PROBLEMS OF PROVIDING SAFE DRINKING WATER TO DEVELOPING COUNTRIES AND SUGGESTIONS FOR THEIR SOLUTION

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Annotatsiya

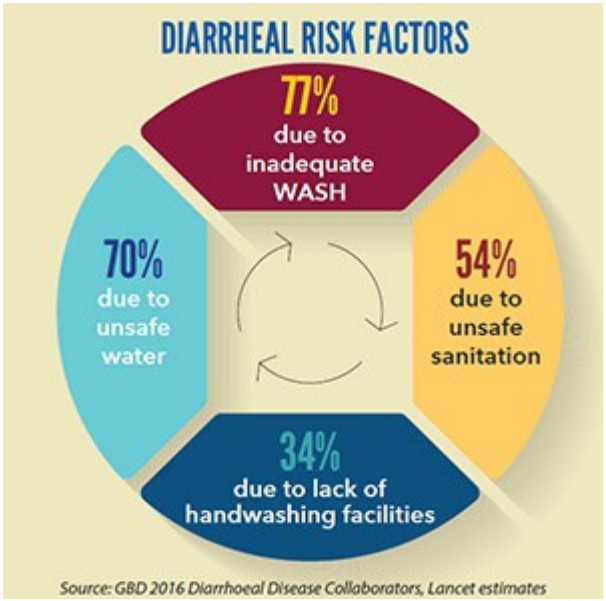
Ushbu maqolada dunyo miqyosida, jumladan rivojlanayotgan davlatlarda aholini sifatli ichimlik suvi bilan ta'minlashda yuzga kelayotgan bir qator muammolar o'rganilgan.Shu bilan birgalikda mavjud muammolarga bir qancha amaliy yechimlar ijtimoiy, siyosiy texnik tomonlama yondoshilgan holatda taklif etilgan.

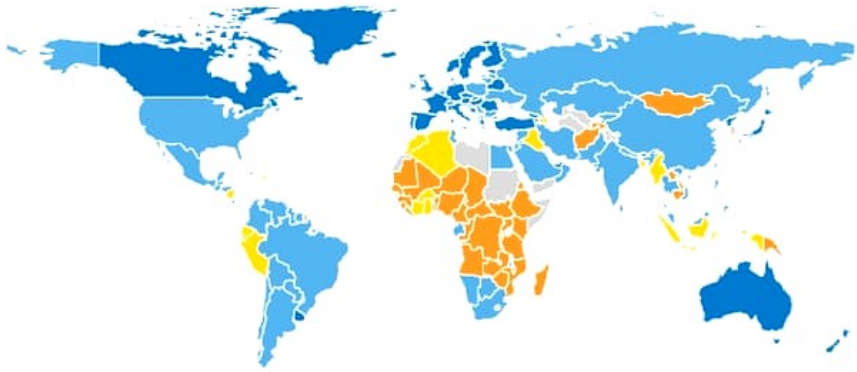
Abstract. This article examines a number of problems in the world, including in developing countries, in providing the population with quality drinking water. At the same time, several practical solutions to the existing problems are proposed in a social, political and technical approach.

Аннотация. В данной статье рассматривается ряд проблем в мире, в том числе в развивающихся странах, по обеспечению населения качественной питьевой водой, при этом предлагается ряд практических решений существующих проблем в социальном, политическом и техническом подходе.

Key words: Safe drinking water, Safe drinking water, developing countries, waterborne diseases, sanitation, water scarcity, human rights.

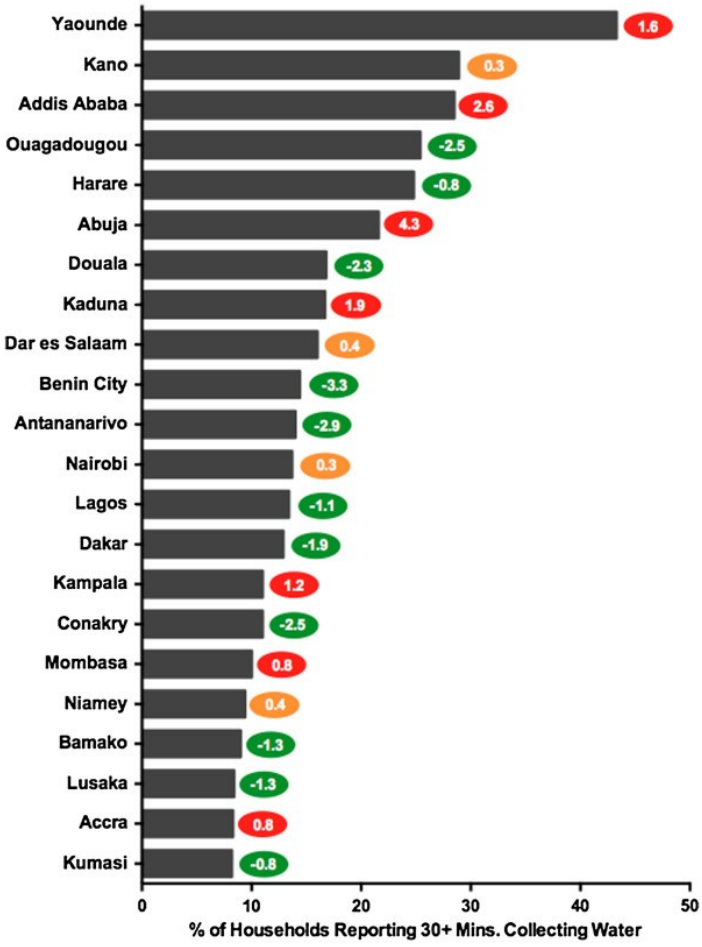
Access to safe and clean drinking water is a fundamental human right, yet millions of people across the globe, especially in developing countries, struggle to obtain this essential resource. Around 2 billion people around the world do not have access to clean and safe drinking water, and approximately 3.6 billion people – 46% of the world's population – lack adequate sanitation services, according to a new United Nations World Water Development Report. According to the CDC, 50 countries worldwide have drinkable tap water. But look closer, and the picture is more nuanced. The challenges associated with ensuring safe drinking water in these regions are complex and multifaceted, stemming from a combination of social, economic, environmental, and infrastructural factors.





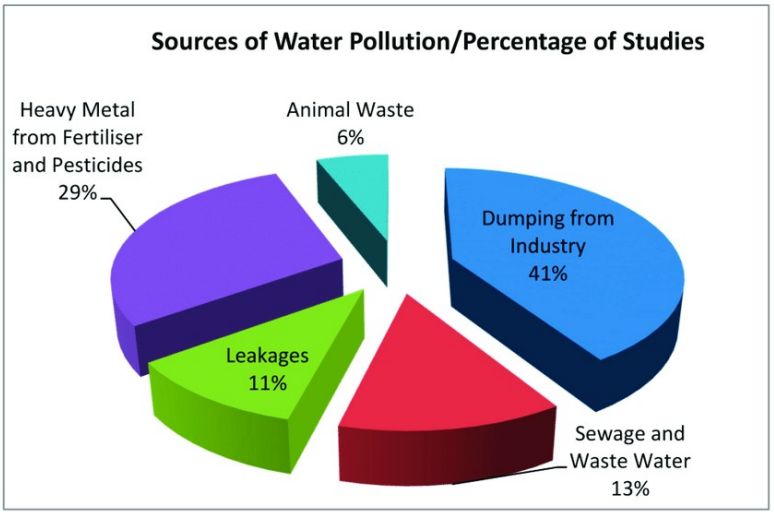
One of the foremost challenges in providing safe drinking water in developing countries is the lack of adequate infrastructure for water treatment and distribution. Many communities in these regions do not have access to reliable water treatment facilities, leading to the consumption of contaminated water, which results in a myriad of waterborne diseases, including cholera, dysentery, and typhoid fever. According to information in webpage cdc.gov many waterborne infections cause diarrhea and loss of body fluids, resulting too often in severe dehydration and death. Diarrhea is the fifth-leading cause of death among children under the age of 5. Frequent and recurring diarrhea can reduce children's growth and cognitive development and increase their susceptibility to other infectious diseases.

About 88% of diarrhea-associated deaths are due to unsafe water, inadequate sanitation, and insufficient hygiene. Inadequate infrastructure also contributes to water scarcity, making it difficult for communities to meet their daily water needs. For information, during the years of independence in Uzbekistan, 21,210 kilometers of water networks were built in rural areas, and their total length increased by 2.3 times compared to the period of the Soviets. This led to an increase in the provision of drinking water to rural residents from 56 percent in 1992 to 78.1 percent as of January 1, 2003.



Moreover, the issue is compounded by the presence of pollutants and contaminants in water sources, often due to industrial activities, agricultural runoff, and inadequate waste management systems. Addressing such contamination requires significant investments in advanced water treatment technologies and strict enforcement of environmental regulations, both of which pose challenges in resource-constrained settings. According to costs in owlshall.co.uk webpage for the sewage treatment plant itself – A six-person domestic sewage treatment plant will cost approximately £1,700-£3,000. For an eight-person plant, this will be around £2,500-£4,500. Installation can cost between £5,300-£8,500.

In many developing countries, socio-economic disparities exacerbate the unequal access to safe drinking water. Marginalized communities, including those living in remote rural areas and urban slums, are disproportionately affected by water insecurity. Women and children often bear the brunt of this burden, as they are frequently tasked with fetching water over long distances, contributing to reduced educational and economic opportunities. According to usaid.gov, women and girls in developing countries carry an average of 20 liters (about 42 pounds/20 kg) of water per day to walk 6 kilometers (about 3.5 miles). In some areas, it is common for this travel to take more than 15 hours per week. And according to UNICEF, women and girls spend 200 million hours each day fetching water, far more than men and boys. Collecting water is tedious and adds to the unpaid domestic and care work that is at the heart of gender inequalities.



Furthermore, climate change presents a growing threat to water security in many developing countries. Shifts in precipitation patterns, rising temperatures, and extreme weather events pose challenges to

maintaining adequate water supplies. Droughts, floods, and erratic rainfall not only diminish water quality and availability but also disrupt agricultural productivity, further intensifying the water crisis.

Efforts to address these challenges require a multifaceted approach that encompasses infrastructural development, community engagement, technological innovation, and policy reform. Investment in robust water treatment and distribution systems is essential to provide communities with a reliable supply of clean water. This necessitates collaboration between governments, non-governmental organizations, and the private sector to mobilize resources and expertise for large-scale infrastructure projects.

Here are some solutions to the above problems:

- Community participation and education are equally vital components of ensuring sustainable access to safe drinking water. Empowering local residents to manage their water resources, promoting hygienic practices, and raising awareness about the detrimental effects of water contamination can help prevent waterborne diseases and improve overall public health.

- Technological innovations, such as point-of-use water purification devices and low-cost filtration systems, offer promising solutions to mitigate water contamination at the household level, particularly in areas with limited access to centralized water treatment facilities. These innovations can be tailored to suit the unique needs and resource constraints of different communities, fostering greater resilience against water-related challenges.

- Importantly, policy reforms are crucial for addressing the systemic issues underlying water insecurity in developing countries. Governments must prioritize investments in water infrastructure, enact and enforce regulations to safeguard water quality, and promote equitable distribution of water resources. International cooperation and assistance play a pivotal role in supporting these efforts, providing financial and technical aid to facilitate sustainable water management practices.

In conclusion, the challenges of providing safe drinking water in developing countries are daunting, but not insurmountable. By adopting a comprehensive and collaborative approach that integrates infrastructure development, community engagement, technological innovation, and policy reform, progress can be made towards ensuring universal access to clean and safe drinking water. Addressing these challenges is not only a moral imperative but also a catalyst for improved public health, economic development, and environmental sustainability in the long term.

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