

UNESCO

United Nations Educational, Scientific and Cultural Organization Access to Clean Water and Sanitation

Overview

Access to clean water and adequate sanitation remains one of the most critical global challenges, affecting billions of people worldwide. According to the World Health Organization (WHO), approximately 2 billion people lack access to safely managed drinking water services, and 3.6 billion people are without access to safely managed sanitation facilities (WHO, 2021). These disparities are particularly pronounced in marginalized communities and developing regions, where inadequate water supply and poor sanitation contribute to widespread health problems, including waterborne diseases, malnutrition and even fatalities. The lack of clean water and sanitation not only affects individual health but also hinders economic development, exacerbates inequality, and undermines overall societal well-being (UN, 2021).

What is *UNESCO*?

The United Nations Educational, Scientific and Cultural Organization (UNESCO) plays a pivotal role in addressing global water and sanitation issues. Established in 1972, UNESCO aims to promote environmental care through leadership and action (UNESCO, 2021). UNESCO's initiatives focus on fostering international cooperation to enhance water management, promote innovative technologies, and support policies that ensure equitable access to water and sanitation for all communities (UNESCO, 2021). Through its various programs, UNESCO advocates for the integration of water education into school curricula, the promotion of sustainable water practices, and the empowerment of local communities to manage their water resources effectively.

Source of the Issue: Global Access to Clean Water and Sanitation

Access to clean water and sanitation varies significantly across the globe, influenced by geographical, economic, and social factors. A recent report by UNICEF highlights that 1 in 4 healthcare facilities worldwide lacks basic water services, severely impacting the health of patients and healthcare workers (UNICEF, 2020). In rural areas, where infrastructure is often

lacking, communities face significant challenges in accessing clean water, and take significant efforts to ensure proper access. For instance, in rural India, initiatives like the installation of community-managed water systems have dramatically reduced the incidence of waterborne diseases such as diarrhea and cholera. These projects have also led to improved school attendance rates, as children, particularly girls, no longer need to spend hours fetching water from distant sources (Biswas et al., 2024). By empowering local communities to take charge of their water supply, these initiatives not only address health issues but also foster community cohesion and resilience.

Furthermore, the recent COVID-19 pandemic has highlighted the critical need for sanitation facilities, with inadequate access contributing to increased transmission of the disease in many regions (UN, 2020). The intersection of health and sanitation is vital to prioritize access to clean water and sanitation in global health agendas. The WHO emphasizes that achieving universal access to safe water and sanitation is essential for reducing health disparities and improving overall quality of life (WHO, 2021).

Challenges in Urban Settings

Urban areas face unique challenges regarding water and sanitation access, particularly in rapidly growing cities. Rapid urbanization often leads to informal settlements, where infrastructure is inadequate or nonexistent. According to the United Nations, approximately 1 billion people live in slums, where access to clean water and proper sanitation is severely limited (UN-Habitat, 2020). This situation results in significant health risks, including poor human waste disposal, which contributes to the spread of diseases such as cholera and hepatitis A. For example, a study on urban health in Cape Town, South Africa during the recent drought crisis revealed that water scarcity exacerbated existing inequalities, with low-income communities facing the brunt of the water crisis due to insufficient infrastructure and poor access to sanitation facilities (Hoffman et al., 2021). The city's experience underscores the need for integrated urban planning that prioritizes sustainable water management and sanitation solutions.

Moreover, human waste management poses a significant challenge in urban environments. Many cities lack adequate sanitation systems, leading to untreated waste being disposed of in open spaces or water bodies, which further contaminates water supplies (Davis, 2020). The WHO states that inadequate sanitation is a leading cause of environmental pollution,

affecting both public health and ecosystems (WHO, 2021). Innovative solutions, such as decentralized sanitation systems and community-led waste management initiatives, are critical for addressing these challenges in urban settings. As cities continue to grow, the need for comprehensive and sustainable approaches to water and sanitation becomes increasingly urgent.

Impact of Climate Change

Climate change heightens existing water scarcity and sanitation issues by altering precipitation patterns and increasing the frequency and severity of droughts and floods. The Intergovernmental Panel on Climate Change (IPCC) reports that millions of people will be affected by these changes, particularly in vulnerable regions (IPCC, 2021). For instance, in sub-Saharan Africa, erratic rainfall impacts agricultural productivity, threatening food security and clean water supplies. Climate change is projected to increase the number of people living in water-stressed areas, particularly in regions already facing significant water scarcity (Mastrorillo et al., 2021). Addressing the intersection of climate change and water access is crucial for developing resilient communities that can adapt to these environmental shifts.

Additionally, the impact of climate change on water quality cannot be overlooked. Increased flooding can lead to the contamination of water supplies, while higher temperatures can promote the growth of harmful pathogens (IPCC, 2021). In coastal areas, rising sea levels threaten freshwater sources by increasing salinity. Therefore, comprehensive water management strategies must consider the impacts of climate change and incorporate adaptation measures to safeguard water supplies and sanitation facilities. The WHO highlights the importance of integrating climate change adaptation into water management practices to enhance resilience and protect public health (WHO, 2021).

Innovations in Water Technology and Infrastructure

Technological advancements have the potential to revolutionize access to clean water and sanitation, particularly in areas where traditional infrastructure is lacking. Innovative solutions, such as solar-powered water purification systems and low-cost sanitation technologies, have been successfully implemented in various regions. Israel serves as a prominent example of how advanced water management technologies transformed it from a water-scarce nation to a leader in water surplus. The country has developed cutting-edge techniques in water recycling and

desalination, making it possible to turn seawater into potable water (Gvirtzman and Shalev, 2018). Such innovations can be adapted and adopted by other nations facing similar challenges, emphasizing the importance of knowledge sharing and collaboration.

Furthermore, the rise of mobile technology has opened new avenues for improving water management and sanitation services. Applications that allow communities to report water quality issues or sanitation needs directly to local authorities can enhance accountability and responsiveness (Oduor et al., 2012). By leveraging technology, communities can be empowered to take an active role in managing their water resources, fostering a sense of ownership and responsibility. This approach not only improves access but also contributes to sustainable water practices.

Global Responses and Solutions

International cooperation has led to several initiatives aimed at improving access to clean water and sanitation. Programs such as the Global Water Partnership and the Sanitation and Water for All initiative promote collaborative approaches to tackle water-related issues. The United Nations' Water Action Decade, started in 2018, aims to accelerate the implementation of water-related development goals through global partnerships and innovative solutions (Sustainable Development). These initiatives underscore the importance of multilateral efforts in addressing water and sanitation challenges, recognizing that sustainable solutions require a collective commitment from all nations (UN, 2020).

Notably, the Global Water and Sanitation Partnership seeks to mobilize resources and expertise to support countries in achieving SDG 6. This partnership emphasizes the role of local communities in decision-making and encourages the sharing of best practices among nations (UN-Water, 2021). Moreover, the establishment of international funding mechanisms, such as the Green Climate Fund, aims to support projects that enhance water access and resilience against climate change impacts. By fostering global collaboration, these initiatives seek to create sustainable solutions that benefit both urban and rural communities worldwide.

UNESCO is publicizing the issue through the International Hydrological Programme, which promotes the sustainable use of water resources through research and capacity building (UNESCO, 2021). By leveraging its expertise and partnerships, UNESCO aims to create a global framework for action that addresses both the immediate needs for clean water and sanitation and

the long-term sustainability of these vital resources. Nations should consider the methods through which these pressing issues can be best solved and cooperate to help those in need, domestically and internationally.

Questions to Consider

1. What can UNESCO do to help countries improve access to clean water and sanitation?
2. How can new technologies enhance both water and sanitation availability in under-resourced areas?
3. In what ways can countries prepare for climate change while ensuring that all individuals have access to clean water?
4. How can countries effectively manage human waste disposal in growing urban populations to protect public health?
5. What strategies can countries employ to sustainably fund and maintain long-term clean water and sanitation projects in both urban and rural areas?
6. In what ways can affluent nations aid those without funds to combat poor sanitation and water access? Which countries bear most responsibility?

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