

Policy Brief – Water Sustainability in Developing Countries



April 16, 2023 | Molly Findley

Executive Summary

Water scarcity is a critical issue affecting millions of people in developing countries. This policy brief focuses on the challenge of water scarcity in developing countries and provides evidence-based policy recommendations to address this issue. The brief highlights the importance of investing in water infrastructure, promoting sustainable water use practices, and supporting research and development to improve water access and availability.

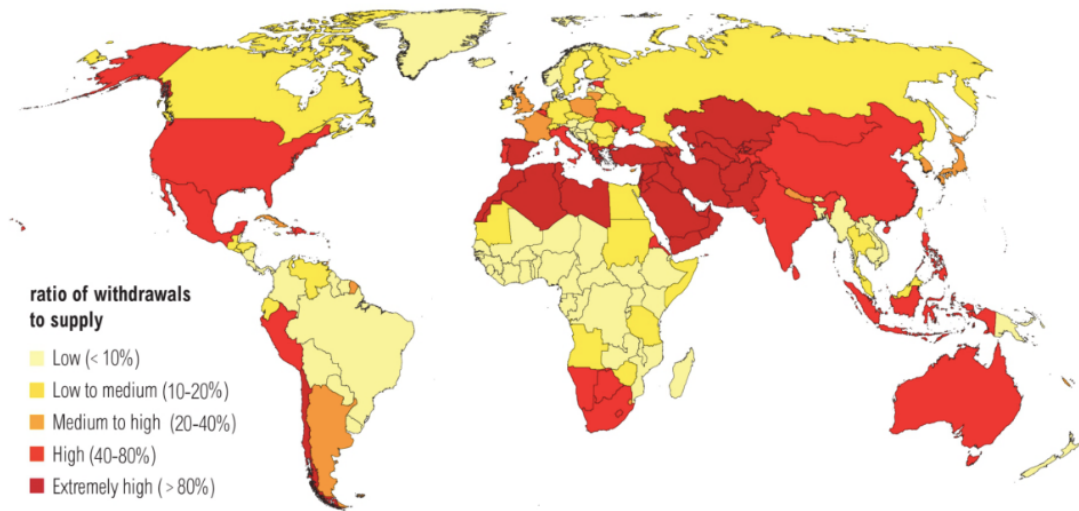
Recommendations

Invest in Water Infrastructure	Policymakers can invest in the development of water infrastructure to improve water access and availability. This includes the construction of dams, reservoirs, and irrigation systems that can help to store and distribute water resources.
Promote Sustainable Water Use Practices	Policymakers can promote sustainable water use practices, such as water conservation and rainwater harvesting, to improve water availability in developing countries.
Support Research and Development	Policymakers can support research and development to identify innovative solutions to address water scarcity in developing countries. This includes investing in technologies that can help to improve water quality, reduce water loss, and increase water availability.
Strengthen Water Governance	Policymakers can strengthen water governance by establishing policies and regulations to promote sustainable water use practices and improve water management.

The Problem

In developing countries, having access to clean and enough water is an essential problem that affects many aspects of life, including human health, the environment, and poverty reduction. According to the United Nations (UN), over 40% of people worldwide do not have enough clean water. UN-Water predicts that 1.8 billion people will face total water scarcity by 2025, which could lead to food insecurity (UNICEF). Women and girls in developing countries, who are usually responsible for household chores and natural resource management, are disproportionately affected by the lack of access to clean water and sanitation facilities. Poor hygiene practices put them at risk of physical and safety hazards, including infections. Moreover, they are often excluded from decision-making processes regarding water management, even though they are key change agents in promoting sustainable water management practices (UNICEF).

Water Stress by Country: 2040



NOTE: Projections are based on a business-as-usual scenario using SSP2 and RCP8.5.

Figure 1. Water Stress by Country. Maddocks, Andrew, Robert Samuel Young, and Paul Reig. 2015. "Ranking the World's Most Water-Stressed Countries in 2040." World Resources Institute. August 26, 2015. <https://www.wri.org/insights/ranking-worlds-most-water-stressed-countries-2040>

Analysis

Water scarcity in developing countries is a major issue with widespread impacts. The lack of access to clean and sufficient water is linked to several negative outcomes including poor health, environmental degradation, poverty, and gender inequality.

Agriculture, which uses approximately 70% of the world's freshwater, is a major contributor to water scarcity (FAO 2017). In developing countries, inefficient irrigation systems, poor water management practices, and climate change exacerbate this problem. Climate change is projected to worsen water scarcity in many regions, particularly in Africa and Asia (Kummu et al. 2016).

The effects of water scarcity on human health are substantial. Inadequate access to clean water and sanitation facilities contributes to the spread of water-borne diseases, such as diarrhea, cholera, and typhoid fever. The World Health Organization (WHO) estimates that up to 80% of illnesses in developing countries are linked to poor water and sanitation (WHO 2022). Women and children are particularly vulnerable, as they are often responsible for collecting water from distant sources, and the time spent doing so can detract from their education and economic opportunities (Government of Canada 2023).

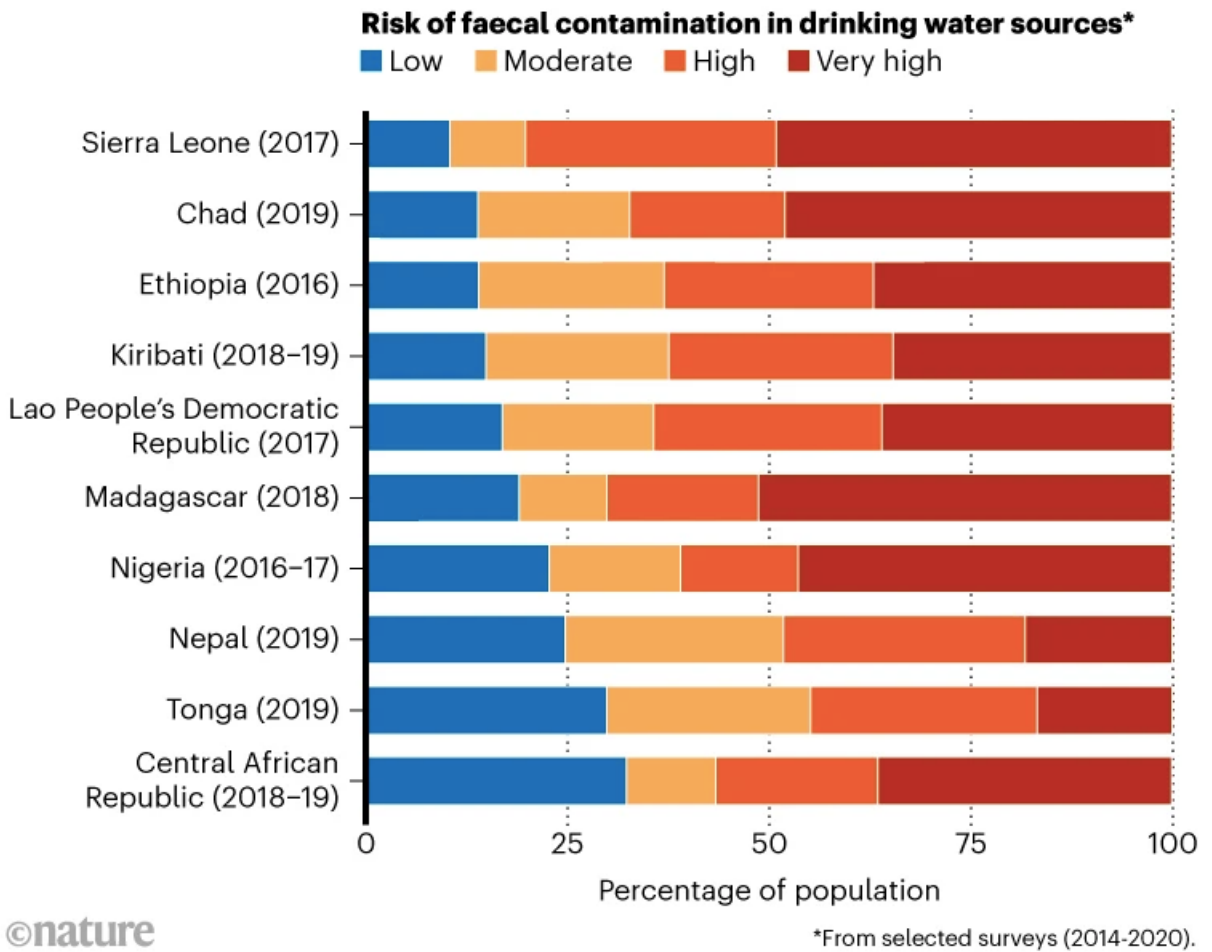


Figure 2. Risk of Faecal Contamination. Naddaf, Miryam. 2023. "The world faces a water crisis — 4 powerful charts show how." Nature. March 22, 2023. <https://www.nature.com/articles/d41586-023-00842-3>

Water scarcity also has negative effects on the environment. Over-extraction of groundwater can lead to land subsidence and saltwater intrusion. This, in turn, can impact agricultural productivity, food security, and biodiversity (Ifreyy et al. 2023). In addition, the discharge of untreated wastewater and agricultural runoff into water sources can contribute to pollution and harm aquatic ecosystems.

Gender inequality is another significant issue related to water scarcity. Women and girls are often responsible for collecting water and managing natural resources, yet they are excluded from decision-making processes regarding water management (Savoy and Staghun 2022). Poor sanitation facilities and hygiene practices during menstruation put women and girls at risk for infection and

other physical and safety risks. Access to clean water and sanitation is crucial for their health, safety, and economic opportunities.

Water scarcity is a complex issue with far-reaching impacts on human health, the environment, poverty, and gender equality. The causes of water scarcity in developing countries are multifaceted, including inefficient irrigation systems, poor water management practices, climate change, and gender inequality. Addressing this issue requires a comprehensive approach that prioritizes sustainable water management practices, improves access to clean water and sanitation facilities, and promotes gender equality.

Policy Recommendation

To address the challenge of water scarcity in developing countries, policymakers should invest in water infrastructure, promote sustainable water use practices, support research and development, and strengthen water governance. These policy recommendations are essential to ensure that water resources are used responsibly and sustainably to meet the needs of individuals and communities.

Water scarcity is a complex issue that requires a multifaceted approach to address. Several solutions are currently underway to tackle this issue in developing countries. First, the United Nations has set a goal to achieve universal access to safe and affordable drinking water by 2030. To achieve this, the UN has launched various initiatives, such as the Sustainable Development Goals (SDGs) and the UN Water Action Decade, to raise awareness and mobilize action to improve water management and increase access to water (UN). Despite these efforts, we have not made significant progress toward achieving the targets outlined in SDG 6 for clean water. The progress toward achieving SDG 6 is hindered by insufficient funding and fragmented efforts at various levels. Additionally, there is a lack of available data and information sharing among different sectors and countries that is necessary for effective decision-making. Moreover, implementation is slowed by inadequacies in human and institutional capacity, especially at the local government and water and sanitation provider levels. Outdated infrastructure and governance models also contribute to the challenges in achieving SDG 6 (UN Water 2020).

Another solution is the implementation of rainwater harvesting systems. Rainwater harvesting is a simple and effective way to collect and store rainwater for domestic use. In countries with high rainfall, such as Bangladesh, rainwater harvesting can meet a significant amount of total water demand. The villagers of Manikkhali, Bangladesh, are utilizing the Local Climate Adaptive Living facility to collect and retain monsoon rains in huge tanks for a source of clean and reasonably priced drinking water. Through the Performance Based Climate Resilience Grants, which are funded by the European Union and the Swedish Development agency SIDA, each rainwater collection unit can store 1,000 liters of water and costs \$25 for every family (Dakua 2013). The availability of a disease-free fresh water source has improved the health of inhabitants, and women and girls no longer have to travel for hours to get clean water.

Improving access to sanitation facilities is another important remedy. The lack of sanitation facilities is a major contributor to water pollution and contamination, particularly in developing countries. Nearly 14 billion liters of untreated, faecally-contaminated toilet wastewater is produced daily in developing countries due to a lack of access to safe sanitation (Thomas 2021). The current data collection tools used by the UN for Sustainable Development Goals are inadequate in providing

complete information on sanitation (Thomas 2021). To improve this, more effective surveys and resource allocation for sanitation departments need to be designed. In addition, coordinated investment in sustainable sanitation solutions is crucial for the well-being of all living beings, and it requires participation from all stakeholders, including governments, international organizations, and the private sector.

Conclusion

Water scarcity is a critical issue that affects millions of people in developing countries. The lack of access to clean and sufficient water is linked to several negative outcomes, including poor health, environmental degradation, poverty, and gender inequality. The causes of water scarcity in developing countries are multifaceted, including inefficient irrigation systems, poor water management practices, climate change, and gender inequality. To address this issue, policymakers should invest in water infrastructure, promote sustainable water use practices, support research and development, and strengthen water governance. Achieving universal access to safe and affordable drinking water by 2030, as outlined in the Sustainable Development Goals, requires a comprehensive approach that prioritizes sustainable water management practices, improves access to clean water and sanitation facilities, and promotes gender equality. Despite ongoing efforts, there is still a long way to go to achieve these targets, and it requires collaboration and cooperation among different sectors and countries.

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