate progress toward SDG 6.
- A child rights-based approach to innovation in WASH improves the quality, accessibility and reliability of services including universal healthcare, education, maternal health, while reducing multidimensional poverty.
- Circular economy principles are increasingly central to WASH innovation, promoting resource recovery and reuse while reducing environmental impacts.
- Success depends on considering the full ecosystem in which these innovations operate - including governance structures, financing mechanisms, behavioural factors, and critically, the principles of universal design and accessibility.

Notes

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