FORUM:	General Assembly
ISSUE:	Measures to Develop Water Infrastructure to Ensure Widespread Access to Clean Water
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Introduction

Clean water is essential for life. Not only does it affect one's health, but it also has relations to poverty, food security, environment, and human rights. To save two out of five people without access to this vital resource, the United Nations have recognized the issue as the 6th Sustainable Development Goal. According to the UN, more than 40 percent of the world's population is undergoing water scarcity, and without effective measures to solve this crisis, the UN projects that 700 million people worldwide would suffer from water scarcity by 2030.

There are many reasons why people lack access to clean water: poverty, inequality, climate change, water pollution, population increase, etc. Yet, the shortages of water infrastructure and the ineffective management of these services must be remembered as one of the leading causes of the global water crisis. Thus, as stated in the UN World Water Development report, settling the lack of access to clean water with increased funding and comprehensive management from the government can improve the water crisis by increasing the benefit-cost ratio to 5.5.

Background

Before the COVID-19 Pandemic, billions of people already faced the absence of clean water and sanitation. In 2017, the UN pointed out that 2.2 billion people do not have access to safe drinking water, and 4.2 billion people were experiencing a lack of sanitation. Also, they reported that two in five health care centers worldwide have an inadequate amount of soap, water, and hand sanitizer, which are essential for sustaining one's health.

After the outbreak, the need for clean water was highlighted considerably when the World Health Organization (WHO) stated handwashing is the best way to prevent the spread of disease. However, due to water scarcity, about 3 billion people are deprived of the most fundamental protections against the COVID-19, and recovery from this pandemic surely includes the need for productive water management.

Most water infrastructure problem comes from aging. As time passes, the existing water systems start to deteriorate and lose their function. However, most municipalities are building new sections in the water infrastructure to expand access to clean water, neglecting the fact that the existing ones malfunction. Thus, the new pipes connected to the old ones become ineffective, failing to manage the water systems. In addition, frequent breaks in the water main reduce the water quality, affecting the public health and food security in the city.

A picture of a broken water pipe

Problems Raised

Health Crisis

Approximately 1 million people die each year due to the lack of water and sanitation. After the COVID-19 Pandemic, the need for clean water has become even more crucial worldwide. Moreover, in the vulnerable regions, children and women are responsible for carrying heavy buckets to distant wells, weakening their physical health when they are already in poor health condition due to the lack of access to clean water.

A picture of a women pumping water

Water scarcity is also in relation to water-borne illnesses such as typhoid, diarrhea, E.coli, salmonella, etc. Weakened public health due to these diseases can significantly impact a country's economic growth and stability. Also, children who only have access to unsafe water are especially prone to these diseases that could lead them to severe death. According to Water.org, a child dies every 2 minutes due to water-borne diseases, and direct access to safe water can save about 297,000 children each year.

In addition, unsafe water also affects the agriculture and food grown in the region. The viruses and diseases in water scatter throughout the field, affecting the quality of crops. These crops would contain the same bacteria that are found in the water and affect the health of those who consume them. Farmers in Burkina Faso, for instance, used wastewater that contains infectious pathogens to grow their crops due to its low cost and availability. However, this indirectly posed health risks to 200 million residences who used their crops.

Economic Crisis

The opportunity cost for collecting water is huge. Instead of spending time and money to find places to gather water, people could seek higher-salary jobs that can help them earn more money. Nevertheless, about 785 million people spend hours, or even days to collect water from distant wells or wait in long lines at the community water center, and approximately $260 billion is lost each year due to the unavailability of clean water and sanitation.

By universally enhancing the direct access to household water and sanitation, the global economy can earn $18.5 billion each year due to the citizens earning income instead of searching for water. Moreover, families can save their money due to the reduced health care expenses and afford other basic needs. For instance, the organization, Water.org helped a woman in the Philippines to emplace a water tap in her house. After safe water has become available in her house, she did not have to go out and search for water and instead used her time to find a job and receive income to support her family.

International Actions

Water Action Decade 2018-2028

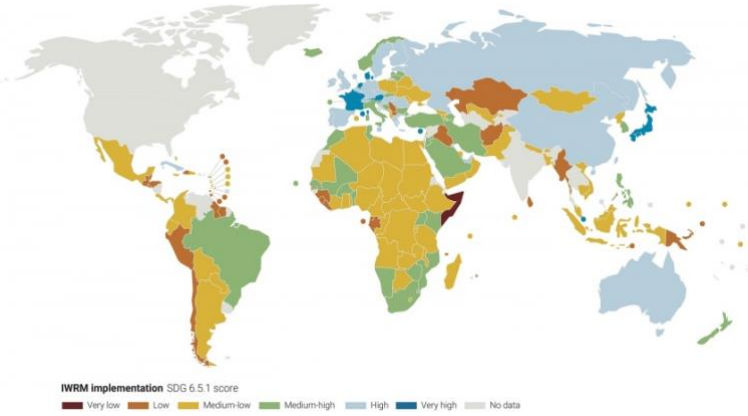
Due to the growing population every year, the United Nations reported that 40 percent of the clean water would decrease in 2030, and the lack of clean water is skewing towards a global crisis. To raise awareness and find effective measures to manage clean water, the United Nations started a project in 2018 that will last for a decade to improve the water crisis around the world. Yet, after the COVID-19 pandemic, the public is questioning whether the UN would meet its goals, but the project remains.

The logo of the Water Action Decade

To take action, the project aims to find means to facilitate international cooperation and fund more research and innovations to sustain water resources. To be specific, the UN has proceeded to work with all member states to improve water resource management, fund water-based research project, strengthen communication with water-related knowledge, etc. The project's goal is to improve water quality and make clean water equally available for all. Achievements already made by the project include improved handwashing of 7 million people after effective investments on WASH and a midterm review of Water Action Decade would be held next year to make more active plans to achieve their goal.

Integrated Water Resources Management (IWRM)

Integrated Water Resources Management (IWRM) is led by United Nations Environment Programme (UNEP), and it mainly focuses on monitoring nations that have access to freshwater and marking places in need of assistance. When these regions are identified, the IWRM and other partnered organizations will provide support to meet Sustainable Development Goal No. 6, which are universally agreed on water-related goals. For instance, IRWM in the Arab region collaborated with Arab Integrated Water Resources Network (AWARNET) to identify region-specific priorities such as adapting to climate change and increasing water services to meet sustainable goals.



Countries where IWRM is implemented

On the rest of the COVID-19 pandemic, the UNEP organization has swiftly adapted to the changes and monitored the countries. To make access to these data more manageable, the organization established online webinars to help officials download the requisite materials and partnered with Global Water Partnership (GWP) to help countries that face difficulties monitoring and reporting online.

Key Players

UN Water

UN-Water is an organization that focuses on ensuring sustainable water and sanitation for everyone. The role that the organization plays in the water crisis can be divided into three parts. First, the organization releases campaigns for World Water Day to inspire the public to save water and take actions globally to achieve sustainable goals. This year the World Water Day was held online on March 22nd to celebrate and understand the value of water.

Second, the organization gathers water-related data and information from different organizations and programs in one place. Then the organization presents various infographics and graphs with the compiled data and uses them to analyze and make useful advice on what needs to be worked on to achieve the goals.

Above all, the UN-Water collaborates with all member states to recognize the ongoing issues and discuss effective solutions to these problems. The organization has succeeded in raising awareness of the water crisis and the problems were reinforced by landmark agreements such as the 2030 Agenda for Sustainable Development, 2015 Paris Agreement, The Water Action Decade, and more.

Water.org

Water.org is a nonprofit governmental organization (NGO) that provides access to water and sanitation by funding vulnerable regions and guiding more than 38 million people worldwide to reach safe water and sanitation. The organization mainly contributes to the water crisis by offering vulnerable families, who are spending a lot of time and money to collect water, small loans that can cover their immediate needs. As a result, the families can continue paying for their needs without constant help from the organization.

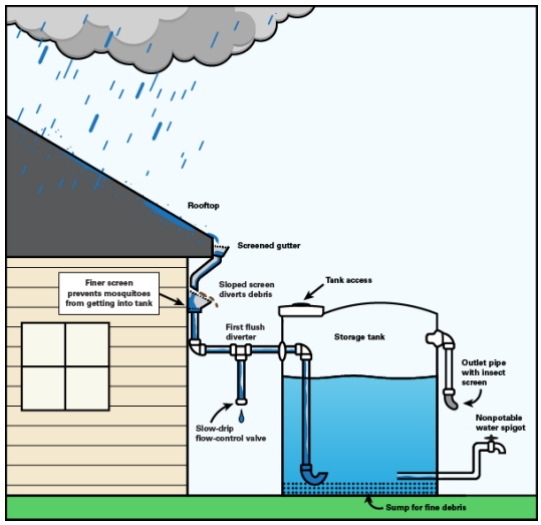
A picture of a woman financing in Water.org

The organizations has given impact to many families in different regions. Recently, the organization funded a rural region in Ethiopia through a local bank. A family that got help from these loans were able to purchase a water tap in their home and have day-to-day access to water that supports a family of seven. Children who used to be busy looking and purchasing costly water from public vendors were able to find time and money to go to school and receive education.

Possible Solutions

Innovation to New Water Conservation

With thorough research and funds from the government or organization (such as the UN), new inventions that can help cope with the lack of access to safe water can be established. One example of a recent invention on water infrastructure is the rainwater harvesting system. This technology's main function is to collect rainwater and convert it for human use. The water collected by this technology can be used when washing cars, flushing toilets, laundering clothes, and can even be converted to drinkable water. This system has already been implemented in Germany, Australia, and the United States, and other nation states should also be more aware of this system to save water for the future.



A diagram of a rainwater harvesting system

In addition, more research on inexpensive but productive ways to implement or recover water systems is needed. Replacing the outdated water systems is crucial because it sustains the water quality that flows through the pipes and affects the water flow to different regions. However, many governments

have an inadequate sum of money to continuously invest in water infrastructures; thus, finding inexpensive materials or means to build water systems and reducing the cost can be beneficial.

Increased Funding

Investment from the government in water infrastructure needs to be increased. Even the United States that has existing funding sources such as the Clean Water State Revolving Funds still lacks the amount of money needed to build and repair water infrastructure to meet the public needs. However, it is not just the community itself that gets benefits from the improved water infrastructure. The countries economy would increase and about 1.9 million jobs would be created in return.

Developing countries should seek financial support from organizations such as Water.org or the UN. However, these organizations must think of means that can help the countries to grow independently. This is because blindly giving funds to a country means it would not be able to sustain itself in the long term and would continuously seek support. For example, the organization Water.org only provide small loans for a vulnerable family to build direct-access-to-water facilities. Yet, even though it wasn't a huge amount of money, it reduced the time to search for water and replaced it with jobs that gives income to the families.

Glossary

Benefit-Cost Ratio

Shows the relationship between the cost and the benefits of a proposed project

Opportunity Cost

The value of what was given up

WASH

An abbreviation that is frequently used in UN reports and stands for "water, sanitation, and hygiene"

Global Water Partnership (GWP)

An organization that partners with various water-related organizations, such as agencies of UN, government and research institutions, professional associations, etc., to improve water management in these programs.

Clean Water State Revolving Fund (CWSRF)

A program in the United States that provides lost-cost financing in improving water infrastructure and allows the government to flexibly invest in water-related projects.

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